

**DEVELOPING ENGLISH SPEAKING MATERIALS FOR TUTORIAL
PRACTICES OF INTERNATIONAL SCIENCE CLASSES OF YOGYAKARTA
STATE UNIVERSITY**

A Thesis

**Presented as a Partial Fulfillment of the Requirements for the Attainment of the
Sarjana Pendidikan Degree in English Education**



by

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Developing English Speaking Materials for Tutorial Practices of International
Science Classes of Yogyakarta State University

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MOTTOS

“Be yourself; everyone else is already taken.” — Oscar Wilde

“We are all connected; To each other, biologically. To the earth, chemically. To the rest of the universe atomically”. — Neil DeGrasse Tyson.

*“Remember to look up at the stars and not down at your feet. Try to make sense of what you see and wonder about what makes the universe exist.
Be curious. And however difficult life may seem, there is always something you can succeed at. It matters that you don't just give up.”
—Stephen Hawking*

DEDICATIONS

I dedicate this thesis to:

My parents and my brothers, for the love and support.

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Finally, I invite the readers to give critical comments and suggestions from those who are interested in this topic. However, I expect that this thesis will give worthwhile contributions to all readers.

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ABSTRACT

The objectives of this study are: (1) to find out the target and learning needs of 4th semester students of international science classes of Yogyakarta State University (2) to develop appropriate English speaking materials for tutorial practices for 4th semester students of international science classes.

The type of this study is Research and Development (R&D). The subjects of the research were the 4th semester students of international science classes in the academic year of 2012/ 2013 at Yogyakarta State University. This study was carried out by employing questionnaires. The data were analyzed using quantitative data analysis.

Based on the research findings, appropriate English speaking materials for tutorial practices consist of several sections, namely opening task, main task, study task, practice task, and closing task. The effective objectives of the developed materials are asking for and giving description, asking for and giving explanation, discussing and presenting. The effective inputs are the input which are in form of dialogue or monologue and has less than 450 words in length with list of vocabulary with the meanings and phonetic transcription. Acting out dialogues in pair, translating English words based on the context of the text, answering comprehension questions, having dialogues, and practicing dialogues (role playing) are the effective activities for them. The effective setting for the task is working in pairs. The effective learners' role is that the students are encouraged to be a problem solver in doing the activities. The effective teacher's role is to be active in observing and commenting to the students' activities.

CHAPTER I

INTRODUCTION

This chapter presents the introduction of the study. The discussion in this chapter includes the background of the study, the problem identification, the limitation of the problem, the formulation of the problem, research objectives, and research significance.

A. Background of Study

Nowadays, in the competitive global era of the 21st century, the growth of a country depends on the quality of its people – how well educated they are. Because of that, educational institutions at all levels of education have an important influence on the country's own development. Indonesia, as one of ASEAN developing countries, dreams about the growing number of 'world class universities' as a way to improve to the quality of its education.

At this moment in time, "world-class university" has become a noticeable term among universities all over the world. Professor Don Markwell of the University of Western Australia, on his paper entitled "Working Together to Become 'World Class' Universities" indentified six educational attributes of a 'world class' university i.e. (1) high quality of students, (2) high quality of academic staff, (3) high quality of courses, (4) high quality of teaching, (5) a high degree of student engagement both in their studies and in the extra-curricular life of the university community, and (6) a strong emphasis on equity, access, and diversity.

In line with Markwell's characteristics of a 'world class' university, Yogyakarta State University along with its vision, envisions that the university enjoys a world class education with piety, autonomy, and intellectuality as the foundation. Therefore, to objectify the vision of Yogyakarta State University, several things were done including the design of international classes. The international classes being offered are Accounting Education of Faculty of Social Science, Mathematics Education Biology Education, Chemistry Education, Physics Education, and Science Education of Faculty of Mathematics and Science.

As a result, the existence of international classes encourages students to be given wider opportunities to improve their English speaking skills since the language is used as the medium of instruction at these classes and also a main language in the academic and daily context, especially during the lectures. So, it is not daring to say that the ability to speak English is a necessity. "Language is arguably the defining characteristic of the human species and knowledge of language in general, as well as ability to use one's first and, at least one other language, should be one of the defining characteristics of the educated individual" (Nunan 1999:71).

Nowadays, English holds the position as an international language. Hence, learning English forms a permanent part in of all types of curriculums, from primary schools to universities. Therefore, to keep up with the pace of rapidly changing world, the time requires students to learn English throughout their

lifetimes. Hence, to enhance speaking skills students should always practice speaking in English on a daily basis.

However, although English is used as a language instruction in the classroom, students of international classes of Science Education, Chemistry Education, Biology Education and Physics Education of Faculty of Mathematics and Science, Yogyakarta State University still have difficulties in speaking English. Things such as inadequate vocabulary and grammar inaccurately become prevalent concerns among the students. Many of them face difficulties in producing English sentences, as they are often inhibited about trying to say things in a foreign language in the classroom; worried about mistakes or simply shy of the attention that their speeches attract.

Therefore, to facilitate the needs of the 4th semester students of international classes in improving their English speaking ability, in the academic year of 2012/2013, Center for Language Development of Yogyakarta State University has come up with a new idea of designing an English speaking program, which is called ESC (English Speaking Club). The program consists of six study programs of international class i.e. Mathematics Education, Accounting Education, Biology Education, Chemistry Education, Physics Education, and Science Education. Those study programs are divided into three groups, i.e. Mathematics, Accounting, and Science consisting of Biology Education, Chemistry Education, Physics Education, and Science Education.

In the first year of its running, the program is held every week with total of sixteen meetings. The activities of the program consist of indoor activities which

are conducted in a classroom and outdoor activity which is conducted in a tourism area. Each class consists of at least ten students and a tutor from 9th semester students of English Department, Faculty of Languages and Arts, Yogyakarta State University. In the classroom activities, each student is given a coursebook consists of tasks and a tutor to assist them in doing the activities. While in the outdoor activities, students are given the opportunity to develop their speaking skills by interviewing foreigners.

Since the speaking program for students of international classes is a new program, alternative relevant English materials are needed for better speaking activities. Thus, this study is aimed to develop English speaking tutorial materials which can be used by the participants and tutors of English Speaking Club at Yogyakarta State University majoring science.

B. Identification of the Problems

In designing a new program, Center for Language Development needs to develop materials to conduct the program. Therefore, Center for Language Development together with students of English Education Department and lecturers of English Education Department work together in developing materials in the form of coursebook for the program. Those materials are compiled from several resources such as websites and English speaking books. The topics and themes of each unit in the materials are designed from the easier to the more difficult based on the students' needs and interests. The developed materials focus on three international classes i.e. International Mathematics Education, International Accounting Education, and International Science. Those materials

are designed in the form of tutorial coursebook consisting of tasks needed to be done by the students to develop their speaking skills.

However, as a new program, alternative materials are needed to be used by tutors and students besides the materials developed by lecturers and students of English Department as mentioned above. Therefore, the researcher aims to develop materials for international science classes.

C. Limitation of the Problems

Based on the problems stated above, the limited materials available for students to develop their speaking skills, leads to the needs of other alternative materials that can be used during the English speaking tutorial activities. Thus, it is the starting point from which the researcher wants to conduct this research. However, due to the limited of time and energy, this conducted research focuses on developing speaking materials for students of international science classes of Yogyakarta State University which particularly designed based on their needs, interests and proficiency.

D. Formulation of the Problem

The problems are formulated as follows.

1. What are the learning needs of students of international science classes in English Speaking Club?
2. What are the target needs of students of international science classes in English Speaking Club?
3. What are the appropriate English materials for the students of international science classes in English Speaking Club?

E. Objectives of the Research

In relation in to the limitation of the problem mentioned above, the objectives of this research are:

1. to identify learning needs of 4th semester students of international science classes of Yogyakarta State University in English Speaking Club,
2. to identify the target needs of 4th semester students of international science classes of Yogyakarta State University in English Speaking Club, and
3. to develop appropriate materials for 4th semester students of international science classes of Yogyakarta State University in English Speaking Club.

F. Significance of the Research

This research is expected to give a valuable contribution to the following parties:

1. Theoretically, to the English speaking tutorial practices of English Speaking Club, this result will add more reference about developing English speaking materials for international science classes of Yogyakarta State University.
2. Practically, to the English Speaking Club tutors, who give speaking tutorial to international science classes, the result of this study can be used as a reference as to what English speaking tutorial materials for the English Speaking Club of international science of Yogyakarta State University classes are like.

CHAPTER II

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Chapter II presents some theories and the conceptual framework that underline this study. The theoretical reviews cover the issues of speaking, content-based instruction, English for specific purposes, materials development, task-based language teaching, and tutoring in international science classes.

A. Literature Review

1. Speaking

a. The Nature of Speaking

Speaking is an interactive process of constructing meaning that involves producing and receiving and processing information (Brown, 1994; Burns & Joyce, 1997). Its form and meaning are dependent on the context in which it occurs, including the participants themselves, their collective experiences, the physical environment, and the purposes for speaking. It is often spontaneous, open-ended, and evolving. However, speech is not always unpredictable. Language functions (or patterns) that tend to recur in certain discourse situations (e.g., declining an invitation or requesting time off from work), can be identified and charted (Burns & Joyce, 1997). Speaking requires that learners not only know how to produce specific points of language such as grammar, pronunciation, or vocabulary (linguistic competence), but also that they understand when, why, and in what ways to produce language (sociolinguistic competence). Finally, speech has its own skills, structures, and

conventions different from written language (Burns & Joyce, 1997; Carter & McCarthy, 1995; Cohen, 1996).

Brown (2001: 267) cites that when someone can speak a language it means that he can carry on a conversation reasonably competently. In addition, he states that the benchmark of successful acquisition of language is almost always the demonstration of an ability to accomplish pragmatic goals through an interactive discourse with other language speakers.

Brown (2007: 237) also states that social contact in interactive language functions is a key importance and in which it is not what you say that counts but how you say it what you convey with body language, gestures, eye contact, physical distance and other nonverbal messages. There are three components to make fluent in producing speech, namely vocabulary, pronunciation, and grammar.

According to Walter (1973:11), speaking is one way of learning about one self. In speaking, someone must face problems that have history and relatively to other people, groups, and the predictions we have formed for living together.

According to Nunan (1989: 32), successful oral communication involves several points as presented below.

- 1) The ability to articulate phonological features of the language comprehensibly.
- 2) Mastery of stress, rhythm, intonation patterns.
- 3) An acceptable degree of fluency.
- 4) Transactional and interpersonal skills.

- 5) Skills in taking short and long speaking turns.
- 6) Skills in the management of interaction.
- 7) Skills in negotiating meaning.
- 8) Conversational listening skills (successful conversations require good listeners as well as good speakers).
- 9) Skills in knowing about and negotiating purposes for conversations.
- 10) Using appropriate conversational formulae and fillers.

According to Hornby (1995:826), speaking is making use of words in an ordinary voice, offering words, knowing and being able to use a language expressing one-self in words, and making speech. Therefore the writer infers that speaking uses the word and produces the sound to express ourselves either ideas, feeling, thought and needs orally in an ordinary voice. Furthermore, success in communication is often dependent as much on the listener as on the speaker.

According to Harmer (2001), when discussing the elements of speaking that are necessary for fluent oral production, distinguishes between two aspects – knowledge of ‘language features’, and the ability to process information on the spot, it means ‘mental/social processing’.

The first aspect, language features, necessary for spoken production according to Harmer (2001, 269-270) are presented below.

- 1) Connected speech – conveying fluent connected speech including assimilation, elision, linking ‘r’, contractions and stress patterning – weakened sounds);

- 2) Expressive devices – pitch, stress, speed, volume, physical – non-verbal means for conveying meanings (supersegmental features);
- 3) Lexis and grammar – supplying common lexical phrases for different functions (agreeing, disagreeing, expressing shock, surprise, approval, etc.);
- 4) Negotiation language – in order to seek clarification and to show the structure of what we are saying.

b. Classroom Speaking Activities

Harmer (2001: 348-352) states six classroom speaking activities as follows.

1) Acting from a script

Acting scripts consists of the activities of playing script and acting out the dialogues. The teacher acts as the director, drawing attention to appropriate stress, intonation, and speed, and the students perform the dialogue, as if the lines they speak have real meaning. When choosing who should come out to the front of the class we need to be careful not to choose the shyest students first, and we need to work to create the right kind of supportive atmosphere in the class. We need to give students time to rehearse their dialogues before they are asked to perform them. By giving students practice in these things before they give their final performances, we ensure that acting out is both learning and language producing activity.

2) Communication Games

As one of activities that can help students relaxed in learning the language, games are designed to provoke communication between students, so that the students has to talk to a partner in order to solve a puzzle, draw a picture (describe and draw), puts the things in right order (describe and arrange), and find similarities and differences between pictures.

3) Discussion

According to Hammer (2001: 272), discussion range is divided into several stages from highly formal, whole-group staged events to informal small-group interactions. Discussion is probably the most commonly used activities in the oral skill class where students are allowed to express their opinions.

The problem in conducting the discussion is the students' reluctant to give opinion in front of the whole class, particularly when the students are not mastering the topic of a discussion. Therefore, to encourage the students is to provide activities which force the students in expressing the ideas through the topics such as their daily activity, their hobbies or the situation of their class.

4) Prepared talks

Students make a presentation on a topic of their own choice. Such talks are not designed for informal spontaneous conversation because they are prepared, they are more 'writing-like' than this. However, if possible, students should speak from notes rather than from a script.

5) Questionnaires

Questionnaires are useful because, by being pre-planned, they ensure that both questioner and respondent have something to say each other. Students can design questionnaires on any topic that is appropriate. As they do so the teacher can act as a resource, helping them in the design process. The result obtained from questionnaires can then form the basis for written work, discussions, or prepared talks.

6) Simulation and Role Play

In simulation and role play, students pretend that they are in a different situation, either as themselves or playing the role of someone different. It can encourage students' general oral fluency, or to train students for specific situations. Teachers can choose an activity that related to the topic and objective of the lesson, but they must consider the situation, condition of the students and materials that are being taught. Some students find it very comfortable to use language in a simulated environment, playing the role of someone else.

Ur (1996) lists the characteristics of a successful speaking activity as presented below.

- a) Learners talk a lot. As much as possible of the period of time allotted to the activity is in fact occupied by learner talk.
- b) Participation is even. Classroom discussion is not dominated by a minority of talkative participants: all get a chance to speak, and contributions are fairly evenly distributed.

- c) Motivation is high. Learners are eager to speak: because they are interested in the topic and have something new to say about it, or because they want to contribute to achieving a task objective.
- d) Language is of an acceptable level. Learners express themselves in utterances that are relevant, easily comprehensible to each other, and of an acceptable level of language accuracy.

c. Types of Classroom Speaking Performance

Brown (2001: 271-274) describes six categories of classroom speaking performances. Those six categories are as follows.

1) Imitative

This category includes the ability to practice an intonation and focusing on some particular elements of language form. That is just imitating a word, phrase or sentence. The important thing here is focusing on pronunciation. The teacher uses drilling in the teaching learning process. The reason is by using drilling, students get opportunity to listen and to orally repeat some words.

2) Intensive

This is the students' speaking performance that is practicing some phonological and grammatical aspects of language. Intensive speaking can be self-initiated or it can even form part of some pair work activity, where learners are 'going over' certain forms of language.

3) Responsive

Responsive performance includes interaction and test comprehension but at the somewhat limited level of very short conversation, standard greeting and small talk, simple request and comments. A good deal of student speech in the classroom is responsive short replies to teacher-or students-initiated questions or comments. These replies are usually sufficient, meaningful and do not extend into dialogues.

4) Transactional (dialogue)

Transactional language, carried out for the purpose of conveying or exchanging specific information, is an extended form of responsive language.

5) Interpersonal (dialogue)

Interpersonal dialogue is carried out for the purpose of maintaining social relationships than for the transmission of facts and information. The forms of interpersonal speaking performance are interview, role play, discussions, conversations and games.

6) Extensive (monologue)

Students are called on to give extended monologues in the form of oral reports, summaries, and story telling and short speeches.

d. Principles for Designing Speaking Techniques

Brown (2001: 275-276) proposes principles for designing speaking techniques as follows.

- 1) Use techniques that cover the spectrum of learner needs, from language-based focus on accuracy to message-based focus on interaction, meaning, and fluency. Make sure that the tasks include techniques designed to help students to perceive and use the building block. At the same time, do not make the students feel bored with repetitious drills. Teachers should make any drilling as meaningful as possible.
- 2) Provide intrinsically motivating techniques. Try at all times to appeal to students' ultimate goals and interests, to their need for knowledge, for status, for achieving competence and autonomy, and for "being all that they can be." Even in those techniques that don't send students into ecstasy, help them to see how the activity benefits them. Inform the students why we ask them to do certain things; so they know how the activity benefits them.
- 3) Encourage the use of authentic language in meaningful context. It takes energy and creativity to design authentic contexts and meaningful interaction, but with the help of storehouse of teacher resource material it can be done. Even drilling can provide a sense of authenticity.
- 4) Provide appropriate feedback and correction. In most EFL situations, students are dependent on the teacher for useful linguistic feedback. Feedback can be found outside of the classroom but it is important to inject the kinds of corrective feedback that are appropriate for the moment.

- 5) Capitalize on the natural link between speaking and listening. Many interactive techniques that involve speaking skills include listening. Don't lose out on opportunities to integrate these two skills. As you are perhaps focusing on speaking goals, listening goals may naturally coincide, and the two skills can reinforce each other. Skills in producing language are often initiated through comprehension.
- 6) Give students opportunities to initiate oral communication. Part of oral communication competence is the ability to initiate conversations, to nominate topics, to ask questions, to control conversations, and to change the subject. As you design and use speaking techniques, ask yourself if you have allowed students to initiate language.
- 7) Encourage the development of speaking strategies. The concept of strategic competence is one that few beginning language students are aware of. They simply have not thought about developing their own personal strategies for accomplishing oral communicative purposes. Teachers should help their students develop strategic competence to accomplish oral communicative purposes.

2. English for Specific Purposes (ESP)

a. Definition of English for Specific Purposes

Hutchinson and Waters (1987:19) defined ESP as an approach to language teaching in which all decisions as to content and method are based on the learner's reason for learning. According to Basturkmen (2010:17), ESP concerns in teaching language and communicative skill that specific group of

language learners needs to function effectively in their discipline of study, professions or workplaces. According to Richards and Schmidt (2002:181), English for specific purpose is the role of English in a language course or program of instruction in which the content and aims of the course are fixed by the specific needs of a particular group of learners. From the above statements, it can be concluded that ESP is an approach to language teaching which aims to meet the needs of a particular learner. Beside, Dudley-Evans and St John (1998:3) state that the definition of ESP can be seen through two characteristics as presented below.

1) Absolute characteristics

- a) ESP is designed to meet specific needs of the learner.
- b) ESP makes use of the underlying methodology and activities of the disciplines it serves.
- c) ESP is centered on the language (grammar, lexis, and register), skills, discourse and genres that are appropriate to activities.

2) Variable characteristics

- a) ESP may be related or designed for specific disciplines.
- b) ESP may use, in specific teaching situations, a different methodology from that general English.
- c) ESP is likely to be designed for adult learners, either at a tertiary level institution or in a professional work situation; it could be used for learners at secondary school level.
- d) ESP is generally designed for intermediate or advanced learners, and

- e) Most ESP courses assume basic knowledge of the language system, but it can be used with beginners.

In contrast to students learning English for general purposes, learning the language in order to pass a general examination is the primary goal, the goal of ESP students is usually studying English in order to carry out a particular role (Richards, 2001:28).

b. The Categorization of English for Specific Purpose

Hutchinson and Waters (1987) categorize ESP based on two things i.e. learners' needs and learners' specialism as presented below.

1) ESP Based on Learners' Needs

There are two types of ESP; they are English for Academic Purposes (EAP) and English for Occupational Purposes (EOP). In this study, students of international science classes need English to communicate with their lecturers and friends.

Therefore, the English needed is categorized into English for Academic Purposes (EAP).

2) ESP Based on Learners' Specialism

There are three categories of ESP that is based on learners' specialism; they are English for Science and Technology (EST), English for Business and Economics (EBE), and English for Social and Science (ESS). In this study, students of international science classes use English as language for academic and daily communication. Therefore, the English

used by the international science classes is categorized into English for Science and Technology (EST).

c. Teacher's Role in ESP

The role of an ESP teacher is different from a general English teacher. According to Hutchinson and Waters (1987:157), an ESP teacher deals with needs analysis, syllabus design, materials writing or adaptation and evaluation. It means that the teaching of ESP also differ from general English teaching. Based on one of ESP criteria by Robinson (1992:2), ESP is “ordinarily goal directed.” It means that in teaching ESP, students achieve a certain goal. They need English for their study and their purpose not just because they are interested in General English.

Moreover, Dudley-Evans and St John (1998:13-16) proposed five key roles of an ESP teacher as follows.

1) The ESP teacher as teacher

The main focus as a teacher is helping students to learn. It means that the teacher is not in the position of being the “primary knower” of the carrier content of the materials. In this situation, ESP teacher has the opportunity to draw on students’ knowledge of the content in order to generate genuine communication in the classroom.

2) The ESP teacher as a researcher

Before designing course or writing materials, the ESP teacher should conduct a research named needs analysis. He or she also needs

to observe the situation in which students use the identified skills and analyze the discourse of the texts that students use.

3) The ESP teacher as a course designer and a materials provider

The ESP teacher often has to plan the course he or she teaches and provides materials for it. It is rarely possible to use published materials or textbooks. The role of the ESP teacher as provider of material thus involves choosing suitable published materials, adapting materials when published materials are not suitable or even writing materials.

4) The ESP teacher as a collaborator

The ESP teacher collaborates with subject experts as team-teaching in order to get more understanding on subject matter.

5) The ESP teacher as an evaluator

The ESP teacher is often involved in various types of evaluation, including the testing of students and the evaluation of courses and teaching materials. Evaluation course design and teaching materials should be done while the course is being taught, at the end of the course and after the course has finished. The ESP teacher also needs to be able to device achievement test to assess how much learners have gained from a course.

d. Learner's Role in ESP

In ESP teaching process, the learner is the fundamental component in this process and the learner's needs should be gained for getting language required. Dudley and Evan (2001:177) mention that "learners, in ESP, are not

primarily language learners; they have been learners of other disciplines and this has to be a major consideration in the devising and delivering of a course.”

Furthermore, Johnson and Paulston as quoted by Richards (2006:28) divide learners’ roles in ESP into five i.e. first, the learner is a planner of his own learning program and thus ultimately assumes responsibility for what he does in the classroom. Second, the learner is the monitor and evaluator of his own progress. Third, the learner is a member of group and learns by interacting by other learners. Fourth, the learners learn from the teacher from other students. Fifth, the learners learn from other teaching sources.

e. Needs Analysis

Needs analysis is a systematic way of gathering information about learner’s needs, interpreting the information and then making course decision based on the interpretation in order to meet the needs. As Richards and Schmidt (2002:352) state, a needs analysis is the process of determining the needs for which learners require a language and make priority scale of need. The process is normally required before a syllabus can be developed for language teaching.

In ESP, learner’s needs are described in terms of what the learner are able to do with the language at the end of the study (Richards, 2001:33). Hutchinson and Waters (1987: 55–58) suggest conducting ‘needs analysis’ by considering necessities, lacks, and wants as follows.

1) **Target needs**

The target needs refer to what the learners need to do in the target situation.

a) Necessities

It is what the learner has to know in order to function effectively in the target situation. It is a matter of observing what situations the learner needs to function in and then analyzing the constituent parts of them.

b) Lacks

It is what the learner knows already in the target situation. It is the gap between the target proficiency and the existing proficiency of the learners. What the learners know already should be recognized to decide which of the necessities the learners' lack. It is illustrated as a gap between the ideal situation or target situation with the real conditions. It would be useful to decide which of the necessities that the learner lacks.

c) Wants

The learners may have a clear idea of the necessities of the target situation and their lacks. They also have a view to what they want or they need. The learners' motivation is important in the learning process, so learners' perceived wants cannot be ignored (Hutchinson and Waters, 1987: 57). Wants related to what the learner wants to learn.

2) **Learning Needs**

According to Hutchinson and Waters (1987: 60-62), learning needs indicates how the learners are going to get from their starting point (lacks) to the destination (necessities). To have useful analysis of learners needs, the needs, potential and constraints must be considered. Moreover, the learners must choose their route according to the conditions of the learning situations, their knowledge, skills and strategies, and their motivation.

Basturkmen (2010:19) proposes the process of needs analysis, as presented below.

a) Target situation analysis.

Identification of tasks, activities and skill learners are be using English for; what the learners should ideally know and be able to do.

b) Discourse analysis.

Descriptions of the language used in the above.

c) Present situation analysis.

Identification of what the learners do and do not know and can or cannot do in relation to the demands of the target situation.

d) Learner factor analysis.

Identification of learner factors such as their motivation, how they learn and their perceptions of their needs.

e) Teaching context analysis.

Identification of factors related to the environment in which the course runs. Consideration of what realistically the ESP course and teacher can offer.

A needs analysis is a pre-course design process in which information is gathered to help the teacher or course developer decide what the course should focus on, what content in terms of language or skills to include and what teaching/learning methods to employ. The needs analysis also plays a role in refining the ESP course.

3. Material Development

According to Tomlinson (1998:2), materials development refer to anything which done by writers, teacher or learners to provide sources of language input and to promote language learning. Nunan (1991:208) argues that material is an important element within the curriculum and often the most visible aspect of it.

a. Good Materials

The term 'language-learning materials' is commonly only in form of coursebook. However, the language-learning materials are more than it. Materials are a set of product used in language teaching and learning. Materials can be in the form of newspapers, workbooks, photocopied exercises, etc. Materials refer to anything which is used by the teachers or learners to facilitate the learning of a language that is able to improve the students' knowledge and experience of the language. (Tomlinson, 1998: 2).

Hutchinson and Waters (1987:107) identify some principles in the actual writing of the materials. First, materials provide a stimulus to learning. Good materials do not teach; they encourage learners to learn. Good materials, therefore, contain, interesting texts, enjoyable activities which engage the learners' thinking capacities, opportunities for learners to use their existing knowledge and skills, and content which both learner and teacher can cope with. Second, materials help to organize the teaching and learning process, by providing a clear and coherent unit structure guides teacher and students through various activities to maximize the chances of learning. Third, materials embody a view of the nature of language and learning. Fourth, they should reflect the nature of the learning task. Fifth, materials can have a very useful function in broadening the basis of teacher training, by introducing teachers to new technique. Sixth, they provide models of correct and appropriate language use.

Tomlinson (1998:7-21) summarizes of the basic principles of the materials development for the teaching of languages as stated below.

- a) Materials should achieve impact. Impact is achieved when materials have a noticeable effect on learners that is when the learners' curiosity, interest, and attention are attracted. If this is achieved there is a better chance that some of the language in the materials are taken for processing. Further, it is said that materials can achieve impact when they are new, varied, presented attractively, and appealing content.

- b) Materials should help learners to feel at ease. Materials can help learners to feel at ease in many ways, for example, texts and illustrations rather than just texts, texts that the learners can relate with their own culture than those that are culturally bound, materials that include examples rather than without, and many others.
- c) Materials should help learners to develop confidence. Quoting Dulay, Burt, and Krashen 1982, Tomlinson (1998:9) said that relaxed and self-confident learners learn faster. Many learners feel relaxed and self-confident if they think that the materials they learn are not too difficult but just one step further or more difficult than they master. What is being taught should be perceived by learners as relevant and useful. In ESP, teachers of English can easily select materials that are relevant to the specific choice of topics and tasks that the learners are also learning in their field of study, therefore, the materials they learn must be relevant and useful.
- d) Materials should require and facilitate learner self-investment. Materials that enable the learners to be interested in them can draw their attention, can attract them to learn the materials and facilitate them to learn the materials by themselves. Learners must be ready to acquire the points being taught. To acquire the points being taught, the materials learned should be $i + 1$ in which i represents what has already been learned and 1 represents what is available for learning. According to Krashen (1985),

each learner only learns from the new input what he or she is ready to learn.

- e) Materials should expose the learners to language in authentic use. A lot of teaching/learning materials can provide exposure to authentic input through the instructions, advice they give for the activities and the spoken and the written texts included in the materials. The learner's attention should be drawn to linguistic features of the input. These linguistic features should not become the main focus in the materials but the learners should be made aware that linguistic features are needed to locate and to make a generalization about the function of the linguistic features in the main materials.
- f) Materials should provide the learners with opportunities to use the target language to achieve communicative purposes. After learning the materials, learners should be given opportunities to practice the language they have learned for communication in real life situation not just practicing it in the classroom controlled by the teacher. Next, materials should take into account that the positive effects of instruction are usually delayed. As it can be observed in our daily teaching, learners learning a language is not an instantaneous process but a gradual one. In order to facilitate the gradual process of learning or acquiring a language, it is important to give frequent and ample exposure to the instructed language features in communicative use.

- g) Materials should take into account that learners differ in learning styles.

Not all learners have the same learning styles. Language learning styles include visual, auditory, kinesthetic (e.g. the learner prefers to do something physical, such as following instructions), studial (e.g. the learner likes to pay conscious attention to the linguistic features of the language and wants to be correct), experiential, analytic, global, dependent and independent.

- h) Materials should take into account that learners differ in affective attitudes. Learners attitudes vary in types and times. Ideal learners need strong and consistent motivation, positive feelings towards the target language, their teachers, their fellow learners, and the materials they are learning. Realizing this fact, materials should provide choices of different types of texts and types of activities. Then, materials should permit a silent period at the beginning of instruction. The silent period is used to facilitate the development of an effective internalized grammar and other language elements which can help learners to achieve proficiency. The other possible extension of the principle of permitting silence is to introduce most new language points through activities which initially require comprehension before production.

- i) Materials should maximize learning potential by encouraging intellectual, aesthetic and emotional involvement which stimulates both right and left brain activities. This principle means that materials which encourage the learners to learn the same lesson involving different cerebral processes and

different states of consciousness in many different parts of the brain can maximize recall.

- j) Materials should not rely too much on controlled practice. This principle is intended to state that it is still controversial to say that controlled practice activities are valuable. The statements which state that most spontaneous performance is attained by dint of practice (Sharwood-Smith, 1981) and automaticity is achieved through practice (Bialystok, 1988) have no evidence. However, many researchers agree with Ellis saying that controlled practice appears to have little long term effect on the accuracy with which new structures are performed (Ellis, 1990:192) and has little effect on fluency (Ellis and Rathbone, 1987). Yet, controlled grammar practice activities still feature significantly in popular coursebooks and are considered useful by many teachers and by many learners.
- k) Materials should provide opportunities for outcome feedback. Feedback which is focused on the effectiveness of the outcome rather than just on the accuracy of the output can lead to output becoming a profitable source of input. Therefore, a learner who is successful to achieve a particular communicative purpose gains positive feedback on the effectiveness of the use of the language for further language outcome. In relation to this, materials developer has to be sure that language production activities have intended outcomes other than just practicing language.

b. The Roles of Materials

Materials play important role in teaching learning process, especially English teaching. There are four important roles of materials in the ESP context proposed by Dudley-Evans and St. John (1998:170-172):

1) Source of language

In some situations, where English is a foreign language, ESP classroom may be the only source of English. Materials then play a crucial role in exposing learners to the language; it means that materials need to present real language. Where the classroom is the primary source of language, the materials also need to maximize exposure to the language by providing additional materials.

2) Learning Support

As a learning support, materials need to be reliable, that is, to be consistent and have some recognizable patterns. To enhance learning, materials must involve learners in thinking about and using the language. The activities need to stimulate cognitive not mechanical process. The learners also need a sense of progression.

3) Stimulation and motivation

Materials need to be challenging to offer new ideas and information, to encourage fun and creativity. The input must contain concepts and knowledge that are familiar but it must also offer something new, a reason to communicate, to get involve.

4) Reference

For self-study or reference, materials need to be complete, well laid out and self explanatory. The learners want explanations, examples and practice activities that have answer and discussion keys.

c. Principles of Materials Development

There are five principles of materials development according to Tomlinson (2010) as presented below.

- 1) Providing many opportunities for the learners to produce language in order to achieve intended outcomes.
- 2) Making sure that these output activities are designed so that the learners are using language rather than just practicing specified features of it.
- 3) Designing output activities so that they help learners to develop their ability to communicate fluently, accurately, appropriately and effectively.
- 4) Making sure that the output activities are fully contextualized in that the learners are responding to an authentic stimulus (e.g. a text, a need, a viewpoint, an event), that they have specific addressees and that they have a clear intended outcome in mind.
- 5) Trying to ensure that opportunities for feedback are built into output activities.

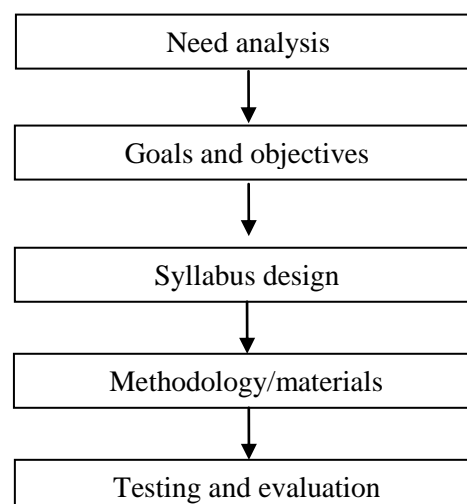
d. Materials Design Model

The way materials organized and presented as well as the types of content and the activities help to shape the students' view of the target language (Nunan, 1991: 210). Steps of materials design principles according to Nunan are as follows.

- 1) Selecting the topic
- 2) Collecting data
- 3) Determining that students need to do in relation to the texts
- 4) Creating activities focusing on language elements
- 5) Creating activities focusing on learning skills/strategies
- 6) Creating application task

There are three approaches to course design i.e. language-centred approach, skill-centred approach, and learning-centred approach (Hutchinson and Waters, 1987: 73). In relation to this, Masuhara (in Tomlinson, 1998: 247) says that the sequence of course design recommended by experts can be summarized as the linear Model X as follows.

Figure 1: Model X of a course design proposed by Masuhara (in Tomlinson, 1988: 247)



e. Materials Evaluation

To know whether the materials design meet the learners' needs, or in other words, are suitable for them, an evaluation is needed in the end of the design. In the last ten years a number of other writers have proposed frameworks for materials evaluation. McGrath (2002: 31) distinguishes between 'general criteria (i.e. the essential features of any good teaching-learning material)' and 'specific (or context related) criteria' and, in relation to choosing a coursebook, proposes a procedure which includes materials analysis, first-glance evaluation, user feedback, evaluation using situation specific checklists and, finally, selection. McDonough & Shaw (2003: 61) suggest that the evaluators first conduct an external evaluation 'that offers a brief overview from the outside' and then carry out 'a closer and more detailed internal evaluation'. They stress that the four main considerations when deciding on the suitability of materials are usability, generalisability, adaptability and flexibility. Cunningsworth (1995) insists on the importance of collecting data about the context of learning and proposes a procedure which includes a survey of the teaching/learning situation, a neutral analysis, a belief-driven evaluation and a selection. Cunningsworth (1995) in Richards (2001: 258) suggests four criteria for evaluating materials especially textbooks as follows.

- 1) They should correspond to learners' needs. They should match the aims and objectives of the language learning programme.

- 2) They should reflect the uses (present or future) that learners make of the language. Textbooks should be chosen to help equip learners to use language effectively for their own purposes.
- 3) They should take account of students' needs as learners and should facilitate their learning processes, without dogmatically imposing a rigid 'method'.
- 4) They should have a clear role as a support for learning. Like teachers, they mediate between the target language and the learner.

The following steps are used to ensure that the evaluation is systemic and principled (Tomlinson, 1998:227-231).

Table 1: The Steps in Conducting an Evaluation of a Task

Step 1	Description of the task: 1. Contents (input, procedures, language activity) 2. Objective(s)
Step 2	Planning the evaluation (with references to the dimensions)
Step 3	Collecting information
Step 4	Conclusion and recommendations

4. Task-Based language Teaching

a. Definition of Task

Richards and Schmidt (2002:539) said task is an activity which is designed to help achieve a particular learning goal. It can be defined as an activity or action that is carried out as the result of processing or understanding language. In line with Breen (1987) in Nunan (2004:3) tasks refer to a range of work plans which have particular objective, appropriate content, a special working procedure, and facilitate language learning from the simple and brief exercise

type to more complex activities. Beside, Nunan (2004:4) task is a piece of classroom work that involves learners in comprehending, manipulating, producing, or interacting in the target language while their attention is focused on mobilizing their grammatical knowledge in order to express meaning, and in which the intention is convey meaning rather than to manipulate form.

b. Principles of Task-Based language Teaching

According to Nunan (2004, 35-38) there are seven principles for planning task-based lesson.

1) Scaffolding

Nunan means that learners need to have sufficient language to complete the tasks. Since the learners focus on meaning when carrying out a task, teachers may need to build extra support into the classroom materials to provide learners with specific language forms and vocabulary that they are likely to need in carrying out the given task.

2) Task dependency

Task dependency refers to the organization and sequencing of tasks. Ideally, one task grows out of another. Thus, the ability to complete Task B depends on the successful completion of Task A. Organizing tasks in this way helps the instructor to ensure that tasks have outcomes.

3) Recycling

Nunan sees that a series of tasks should cluster around some issue or theme. In completing such clustered tasks, students maximize their

opportunities for learning because some set of targeted language forms (e.g. a vocabulary cluster, a certain grammar structure) is likely to occur regularly.

4) Active learning

Nunan reminds instructors that tasks are unit of works, and should thus be structured to have learners do something.

5) Integration

Nunan conceives of integration as ways of connecting form and meaning. While performing tasks, students should have the opportunity to realize the relationships between linguistic form and communicative function and semantic meaning.

6) Reproduction to Creation

Following widely accepted notions that learners need to comprehend input and make form-meaning connections before they can produce the target language for communicative purposes, Nunan reminds instructors to sequence tasks in ways that move from reproduction activities (e.g. comprehension of reading/listening to passages, sorting a series of sentences into a logical dialogue) to production activities where learners create with the language.

7) Reflection

Lastly, Nunan recommends that learners should have opportunities to reflect on what they have learnt and how well they are learning it. If a significant component of task-based language teaching focuses on learners achieving an outcome, then it is important for learners to have the opportunity

to reflect on the learning embodied in that outcome. This learning has both content and performance dimensions.

c. A Framework of Task-Based Learning

The aim of the task based learning framework is to create the optimum conditions for language learning. Willis (1996: 3) identifies these three essential conditions as presented below.

- 1) Exposure to the target language
- 2) Opportunities to use the target language for expressing meaning
- 3) Motivation to engage with exposure and use what they know.
- 4) Focus on language form to prevent fossilisation

A brief description of the task based lesson according to Willis (1996: 52).

1) Pre-task

This serves as an introduction to the topic and task. It may involve brainstorming, a pre-task, introduction of useful words and phrases, preparation time or listening to native speakers doing the task. New structures are not pre-taught.

2) Task cycle

This cycle has three essential phases and one further optional phase.

a) Task

Learners begin by carrying out a communication task, using whatever language they already have, in pairs or groups. A task is a goal-oriented activity in which learners achieve a real outcome.

According to Willis, (1996:26-28), there are six main types of task as presented below.

- (1) Listing (e.g. fact-finding)
- (2) Ordering and sorting (e.g. sequencing items, actions or events, categorizing and classifying items)
- (3) Comparing (e.g. matching, finding similarities and differences)
- (4) Problem solving (e.g. real life problems, completion task)
- (5) Sharing personal experiences (e.g. telling past experience)
- (6) Creative tasks (e.g. having projects)

Grammar exercises, practice activities are examples of activities which are not tasks. Tasks have a specific objective that must be achieved in a given time. Learners are free to choose whatever language forms they like to achieve the goal of the task. The emphasis is on meaning rather than form. The teacher monitors discreetly and does not correct errors.

Closed tasks are highly structured with specific goals and relatively predictable language forms. Open tasks are less structured with less specific goals and less predictable language forms.

At this stage, the teacher monitors and encourages attempts to communicate meaning in the target language. While helping students to formulate what they want to say, the teacher does not correct errors. The emphasis is on spontaneity and fluency.

b) Planning

Having completed the task, students prepare to report on the outcome to the class how they did the task and what they discovered/decided. Now the emphasis is on organisation and accuracy. The teacher ensures the purposes of the report is clear, advises students on language and helps them correct any errors they make during this phase.

c) Report

Some or all of the groups report briefly to the whole class. The others listen in order compare findings or conduct a survey. The teacher may rephrase but not correct the language.

3) Language focus

According to Willis, these are sometimes called consciousness-raising activities, language awareness activities i.e. tasks that focus explicitly on language form and use. The language focus consists of a sequence where language which has been used during the pre-task and the task-cycle is analysed and a sequence where the students practise the language which they looked at during the analysis. In the Language focus stage, the learners observe and talk about exact features of any listening or reading text which they have looked at for the task and the teacher may present some form of preparation of specific language features which the task has provoked.

a) Analysis

The students focus on form and ask questions about language features.

b) Practice

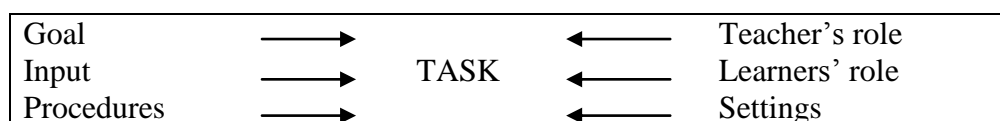
The teacher conducts practice activities after analysis activities based on the analysis work or examples from the text or transcript, to build confidence.

The theory behind the TBL framework is that it is the methodology which most adequately fulfils the key conditions for language learning implied by SLA research findings. These conditions: exposure to real language, opportunities for real use of language, motivation and focus on language are provided for at each phase of the task based learning framework.

d. Components of Task

According to Nunan (2004:41-56), the task is analyzed based on task components i.e. goals, input data, procedures, settings and roles.

Figure 2: Diagram of tasks simple model by Nunan



1) Goals

Goals are the vague general intention behind any given learning task. They provide a point of contact between the task and broader curriculum. They may relate to a set of general outcomes i.e. communicative, affective or cognitive or may directly describe teacher or learner behaviour.

2) Input

Input refers to the spoken, written and visual data that learners work with in the course of completion a task. It can be provided by a teacher, a textbook or some other source such as newspaper, memo note, magazine, recipe, diary, etc. The input relates to authenticity, in this context refers to the use of spoken and written material that has been produced purposes of language teaching. Given the richness and variety of these resources, it should be possible for teachers to select authentic written texts that are appropriate to the needs, interests and proficiency levels of their learners.

3) Procedures

Procedures specify what learners actually do with the input that forms the point of departure for the learning task. In considering criteria for task selection, some issues arise similar to those as encountered when considering input.

One of these is authenticity; it has just looked in relation to input data. Candlin and Edelhoff (1982) cited in Nunan (2004:53) pointed out that the authenticity involves much more than simply selecting texts from outside the area of language teaching, and that the processes brought to bear by learners on the data should also be authentic.

The other way of analyzing procedures is in terms of their focus or goal. They are basically concerned with skill getting or skill using. In skill getting, learners master phonological, lexical and grammatical forms through

memorization and manipulation. In skill using, they apply these skills in communicative interaction.

The third way of analyzing learning procedures is focused on the learner in developing accuracy and fluency. Brumfit (1984) cited in Nunan (2004:56) state that accuracy and fluency are not opposites, but are complementary.

4) Teacher and Learner Roles

Role refers to the part that learners and teachers are expected to play in carrying out learning tasks as well as the social and interpersonal relationship between the participants. Richards and Rodgers (1986) cited in Nunan (2004:64) point out that a task reflects assumptions about the contributions that learners can make to the learning process. This last point raises the important issue of learners developing an awareness of learners themselves. There is growing evidence that an ability to identify one's preferred learning style, and reflect on one's own learning strategies and processes, makes one a better learner.

5) Settings

Setting refers to the classroom arrangements specified or implied in the task. It also requires consideration of whether the task is to be carried out wholly or partly outside the classroom. There are two different aspects of the learning situations. They are mode and environment. Learning mode refers to whether the learner is operating on an individual or a group basis. Environment refers to where the learning actually takes place. It might be a

conventional classroom in a school or language centre, a community class, a workplace setting, a self-access centre, or a multi-media language centre.

e. **Developing Unit of Materials**

A course book usually consists of a number of units; each unit has a number of tasks or activities. The decision should be made upon the unit design. These can be based on the writer's beliefs, understanding and experience. They also depend on the goal and objectives, the way the course is conceptualized, the way the course is organized and sequenced, and the way the learner needs are understood (Graves, 2000:166). Graves (2000:156) also points out that developing materials should follow several considerations; the learners, learning process, language, social context, activity, tasks types, and the materials. The list of consideration for developing materials is stated below:

Table 2: List of Consideration for Developing Materials

Learners
Make relevant to their experience and background
Make relevant to their target needs outside class
Make relevant to their affective needs
Learning
Engage in discovery, problem solving, analyzing
Develop specific skill and strategies
Language
Target relevant aspect (grammar, functions, vocabulary, etc)
Integrate four skill of speaking, listening, reading and writing
Use/understanding authentic texts
Social context
Provide intercultural focus
Develop critical awareness
Activity/Tasks Types
Aim for authentic tasks

(continued)

(continued)

Vary roles and grouping Vary activities and purposes Materials Authentic (text, realia) Varied (print, visual, audio, etc)
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Learners should also be introduced to authentic tasks; that is, introducing them to the real-world context tasks and activities relevant for their field. The tasks which are developed should allow learners to engage in discovery, problem solving, and an analysis and also develop their specific skills. In short, the tasks developed in the unit should contain the complete considerations at the very beginning of the development

f. Task Grading and Sequencing

Grading refers to decisions on what to teach first, what second, and what the last in a course book. As Richards, Platt and Weber (1986) in Nunan (2004:113) state that grading is the arrangement of the content of a language course or textbook so that it is presented in a helpful way. Gradation may be based on the complexity of an item, its frequency in written or spoken English, or its importance for the learner.

1) Grading Input

The first thing to consider is the complexity of the input. Here, grammatical factors are important. In addition to grammatical complexity, difficulty affected by the length of a text, propositional density, the amount of low frequency vocabulary, the speed of spoken texts and the number of

speakers involved, the explicitness of the information, and the discourse structure.

2) Learner Factors

Learner factors are all those that the learner brings to the task of processing and producing language such as background knowledge, interest, and motivation. In addition to background knowledge, interest, and motivation, learner factors include confidence, prior learning experience, learning pace, observed ability in language skills, cultural knowledge or awareness and linguistics knowledge. The implication is interaction between the grammatical complexity of the input and the learners' linguistic knowledge.

3) Procedural factors

The final set of factors to be considered is the procedural factors. Procedural factors refer to the operations that learners are required to perform on input data. To control the difficulty of the task is not by simplifying the input data but by varying the difficulty level of the procedures themselves.

g. Component of a Unit

A good unit should have components that serve in sequence. In developing units of work, Nunan (2004: 31-35) proposed a six-step procedure as follows.

Step 1: Schema –building

The first step is to develop a number of schema-building exercises that serve as introduction to the topic, set the context for the task and introduce some of

the key vocabulary and expression that the students need in order to complete the task.

Step 2: Controlled practice

The next step is to provide students with controlled practice in using the target language vocabulary, structures and functions. In this step, the students would get to see, hear and practice the target language for the unit work. The type of the controlled practice extends the scaffold learning that was initiated in step 1.

Step 3: Authentic listening practice

This steps involves learners in intensive listening practice. It would expose them to the autheentic or simulated conversation.

Step 4: Focus on linguistics elements

In this step, the students get to take part in a sequence of exercises in which the focus is on one or more linguistics elements. Before analyzing elements of the linguistics system, they have seen, heard and spoken the target language within context. In the end, it makes learners easier to see the relationship between the communicative meaning and linguistic form than when linguistic elements are isolated and presented out of context.

Step 5: Provide freer practice

So far, students have been involve in reproductive language work, in other words, they have been working within the constrains of language models provided by the teacher and the materials. At this point, it is time for the students to engage in freer practice, where they move beyond simple

manipulation. For example, working in pairs they could take part in an information gap role play.

Step 6: Introducing the pedagogical task

The final step in developing units of work is the introduction of the pedagogical task. Pedagogical task defines as a piece of classroom work that involves learners in comprehending, manipulating, producing or interacting the target language while their attention is focus on mobilizing their grammatical knowledge in order to express meaning, and in which the attention is to convey meaning rather than to manipulate form. The task should also have a sense of completeness, being able to stand as a communicative act in its own right with a beginning, a middle, and an end.

It can be conclude that the consideration of developing units of work is a six-step element. It consist of schema-building exercise that introduce students to the topic, controlled exercises that scaffold learners, then, students hear authentic conversation in authentic listening activity, analyzing elements of linguistics system in focus in linguistics elements, manipulate language so that the students begin to draw closer to the discourse of normal conversation, and pedagogical task that introduce learners to the communicative act in the real world.

h. Task Continuity

Nunan (2004:125) states the terms ‘continuity’, ‘dependency’ and ‘chaining’ as the same thing: the interdependence of tasks, task components and supporting enabling skills within an instructional sequence.

Further, Nunan proposes ‘psycholinguistic processing’ approach. This approach sequences tasks according to the cognitive and performance demands made upon the learner. The following steps in a possible instructional sequence require learners to undertake activities which become increasingly demanding, moving from comprehension based procedures to controlled production activities and exercises, and finally to ones requiring authentic communicative interaction. The table below shows the phases of students’ activities.

Table 3: Phases of students’ activities proposed by Nunan

Phases	Steps within phase
A. Processing (comprehension)	<ol style="list-style-type: none"> 1. Read or study a text – no other response required. 2. Read or listen to a text and give a non-verbal, physical response (e.g. learner raises hand every time key words are heard). 3. Read or listen to a text and give a non-physical, non-verbal response (e.g. check-off a box or grid every time key words are heard). 4. Read or listen to a text and give a verbal response (e.g. write down key words every time they are heard).
B. Productive	<ol style="list-style-type: none"> 5. Listen to cue utterances, or dialogue fragments and repeat them, or repeat a complete version of the cue. 6. Listen to a cue and complete a substitution or transformation drill. 7. Listen to a cue (e.g. a question) and give a meaningful response (i.e. one that is true for the learner).
C. Interactive	<ol style="list-style-type: none"> 1. Role play (e.g. having listened to a conversation in which people talk about their family, students, working from role cards, circulate and find other members of their family). 2. Simulation/discussion (e.g. students in small groups share information about their own families).

(continued)

(continued)

	Problem-solving / information gap (e.g. in an information gap task, students are split into three groups; each group listens to an incomplete description of a family; students recombine and have to complete a family tree, identify which picture from a number of alternatives represents the family, etc.).
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i. Unit Design

Stevens (1977 in Richards, 2001:33) points out that the content of ESP courses are determined by the restriction of ‘basic skills’ which are required by the learner’s purposes; the selection of vocabulary, patterns of grammar, functions of language which are required by the learner’s purposes; the inclusion of themes and topics which are required by the learner’s purposes; and communicative needs which are required by the learner’s purposes.

Materials consist of a number of units. One unit consists of a group lesson which is planned around a single instructional focus and provides a structured sequence of tasks and activities that lead toward a learning outcome. One unit also normally has a number of tasks and activities.

A unit consists of a number of tasks or activities which are based on the writer’s beliefs, understanding and experience. The components of a unit that is developed in this research are ordered as follows.

- 1) Title/topic: the appropriate title or topic based on the materials discussed
- 2) Objective of a unit/ learning out comes: telling the purpose of the unit and the reason of learning the unit to the students implicitly.

- 3) Let's start: introducing the topic and the language that is related to the focus of the unit i.e. macro-skills (listening, speaking, reading, and writing) and micro-skills (vocabulary, grammar, pronunciation, etc).
- 4) Let's practice: there are many tasks in "let's practice". One task relates to the other tasks, called task dependency. The question of the tasks relates to what the students have to learn in the unit.
- 5) Let's study: the tasks facilitate students in learning grammar, language function, and pronunciation.
- 6) Let's get more practice: there are several tasks in let's get more practice. The tasks give students opportunity to engage in freer practice, where they move beyond simple manipulation. For example, working in pairs or groups or choosing their own topic.
- 7) Let's reflect: consist of questions that aim to evaluate the students' comprehension in each unit.
- 8) Let's summarize: consist of grammar, language function, and pronunciation that being discussed in the unit that aimed to recall students of what they have learnt in the unit.
- 9) Vocabulary list: it presents the vocabulary lists which are taken from the content of unit.

5. Tutoring in International Science Classes of Faculty of Mathematics and Science of Yogyakarta State University

a. Tutoring

The definition of tutorial according to (Fry et al., 2009), tutorial used with different meanings according to discipline, type of institution, level, and teaching and learning method. It involves a tutor and one or more students. It may focus on academic and/or pastoral matters.

Attempts to define the concept using the words ‘seminar’ and ‘tutorial’ are problematic. These names are used both with different meanings and interchangeably. Some writers abandon their use in favour of the term ‘group discussion’. The use of group discussion is congruent with a major objective of the activity that is to teach students to think and to engage with their own and others’ learning through the articulation of views and understanding (Stenhouse, 1972; Bligh, 1986).

Boronat, Castano and Ruiz (2007) allude to several dimensions of tutorial teaching as presented below.

- 1) The legal and administrative tutorial dimension determined under current law.
- 2) The tutorial teaching and curriculum dimension, which underscores the curriculum, concerning the content and the study programs of curricular units.

- 3) The tutorial of an academic and training dimension, which represents the help provided to the student so that he or she can successfully develop his or her academic life, promoting autonomy in learning.
- 4) The personalized tutorial dimension, related to the personal level (the tutor provides special support in case of particular difficulties and advises on the training development of students) and professional future (the professor helps in setting the curricular path and possible career opportunities).
- 5) The practical tutorial period dimension, which, in certain courses (teaching, medicine, nursing, etc.), has a wide tradition, involving university professors and supervisors of the practices.
- 6) The distance tutorial dimension, related to e-learning courses.
- 7) The tutoring dimension as an attention to diversity, because today, as is characteristic of our diverse society, higher education students have diverse social, economic and cultural profiles.
- 8) The peer tutoring dimension, found in many international universities, where mentor play an intermediary role and, at the same time, tutors and responsible for one or more students.

Carrasco and Lapena (2005) claim that it is possible to find- at the core of different conceptions of university tutoring- a set of common characteristics, which can be summarized as follows.

- 1) Tutoring is a guidance action to promote and facilitate the global development of students in their intellectual, emotional, personal and social dimensions.

- 2) Tutoring is a teaching task which personalizes university education through individualized monitoring, which facilitates the building of knowledge and the maturation of attitudes of students, helping them in planning and developing their academic experience.
- 3) Tutoring is an action allowing the integration and active preparation of the students at the university, channeling and fostering relations with the different services (administrative, educational, organizational, etc.), and ensuring the proper beneficial use made of different resources provided by the institution.

(Bligh, 1986; Griffiths and Partington, 1992) as quoted (Fry et al., 2009) argue that small group teaching is among the most difficult and highly skilled of teaching techniques. In addition to the primary objective of teaching students to think, the tutor must have a number of subsidiary objectives if the small group is to function. Writers generally agree that the method requires a wide knowledge of subject matter and ability to attend to detail while keeping an eye on the overall picture. Appreciation of how groups function, openness of spirit, accommodation of different views, receptivity to new ideas and maturity to manage a group of students without dominating them are all necessary for effective small group teaching. These attributes are best thought of as skills to be developed over a period of time.

(Fry et al., 2009) view tutorial as a small group learning in which it is viewed as a critical mechanism for exploring the development of a range of key skills. This revitalised interest in key skills has succeeded in according

group work a new status. It is within the small group that self-confidence can be improved, and teamwork and interpersonal communication developed. The development of group work and other skills is reported by students to foster conditions whereby they can observe their own learning styles, change these styles to suit different tasks and engage more deeply with the content of their subject (Griffiths et al., 1996).

b. Types of Small Group Teaching

According to (Fry et al., 2009) there many types of small group teaching, and the specific method selected for small group teaching will derive from the objectives set. There are many different methods of small group teaching; some methods are more suited to certain disciplines than others. However, few methods are peculiar to one subject alone. A large number of methods can be adapted for use in any subject. It is important to remain flexible and open to try out a variety of methods drawn from a wide repertoire. It may be necessary to overcome a tendency to find one method that works well and to use this method frequently. The effect on learners of over-exposure to one method of teaching is worth considering.

Below is a brief description of various ways of working with small groups. It is not intended to be comprehensive, nor are all types mutually exclusive. Some methods are described in terms of a special setting that encourages the application of principles or techniques; for example, brainstorming takes place in a structured setting to encourage lateral thinking and creativity. Other methods are described in terms of their size or purpose.

Examples of working with small groups are presented below.

- 1) Brainstorm session – generation of ideas from the group to foster lateral thinking; there is no criticism of ideas until they are logged.
- 2) Buzz group – two or three people are asked to discuss an issue for a few minutes; comments are usually then shared with a larger group.
- 3) Cross-over groups – used for brief discussions, then transfers between groups.
- 4) Fishbowl – small groups are formed within a large observation group, followed by discussion and reversal.
- 5) Free discussion – topic and direction come from the group; the tutor or leader observes.
- 6) Open-ended enquiries – students determine the structure as well as reporting back on outcomes.
- 7) Peer tutoring – students learn from one another and teach one another.
- 8) Problem-based tutorial group – involves small groups using problem-based learning.
- 9) Role-play – use of allocated or self-created roles. It is important to facilitate students to enter and come out of role.
- 10) Self-help group – run by and for students; the tutor may be a resource.
- 11) Seminar – group discussion of a paper presented by a student (note that this term is often used in different ways).
- 12) Simulation/game – structured experience in real/imaginary roles.

Guidelines on the process are important and feedback is critical.

- 13) Snowballing – pairs become small groups and then become large groups.
- 14) Step-by-step discussion – a planned sequence of issues/questions led by the students or tutor.
- 15) Structured enquiries – the tutor provides lightly structured experiments and guidance.
- 16) Syndicate – involving mini-project work, followed by reporting to the full class.
- 17) Tutorial – a meeting with a very small group, often based on feedback to an essay or assignment (note that this term is often used in different ways).
- 18) Tutorless group – the group appoints a leader and may report back; it may focus on discussion or completion of some other type of set task.

c. English for Science

David G. Drubin and Douglas R. Kellogg in their editorial entitled “English as the universal language of science: opportunities and challenges” state that English is now used almost exclusively as the language of science. The adoption of a de facto universal language of science has had an extraordinary effect on scientific communication: by learning a single language, scientists around the world gain access to the vast scientific literature and can communicate with other scientists anywhere in the world. However, the use of English as the universal scientific language creates distinct challenges for those who are not native speakers of English. For scientists

whose first language is not English, writing manuscripts and grants, preparing oral presentations, and communicating directly with other scientists in English is much more challenging than it is for native speakers of English. Communicating subtle nuances, which can be done easily in one's native tongue, becomes difficult or impossible.

The fact that English is the de facto global language of science is not likely to change anytime soon. Optimizing communication among members of the international community of scientists, and thus advancing scientific progress, depends on elimination of obstacles faced by nonnative speakers of the English language. This ideal can best be achieved when all members of the scientific community work together.

English for Science develops the speaking skill and specialist English language knowledge of international science students, enabling them to communicate more confidently and effectively in their study environment.

English speaking tutorial is the indoor activities of English Speaking Club. The tutorial is held in a classroom consisting of at least ten students and a tutor from English Department. In this activities, each students is given a coursebook consist of tasks and the tutor is there to assist them in doing the activities.

d. Characteristics of Students of International Science Classes of Faculty of Mathematics and Science of Yogyakarta State University

The 4th semester students of international science classes come from four different international classes i.e. International Science Education, International Chemistry Education, International Physics Education, and

International Biology Education. They are in the age of 20-21 years old which is considered as adult period.

According to Knowles (1984) there are several characteristics of Adult Learners as follows.

1) Autonomous & self-directed

Adult learners prefer to be free to direct themselves. Actively involve them in the learning process and serve as a facilitator for them.

Get learners' perspectives about what topics to cover and let them work on projects that reflect their interests.

Allow learners to assume responsibility for presentations and group leadership.

Act as a facilitator and guide learners to their own knowledge rather than supply them with facts.

Show learners how the class will help them reach their goals.

2) A foundation of life experiences & knowledge

Learners need to connect learning to their knowledge and experience base (family relationships, professional life, and previous academic experience).

Draw out participants' experience and knowledge relevant to the topic.

Relate theories and concepts to the learners' lives; recognize and acknowledge the value of experience in learning.

3) Goal-oriented

When enrolling in a course, learners usually know what goal they want to attain. Good organization and clearly defined elements are much appreciated.

Show learners how your class will help them attain their goals.

Clear goals and course objectives should be presented early in the course. (Course syllabus)

4) Relevancy-oriented

Learners must see a reason for learning something new. It has to be applicable to their work or other responsibilities to be of value. Try to related theories and concepts to a setting that is familiar to learners.

Allow learners to choose projects that reflect their own interests.

5) Practical

Learners may not be interested in knowledge for its own sake. Let them know explicitly how the lesson will be useful to them on the job.

6) Respect

Acknowledge the wealth of experiences that learners bring to the classroom. Learners should be treated as equals in experience and knowledge.

Moreover, in accordance with the use of English as a language instruction in international science classes, the most common roles that the students play in their study is communicating with lecturers and friends, sharing ideas and understanding technical terms that are expressed more in English than any other language.

B. Conceptual Framework

Developing effective speaking materials for tutorial practices is the focus of this study. Materials refer to anything which is used by the teachers or learners to facilitate the learning of a language to improve the students' knowledge and experience of the language (Tomlinson, 1998: 2). It is believed that effective learning materials should meet the needs of the learners, help students to develop their confidence, equip the learners to use the language effectively, facilitate learners in learning process, help learners to feel at ease, and provide learners with opportunities to use the target language to achieve communicative purposes.

In developing English speaking materials for tutorial practices for students of international science classes, a number of factors are worth considering. English speaking materials conducted in this study is for a specific purpose to fulfil their needs in mastering English speaking skill. Developing materials must be based on some related literatures and learners' needs. English speaking materials for tutorial practices is the kind of materials used by tutors in helping them do the teaching and learning process in the class. The learning materials are in form of coursebook.

In developing the materials, several steps are done in this research; they are conducting need analysis, writing course grid, writing the first draft of the materials, getting experts' judgment, and writing the final draft of the materials. Since English speaking materials for tutorial practices that is conducted in this study is for specific purposes to fulfill the needs of students

of international science classes i.e. mastering English speaking skill related to science. The theories of ESP, then, give some contribution to the process of analyzing the students of international science classes needs of English. ESP is concern in teaching language and communicative skill that specific group of language learners needs or will need to function effectively in their discipline of study, professions or workplaces (Basturkmen, 2010:17).

An ESP approach starts with an analysis of the learner's needs. The results of needs analysis are used to determine the the learning needs, the target needs and to write the course grid. Course grid is the central aspect in developing materials. This information, taken together, is used to develop an effective unit design as the basis of developing effective materials. The materials are developed based on the principles of materials development and meet the characteristics of good materials. The materials consist of several units. Units are constructed around a theme, objectives and a number of tasks. There are some components of task: goal, input, procedure, teacher and learner roles, and setting. Tasks should be arranged (graded and sequenced) in such a way that it can help the students to learn English easily and effectively. After the materials are developed, material evaluation should be done. Finally, the output of this research is a set of English speaking materials for tutorial practices (intermediate level) of students of international science classes of Yogyakarta State University.

CHAPTER III

RESEARCH METHOD

Chapter III puts an emphasis on the research methodology comprising the type of the study, the population and sample, setting, instruments of the study, data collection, data analysis techniques and research procedures.

A. Type of the Study

The aim of this study is to develop a product that can be used effectively as English speaking tutorial materials for students of international science classes. The term ‘product’ includes not only materials objects, such as textbooks, instructional films, and so forth, but it is also intended to refer to establish procedures and processes such as method of teaching or method for organizing instruction. It is important to analyze the needs and validate the effectiveness of product in order to produce the product that can give good contribution in educational fields (Gall and Borg, 1983: 772). Therefore, this study is classified a R & D. Gay (1987:10) purposes that the major purpose of R&D efforts is not to formulate or test a theory but to develop effective products for use in educational programs.

B. Population and Sample of the Study

The population of the research is the group of interest to the researcher, to which he/she would like the result of the study to be generalizeable while the sample is the number of individuals represent the larger group from which they were selected (Gay,1988:86). In this research, the population is the students of international classes of Chemistry Education, International Physics Education, International Chemistry Education, International Science Education and International Biology

Education which consist of 71 students. These classes are united as one category i.e. international science classes besides the other classes, international mathematics and international accounting.

C. Setting of the Study

This study was conducted at Yogyakarta State University from July, 2013 up to February, 2014. The campus is located in Karangmalang street, Sleman District, Province of Yogyakarta Special Territory.

D. Instruments of the Study

In conducting a research, instruments are needed in gaining the data. There are many kinds of instruments that can be used in gathering the data. It depends on the type of the study. In this research, the instrument used in gathering the data was questionnaire.

There are two types of questionnaire used in this research. The first questionnaire is the needs analysis questionnaire; the purpose of this questionnaire is to find out the data about the learners and learners' needs. The organization of the first questionnaire is adapted from Hutchinson and Waters (1987) and Nunan (2004).

Table 4: The Organization of the Needs Analysis Questionnaire.

Target Needs		
Aspect	The purpose of the questions	References
Necessities	To find out the type of needs by the demands of the target situation	Hutchinson and Waters (1987)
Lacks	To find out the gap between learners' proficiency and the demand of the target situation	Hutchinson and Waters (1987)
Wants	To find out the learners' needs of learning English	Hutchinson and Waters (1987)

(continued)

(continued)

Goal	To find out the reason of learning English	Hutchinson and Waters (1987)
Learning Needs		
Input	To find out the suitable input for English learning materials that students want the most	Nunan (2004)
Procedures	To find out the suitable procedures that students want the most	Nunan (2004)
Setting	To find out the desired class management of doing the tasks of English learning materials (individually, in pairs, or in groups)	Nunan (2004) Hutchinson and Waters (1987)
Learner's role	To find out the role of the learner in the learning process	Nunan (2004)
Teachers' role	To find out the role of the teacher in doing the tasks	Nunan (2004)

The second questionnaire is experts' judgment questionnaire. It is aimed to know opinions and suggestions about the materials from the expert of speaking and materials. The results of this questionnaire are used to revise the first draft of the materials. This questionnaire is adapted from BSNP.

Table 5: The Organization of The Expert Judgment Questionnaire.

No	The purpose of the question	References
1.	To find out the appropriateness of the content in the materials	BSNP
2.	To find out the appropriateness of the presentation in the materials	BSNP
3.	To find out the appropriateness of the language in the materials	BSNP
4.	To find out the appropriateness of the layout of the materials	BSNP

E. Data Collection

In this study, the data are collected through one kind of data collection technique. The technique is questionnaire. There are two kinds of questionnaire. Firstly, the researcher distributed the needs analysis questionnaire to get data about the learners' needs. Secondly, after designing the materials, opinions and suggestions from the experts of speaking and material were asked through the expert judgments questionnaire to find the appropriateness of the developed materials.

F. Data Analysis Technique

There is only one kind of data in this research, i.e. quantitative data. The quantitative data are obtained through the needs analysis questionnaire and experts' judgment questionnaire.

1. The First Questionnaire (Needs Analysis Questionnaire)

The data from the first questionnaires were analyzed by using percentage of each answer on the questionnaire by following the formula as follows.

—

$$\begin{aligned} \text{With: } P &= \text{Percentage} \\ &= \text{Frequency} \\ &= \text{Total number of respondents} \\ 100 &= \text{Fixed number} \end{aligned}$$

The highest percentage of answers on each question is considered as the tendency of the students related to the condition.

2. The Second Questionnaire (Expert Judgment Questionnaire)

Meanwhile, the quantitative data from the second questionnaire were analyzed by central tendency measure. In this study, the researcher used 'mean'. The mean was calculated by the following formula as proposed by Suharto (2006) below:

$$Mn = \frac{\sum X}{N}$$

In order to make the quantitative data easier to read, the mean values can be put into category. Suharto (2006:52-53) states that the range with the objected categories as follows:

$$R = \frac{Xh - Xl}{4}$$

With R = Range
 Xh = the highest score
 Xl = the lowest score
 4 = the number of scale

In this research the highest score is 4 and the lowest score is 2. The calculation is as follows:

$$R = \frac{Xh - Xl}{4} \rightarrow R = \frac{4 - 2}{4} = 0.5$$

Based on the calculation, the class interval can be presented as follows:

Table 6: Quantitative Data Conversion

Scales	Category	Interval of Mean
4	Very good	≥ 3.53
3	Good	3.02-3.52
2	Poor	2.51-3.01
1	Very Poor	2.00-2.50

G. Research Procedures

In developing the English speaking materials for tutorial practices for the 4th semester students of international science classes of Yogyakarta State University, the research procedure of this research is adapted from the system approach model proposed Masuhara's model (in Tomlinson, 1998:247). However, the researcher adapted the model used in this research as explained below.

Figure 3: Designing course steps by Masuhara (in Tomlinson, 1998: 247)

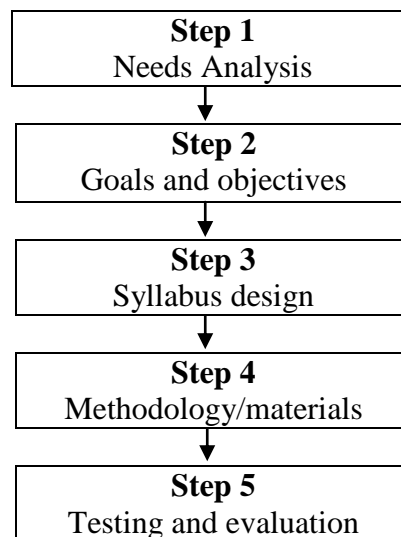
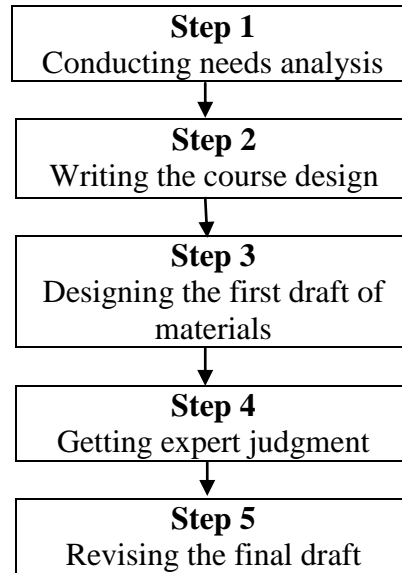


Figure 4: Research Procedures



CHAPTER IV

RESEARCH FINDINGS AND DISCUSSION

This chapter presents and discusses the findings of the research. The first part of this chapter presents the result of needs analysis, the course grid of the materials, the first draft of the materials and the results of materials evaluation (expert judgment).

A. Research Findings

1. The Results of Needs Analysis

To assess the target and learning needs of the students, a needs analysis was conducted. The questionnaire was distributed to the students in March 2013.

a. Target Needs

Target needs is defined as learners' view about the target situation (Hutchinson & Waters, 1987). It includes necessities (the targeted objective of the study), lacks (the recent gaps between students' ability and the target needs) and wants (students' views of the target needs according to their intention to leaning).

1) Necessities

Hutchinson and Waters (1987) define necessities as a list of abilities students should posses in order to function properly in the target situation (1987:5). The following tables show students of International Science classes view about the demand of their target situation.

Table 7: Students' View about Target Goals

Questions	Items	N	F	Percentage
What is your main goal of studying English in English Speaking Club?	a. To get equipped with sufficient general English vocabulary to communicate in the classroom.	71	11	15.49%
	b. To get equipped with sufficient English vocabulary related to science.	71	13	23.94%
	c. To get equipped with sufficient knowledge of grammar in use to communicate in the classroom.	71	11	15.49%
	d. To get equipped with sufficient knowledge of language functions used in academic context to communicate in the classroom.	71	36	50.70%

Table 7 shows that 50.70% of the students claim getting equipped with sufficient knowledge of language functions used in academic context is their main goal of studying English. The second highest tendency of their goals is that getting equipped with sufficient English vocabulary related to science to communicate in the classroom.

Table 8: Students' view about English Speaking Skill Usage

Questions	Items	N	F	Percentage
As students of International study program, I use English speaking skill as...	a. A way of communicating during the lectures	71	34	47.88%
	b. A way of communicating with the lecturers	71	19	26.76%
	c. A way of communicating with friends	71	16	22.53%
	d. A way of communicating with foreigners	71	2	2.81%

Table 8 shows that being able to communicate during the lectures is the main demand. The second target is being able to communicate with lecturers.

Table 9: Students' View about the Importance of Learning English

Questions	Items	N	F	Percentage
I think English for Science is...	a. Very important	71	47	66.19%
	b. Important	71	16	22.53%
	c. Quite Important	71	8	11.26%
	d. Not Important	71	0	0

Table 9 shows that most of the students consider learning English as very important, while the other students consider learning English as important. In brief, English is considered to be very important for students of international science classes.

2) Lacks

The gap between the students' existing knowledge and agreed objectives they have to achieve refers to lack (Hutchinson & Waters, 1987).

The students' view about their lacks is shown in the following tables.

Table 10: Students' Current Levels of English Proficiency

Questions	Items	N	F	Percentage
What is your English proficiency level?	a. Beginner, can't carry on a conversation	71	20	28.16%
	b. Intermediate, basic conversational skills (can talk about a few topics)	71	47	66.19%
	c. Advance, can carry on a conversation (can talk about many topics)	71	4	5.63%
	d. Fluent can talk about almost any topic	71	0	0

Table 10 shows that in terms of students' English proficiency it is shown that most of the students are at the level of intermediate, in which they can carry on basic conversational skills, while students claim that they are in beginner level of English proficiency.

Table 11: Students' Difficulties in Learning English

What is your obstacle in speaking English?	a. The mastery of limited vocabulary	71	17	23.94%
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(continued)

(continued)

	b. The mastery of limited grammar knowledge	71	16	22.53%
	c. Limited knowledge about the topic	71	12	16.90%
	d. The mastery of limited language functions	71	26	36.61%

Task 11 shows that in terms of difficulties, most of the students admit that the mastery of limited language functions is their main obstacle in learning English. The mastery of limited vocabulary is their second obstacle.

3) Wants

The students' view about their needs refers to wants (Hutchinson and Waters, 1987:56). The presentation about students' wants based on the questionnaire is explained below.

Table 12: Students' General Wants in Learning English

Questions	Items	N	F	Percentage
I want to learn English that makes me...	a. able to master grammar well	71	14	19.71%

(continued)

(continued)

	b. able to master grammar well	71	14	19.71%
	c. able to master general or science related vocabularies	71	15	21.12%
	d. able to use expressions in English to communicate with friends and lecturers	71	37	52.11%
	e. able to differ the formality of any expressions	71	5	7.04%

Table 12 presents the students' wants in learning English. Being able to use expressions in English to communicate is the highest tendency, while the second highest tendency is to be able to master general or science related vocabularies.

b. Learning Needs

Learning needs refer to the list of knowledge and abilities the learners require to perform particular competence in the target situation (Hutchinson and Waters, 1987:60). There are five components in the questionnaire, namely input, procedure, setting, teachers' role and learners' role. The tables below show the learning needs of the students.

1) Input

Input refers to what sources they have to get in learning English, so that they are able to learn English as well to achieve the intended objectives. The tables below show the types of input that the students want to get in the process of English leaning.

Table 13: The Data of the Learning Needs (Listening Input)

Questions	Items	N	F	Percentage
What do you want to have for listening input?	a. Monologues	71	33	46.47%
	b. Dialogues	71	38	53.52%
The length of listening input texts I wish to have is in the length of...	a. <2 minutes	71	22	30.98%
	b. 2 minutes	71	33	46.47%
	c. 3 minutes	71	10	14.08%
	d. 4 minutes	71	6	5.63%

Table 13 shows that most of the students want to have dialogues as the listening input. 33 students or 46.47% of the students want to have listening inputs in the lengths of about 2 minutes.

Table 14: The Data of the Learning Needs (Speaking Input)

Questions	Items	N	F	Percentage
What do you want to have for speaking input?	c. Monologues	71	30	42.25%
	d. Dialogues	71	41	57.74%
For the length of speaking input, the students want the input in the length of ...	a. <250 words	71	10	14.08%
	b. 251-350 words	71	18	25.35%
	c. 351-450 words	71	29	40.84%
	d. > 450 words	71	14	19.71%

Table 14 shows that students of international science classes mostly prefer to have speaking input in the form of dialogues and the second preference is monologues. In terms of the length of the input for the texts, most of the students wanted to have texts of between 351-450 words, while of the students wanted to have a text between 251-350 words.

Table 15: Topics to be Discussed

Questions	Items	N	F	Percentage
Topics that you want to discuss in learning English are (four choices)...	a. daily activities	284	4	1.40%
	b. sports	284	7	2.46%
	c. health	284	8	2.81%
	d. hobby	284	5	1.76%
	e. research	284	12	4.22%
	f. wildlife	284	3	1.05%
	g. invention	284	8	2.81%
	h. flora and fauna	284	9	3.16%
	i. Appearance	284	4	1.40%
	j. history of science	284	8	2.81%
	k. nature	284	11	3.87%
	l. environment	284	13	4.57%
	m. Parts of the body	284	10	3.52%
	n. Natural resources	284	6	2.11%
	o. food and beverages	284	8	2.81%
	p. weather and seasons	284	4	1.40%
	q. scientists	284	16	5.63%
	r. natural disasters	284	8	2.81%
	s. diseases	284	24	8.45%
	t. space	284	28	9.85%
	u. technology	284	7	2.46%
	v. lifestyle	284	4	1.40%
	w. occupation	284	5	1.76%

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T	x. science in our daily lives	284	24	8.45%
	y. education	284	8	2.81%
	z. science theory	284	36	12.67%
	aa. natural phenomenon	284	4	1.40%

Table 15 shows that science theory is the most chosen topic by students of international science classes, while space comes second.

Table 16: The Importance of Picture Availability

Questions	Items	N	F	Percentage
I think, the availability of relevant pictures in the materials is...	a. Very helpful	71	47	66.19%
	b. Helpful	71	24	33.80%
	c. Quite helpful	71	0	-
	d. Not helpful	71	0	-

Table 16 shows that in terms of picture availability most of the students consider the availability of relevant pictures in the materials to be very helpful since the presence of relevant pictures may help understanding the materials better.

Table 17: Students' View about Language Functions to Use

Questions	Items	N	F	Percentage
Language functions that I use are...	a. Giving explanation	71	11	15.49%

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	b. Describing pictures	71	12	16.90%
	c. Explaining procedure	71	4	5.63%
	d. Discussing	71	14	19.71%
	e. Presenting	71	16	22.53%
	f. Making generalizations	71	5	7.04%
	g. Interviewing	71	3	4.22%
	h. Giving a speech	71	4	5.63%
	i. Story telling	71	2	2.81%

Table 17 shows that in terms of language functions used by students of international science classes, presenting is considered to be the most frequently used language functions, while discussing is the second highest tendency.

2) Procedures

Procedures refer to the type of activity and tasks students of international science are going to do to achieve particular goals on each developed unit (Nunan, 2004). Below are the result of needs analysis in terms of learning procedures.

Table 18: Learning Needs (Listening Activity)

Questions	Items	N	F	Percentage
When I learn listening, types of tasks that I like is/are...	a. listen to a dialogue or monologue and then discuss the content of the dialogue or monologue.	71	15	21.12%

Table 18 shows that 33.80% of the students like to listen to a dialogue or monologue and then decide whether a statement is true/false based on the dialogue or monologue for their listening activities.

Table 19: Learning Needs (Speaking Activity)

Questions	Items	N	F	Percentage
When I learn speaking, types of tasks that I like is/are...	b. Act out dialogues in pairs	71	29	40.84%
	c. Do a role play	71	20	28.16%
	d. Exchange information with friends in a group	71	14	19.71%
	e. Do problem solving	71	8	11.26%

Table 19 shows that 40.84% of the students like to act out dialogues in pairs for speaking activity. Further, 28.16% of the students like to exchange information with friends in a group.

Table 20: The Learning Needs (Vocabulary Activity)

Questions	Items	N	F	Percentage
What do you want to do to for vocabulary activities?	a. Matching English words with provided Indonesian words.	71	22	30.98%
	b. Translating English words based on the context of the texts.	71	32	45.07%
	c. Completing sentence or paragraph with provided words	71	10	14.08%
	d. Completing sentences or paragraphs with students own words.	71	7	9.85%

Table 20 shows that 45.07% of the students like to translate English words based in the context of the texts. Further, 30.98% of the students also like to complete sentences or paragraphs with provided words.

Table 21: The Learning Needs (Pronunciation Activity)

Questions	Items	N	F	Percentage
What do you want to do to for pronunciation activities?	a. repeat after the tutor loudly	71	28	39.43%
	b. be given phonetic transcription of difficult words	71	43	60.56%

Table 21 shows that 60.56% of the students like to be given phonetic transcription of difficult words. Also, 39.43% of the students like to repeat the teacher aloud.

Table 22: The Learning Needs (Grammar Activity)

Questions	Items	N	F	Percentage
What do you want to do to for grammar activities?	a. identifying and correcting sentence errors.	71	20	28.16%
	b. making sentences orally based on the patterns that have been learned.	71	29	40.84%
	c. completing sentences using the correct grammar.		14	19.71%
	d. identify and correct a paragraph with the correct grammar forms.		8	11.26%

Table 22 shows that 40.84% of the students like to studying and discussing the use of grammar. Also, 28.16% of the students like identifying and correcting sentence errors.

3) Setting

Table 23: The Learning Needs (Setting)

Questions	Items	N	F	Percentage
What do you prefer doing for	a. Doing individually	71	8	11.26%

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accomplishing tasks?	a. Discussing and accomplishing tasks in pairs	71	47	66.19%
	b. Discussing and accomplishing tasks in groups	71	16	22.53%

Table 23 shows that 66.19% of the students prefer to accomplish the tasks in pair. Moreover, 22.53% of the students prefer to accomplish task by group discussions.

4) Teacher's Role

Teacher's role means the role of the teacher during the classroom activities (Nunan, 2004). Here is the tendency of what teachers should do when students perform the task according to the students.

Table 24: The Learning Needs (Tutor's Role)

Questions	Items	N	F	Percentage
What do you expect from the tutor when accomplishing the tasks?	a. Discusses the answers of the tasks directly	71	16	22.53%
	b. Gives examples first before asking the students to do the tasks	71	22	30.98%
	c. Stays in front of the class and keeps a close watch on the activities	71	9	12.67%
	d. Observes and comment to the students' activities	71	24	33.80%

Table 24 shows that 33.80% of the students expect the teacher to observe and comment to the students' activities. Moreover, 30.98% of the students consider that the teacher give examples first before asking the students to do the tasks.

5) Learner's Role

Learner's role is the role of the learners when the teaching and learning process is running (Nunan, 2004). Here is the result of the last questions related to the role of the learners during classroom activities.

Table 25: The Learning Needs (Learners' Role)

Questions	Items	N	F	Percentage
What expected role do you want to have in the English speaking tutorial activities?	a. Passive participants	71	8	11.26%
	b. Problem solver	71	44	61.97%
	c. Note taker	71	19	26.76%

Table 25 shows that 61.97% of the students expect to have role as problem solver in.

2. Course Grid

The course grid is the guideline of the materials that are going to be developed. The course grid is designed by referring to the result of the questionnaire. It was developed based on the results of the needs analysis of international science classes consisting of four international classes i.e.

International Chemistry Education, International Biology Education, International Physics Education and International Science Education. The course grid has five items i.e. topics, titles, input texts, language functions and procedures. The explanations below are the detailed information about the course grid from each unit.

a. Unit 1

The topic of Unit 1 is *space*, it is taken from one of four most chosen topics by the students of international science classes. The title of this unit is *what does comets look like?* It is taken from one of the expression used in the unit. It emphasizes the topic about space objects and expressions discuss in this unit. Therefore, the students are provided with the background knowledge before they do the tasks. The input texts in this unit are in form of monologue and dialogue about comets, and asteroids. The pictures used as input are pictures of space objects consisting of comets, asteroids, meteors, planets, aurora and stars. The language functions discuss are asking for and giving description. The choice is based on the fact that *describing* is one of four language functions mostly chosen by the students of international science classes. It is also considered as the easiest language functions among the other three. In terms of vocabulary, since the topic is about space objects, the vocabularies are mostly common words used in a description of space objects. In terms of pronunciation, silent letters is being discussed in this unit since the input texts contains some silent letters. Since the input texts consist of many articles, the grammar being discussed is articles. The

procedures of this unit are pre-task, task, language focus and practice. Each part shows a list of activities to perform.

b. Unit 2

The topic of Unit 2 is *science theory*. The title of this unit is *an you tell me about theory of relativity?* It emphasizes the topic and expressions discuss in this unit. Texts being discussed are about theory of relativity, law of gravity, and constructal theory. The pictures used as input are pictures of scientists and the visualization of their theory/law. The language functions for Unit 2 are asking for and giving explanation. It was considered that *asking for and giving explaining* as the second easiest language functions among the other three. The vocabularies in this unit are mostly common words found in an explanation of science theory/law. The language focus in Unit 2 is pronunciation and grammar. Linking and prepositions are being discussed in this unit since the input texts have several linking words and prepositions. The procedures of this unit are pre-task, task, language focus and practice.

c. Unit 3

The topic of this Unit 3 is *diseases*. The title of this unit is *today, we're going to discuss eye disorders*. The title is taken from one of the expression used in Unit 3. The input texts are in from dialogues about HIV/AIDS, eyes disorder and diabetes. While, the input pictures are pictures of diseases. The language functions for Unit 3 are *discussing*. It is selected from one of four language functions mostly chosen by the students of international science classes. The

vocabulary for this unit is selected based on the input texts. Therefore, the vocabularies are mostly common words about diseases. The grammar for this unit is reduced form since the input texts contain some reduced form phrases. In terms of grammar, gerunds are being discussed in Unit 3 since the input texts consist of many gerunds. Procedures of Unit 3 are pre-task, task, language focus and practice. Each part shows a list of activities to perform.

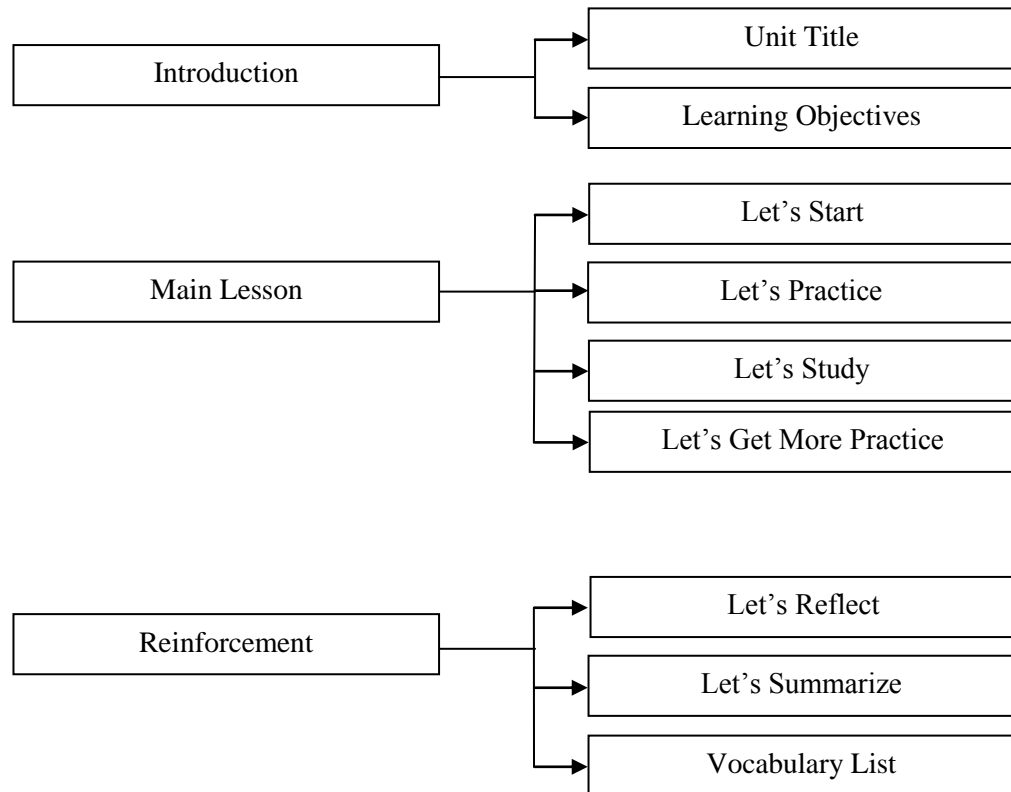
d. Unit 4

The topic of Unit 4 is *science in our daily lives*. The title of this unit is *today, I'll be talking about chemistry in our daily lives*. The title is taken from one of the expressions in Unit 4 which also indicates the expression of presenting. The input texts in Unit 4 are in form of dialogue and monologues. They are about food and chemistry. The input pictures are related to presenting and chemistry. The language functions for Unit 4 are *presenting*. This language function is considered the most difficult language functions among the other three. The vocabulary for this unit is selected based on the topic and input texts. The vocabularies are mostly common words used in a presentation and related to chemistry. In terms of language features, grammar being discussed is infinitives and the pronunciation is pitch. The language focus for this unit is selected based on the input texts. The procedures of this unit are pre-task, task, language focus and practice. Each part shows a list of activities to perform.

3. The Design of the Unit

After formulating the course grid, the researcher continues to the next step of this study which is developing the materials. Each of unit in the materials consists of some tasks which cover the speaking skill. In the introduction part, there are a unit title, a picture, and learning objectives. The unit title is taken from one of the expressions explained in the related unit. The picture below the unit title describes the unit topic of the unit title. In the main teaching and learning part, there are some sections namely *let's start*, *let's practice*, *let's study*, *let's get more practice*, *let's reflect*, *let's summarize* and *vocabulary list*. In the *let's start* section students are introduced the topic and the language that is related to the focus of the unit i.e. macro skill (speaking) and micro-skills (vocabulary, grammar, pronunciation, etc). In the *let's practice* section, students are drilled by speaking activities. In the “*Let's Study*” section the students learn grammar, language functions and pronunciation. In the “*Let's Get More Practice*”, students get chance to do more speaking activities. In the “*Let's Reflect*”, students are given the opportunity to take an objective view of their progress and see what is going well and what needs working on. In “*Let's Summarize*” students summarize what they have learnt in a unit. *The Vocabulary List* consists of Indonesian versions of difficult words along with its part of speech and phonetic transcript. In the last unit, the Appendix consists of audio transcripts of each recording.

Figure 5: Unit Design



4. The First Draft of the Materials

The English learning materials were developed based on the course grid as the first draft which can be seen in Appendix B. The first draft consists of four units in which each unit consists of 14-18 tasks. The descriptions of the first draft of each unit can be seen in Appendix D.

5. The Expert Judgment

The purpose of the expert judgment is to get the experts' opinion of the first draft of the materials. The instrument of the expert judgment is a

questionnaire. The items of the questionnaire are adapted from the standard of materials proposed by *BNSP*. According to *BNSP*, there are four aspects to determine the appropriateness of materials: content, presentation, language and layout. Therefore, the questionnaire aims to measure how far the materials have accomplished those standards.

The expert judgment of the materials involves two materials experts. The results of the expert judgment questionnaire are analyzed using descriptive statistic. In this study, the central tendency applied is the mean, while in classifying the category; the mean was converted into frequencies of agreement. The summary of the result are presented as follows.

a. The Results of Expert Judgment of Unit 1

The tables below present the descriptive statistic of the material judgment related to the appropriateness of Unit 1.

Table 26: The Appropriateness of the Content of Unit 1

No.	Evaluated Aspect	Items	Means	Category
1.	Content	The developed materials are appropriate to the learning goals.	4	Very good
2.		The developed materials (text, table, picture, etc) are taken from recent source of science issue.	3.50	Good
3.		The developed materials (text, table, picture, etc) are relevant to the topics being discussed.	3.50	Good

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4.		The developed materials contain language functions which are in accordance with students' need.	3.50	Good
5.				
6.		The developed materials contain knowledge of science.	3.50	Good
7.		The developed materials are appropriate with the students' level of English proficiency.	3.50	Good
8.		The developed materials lead the students to understand the linguistic features of the discussed text.	3	Poor
The general judgment of the content			3.50	Good

Table 26 shows that the contents of the materials of Unit 1 are considered good. It could be seen from the mean of the general judgment which is gained from seven questions related to the content of the materials. Therefore, the content of the developed materials is categorized as good.

Table 27: The Appropriateness of the Presentation of Unit 1

No.	Evaluated Aspect	Items	Means	Category
1.	Presentation	The developed materials provided opening, main activities, evaluation, reflection and summary consistently in each units.	3.50	Good
2.		The developed tasks are well organized, systemically graded, grading from the easiest task up to the most difficult task.	3.50	Good
3.		There is good balance among task in a unit with the tasks in the next unit.	3.50	Good

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4.		The developed tasks encourage students to perform oral communication effectively.	3.50	Good
5.		The developed tasks encourage students to be creative.	3.50	Good
6.		The developed tasks encourage students to work independently and in groups.	3.50	Good
7.		The developed materials consist of evaluation for students to measure their understanding of the developed materials.	3.50	Good
8.		The developed materials provide vocabulary appropriate with the topic being discussed.	3.50	Good
9.		The developed materials contains science terminology related to topic discuss in each unit.	3.50	Good
The general judgment of the presentation			3.50	Good

Table 27 shows that the presentation of the materials is good. It could be inferred from the mean resulted from the general judgment. The mean shows 3.50, so the presentation of Unit 1 is categorized as good.

Table 28: The Appropriateness of the Language of Unit 1

No.	Evaluated Aspect	Items	Means	Category
1.	Language	The language used is relevant to students' cognitive development.	4	Very good
2.		The language of instruction can be easily understood by the students.	3.50	Good
3.		The materials are developed in a grammatical English.	3.50	Good

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4.	Language	The spelling of the language of instruction is in accordance with spelling principle.	3.50	Good
5.		The choices of words of the materials are in accordance with word choice principle.	4	Very good
6.		The developed materials in a unit are linked to materials in the next unit.	4	Very good
The general judgment of the language			3.75	Very good

Table 28 presents the result of experts' judgment related to the language of the materials in Unit 1. The mean of the general judgment of the language is 3.75. Therefore, the language in Unit 1 is categorized as very good.

Table 29: The Appropriateness of the Layout of Unit 1

No.	Evaluated Aspect	Items	Means	Category
1.	Lay-out	The fonts used are no too various.	3.50	Good
2.		The fonts used are not too big or too small.	3.50	Good
3.		The color of the materials are not disturbing the reader.	3.50	Good
4.		The pictures are provided for aesthetic and functional purposes.	3.50	Good
The general judgment of the layout			3.50	Good

Table 29 presents the result of experts' judgment related to the layout of the materials in Unit 1. The mean of the general judgment of the language is 3.50. Therefore, the language in Unit 1 is categorized as very good.

b. The Results of Expert Judgment of Unit 2

The tables below present the descriptive statistic of the material judgment related to the appropriateness of Unit 2.

Table 30: The Appropriateness of the Content of Unit 2

No.	Evaluated Aspect	Items	Means	Category
1.	Content	The developed materials are appropriate to the learning goals.	4	Very good
2.		The developed materials (text, table, picture, etc) are taken from recent source of science issue	3.50	Good
3.		The developed materials (text, table, picture, etc) are relevant to the topics being discussed	3.50	Good
4.		The developed materials contain language functions which are in accordance with students' need.	3.50	Good
5.		The developed materials contain knowledge of science.	3.50	Good
6.		The developed materials are appropriate with the students' level of English proficiency.	3.50	Good
7.		The developed materials lead the students to understand the linguistic features of the discussed text.	3	Poor
The general judgment of the content			3.50	Good

Table 30 shows that the contents of the materials in Unit 2 are categorized as good. It could be inferred from the mean of the general judgment of the content which is 3.50.

Table 31: The Appropriateness of the Presentation of Unit 2

No.	Evaluated Aspect	Items	Means	Category
1.	Presentation	The developed materials provided opening, main activities, evaluation, reflection and summary consistently in each units.	3.50	Good
2.		The developed tasks are well organized, systemically graded, grading from the easiest task up to the most difficult task.	3.50	Good
3.		There is good balance among task in a unit with the tasks in the next unit.	3.50	Good
4.		The developed tasks encourage students to perform oral communication effectively.	3.50	Good
5.		The developed tasks encourage students to be creative.	3	Good
6.		The developed tasks encourage students to work independently and in groups.	3.50	Good
7.		The developed materials consist of evaluation for students to measure their understanding of the developed materials.	3.50	Good
8.		The developed materials provide vocabulary appropriate with the topic being discussed.	3.50	Good
9.		The developed materials contains science terminology related to topic discuss in each unit.	3.50	Good
The general judgment of the presentation			3.44	Good

Table 31 shows that the presentation of the materials is considered good. It could be seen from the mean of the general judgment of the presentation.

Table 32: The Appropriateness of the Language of Unit 2

No.	Evaluated Aspect	Items	Means	Category
1.	Language	The language used is relevant to students' cognitive development.	4	Very good
2.		The language of instruction can be easily understood by the students.	3.50	Good
3.		The materials are developed in a grammatical English.	3.50	Good
4.		The spelling of the language of instruction are in accordance with spelling principle.	3.50	Good
5.		The choice of words of the materials are in accordance with word choice principle.	4	Very good
6.		The developed materials in a unit are linked to materials in the next unit.	4	Very good
The general judgment of the language			3.75	Very good

Table 32 shows that the material is very good in terms of its language aspect.

It could be seen from the mean of the general judgment of the language in Unit 2.

Therefore, the language of the developed materials is categorized as very good.

Table 33: The Appropriateness of the Layout of Unit 2

No.	Evaluated Aspect	Items	Means	Category
5.	Lay-out	The fonts used are no too various.	3.50	Good
6.		The fonts used are not too big or too small.	3.50	Good
7.		The color of the materials are not disturbing the reader.	3.50	Good
8.		The pictures are provided for aesthetic and functional purposes.	3.50	Good
The general judgment of the layout			3.50	Good

Table 33 shows that the layout of the materials is good. It is shown from the mean of the general judgment. The mean is 3.50, which categorized the layout of Unit 2 as good.

c. The Results of Expert Judgment of Unit 3

The tables below present the descriptive statistic of the material judgment related to the appropriateness of Unit 3.

Table 34: The Appropriateness of the Content of Unit 3

No.	Evaluated Aspect	Items	Means	Category
1.	Content	The developed materials are appropriate to the learning goals.	4	Very good
2.		The developed materials (text, table, picture, etc) are taken from recent source of science issue	3.50	Good
3.		The developed materials (text, table, picture, etc) are relevant to the topics being discussed	3.50	Good
4.		The developed materials contain language functions which are in accordance with students' need.	3.50	Good
5.		The developed materials contain knowledge of science.	3.50	Good
6.		The developed materials are appropriate with the students' level of English proficiency.	3.50	Good
7.		The developed materials lead the students to understand the linguistic features of the discussed text.	3	Poor
The general judgment of the content			3.50	Good

Table 34 shows that the contents of the materials in Unit 3 are good. It could be inferred from the mean of the general judgment of the content in Unit 3. Therefore, the content of the developed materials is categorized as good.

Table 35: The Appropriateness of the Presentation of Unit 3

No.	Evaluated Aspect	Items	Means	Category
1.	Presentation	The developed materials provided opening, main activities, evaluation, reflection and summary consistently in each units.	3.50	Good
2.		The developed tasks are well organized, systemically graded, grading from the easiest task up to the most difficult task.	3.50	Good
3.		There is good balance among task in a unit with the tasks in the next unit.	3.50	Good
4.		The developed tasks encourage students to perform oral communication effectively.	3.50	Good
5.		The developed tasks encourage students to be creative.	3	Good
6.		The developed tasks encourage students to work independently and in groups.	3.50	Good
7.		The developed materials consist of evaluation for students to measure their understanding of the developed materials.	3.50	Good
8.		The developed materials provide vocabulary appropriate with the topic being discussed.	3.50	Good
9.		The developed materials contains science terminology related to topic discuss in each unit.	3.50	Good
The general judgment of the presentation			3.44	Good

Table 35 shows that according to the experts, the presentation of Unit 3 is considered good. It could be seen from the mean of the general judgment of the presentation. The mean is 3.44, which categorized the presentation of Unit 2 as good.

Table 36: The Appropriateness of the Language of Unit 3

No.	Evaluated Aspect	Items	Means	Category
1.	Language	The language used is relevant to students' cognitive development.	4	Very good
2.		The language of instruction can be easily understood by the students.	3.50	Good
3.		The materials are developed in a grammatical English.	3.50	Good
4.		The spelling of the language of instruction is in accordance with spelling principle.	3.50	Good
5.		The choices of words of the materials are in accordance with word choice principle.	4	Very good
6.		The developed materials in a unit are linked to materials in the next unit.	4	Very good
The general judgment of the language			3.75	Very good

The Table 36 shows that the material is very good in terms of its language aspect. It could be seen from the mean of the general judgment of the language in Unit 3. Therefore, it can be inferred that the language in Unit 3 is categorized as very good.

Table 37: The appropriateness of the layout of Unit 3

No.	Evaluated Aspect	Items	Means	Category
1.	Lay-out	The fonts used are no too various.	3.50	Good
2.		The fonts used are not too big or too small.	3.50	Good
3.		The colors of the materials are not disturbing the reader.	3.50	Good
4.		The pictures are provided for aesthetic and functional purposes.	3.50	Good
The general judgment of the layout			3.50	Good

Table 37 shows that according to the experts, the layout of Unit 3 is good. It can be seen from the mean of the general judgment of the layout. The mean is 3.50, which categorized the layout of Unit 3 as good.

d. The Results of Expert Judgment of Unit 4

The tables below present the descriptive statistic of the material judgment related to the appropriateness of Unit 4.

Table 38: The Appropriateness of the Content of Unit 4

No.	Evaluated Aspect	Items	Means	Category
1.	Content	The developed materials are appropriate to the learning goals.	4	Very good
2.		The developed materials (text, table, picture, etc) are taken from recent source of science issue.	3.50	Good
3.		The developed materials (text, table, picture, etc) are relevant to the topics being discussed.	3.50	Good

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4.		The developed materials contain language functions which are in accordance with students' need.	3.50	Good
5.		The developed materials contain knowledge of science.	3.50	Good
6.		The developed materials are appropriate with the students' level of English proficiency.	3.50	Good
7.		The developed materials lead the students to understand the linguistic features of the discussed text.	3	Poor
The general judgment of the content			3.50	Good

Table 38 shows that the contents of the materials in Unit 4 are good. It could be seen from the mean of the general judgment of the content which is gained from seven questions. Therefore, the content of the developed materials is categorized as good.

Table 39: The Appropriateness of the Presentation of Unit 4

No.	Evaluated Aspect	Items	Means	Category
1.	Presentation	The developed materials provided opening, main activities, evaluation, reflection and summary consistently in each unit.	3.50	Good
2.		The developed tasks are well organized, and systemically graded from the easiest task up to the most difficult task.	3.50	Good
3.		There is good balance among task in a unit with the tasks in the next unit.	3.50	Good

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4.		The developed tasks encourage students to perform oral communication effectively.	3.50	Good
5.		The developed tasks encourage students to be creative.	3.50	Good
6.		The developed tasks encourage students to work independently and in groups.	3.50	Good
7.		The developed materials consist of evaluation for students to measure their understanding of the developed materials.	3.50	Good
8.		The developed materials provide vocabulary appropriate with the topic being discussed.	3.50	Good
9.		The developed materials contains science terminology related to topic discuss in each unit.	3.50	Good
The general judgment of the presentation			3.50	Good

Table 39 shows that the presentation of Unit 4 is considered good. It could be seen from the mean of general judgment of the presentation. The mean is 3.50, which categorized the presentation of Unit 2 as good.

Table 40: The Appropriateness of the Language of Unit 4

No.	Evaluated Aspect	Items	Means	Category
1.	Language	The language used is relevant to students' cognitive development.	4	Very good
2.		The language of instruction can be easily understood by the students.	3.50	Good
3.		The materials are developed in a grammatical English.	3.50	Good

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4.		The spelling of the language of instruction is in accordance with spelling principle.	3.50	Good
5.		The choices of words of the materials are in accordance with word choice principle.	4	Very good
6.		The developed materials in a unit are linked to materials in the next unit.	4	Very good
The general judgment of the language			3.75	Very good

Table 40 shows that the material is very good in terms of its language aspect. It could be seen from the mean of the general judgment of the language in Unit 4. Therefore, it can be inferred that the language in Unit 4 is categorized as very good.

Table 41: The appropriateness of the layout of Unit 4

No.	Evaluated Aspect	Items	Means	Category
5.	Lay-out	The fonts used are no too various.	3.50	Good
6.		The fonts used are not too big or too small.	3.50	Good
7.		The colors of the materials are not disturbing the reader.	3.50	Good
8.		The pictures are provided for aesthetic and functional purposes.	3.50	Good
The general judgment of the layout			3.50	Good

Table 41 shows that the layout of Unit 4 is good. It can be inferred from the mean which is gained from eight questions. The mean is 3.50, which categorized the layout of Unit 3 as good.

e. The Results of Expert Judgment of the Whole Materials

Table 42: The Appropriateness of the Whole Materials

No.	Units	Means
1.	Unit 1	
	1. Content	3.50
	2. Presentation	3.50
	3. Language	3.75
	4. Layout	3.50
	Average Score	3.56
2.	Unit 2	
	1. Content	3.50
	2. Presentation	3.44
	3. Language	3.75
	4. Layout	3.50
	Average Score	3.54
3.	Unit 3	
	1. Content	3.50
	2. Presentation	3.44
	3. Language	3.75
	4. Layout	3.50
	Average Score	3.54
4.	Unit 4	
	1. Content	3.50
	2. Presentation	3.50
	3. Language	3.75
	4. Layout	3.50
	Average Score	3.56
Final Means		3.55

Table 42 shows that the average score of each unit is 3.56, 3.54, 3.54, and 3.56. So, the overall means or the final means is 3.55. Therefore, the result of the expert judgment shows that the developed materials are very good and feasible to apply.

6. The Review of the First Draft Materials

The experts were not only asked to give their evaluation about the materials, but also to give their comments and suggestions about the developed materials. Their comments were about the weaknesses of the materials and the suggestions to improve the developed materials. The feedbacks from the experts were used to revise the first draft to be the final draft. The following is the description of the experts' feedback.

Table 43: The Experts' Suggestions of Unit 1

Unit 1	
Parts of units	Suggestions
Task 1	Revising the instruction
Task 5	Revising the instruction
Task 9	Changing some words
Task 10	Revising the instruction
Fun spot	Revising the instruction
Additional Suggestion	Adding more non-guided activity in form of conversation

Table 43 shows that the materials in Unit 1 are good. However, the experts suggested that the materials must be revised in some parts. They are Task 1, Task 5, Task 8, Task 10 and Fun Spot. The revisions are as follows.

Table 44: The Revision of Unit 1

Part of the Unit	Before Revision	After Revision
Task 1	<ol style="list-style-type: none"> 1. What is the picture about? 2. Have you ever seen a comet? 3. What do you know about comet? 	<ol style="list-style-type: none"> 1. What is the picture about? 2. Have you ever seen this? 3. What do you know about this?

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Task 5	Work in pairs. Act out the dialogue, each of you acts as Megan and Matthew. Then, check your comprehension by answering the questions orally.	Work in pairs. Act out the dialogue, one acts as Megan and another as Matthew. Then, check your comprehension by answering the questions orally.
Task 9	<ol style="list-style-type: none"> 1. Silent Vowels <ul style="list-style-type: none"> a: spread, boat, team e: great, pie, toe e: fuse, scene, lime, stove, pale i: pail, business, receive, believe o: people, jeopardy u: guest, guess, laugh, guide 2. Silent Consonants <ul style="list-style-type: none"> b: doubt, debt, tomb, bomb c: muscle, black, science d: Wednesday, bridge, ledge, fudge f: cliff, stuff, staff g: campaign, foreign, sign h: chemical, echo, school, ghost k: knowledge, know, knee l: quill, swell, tall m: mnemonics n: autumn, column, solemn p: psychology, pneumonia, receipt s: fuss, press t: fasten, often, listen, soften w: shadow, answer z: jazz, buzz 	<ol style="list-style-type: none"> 1. Silent Vowels <ul style="list-style-type: none"> [a]: spread, boat, team [e]: fuse, lime, stove, pale [i]: pail, business [o]: people, sophomore [u]: guest, guess, laugh, guide 2. Silent Consonants <ul style="list-style-type: none"> [b]: doubt, debt, tomb [c]: muscle, black, science [d]: bridge, ledge, fudge [g]: campaign, foreign, sign [h]: chemical, echo, school, [k]: knowledge, know, knee [l]: talk, walk, could, half [m]: mnemonics [n]: autumn, column, solemn [p]: psychology, pneumonia, receipt [s]: aisle, island [t]: fasten, often, listen, soften [th]: asthma, isthmus, northeaster [w]: shadow, answer, two, wrong [z]: rendezvous

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Task 10	Have a discussion with your tutors and friends about articles the, a and an.	Have a discussion with your tutors and friends on articles the, a and an.
Fun spot	Listen to a song called Space Debris. Listen to it carefully and complete the missing lyrics then sing it together with your class.	Listen to a song called Space Debris. Listen to it carefully and complete the missing lyrics then sing it together with your friends.
Additional Suggestion	Adding more non-guided activity in form of conversation and language games.	<ol style="list-style-type: none"> 1. Task 6 Adjective Bingo 2. Task 12 Sound Game 3. Task 15 Work in pairs. Think of some objects, describe it to your friends and let your friend guesses what the object are. Look at an example below. 4. Task 16 Work in pairs. Share to each other the weirdest objects both of you have ever seen in your life.

Table 45: The Experts' Suggestions of Unit 2

Unit 2	
Parts of units	Suggestions
Task 1	Revising the instruction
Task 7	Revising the instruction
Task 10	Changing some words
Task 12	Revising the instruction
Additional Suggestion	Adding more relevant, interesting and colorful pictures

In Unit 2, the experts suggested that the materials must be revised in some parts. They are Task 1, Task 7, Task 10, and Task 12. The revisions are as follows:

Table 46: The Revision of Unit 2


Part of the Unit	Before Revision	After Revision
Task 1	<ol style="list-style-type: none"> 1. What is the picture about? 2. What theory does it refers to? 3. Who proposed the theory? 	<ol style="list-style-type: none"> 1. What is the picture about? 2. Have you ever seen this? 3. What do you know about this?
Task 7	Study the explanation and answer do following instructions.	Study the explanation and do the following instructions..
Task 10	Situation: Stephanie and Luke are in the classroom, discussing about their favorite scientists.	Situation: Stephanie and Luke are in the classroom discussing about their favorite scientists.
Task 12	Have a discussion with your tutors and friends about prepositions	Have a discussion with your tutors and friends on prepositions
Additional Suggestion	Adding more relevant, interesting and colorful pictures and language games.	<ol style="list-style-type: none"> 1. Task 6 Tongue twisters 2. Task 10 Speaking for one minute game. 3. <div>  </div>

Table 47: The Experts' Suggestions of Unit 3

Unit 3	
Parts of units	Suggestions
Task 5	Revising the text
Task 11	Revising the table
Task 15	Revising the text
Additional Suggestion	Exchanging Unit 3 to Unit 4, adding language game and text

In Unit 3, the experts suggested that the materials must be revised in some parts. They are Task 11 and since the discussing skill is less complicated than presenting skill, Unit 3 is placed to Unit 4. The revisions are as follows:

Table 48: The Revision of Unit 3

Part of the Unit	Before Revision	After Revision		
Task 11 Additional Suggestion	Introducing visual aids Ok. Let's take a look at... I have a transparency to show you... The first/second/next/final slide is... Have a look at this.	1.	Introducing visual aids	Ok. Let's take a look at... Ok. Let's take a look at... I have a transparency to show you... The first/second/next/final slide is... Have a look at this. I have a transparency to show you... The first/second/next/final slide is... Have a look at this.
	Meaning of the visual This shows/illustrates/refers to... This is a graph which shows... As you can see, this is... Here we can see...			
	Focusing attention I'd like to draw your attention to... One of the most important aspects of this is... At first glance it seems...but...	2.	Focusing attention	I'd like to draw your attention to... One of the most important aspects of this is... At first glance it seems...but...
		3.	Meaning of the visual	This shows/illustrates/refers to... This is a graph which shows...

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Additional Suggestion	Adding game Adding text	Task 13 Word link Task 16
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Table 49: The Experts' Suggestions of Unit 4

Unit 4	
Parts of units	Suggestions
Task 5	Adding the functions of expressions
Additional Suggestion	Exchanging Unit 4 to Unit 3 and adding language game

The materials in Unit 4 are good. However, the experts suggested that the materials must be revised in some parts.

Table 50: The Revision of Unit 4

Part of the Unit	Before Revision	After Revision
Task 5	So it's not If on the other hand I am a Food Toxicologist In both cases In the next segment : to One of the most important One way to Today I'll be discussing	So it's not : Concluding a section If on the other : Contrasting hand I am a Food : Introducing Toxicologist yourself In both cases : Giving examples In the next : Ordering segment : to points One of the : Emphasizing most important One way to : Signposting Today I'll be : Introducing the discussing talk
Additional Suggestion	Adding language game	Task 7 Line up game

7. The Final Draft of the Materials

Based on the result of the expert judgment, the content, the language, the presentation, and the graphic design of the materials were revised and written into the final draft. The description of the final draft of each unit can be seen in Appendix F.

B. DISCUSSIONS

The developed English learning materials were intended for the intermediate level students of international science classes. The needs of specific area of students of international science classes determined that English for Specific Purposes (ESP) should be employed. Developing learning materials for ESP purposes differs from developing learning materials for general purposes. What makes ESP unique and in demand, according to Dudley-Evans and St. John (1998), is that it is an approach to language teaching in which all decisions related to content and method are based on learners' reasons for learning. ESP courses bridge the gap between learners' basic English proficiency and their mainstream courses while helping students develop language, study, and research skills appropriate for study in a particular academic discipline or profession.

Developing ESP learning materials involves doing a needs analysis, developing tasks, and identifying and preparing materials with discipline-specific content. According to Dudley-Evans and St. John (1998), the needs analysis encompasses a detailed description of learners needs: the tasks and activities the learners are using English for, personal information about learners, cultural

information about the students, their current language skills, and their perceived language needs.

In the materials development, the first stage is conducting needs analysis. It is done by distributing questionnaire to the students. The questionnaire is developed in accordance to the principles of the needs analysis proposed by Hutchinson & Waters (1987) that cover the target needs and learning needs. In terms of target needs, the questionnaire is divided into three components, i.e. necessities, lacks, and wants. The learning needs cover some elements used in developing the speaking materials. They are input, activities (procedure), setting, teacher's role and learner's role.

The first aspect of the questionnaire is target needs. In terms of necessities, the purpose of the most students is learning English through speaking tutorials of ESC is they wanted to develop their speaking skill to help them communicate during the lectures. They wanted the materials to develop their knowledge of language functions used in academic context to communicate in the classroom. They wanted to use English speaking skills as a way of communication during the lectures. In terms of lacks, the speaking proficiencies of the most students are in the level of intermediate, where they have basic conversational skills in which they can talk about a few topics. Moreover, most of the students say that the problem they have in speaking English is the limited number of language functions mastery. In terms of wants, most of the students say that they learn English

through English tutorial to get equipped with sufficient expressions in English to communicate with friends and lecturers.

The next aspect of the questionnaire is learning needs. For the listening input, most of the students want to have dialogues related to the topic of the unit, where the length of the texts is about 2 minutes. For the speaking input, most of them want to have dialogues related to the topic of the unit. The topics of the unit they want to have are science theory, space, diseases and science in our daily lives. The language functions they want to learn are describing, presenting, discussing and explaining. Then, most of the students also consider that the availability of relevant pictures in the materials would be very helpful.

The third aspect of the learning needs is procedure. For the listening activity, most of the students want to listen to a dialogue or monologue and then decide whether a statement is true/false based on the dialogue or monologue. For the speaking activity, most of them want to act out a dialogue in pairs. For the vocabulary activity, most of them want to translate English words to Indonesian version based on the context of the texts. For the grammar activity, most of them want to study and discuss the use of grammar. Moreover, for the pronunciation activity, most of them want to be given phonetic transcription of difficult words.

In terms of setting, most of the students want to accomplish the tasks in pairs. While accomplishing the tasks, most of them expect the teacher to observe and comment on their activities. For the students' role itself, they want to accomplish the tasks as a problem solver.

Then, after the researcher analyzes the needs analysis questionnaire, the next step to do is developing a course grid. The course grid covers the topic of the unit, title of the unit, language functions, vocabulary list, pronunciation aspect, grammar aspect, and procedures of the activities. Then, the course grid is developed into four units of speaking materials.

Each unit of the developed materials has the similar patterns. There are three parts of the unit; introduction, main lesson, and reinforcement. The introduction part consists of the title of the unit, a picture describing the title of the unit, followed by the learning objectives. The main lesson consists of three main activities, i.e. *pre-task*, *task cycle*, and *language focus*. The reinforcement part consists of reflection, summary and a vocabulary list.

After that, the materials are evaluated by the experts. The materials evaluation is done by distributing a questionnaire. The items of the questionnaire are developed based on *Badan Nasional Standar Penilaian (BNSP)* that covers four main points of evaluation, i.e. the appropriateness of the content, the appropriateness of the language, the appropriateness of the presentation, and the appropriateness of the lay-out.

Based on the result of the questionnaire, it can be concluded that the developed speaking materials are appropriate for the needs of intermediate level 4th semester students of international science classes used in the English Speaking Club at the Centre for Language Development of Yogyakarta State University. It can be seen from the mean value of each item of the experts' judgment

questionnaire results. The mean of the whole materials is 3.55. Referring to the quantitative data conversion proposed by Suharto (2006: 52-53), the ranges are in the “Very good” category.

CHAPTER V

CONCLUSIONS AND SUGGESTIONS

This chapter consists of two sections, namely conclusions and suggestions. The conclusions section talks about the summary of the research findings related to the formulation of the problems and objectives of the research. The second one is suggestions of particular matters for other researchers. Each section is presented below.

A. Conclusions

Based on the findings and discussion, the result of the research can be summarized as follows.

1. The first objective of this research is to identify the learning needs of students of international science classes. Based on the result of the questionnaire, the students' views about what they need are listed as follows.
 - a. Most of the students want to have dialogues related to the topic of the unit for the listening input.
 - b. Most of the students want the listening input texts in the length of about 2 minutes.
 - c. Most of the students want to have dialogue related to the topic of the unit for the speaking input.
 - d. The topics that most of the students want to learn are science theory, space, diseases and science.

- e. The language functions that most of the students want to learn are asking and giving description, asking for and giving explanation, having a discussion and giving a presentation.
- f. Most of the students think that the availability of the relevant pictures in the materials is very helpful.
- g. Listening activity that most of the students want is to listen to a dialogue or monologue and then decide whether a statement is true/false based on the dialogue or monologue.
- h. Speaking activity that most of the students want is to act out a dialogue in pairs.
- i. Vocabulary activity that most of the students want to is to translate English words to Indonesian version based on the context of the texts.
- j. Grammar activity that most of the students want is to make sentences orally based on the patterns that have been learned.
- k. Pronunciation activity that most of the students want to be given phonetic transcription of difficult words.
- l. Most of the students prefer to accomplish the tasks in pairs.
- m. In accomplishing the tasks, most of the students expect the teacher to observe and comment on the students' activities.
- n. In accomplishing the tasks, most of the students expect to have the role as problem solver.

2. The second objective of this research is to identify and describe the target needs of students of international science classes in English Speaking Club. The findings of the research reveal the target needs of students of international science classes which presented as follows.
 - a. The goal of the students of International Science to learn English is to get equipped with sufficient knowledge of language functions used in academic context to communicate in the classroom.
 - b. Their view about English speaking skill usage is a way to communicate during the lecturers.
 - c. Most of the students admit that English for science is very important.
 - d. Most of the students admit that their speaking skills proficiency so far is at the level of intermediate. They are able to carry out basic conversational skills (can talk about a few topics)
 - e. The difficulty that most of the students have when speaking English is the mastery of limited language functions.
 - f. Most of students admit that they learn English in English Speaking Club because they want to be able to use expressions in English to communicate with friends and lecturers.
3. The third objective of this research is to develop appropriate English speaking materials for tutorial practices of international science classes. In order to develop appropriate English speaking materials for tutorial practices of international classes, the materials were develop by considering the theories and the analysis of

the learning and target needs and were revised through the result of evaluations. The product is formulated into course grid, first draft of the materials and final draft of the materials. The materials consist of four units, the topic of the unit are science theory, space objects, science in our daily lives and diseases. The language functions of each unit are asking for and giving a description, asking for and giving explanation, having a discussion and giving a presentation.

Based on the result of this research, the appropriate speaking materials for international science classes have the following characteristics as follows.

- a. The materials are relevant to the needs of students of international science classes.
- b. The tasks in the units can make the students practice their speaking skills.
- c. The content, language, presentation and layout of the materials are appropriate for students of international science.
- d. The quality of the materials are good and can be use for many times.
- e. The learning materials have the following components as follows.
 - 1) The first part of the unit is the title of the unit. The title reflects the whole topic of the unit. There is also a brief explanation about the objectives of the unit to give the students explanation about what they are going to learn.
 - 2) The second part of the unit is pre-task (Let's Start). The tasks in this part are designed to recall the students' background knowledge about the scope of the unit.

- 3) The third part is task cycle (Let's Practice) and (Let's Get More Practice).

This part consists of three phases, task, planning, and report.

- 4) The fourth part of the unit is language focus (Let's Study). This part consists of two main phase, analysis and practice.

- 5) The last part of the unit is reinforcement (Let's Reflect, Let's Summarize and Vocabulary List). The availability of the *let's reflect* is essential to check the students' understanding towards the materials. While the availability of *let's summarize* aims to simplifying the whole materials in the unit. While the *a vocabulary list* provides a list of words related to the topic of the unit.

B. Implications

Based on the result of the study, the implication that can be drawn below is that the English speaking materials for tutorial practices for international science classes were designed based on the needs analysis obtained from the needs analysis questionnaire. The needs analysis questionnaire was conducted in English Speaking Club program to 71 students of international science classes of Faculty of Mathematics and Science of Yogyakarta State University. The final product was designed by considering the assessment from the experts' judgments. Moreover, the average score based on the assessment from the experts' judgments implies that the developed materials are very good and feasible to use in English instruction. The results of the developed materials after the evaluation imply that

the materials are appropriate and feasible to be implemented in English speaking tutorial practices for students of international science classes.

C. Suggestions

This research only focuses on developing the English speaking tutorial materials for students of international science classes at Yogyakarta State University. Its limited used only for students of international science classes, leave other classes beside science lack of English speaking tutorial materials. Therefore, other researchers are expected to be able to develop English learning materials for other international classes which have the problems with the availability of appropriate English learning materials. They are also expected to find the other characteristics of appropriate speaking materials based on the needs of the students.

Due to limited of time, this research only develops four units of materials for students of international science classes. Therefore, other researchers are expected to be able to develop more appropriate English speaking materials for tutorial practices to cover all of language functions, language features, theme, topic and vocabulary needed by the students of international science classes.

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APPENDICES

APPENDIX A

NEED ANALYSIS INSTRUMENTS

KUESIONER DATA PENELITIAN
ANALISA KEBUTUHAN BELAJAR BAHASA INGGRIS
UNTUK KEGIATAN ENGLISH SPEAKING CLUB
MAHASISWA KELAS INTERNASIONAL PENDIDIKAN
BIOLOGI/FISIKA/KIMIA/IPA
UNIVERSITAS NEGERI YOGYAKARTA

Kepada

Mahasiswa kelas Internasional Pendidikan Biologi/Fisika/Kimia/IPA
di Universitas Negeri Yogyakarta

Dalam rangka pengembangan materi belajar bahasa Inggris untuk kegiatan speaking tutorial dalam English Speaking Club untuk mahasiswa kelas Internasional Pendidikan Biologi/Fisika/Kimia/IPA Universitas Negeri Yogyakarta, saya mengharap kesediaan Anda untuk meluangkan waktu mengisi kuesioner ini.

Kuesioner ini bertujuan untuk mengetahui kebutuhan belajar Bahasa Inggris Anda sebagai pertimbangan dalam mengembangkan materi dalam kegiatan speaking tutorial di English Speaking Club untuk mahasiswa Program Studi Internasional Pendidikan Biologi /Fisika/Kimia/IPA TANPA bermaksud untuk menguji atau menilai Anda.

Demi tercapainya tujuan dari kuesioner ini, Anda dimohon memilih jawaban dan/atau menuliskan informasi dengan jujur dan sebenar-benarnya sesuai dengan keadaan Anda saat ini. Semua jawaban yang diisikan dalam lembar kuesioner ini benar-benar hanya untuk kepentingan penyusunan materi dan kegiatan untuk kegiatan speaking tutorial di English Speaking Club. Jawaban dan identitas Anda akan saya jaga kerahasiaannya.

Demikian, atas perhatian dan kerjasama Anda diucapkan terima kasih.

Yogyakarta, Juli 2013

Petunjuk Pengisian Kuesioner

Berilah tanda silang (X) pada huruf a, b, c, d dan/atau seterusnya dan/atau menuliskan informasi sesuai dengan keadaan yang paling menggambarkan diri Anda saat ini. Anda boleh memilih jawaban lebih dari satu untuk setiap pertanyaan.

1. Apa tujuan kegiatan English Speaking Club untuk keperluan Anda?
 - a. Untuk menjadikan saya mampu menguasai kosakata bahasa Inggris yang berkaitan dengan program studi saya.
 - b. Untuk menjadikan saya mampu menguasai kosakata bahasa Inggris yang berkaitan dengan program studi saya dan menggunakannya berkomunikasi dengan dosen dan teman selama proses perkuliahan.
 - c. Untuk menjadikan saya mampu menguasai penggunaan tatabahasa dengan baik dan berterima baik secara lisan untuk berkomunikasi dengan dosen dan teman selama proses perkuliahan.
 - d. Untuk menjadikan saya mampu menggunakan dan merespon ungkapan (ekspresi) yang banyak digunakan dalam konteks akademik dengan baik dan berterima untuk berkomunikasi dengan dosen dan teman selama proses perkuliahan.
 - e. Lainnya

2. Untuk apa Anda membutuhkan keterampilan *speaking* bahasa Inggris pada saat ini?
 - a. Untuk berkomunikasi di kelas saat perkuliahan berlangsung
 - b. Untuk berkomunikasi dengan dosen.
 - c. Untuk berkomunikasi dengan teman.
 - d. Untuk berkomunikasi dengan orang asing.
 - e. Lainnya

3. Menurut Anda, seberapa pentingkan bahasa Inggris dengan tema *science*?
 - a. Sangat penting.

- b. Penting.
 - c. Cukup penting.
 - d. Tidak penting.
4. Secara umum, Anda menginginkan pembelajaran bahasa Inggris yang menjadikan anda?
- a. Mampu menguasai tata bahasa (grammar) dengan baik.
 - b. Mampu menguasai kosata kata yang berhubungan dengan *science* dengan baik.
 - c. Mampu menguasai kosata kata umum dengan baik.
 - d. Mampu menguasai ungkapan-ungkapan untuk berkomunikasi dengan dosen maupun teman.
 - e. Lainnya
- _____
- _____
- _____
- _____
5. Input teks dalam bentuk apakah yang Anda ingin pelajari dalam pembelajaran (mendengarkan teks)?
- a. Monolog.
 - b. Dialog.
6. Dalam pembelajaran (mendengarkan teks), teks yang diberikan sebaiknya sepanjang?
- a. <2 menit.
 - b. 2 menit.
 - c. 3 menit.
 - d. 4 menit.
7. Input teks dalam bentuk apakah yang Anda ingin pelajari dalam pembelajaran (berbicara)?
- c. Monolog.
 - d. Dialog.
8. Dalam pembelajaran (berbicara), teks yang diberikan sebaiknya sepanjang?
- e. <250 kata.
 - f. 251-350 kata.
 - g. 351-450 kata.
 - h. >450 kata.

9. Apakah tersedianya gambar-gambar dalam materi dapat membantu Anda memahami pelajaran?
- a. Sangat membantu.
 - b. Membantu.
 - c. Kurang membantu.
 - d. Tidak membantu.

10. Jenis tugas berbicara (*speaking*) manakah yang paling Anda sukai?
- a. Mempraktekan dialog dengan secara berpasangan.
 - b. Mempraktekan sebuah peran.
 - c. Bertukar informasi dengan teman-teman.
 - d. Memecahkan persoalan.
 - e. Lainnya

11. Bentuk kegiatan mengenai kosa kata (*vocabulary*) apakah yang Anda inginkan?
- a. Mencocokkan kata bahasa Inggris dengan kata bahasa Indonesia yang telah tersedia.
 - b. Menerjemahkan kata bahasa Inggris sesuai dengan konteksnya.
 - c. Melengkapi kalimat atau paragraph dengan kata.
 - d. Melengkapi kalimat atau paragraph dengan kata sendiri.
 - e. Lainnya

12. Bentuk kegiatan mengenai pengucapan (*pronunciation*) apakah yang Anda inginkan?
- a. Mengulang ucapan tutor tentang kata yang dianggap sulit untuk diucapkan.
 - b. Diberikan phonetic transcription tentang kata-kata yang sulit diucapkan.
 - c. Lainnya

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-
13. Bentuk kegiatan mengenai (*grammar*) apakah yang Anda inginkan?
- a. Menidentifikasi dan memperbaiki kesalahan pada kalimat.
 - b. Membuat kalimat berdasarkan pola yang telah dipelajari.
 - c. Melengkapi kalimat menggunakan *grammar* yang tepat.
 - d. Mengidentifikasi and memperbaiki kesalahan pada paragraph dengan *grammar* yang benar.
 - e. Lainnya
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-
-

14. Keterampilan *speaking* apa yang ingin Anda gunakan dalam bahasa Inggris ?
- a. Memberikan keterangan (*giving explanation*).
 - b. Mendeskripsikan gambar (*describing pictures*.)
 - c. Menjelaskan prosedur (*explaining procedure*).
 - d. Berdiskusi (*discussing*).
 - e. Presentasi (*presenting*).
 - f. Membuat kesimpulan (*making generalizations*)
 - g. Wawancara (*interview*).
 - h. Pidato (*speech*).
 - i. Bercerita (*story telling*).
 - j. Lainnya
-
-
-

15. Bagaimana kemampuan *speaking* Anda saat ini?
- a. Saya sama sekali tidak bisa berkomunikasi secara lisan dalam bahasa Inggris.
 - b. Saya bisa berbicara dalam bahasa Inggris dalam berbagai situasi dengan berbagai topik walaupun masih membuat kesalahan.
 - c. Saya bisa memahami orang berbicara dalam bahasa Inggris dalam berbagai situasi dengan berbagai topik dengan baik, tetapi kurang lancar.
 - d. Saya bisa memahami orang berbicara dalam bahasa Inggris dalam berbagai situasi dengan berbagai topik dengan baik, lancar, dan berterima.

e. Lainnya

16. Kesulitan apa yang Anda alami ketika berbicara dalam bahasa Inggris?

- a. Penguasaan kosa kata yang terbatas.
- b. Penguasaan grammar yang terbatas.
- c. Pengetahuan topik yang terbatas.
- d. Penguasaan ungkapan-ungkapan yang terbatas.
- e. Lainnya

17. Topik apa yang ingin Anda cakup dalam materi bahasa Inggris untuk kegiatan English Speaking Club? (Pilih dan/atau tulis 4 topik)

- a. Kegiatan sehari-hari (*daily activities*).
- b. Olahraga (*sports*).
- c. Kesehatan (*health*).
- d. Hobi (*hobby*).
- e. Penelitian (*research*).
- f. Alam liar (*wildlife*).
- g. Penemuan (*invention*).
- h. Flora dan fauna (*flora and fauna*).
- i. Penampilan (*appearance*).
- j. Sejarah (*history of science*).
- k. Alam (*nature*).
- l. Lingkungan (*environment*).
- m. Bagian tubuh (*parts of the body*).
- n. Sumber daya alam (*Natural resources*).
- o. Makanan dan minuman (*food and beverages*).
- p. Cuaca dan musim (*weather and seasons*).
- q. Tokoh (*scientists*).
- r. Bencana Alam (*natural disasters*).
- s. Penyakit (*diseases*).
- t. Luar Angkasa (*space*).
- u. Teknologi (*technology*).
- v. Gaya hidup (*lifestyle*).

- w. Pekerjaan (*occupation*).
- x. Ilmu pengetahuan dan terapannya (*science in our daily lives*).
- y. Pendidikan (*education*).
- z. Teori ilmu pengetahuan (*science theory*).
- aa. Fenomena alam (*natural phenomenon*).
- bb. Lainnya

18. Jenis aktifitas dalam apa yang Anda sukai dalam melakukan aktivitas *speaking* dalam kegiatan mengerjakan tugas (*task*)?
- a. Saya lebih suka aktivitas *speaking* yang bisa saya lakukan sendiri, seperti presentasi.
 - b. Saya lebih suka aktivitas *speaking* yang bisa saya lakukan berpasangan dengan teman saya, seperti mempraktekkan percakapan.
 - c. Saya lebih suka aktivitas *speaking* yang bisa saya lakukan secara berkelompok, seperti berdiskusi.
 - d. Lainnya

19. Menurut Anda, bagaimana peran anda dalam kegiatan aktivitas *speaking*?

- a. Peserta yang pasif.
- b. Pemecah masalah.
- c. Pencatat.
- d. Lainnya

20. Menurut Anda, bagaimana peran tutor yang baik dalam mendampingi Anda melakukan aktivitas *speaking*?

- a. Tutor langsung mengoreksi kesalahan saya walaupun aktivitas *speaking* sedang berlangsung.
- b. Tutor memberikan contoh terlebih dahulu sebelum meminta saya praktik.

- c. Tutor berkeliling untuk mengarahkan dan memberikan contoh yang benar apabila saya melakukan kesalahan.
- d. Tutor diam di depan dan mengamati aktivitas saya.
- e. Tutor membantu saya memberikan gagasan dengan cara memberi umpan.
- f. Tutor berperan sebagai sumber.
- g. Tutor mengoreksi kesalahan saya pada saat aktivitas *speaking* sudah selesai.
- h. Lainnya

-TERIMAKASIH -

APPENDIX B
COURSE GRID

COURSE GRID							
ENGLISH SPEAKING TUTORIAL FOR INTERNATIONAL SCIENCE CLASSES							
No.	Topic	Input texts	Language Functions	Vocabulary	Pronunciation	Grammar	Activities
1.	Space Title What does a comet look like?	<ul style="list-style-type: none"> Recording Pictures Dialogues Monologues 	Asking for description The examples of expression to ask for description are as follows. <ul style="list-style-type: none"> What is it? What does it look like? How big is it? How much does it weigh? What color is it? What's it made out of? What else can you tell me? Tell me about... What did you think of the.. Is there a...? Are there (some)...? Giving description The examples of expression to give description are as follows. <ol style="list-style-type: none"> It looks like... It's... Well, it has... 	approximately chunk core debris diameter dusty exploration extend extinction faint force grain humanity impact lack mass orbit pebble planetary) ponderously raw remain rip smudge track vaporize	Silent letters. Silent letters are letters that are not pronounced in a word. Examples of words with silent letters: Silent Vowels <ul style="list-style-type: none"> a: spread, aisle, boat, team: e: fuse, scene, lime, stove, pale i: pail, business, receive, believe o: people, jeopardy u: guest, guess, laugh, guide Silent Consonants <ul style="list-style-type: none"> b: doubt, debt, tomb, bomb c: muscle, black, science d: Wednesday, bridge, ledge, 	Articles the, a and an Articles are used to differentiate between things or ideas – usually expressed by nouns. The speaker/writer may be referring to a specific thing or idea, or a general one. Article the is used: <ul style="list-style-type: none"> to refer to something which has already been mentioned. when both the speaker and listener know what is being talked about, even if it has not been mentioned before. in sentences or clauses where we define or identify a particular person or object to refer to objects we regard as 	Pre-task <ol style="list-style-type: none"> Introducing the topic through brainstorming pictures and questions Finding the meaning/equivalents of words that will be found in the next task Task cycle <ol style="list-style-type: none"> Task Listening to a monologue and stating whether the statement is true or false Listening to the monologue and answering questions Acting out dialogues in pairs and answering questions Asking descriptions of space objects in pairs Identifying the

			d. There is a... e. There are some...		fudge • f: cliff, stuff, staff • g: campaign, foreign, sign • h: chemical, echo, school, ghost • k: knowledge, know, knee • l: quill, swell, tall • m: mnemonics • n: autumn, column, solemn • p: psychology, pneumonia, receipt • s: fuss, press • t: fasten, often, listen, soften • w: shadow, answer, window z: jazz, buzz	unique (the sun, the world) • before superlatives and ordinal numbers (the highest building, the first page) • with adjectives, to refer to a whole group of people (the Japanese, the old) • the names of geographical areas and oceans (the Sahara, the Atlantic) • with decades, or groups of years (the seventies) An/a is used • to talk about one particular person or thing, when the listener/reader does not know which one is meant, or when it does not matter which one. • to talk about one member of a class (job)	characteristics of objects and describing it to your friends a. Planning 8. Describing pictures in front of friends b. Report 9. Describing objects to friends and let them guess the objects Language focus a. Analysis: 10. Studying the explanation about the expressions of asking for and giving explanation 11. Studying the explanation about prepositions 12. Discussing the explanation about articles b. Practice: 13. Describing a picture to partner according to information on
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						<ul style="list-style-type: none"> to classify people and things to say what class, group, or type they belong to. to identify what something/someone is, or what something/someone is like. after certain adverbs or adjectives. before noun qualifiers. with proper names. after <i>so</i> or <i>too</i> + <i>an adjective</i> + <i>a singular noun</i>. after <i>such</i> and <i>waste</i> 	the box provided.
2.	<p>Scientific theory and law</p> <p>Title Can you tell me about theory of relativity?</p>	<ul style="list-style-type: none"> Recording Pictures Dialogues 	<p>Asking for explanation</p> <ul style="list-style-type: none"> Do you know ...? How can I ...? Could you tell me...? Could you explain...? Could you expound on that? Could you fill me in on that? I don't understand... 	<p>appear</p> <p>arise</p> <p>catchy</p> <p>concise</p> <p>configuration</p> <p>determine</p> <p>distinct</p> <p>empirical</p> <p>essence</p> <p>evidence</p> <p>hierarchy</p> <p>immense</p>	<p>Linking in English</p> <p>When we say a sentence in English, we join or "link" words to each other. Because of this linking, the words in a sentence do not always sound the same as when</p>	<p>Prepositions</p> <p>Prepositions indicate relationships between words or ideas. Most prepositions deal with location and are easy to learn.</p> <p>About</p> <p>Above</p> <p>After</p> <p>Along</p> <p>Among</p>	<p>Pre-task</p> <ol style="list-style-type: none"> Introducing the topic through a picture by answering questions orally. Finding the meaning or equivalents of words that will be found in the next task <p>Task cycle</p>

			<ul style="list-style-type: none"> • How is it that? • Please explain to me... • Is there anything you can tell us? • Would you mind telling me ...? • Something else I'd like to know is... • Could you give me some explanation about....? • Can you give me more details? <p>Giving explanation</p> <ul style="list-style-type: none"> • Let me explain... • Let me tell you about it... • Let me give you some details... • All I can say is... • What's more, • That's because ... • May I explain ...? • Let me explain you why... • As you can see that... • What you have to do is... • It is important that... • The most important point is... 	<p>invent mass occur purely tendency tentative</p>	<p>we say them individually. There are basically two types of linking:</p> <p>Linking Consonant to Vowel When a word ends in a consonant sound, we often move the consonant sound to the beginning of the next word if it starts with a vowel sound. For example, in the phrase "turn off":</p> <p>Linking Vowel to Vowel When one word ends with a vowel sound and the next word begins with a vowel sound, we link the words with a sort of W or Y sound. If our lips are round at the end of the first word, we</p>	<p>Around As Before Behind Below In spite of Inside Into Like Near Nearby Next to Off Out Outside Over Underneath Since Than Through Toward Under Until Up Upon With Within Without Beneath Beside Between Beyond But By</p>	<p>a. Task</p> <p>3. Listening to a dialogue and stating whether the statement is true or false</p> <p>4. Listening to a monologue again and answering following W/H questions</p> <p>5. Studying and acting out a dialogue and answering following questions</p> <p>6. Finding differences between comets and asteroids</p> <p>b. Planning</p> <p>7. Studying and acting out dialogues and answering following questions</p> <p>8. Making dialogues in pairs based on the provided information</p> <p>c. Report Making dialogues</p>
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			<ul style="list-style-type: none"> To give you more information, Taking into account, it was clear that 		insert a W sound:	<p>Despite Down During Except In front of</p>	<p>in pairs based on the provided situational cards</p> <p>Language focus</p> <p>c. Analysis</p> <p>9. Studying explanation about expressions of asking for and giving explanation</p> <p>10. Studying explanation about linking in English</p> <p>d. Practice:</p> <p>11. Pronouncing words provided in the box</p> <p>12. Giving explanation to a friend related to the pictures</p>
3.	<p>Diseases</p> <p>Title</p> <p>Today, we're going to discuss eyes disorder</p>	<ul style="list-style-type: none"> Recording Pictures Monologues 	<p>Opening a discussion</p> <p>To begin with, We need to discuss . . . Let's start by (V ing) We'll start by (V ing) The problem here is . . . The important thing (here) is . . . The main thing we need to discuss is . . . Let's look at . . . It looks like . . .</p>	<p>Abnormality Accelerate Acuity Brief Clarity Consistency Deficient Devastating Digest Disorder Evidence Fairly</p>	<p>Contractions</p> <p>Positive statement Long form: Is, are, am, has, have, had, will Short form: 's, 're, 'm, 's, 've, 'd, 'll</p> <p>Negative Statement Long form: Is not,</p>	<p>Gerunds</p> <p>Gerunds are defined as the -ing form of a verb. They have several functions.</p> <p>1. Used as subjects and complements <i>Skiing</i> is my favorite sport. <i>Hiking</i> can be very strenuous.</p>	<p>Pre-task</p> <p>1. Introducing the topic through pictures</p> <p>2. Brainstorming by answering questions orally</p> <p>3. Finding the meaning or equivalents of words that will be found in the</p>

		<p>It appears that . . .</p> <p>Expression opinion</p> <p>I think. . .</p> <p>I believe. . .</p> <p>I don't think that . . .</p> <p>In my opinion . . .</p> <p>Adding opinion</p> <p>You made a good point but I'd also like to add. . .</p> <p>Asking for input</p> <p>What do you think?</p> <p>How about you?</p> <p>How do you feel about that?</p> <p>Any ideas on that?</p> <p>What's your opinion on that, Martha?</p> <p>Any thoughts on that?</p> <p>Responding</p> <p>That sounds like a) good idea.</p> <p>Sounds good.</p> <p>The problem with that is . . .</p> <p>. . .</p> <p>That raises the issue of . . .</p> <p>Contradicting</p> <p>However</p> <p>Yeah, but</p> <p>On the other hand,</p> <p>You may be right, but . . .</p> <p>I may be wrong, but . . .</p> <p>Correct me if I'm wrong, but . . .</p> <p>Interrupting</p> <p>Sorry, but. . .</p> <p>May I say something. . .</p>	<p>Formation</p> <p>Incision</p> <p>Inflammation</p> <p>Lens</p> <p>Ophthalmology</p> <p>Sufferer</p> <p>Surgical</p> <p>Symptom</p> <p>Syndrome</p> <p>Treated</p>	<p>are not, am not, has not, have not, had not, will not</p> <p>Short form: isn't, aren't, I'm not, hasn't, haven't, hadn't, won't</p>	<p><i>Seeing</i> is believing</p> <p>2. Used as objects following prepositions and prepositional expressions</p> <p>Thanks for <i>tending</i> my children.</p> <p>The job consists of <i>typing, filing</i>, and <i>answering</i> the phone.</p> <p>3. Used as objects following certain verbs.</p> <p>The children enjoyed <i>watching</i> the parade.</p> <p>Ms. Terrell avoided <i>paying</i> her taxes until it was too late.</p> <p>Gerunds can sometimes take objects of their own:</p> <p>Roland is afraid of <i>making</i> mistakes.</p> <p>Sandy is <i>considering</i> leaving New York.</p> <p>These verbs are commonly followed by gerunds:</p> <p>admit</p> <p>advise</p> <p>anticipate</p>	<p>next task</p> <p>Task cycle</p> <p>a. Task</p> <p>4. Listening to a dialogue and stating whether the statement is true or false</p> <p>5. Listening to a dialogue and answering following questions</p> <p>6. Studying and acting out a discussion and answering following questions</p> <p>7. Identifying expression used in the discussion</p> <p>8. Studying and acting out a discussion</p> <p>9. Studying a discussion</p> <p>b. Planning</p> <p>Having a pair discussion about diseases</p> <p>c. Report</p> <p>10. Having a discussing based on the provided</p>
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			<p>Excuse me, Pardon me, Sorry to interrupt, May I interrupt (for a minute)? Can I add something here? I don't mean to intrude, but ... Could I inject something here? Do you mind if I jump in here?</p> <p>Holding the floor Please let me finish. . .</p> <p>Returning to your saying As I was saying . . . Don't get me wrong. . . Anyway, Now, where was I? Where were we? What were you saying? You were saying . . . To get back to . . .</p> <p>Clarifying your own ideas In other words, What I mean is . . . What I'm trying to say is What I wanted to say was To clarify,</p> <p>Asking for Clarification What do you mean (by that)? What are you trying to say? What was that again?</p>			<p>appreciate attempt avoid begin can't help complete consider delay deny discuss dislike enjoy finish forget go hate hesitate imagine intend keep like love mention mind miss neglect postpone practice prefer quit recall recollect recommend regret remember resent</p>	<p>situational cards</p> <p>Language focus d. Analysis: 11.Studying expressions used in a discussion 12.Studying expressions used to describe visual aids and numbers 13.Discussing the used of gerund 14.Studying about reduced form e. Practice: 15.Practicing expressions used when interrupting 16.Identifying expression used by the speakers</p>
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		<p>Could you clarify that? Could you elaborate on that? Clarifying another's ideas You mean . . . What you mean is . . . What you're saying is . . . (I think) what she means is . . . What he's trying to say is If I understand you, (you're saying that . . .) If I'm hearing you correctly, So, you think (that) . . . So, your idea is . . .</p> <p>Making a Suggestion/Proposal I think we should . . . Maybe we should . . . I suggest . . . Why don't we . . . How about . . . We could . . .</p> <p>Agreeing I agree. So do I. Me too. Me neither. (Agreeing about a negative idea.) I don't either (Agreeing about a negative idea.) You're right. That's right. Good idea. I think that's a good idea.</p>			<p>resist risk start stop suggest threaten tolerate try understand</p>	
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			Disagreeing • I disagree. I don't think so. (No.) That's not right. Yes, but... (I'm sorry, but) I don't agree Giving examples For instance, Let me illustrate, To illustrate, Summarizing In summary, The conclusion is . . . So, we've decided to . . . We're going to . . . (then) In conclusion, To conclude, To summarize, To sum up,				
4.	Science in our daily lives Title Today, I'll be talking about chemistry in our daily lives	<ul style="list-style-type: none"> • Recording • Pictures • Monologues 	Presenting Greeting Ladies and gentlemen, thank you very much for coming today Good morning ... Good afternoon Ladies and Gentlemen Good afternoon ladies and gentlemen, Thank you for finding the time to come and join me for this presentation this afternoon Introducing the talk I'd like to talk about ...	agricultural chemical container contaminant dosage dose) entire exposure harm overdose pain poison principle relieve safety supply	Pitch Pitch is the rise and fall of our voice when we speak. Pitch is usually described as a sound's highness or lowness. The use of pitch is called intonation, and it gives subtle meaning to our sentences beyond what the words themselves can convey. Pitch and intonation are	Infinitives Infinitives are defined as to + base form of the verb. They have several functions. 1. Used as subjects and subject complements. <i>To know</i> me is to <i>love</i> me. <i>To live</i> in Hawaii is my lifetime dream. 2. Used as objects following certain verbs. I wanted <i>to tell</i> you how much I appreciated your gift.	Pre-task 1. Introducing the topic through a picture by answering questions based on the picture 2. Introducing the topic through brainstorming 3. Finding the meaning or equivalents of words that will be found in the next task

		<p>I'm going to discuss ... I want to tell you about ... What I'd like to do is to explain to you ... What I'm going to do is to describe ... The purpose of today's presentation is to discuss I've invited you here today to have a look at my findings.</p> <p>Ordering points (Time order)</p> <p>To begin with ... At the beginning, ... At the start, ... Second(ly), ... Next, ... Finally, ... At the end, ...</p> <p>Ordering points (Listing and adding)</p> <p>A second reason ... Another point ... Also ... Other factors ... In addition, ... Showing open to questions At the end I'd be happy to answer any of your questions... At the end, you can ask questions...</p>	toxicology	<p>often terms used interchangeably.</p> <p>Pitch is directly related to word and syllable stress. Remember, content words (the words that give us the picture of what is happening) are stressed more during speech than function words (the grammatical words of the sentence). With pitch, one or more of the stressed content words of our speech will have a more dramatic rise of pitch than the other content words, and that pitch change falls mostly on the stressed syllable of that content word. How often we choose to change the pitch of our sentence depends on a number of variables.</p> <p>English speakers audibly mark words with a higher pitch</p>	<p>He hesitated <i>to ask</i> the embarrassing question. 3. Used as a shortened form of in order to. You must take this medicine (in order) <i>to get</i> well. I went to the bank <i>to cash</i> a check.</p> <p>Infinitives can sometimes take objects of their own.</p> <p>We hope <i>to find the person</i> who did this. I was asked <i>to make a dessert</i> for the potluck dinner.</p> <p>These verbs are commonly followed by infinitives: afford agree appear arrange ask attempt beg begin care choose claim consent decide demand</p>	<p>Task cycle</p> <p>a. Task</p> <p>4. Listening to a dialogue and fill the missing information with correct words or phrases</p> <p>5. Listening to a dialogue about how to open a presentation then answer W?H questions</p> <p>6. Studying a dialogue about Tim, answering the multiple choice questions</p> <p>7. Identified Tim's expression used in the presentation</p> <p>8. Listening to a monologue and answer the missing information with correct words or phrases</p> <p>f. Planning</p> <p>9. Studying the explanation about the expressions used in</p>
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		<p>Starting a new section Moving on to ... Turning to ... I'd like to move on ... I'd like to turning on ... I'd like to talk about ... I want to have a look at...</p> <p>Transition Let us now move on to So these were our mothod. What about the result?</p> <p>Contrasting But However On the other hand Referring to visual aids The slide (graph, chart) shows Here you can see Here are If you have a look at this first graph... As you can see... If you look at this slide...</p> <p>Signposting A good illustration of the... A good example of this is... Now let's look at...</p> <p>Giving an example For example Such as Here is an example</p>		<p>for many reasons, including:</p> <ol style="list-style-type: none"> 1. to make a simple statement (neutral statement) 2. to contrast or clarify information 3. to give new information 4. to show emphasis to ask questions 	<p>deserve desire expect fail forget go happen hate hesitate hope intend know how learn like love manage mean need neglect offer plan prefer prepare pretend promise refuse regret remember seem start stop struggle swear tend threaten try</p>	<p>presenting 10. Completing a dialogue by arranging the expressions 11. Listening to a dialogue between Tim and Carrie and indentified the expressions g. Report Acting out the dialogue in Task 7</p> <p>Language focus h. Analysis: 12. Listening to a monologue and answering W/H questions to check the comprehension i. Studying the explanation about <i>infinitives</i> 13. Practice: Making a dialogue based on provided situations and acting out the dialogue</p>
--	--	--	--	---	---	--

			<p>Let me give you an example</p> <p>Emphasising</p> <p>In fact</p> <p>Actually,</p> <p>I'd like to underline</p> <p>It's important to bear in mind</p> <p>Concluding a section</p> <p>So,</p> <p>Concluding the talk</p> <p>Finally,</p> <p>I'd like to finish by saying</p> <p>I'd like to conclude now with a few remarks about</p>			<p>volunteer</p> <p>wait</p> <p>want</p> <p>wish</p>	
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APPENDIX C
EXPERT JUDGEMENT QUESTIONNAIRE

LEMBAR EVALUASI MATERI BAHASA INGGRIS

UNIT 1: What Does A Comet Look Like?

(untuk ahli Materi)

Pengantar

Kuesioner ini merupakan instrument penilaian terhadap materi pembelajaran Speaking Club Bahasa Inggris untuk semester 4 kelas internasional Science Universitas Negeri Yogyakarta. Saya sangat mengharapkan kesediaan dan partisipasi Bapak/Ibu untuk mengisi kuesioner ini sebagai masukan atas materi yang dikembangkan. Atas kesediaan dan partisipasinya, saya sampaikan banyak terimakasih.

Petunjuk Pengisian

Berikut ini adalah butir-butir pertanyaan yang berkaitan dengan materi Bahasa Inggris yang telah dikembangkan. Bapak/Ibu dipersilahkan untuk memberikan tanda centang (✓) pada salah satu kolom SS, S, TS, TT atau STS pada tiap pertanyaan yang ada pada table. Mohon ditulis saran perbaikan pada ruang yang telah disediakan.

Keterangan:

SS	= Sangat Setuju	S	= Setuju
TS	= Tidak Setuju	STS	= Sangat Setuju

1. KOMPONEN KELAYAKAN ISI

No.	Pernyataan	STS	TS	S	SS
1.	Materi yang dikembangkan sesuai dengan kebutuhan berbicara dalam Bahasa Inggris mahasiswa dalam bidang science.				
2.	Materi (teks, table, gambar, lampiran, dll) yang disusun relevan dengan topik yang dibahas.				
3.	Materi (teks, table, gambar, lampiran, dll) diambil dari sumber-sumber terbaru tentang topik yang dibahas.				
4.	Materi yang disusun mengarahkan mahasiswa untuk memahami fitur linguistik dari teks yang dibahas.				
5.	Materi yang disusun memuat berbagai teks yang sesuai dengan kebutuhan belajar mahasiswa.				
6.	Materi yang disusun memuat berbagai fungsi bahasa yang sesuai dengan kebutuhan belajar mahasiswa.				
7.	Materi yang disusun mengandung pengetahuan <i>science</i> .				

2. KELAYAKAN PENYAJIAN

No.	Pernyataan	STS	TS	TT	S	SS
8.	Kegiatan pembelajaran (task) yang disusun mendukung mahasiswa untuk berkomunikasi secara lisan.					
9.	Kegiatan pembelajaran (task) yang disusun mendukung mahasiswa untuk belajar mandiri maupun berkelompok.					
10.	Kegiatan pembelajaran (task) yang disusun mendukung mahasiswa untuk berpikir dan bertindak secara kreatif.					
11.	Kegiatan pembelajaran (<i>task</i>) disusun secara sistematis, menyajikan bagian pembuka, kegiatan inti, evaluasi, refleksi dan rangkuman secara konsisten pada setiap unit.					

12.	Materi yang disusun dilengkapi dengan kosa kata yang sesuai dengan materi yang dibahas.					
13.	Materi yang disusun dilengkapi dengan istilah-istilah asing yang sesuai dengan materi yang dibahas.					
14.	Kegiatan pembelajaran (task) disusun secara teratur dan sistemis, berurutan dari yang paling mudah ke yang paling sulit.					
15.	Kegiatan pembelajaran (task) yang disusun memiliki keseimbangan antar unit.					

3. KELAYAKAN BAHASA

No.	Pernyataan	STS	TS	TT	S	SS
16.	Bahasa yang digunakan untuk memberi instruksi mudah dipahami oleh mahasiswa.					
17.	Bahasa yang digunakan sesuai dengan perkembangan kognitif mahasiswa.					
18.	Bahasa Inggris yang digunakan sesuai dengan kaidah gramatikal yang benar.					
19.	Materi yang disajikan memiliki keterkaitan dengan materi selanjutnya.					
20.	Bahasa Inggris yang digunakan memiliki ketepatan dalam pemilihan kata (word choice).					
21.	Bahasa Inggris yang digunakan menganut prinsip ejaan yang benar (spelling).					

4. KEGRAFIKAN

No.	Pernyataan	STS	TS	TT	S	SS
22.	Pemilihan ukuran font dalam penyajian materi tidak terlalu besar/terlalu kecil.					
23.	Penggunaan font dalam penyajian materi tidak berlebihan.					
24.	Penyajian gambar bersifat estetis dan fungsional.					
25.	Pemilihan warna dalam penyajian materi tidak mengganggu penyampaian materi.					

1. Apa tanggapan Bapak/Ibu secara umum mengenai Unit 1 pada materi yang saya kembangkan ini?

2. Menurut Bapak/Ibu apakah kekurangan dari materi Unit 1 yang saya kembangkan ini?

3. Apakah saran Bapak/Ibu apakah bagi Unit 1 ini?

REKOMENDASI

Mengacu pada hasil penilaian di atas, maka dengan ini Unit 1 dinyatakan:

☐

Layak tanpa revisi

☐

Tidak layak

☐

Layak dengan revisi sebagai berikut:

Yogyakarta, Maret 2014

Evaluator Materi,

LEMBAR EVALUASI MATERI BAHASA INGGRIS

UNIT 2: Can You Tell Me About Theory of Relativity?

(untuk ahli Materi)

Pengantar

Kuesioner ini merupakan instrument penilaian terhadap materi pembelajaran Speaking Club Bahasa Inggris untuk semester 4 kelas internasional Science Universitas Negeri Yogyakarta. Saya sangat mengharapkan kesediaan dan partisipasi Bapak/Ibu untuk mengisi kuesioner ini sebagai masukan atas materi yang dikembangkan. Atas kesediaan dan partisipasinya, saya sampaikan banyak terimakasih.

Petunjuk Pengisian

Berikut ini adalah butir-butir pertanyaan yang berkaitan dengan materi Bahasa Inggris yang telah dikembangkan. Bapak/Ibu dipersilahkan untuk memberikan tanda centang (✓) pada salah satu kolom SS, S, TS, TT atau STS pada tiap pertanyaan yang ada pada table. Mohon ditulis saran perbaikan pada ruang yang telah disediakan.

Keterangan:

SS	= Sangat Setuju	S	= Setuju
		TT	= Tidak Tahu
TS	= Tidak Setuju	STS	= Sangat Setuju

1. KOMPONEN KELAYAKAN ISI

No.	Pernyataan	STS	TS	TT	S	SS
1.	Materi yang dikembangkan sesuai dengan kebutuhan berbicara dalam Bahasa Inggris mahasiswa dalam bidang science.					
2.	Materi (teks, table, gambar, lampiran, dll) yang disusun relevan dengan topik yang dibahas.					
3.	Materi (teks, table, gambar, lampiran, dll) diambil dari sumber-sumber terbaru tentang topik yang dibahas.					
4.	Materi yang disusun mengarahkan mahasiswa untuk memahami fitur linguistik dari teks yang dibahas.					
5.	Materi yang disusun memuat berbagai teks yang sesuai dengan kebutuhan belajar mahasiswa.					
6.	Materi yang disusun memuat berbagai fungsi bahasa yang sesuai dengan kebutuhan belajar mahasiswa.					
7.	Materi yang disusun mengandung pengetahuan <i>science</i> .					

2. KELAYAKAN PENYAJIAN

No.	Pernyataan	STS	TS	TT	S	SS
8.	Kegiatan pembelajaran (task) yang disusun mendukung mahasiswa untuk berkomunikasi secara lisan.					
9.	Kegiatan pembelajaran (task) yang disusun mendukung mahasiswa untuk belajar mandiri maupun berkelompok.					
10.	Kegiatan pembelajaran (task) yang disusun mendukung					

	mahasiswa untuk berpikir dan bertindak secara kreatif.					
11.	Kegiatan pembelajaran (<i>task</i>) disusun secara sistematis, menyajikan bagian pembuka, kegiatan inti, evaluasi, refleksi dan rangkuman secara konsisten pada setiap unit.					
12.	Materi yang disusun dilengkapi dengan kosa kata yang sesuai dengan materi yang dibahas.					
13.	Materi yang disusun dilengkapi dengan istilah-istilah asing yang sesuai dengan materi yang dibahas.					
14.	Kegiatan pembelajaran (<i>task</i>) disusun secara teratur dan sistematis, berurutan dari yang paling mudah ke yang paling sulit.					
15.	Kegiatan pembelajaran (<i>task</i>) yang disusun memiliki keseimbangan antar unit.					

3. KELAYAKAN BAHASA

No.	Pernyataan	STS	TS	TT	S	SS
16.	Bahasa yang digunakan untuk memberi instruksi mudah dipahami oleh mahasiswa.					
17.	Bahasa yang digunakan sesuai dengan perkembangan kognitif mahasiswa.					
18.	Bahasa Inggris yang digunakan sesuai dengan kaidah gramatikal yang benar.					
19.	Materi yang disajikan memiliki keterkaitan dengan materi selanjutnya.					
20.	Bahasa Inggris yang digunakan memiliki ketepatan dalam pemilihan kata (<i>word choice</i>).					
21.	Bahasa Inggris yang digunakan menganut prinsip ejaan yang benar (<i>spelling</i>).					

4. KEGRAFIKAN

No.	Pernyataan	STS	TS	TT	S	SS
22.	Pemilihan ukuran font dalam penyajian materi tidak terlalu besar/terlalu kecil.					
23.	Penggunaan font dalam penyajian materi tidak berlebihan.					
24.	Penyajian gambar bersifat estetis dan fungsional.					
25.	Pemilihan warna dalam penyajian materi tidak mengganggu penyampaian materi.					

1. Apa tanggapan Bapak/Ibu secara umum mengenai Unit 2 pada materi yang saya kembangkan ini?

2. Menurut Bapak/Ibu apakah kekurangan dari materi Unit 2 yang saya kembangkan ini?

3. Apakah saran Bapak/Ibu apakah bagi Unit 2 ini?

REKOMENDASI

Mengacu pada hasil penilaian di atas, maka dengan ini Unit 2 dinyatakan:

☐

Layak tanpa revisi

☐

Tidak layak

☐

Layak dengan revisi sebagai berikut:

Yogyakarta, Maret 2014

Evaluator Materi,

LEMBAR EVALUASI MATERI BAHASA INGGRIS

UNIT 3: I'll Be Talking About Chemistry in Our Daily Lives (untuk ahli Materi)

Pengantar

Kuesioner ini merupakan instrument penilaian terhadap materi pembelajaran Speaking Club Bahasa Inggris untuk semester 4 kelas internasional Science Universitas Negeri Yogyakarta. Saya sangat mengharapkan kesediaan dan partisipasi Bapak/Ibu untuk mengisi kuesioner ini sebagai masukan atas materi yang dikembangkan. Atas kesediaan dan partisipasinya, saya sampaikan banyak terimakasih.

Petunjuk Pengisian

Berikut ini adalah butir-butir pertanyaan yang berkaitan dengan materi Bahasa Inggris yang telah dikembangkan. Bapak/Ibu dipersilahkan untuk memberikan tanda centang (✓) pada salah satu kolom SS, S, TS, TT atau STS pada tiap pertanyaan yang ada pada table. Mohon ditulis saran perbaikan pada ruang yang telah disediakan.

Keterangan:

SS	= Sangat Setuju	S	= Setuju
	TT	= Tidak Tahu	
TS	= Tidak Setuju	STS	= Sangat Setuju

1. KOMPONEN KELAYAKAN ISI

No.	Pernyataan	STS	TS	TT	S	SS
1.	Materi yang dikembangkan sesuai dengan kebutuhan berbicara dalam Bahasa Inggris mahasiswa dalam bidang science.					
2.	Materi (teks, table, gambar, lampiran, dll) yang disusun relevan dengan topik yang dibahas.					
3.	Materi (teks, table, gambar, lampiran, dll) diambil dari sumber-sumber terbaru tentang topik yang dibahas.					
4.	Materi yang disusun mengarahkan mahasiswa untuk memahami fitur linguistik dari teks yang dibahas.					
5.	Materi yang disusun memuat berbagai teks yang sesuai dengan kebutuhan belajar mahasiswa.					
6.	Materi yang disusun memuat berbagai fungsi bahasa yang sesuai dengan kebutuhan belajar mahasiswa.					
7.	Materi yang disusun mengandung pengetahuan <i>science</i> .					

2. KELAYAKAN PENYAJIAN

No.	Pernyataan	STS	TS	TT	S	SS
8.	Kegiatan pembelajaran (task) yang disusun mendukung mahasiswa untuk berkomunikasi secara lisan.					
9.	Kegiatan pembelajaran (task) yang disusun mendukung mahasiswa untuk belajar mandiri maupun berkelompok.					
10.	Kegiatan pembelajaran (task) yang disusun mendukung mahasiswa untuk berpikir dan bertindak secara kreatif.					
11.	Kegiatan pembelajaran (<i>task</i>) disusun secara sistematis, menyajikan bagian pembuka, kegiatan inti, evaluasi, refleksi dan rangkuman secara konsisten pada setiap unit.					

12.	Materi yang disusun dilengkapi dengan kosa kata yang sesuai dengan materi yang dibahas.					
13.	Materi yang disusun dilengkapi dengan istilah-istilah asing yang sesuai dengan materi yang dibahas.					
14.	Kegiatan pembelajaran (task) disusun secara teratur dan sistemis, berurutan dari yang paling mudah ke yang paling sulit.					
15.	Kegiatan pembelajaran (task) yang disusun memiliki keseimbangan antar unit.					

3. KELAYAKAN BAHASA

No.	Pernyataan	STS	TS	TT	S	SS
16.	Bahasa yang digunakan untuk memberi instruksi mudah dipahami oleh mahasiswa.					
17.	Bahasa yang digunakan sesuai dengan perkembangan kognitif mahasiswa.					
18.	Bahasa Inggris yang digunakan sesuai dengan kaidah gramatikal yang benar.					
19.	Materi yang disajikan memiliki keterkaitan dengan materi selanjutnya.					
20.	Bahasa Inggris yang digunakan memiliki ketepatan dalam pemilihan kata (word choice).					
21.	Bahasa Inggris yang digunakan menganut prinsip ejaan yang benar (spelling).					

4. KEGRAFIKAN

No.	Pernyataan	STS	TS	TT	S	SS
22.	Pemilihan ukuran font dalam penyajian materi tidak terlalu besar/terlalu kecil.					
23.	Penggunaan font dalam penyajian materi tidak berlebihan.					
24.	Penyajian gambar bersifat estetis dan fungsional.					
25.	Pemilihan warna dalam penyajian materi tidak mengganggu penyampaian materi.					

1. Apa tanggapan Bapak/Ibu secara umum mengenai Unit 3 pada materi yang saya kembangkan ini?

2. Menurut Bapak/Ibu apakah kekurangan dari materi Unit 3 yang saya kembangkan ini?

3. Apakah saran Bapak/Ibu apakah bagi Unit 3 ini?

REKOMENDASI

Mengacu pada hasil penilaian di atas, maka dengan ini Unit 3 dinyatakan:

☐

Layak tanpa revisi

☐

Tidak layak

☐

Layak dengan revisi sebagai berikut:

Yogyakarta, Maret 2014

Evaluator Materi,

LEMBAR EVALUASI MATERI BAHASA INGGRIS

UNIT 4: Today, We're Going to Discuss Eyes Disorder. (untuk ahli Materi)

Pengantar

Kuesioner ini merupakan instrument penilaian terhadap materi pembelajaran Speaking Club Bahasa Inggris untuk semester 4 kelas internasional Science Universitas Negeri Yogyakarta. Saya sangat mengharapkan kesediaan dan partisipasi Bapak/Ibu untuk mengisi kuestioner ini sebagai masukan atas materi yang dikembangkan. Atas kesediaan dan partisipasinya, saya sampaikan banyak terimakasih.

Petunjuk Pengisian

Berikut ini adalah butir-butir pertanyaan yang berkaitan dengan materi Bahasa Inggris yang telah dikembangkan. Bapak/Ibu dipersilahkan untuk memberikan tanda centang (✓) pada salah satu kolom SS, S, TS, TT atau STS pada tiap pertanyaan yang ada pada table. Mohon ditulis saran perbaikan pada ruang yang telah disediakan.

Keterangan:

SS	= Sangat Setuju	S	= Setuju
		TT	= Tidak Tahu
TS	= Tidak Setuju	STS	= Sangat Setuju

1. KOMPONEN KELAYAKAN ISI

No.	Pernyataan	STS	TS	TT	S	SS
1.	Materi yang dikembangkan sesuai dengan kebutuhan berbicara dalam Bahasa Inggris mahasiswa dalam bidang science.					
2.	Materi (teks, table, gambar, lampiran, dll) yang disusun relevan dengan topik yang dibahas.					
3.	Materi (teks, table, gambar, lampiran, dll) diambil dari sumber-sumber terbaru tentang topik yang dibahas.					
4.	Materi yang disusun mengarahkan mahasiswa untuk memahami fitur linguistik dari teks yang dibahas.					
5.	Materi yang disusun memuat berbagai teks yang sesuai dengan kebutuhan belajar mahasiswa.					
6.	Materi yang disusun memuat berbagai fungsi bahasa yang sesuai dengan kebutuhan belajar mahasiswa.					
7.	Materi yang disusun mengandung pengetahuan <i>science</i> .					

2. KELAYAKAN PENYAJIAN

No.	Pernyataan	STS	TS	TT	S	SS
8.	Kegiatan pembelajaran (task) yang disusun mendukung mahasiswa untuk berkomunikasi secara lisan.					
9.	Kegiatan pembelajaran (task) yang disusun mendukung mahasiswa untuk belajar mandiri maupun berkelompok.					
10.	Kegiatan pembelajaran (task) yang disusun mendukung					

	mahasiswa untuk berpikir dan bertindak secara kreatif.					
11.	Kegiatan pembelajaran (<i>task</i>) disusun secara sistematis, menyajikan bagian pembuka, kegiatan inti, evaluasi, refleksi dan rangkuman secara konsisten pada setiap unit.					
12.	Materi yang disusun dilengkapi dengan kosa kata yang sesuai dengan materi yang dibahas.					
13.	Materi yang disusun dilengkapi dengan istilah-istilah asing yang sesuai dengan materi yang dibahas.					
14.	Kegiatan pembelajaran (<i>task</i>) disusun secara teratur dan sistemis, berurutan dari yang paling mudah ke yang paling sulit.					
15.	Kegiatan pembelajaran (<i>task</i>) yang disusun memiliki keseimbangan antar unit.					

3. KELAYAKAN BAHASA

No.	Pernyataan	STS	TS	TT	S	SS
16.	Bahasa yang digunakan untuk memberi instruksi mudah dipahami oleh mahasiswa.					
17.	Bahasa yang digunakan sesuai dengan perkembangan kognitif mahasiswa.					
18.	Bahasa Inggris yang digunakan sesuai dengan kaidah gramatikal yang benar.					
19.	Materi yang disajikan memiliki keretautan dengan materi selanjutnya.					
20.	Bahasa Inggris yang digunakan memiliki ketepatan dalam pemilihan kata (<i>word choice</i>).					
21.	Bahasa Inggris yang digunakan menganut prinsip ejaan yang benar (<i>spelling</i>).					

4. KEGRAFIKAN

No.	Pernyataan	STS	TS	TT	S	SS
22.	Pemilihan ukuran font dalam penyajian materi tidak terlalu besar/terlalu kecil.					
23.	Penggunaan font dalam penyajian materi tidak berlebihan.					
24.	Penyajian gambar bersifat estetis dan fungsional.					
25.	Pemilihan warna dalam penyajian materi tidak mengganggu penyampaian materi.					

1. Apa tanggapan Bapak/Ibu secara umum mengenai Unit 4 pada materi yang saya kembangkan ini?

2. Menurut Bapak/Ibu apakah kekurangan dari materi Unit 4 yang saya kembangkan ini?

3. Apakah saran Bapak/Ibu apakah bagi Unit 4 ini?

REKOMENDASI

Mengacu pada hasil penilaian di atas, maka dengan ini Unit 4 dinyatakan:

☐

Layak tanpa revisi

☐

Tidak layak

☐

Layak dengan revisi sebagai berikut:

Yogyakarta, Maret 2014

Evaluator Materi,

APPENDIX D

DESCRIPTIONS OF THE FIRST DRAFT OF MATERIALS

The Description of the First Draft of Unit 1

Title: WHAT DOES A COMET LOOK LIKE?	
The title is taken from one of the expressions used in the dialog and explained in the unit. It is also related to the topic of the unit.	
LET'S START	
Tasks	Descriptions
Task 1	<p>Instruction: Study the picture below and answer the questions orally.</p> <p>Description: Task 1 is designed to introduce the topic of the unit. The task consists of a picture; the students are expected to answer W/H questions about the picture from their previous knowledge.</p>
LET'S PRACTICE	
Task 2	<p>Instruction: Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.</p> <p>Description: This task leads the students to have background language that will be used in the unit.</p>
Task 3	<p>Instruction: In this part, you are going to listen to a monologue about Comets. Listen to it and take notes for important information. Then, answer the questions below by putting T if the answer is true, F if the answer is false and NC if the answer is not clear and state your reason. Then, discuss your answers with your friends.</p> <p>Description: This task provides a context of monologue about comets. Students are asked to listen to the monolog and then they have to put F or T or NC in the statements provided and state their reasons.</p>
Task 4	<p>Instruction: In this part, you are going to listen to a monologue about Asteroids. Listen to it and complete the following sentences with appropriate words or phrases. Then, check your comprehension by answering questions orally.</p> <p>Description: This task provides a context of monologue about asteroids. Students are asked to listen to the monolog about asteroids, identified missing information of a picture and then answering</p>

	w/h questions to check their comprehension.
Task 5	<p>Instruction: Work in pairs. Act out the dialogue, each of you acts as Megan and Matthew. Then, check your comprehension by answering the questions orally.</p> <p>Description: This task provides a context of dialogues about asteroids and comets. Students are asked to act out the dialogues and answer w/h questions to check their comprehension.</p>
Task 6	<p>Instruction: Work in pairs. One of you asks questions about space objects in box A and the other answers the questions using descriptions in box B.</p> <p>Description: This task provides names of space objects and their description. Students are to ask space objects descriptions to their partner.</p>
Task 7	<p>Instruction: Still with your partner, each person chooses a picture. Identify the shape, color and size of the object. Then, describe the object to your partner.</p> <p>Description: This task leads the students to have knowledge of terminology related to asteroids and comets and their descriptions. This task provides pictures of space objects. Students are expected to identify its appearance and describe it to their partner.</p>
LET'S STUDY	
Task 8	<p>Instruction: Practice the expressions below.</p> <p>Description: In this task students are given list of expressions used for describing things.</p>
Task 9	<p>Instruction: Study the explanation below and practice pronouncing words with silent letters.</p> <p>Description: This task provides explanation about silent letters.</p>
Task 10	<p>Instruction: Have a discussion with your tutors and friends about articles the, a and an.</p> <p>Description: This task facilitates students to have a discussion about articles the, a and an.</p>

LET'S GET MORE PRACTICE	
Task 11	<p>Instruction: Here's a picture of a meteor. Describe the picture to your partner according to information in the box.</p> <p>Description: This task provides information about meteors. Students are expected to use the information for describing meteors to their partner.</p>
Task 12	<p>Instruction: Still with your partner, choose a picture below, describe them in front of your friends</p> <p>Description: This task provides pictures of space objects. Students are expected describe one of them with their partner.</p>
FUN SPOT	<p>Instruction: Listen to a song called Space Debris. Listen to it carefully and complete the missing lyrics then sing it together with your class</p> <p>Description: In this part, students are given the opportunity to listen to a song entitled Space Debris. While listening to the songs, students are asked to complete the missing lyrics and then sing it together with their friends; this activity is expected to motivate the students in learning English.</p>
LET'S REFLECT	<p>Description: This part provides statements for students to answer as a reflection for what they have learnt in this unit.</p>
LET'S SUMMARIZE	<p>Description: This part provides a summary of what students have learnt in this unit.</p>
VOCABULARY LIST	<p>Description: This part provides the vocabularies that the students have found in the unit. The vocabularies features with parts of speech, phonetic transcriptions, and their Indonesian versions.</p>

The Description of the First Draft of Unit 2

Title: Could You Explain The Theory of Relativity?	
The title is taken from one of the expressions used in the dialog and explained in the unit. It is also related to the topic of the unit.	
LET'S START	
Tasks	Descriptions

Task 1	<p>Instruction: Below are some pictures of scientific theory and law, choose and study one of them with your partners and answer the following questions.</p> <p>Description: This task leads the students to have background knowledge about the scope of the unit topics. By choosing a picture and answering the following questions with partners, students are expected to have view about what they will learn.</p>
LET'S PRACTICE	
Task 2	<p>Instruction: Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.</p> <p>Description: This task leads the students to have background language that will be used in the unit</p>
Task 3	<p>Instruction: In this part, you are going to listen to a monologue about the theory of relativity . Listen to it and take notes for important information. Then, answer the questions below by putting T if the answer is true, F if the answer is false and NC if the answer is not clear and state your reason. Then, discuss your answers with your friends.</p> <p>Description: This task provides a context of monologue about theory of relativity. Students are asked to listen to the monolog and then they have to put F or T or NC in the statements provided and state their reasons.</p>
Task 4	<p>Instruction: Now listen to a monologue about gravity law and answer the following questions orally.</p> <p>Description: This task provides a context of monologue about one of the scientific law i.e. gravity law. Students are asked to listen to the monologue and answer comprehending questions related to the monologue.</p>
Task 5	<p>Instruction: Study the dialogue below. Answer the following questions orally and then act out the dialogue with your partner.</p> <p>Description: This task provides a context of dialogue about one of the</p>

	scientific theories i.e constructal theory. Students are asked to act out the dialogues and answer comprehending questions related to the dialogue.
LET'S STUDY	
Task 6	<p>Instruction: Practice following expressions.</p> <p>Description: In this task students are given list of expressions used for asking for and giving explanation.</p>
Task 7	<p>Instruction: Study the explanation and answer do following instructions</p> <p>Description: This task facilitates students to have a discussion about Scientific Laws, Theories and Hypotheses</p>
Task 8	<p>Instruction: Study the following explanation and practice the examples.</p> <p>Description: This task provides an explanation about linking in English. Students are expected to study the explanation and practice examples of linking in English.</p>
Task 9	<p>Instruction: Now let's try pronouncing the words.</p> <p>Description: This task provides list of English phrases. Students are expected to be able pronouncing the phrases correctly.</p>
Task 10	<p>Instruction: Study the following dialogue, and then act it out with your partner.</p> <p>Description: This task provides context of dialogue about Einstein and his theory of relativity. Students are asked to study the dialogue, act it out with their partners and answer following questions to check their comprehension.</p>
LET'S GET MORE PRACTICE	
Task 11	<p>Instruction: Work in pairs. Each person chooses a scientist picture, and then explains the scientist's theory/law orally to your partner. You may use the box beside the picture to elaborate your points.</p> <p>Description: In this task students are asked to explain a scientific theory/law discussed in the previous tasks. Pictures of examples of scientific theories are provided to help the students.</p>

Task 12	<p>Instruction: Have a discussion with your tutors and friends about prepositions.</p> <p>Description: In this task facilitated students to have a discussion about prepositions.</p>
Task 13	<p>Instruction: Work in partner. Choose one situational card, make a dialogue based on the information provided in the box and then act it out in front of your classmates.</p> <p>Description: This task provides context of information about theory of parallel universes and law of gravity. Students work in pairs and are to choose one card and explain the theory/law in a form of a dialogue.</p>
Task 14	<p>Instruction: In this task you have to choose one of the situations, make a dialogue with your partner and then act it out in front of your classmates.</p> <p>Description: This task provides context of situational cards. Students are to choose one cards and make the dialogue based on it.</p>
Fun Spot	<p>Instruction: Listen to a song entitled History of Everything. Listen to the song carefully and complete the missing lyrics and then sing it together with your partner.</p> <p>Description: In this part, students are given the opportunity to listen to a famous song from a popular American TV show, “The Big Bang Theory”. While listening to the songs, students are asked to complete the missing lyrics and then sing it together with their friends, this activity is expected to motivates the students in learning English.</p>
LET’S REFLECT	<p>Description: This part provides statements for students to answer as a reflection for what they have learnt in this unit.</p>
LET’S SUMMARIZE	<p>Description: This part provides a summary of what students have learnt in this unit.</p>
VOCABULARY LIST	<p>Description: This part provides the vocabularies that the students have found in the unit. The vocabularies features with parts of speech,</p>

	phonetic transcriptions, and their Indonesian versions.
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The Description of the First Draft of Unit 3

Title: Today, I'll Be Talking About Chemistry in Our Daily Lives	
The title is taken from topic of the unit.	
LET'S START	
Tasks	Descriptions
Task 1	<p>Instruction: Study the picture below and answer the questions orally.</p> <p>Description: Task 1 is designed to introduce the topic of the unit. The task consists of two pictures; the students are expected to answer W/H questions about the picture from their previous knowledge.</p>
LET'S PRACTICE	
Task 2	<p>Instruction: Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.</p> <p>Description: This task leads the students to have background language that will be used in the unit.</p>
Task 3	<p>Instruction: In this part you will listen how Carl opens his presentation and answer the following questions orally.</p> <p>Description: This task provides the context on how to open a presentation, and then they are expected to answer following questions.</p>
Task 4	<p>Instruction: In this part you will listen again on how Carl opens his presentation, and then identified the expressions used and act out the expressions.</p> <p>Description: This task provides table for students to identify expressions in opening presentation based on the audio in the previous task.</p>
Task 5	<p>Instruction: Here are Carl's presentation scripts about Basic Food Toxicology. Work in pairs. Each of you choose a script, and</p>

	<p>then complete a monologue with correct words or phrases by asking to your partner. Then, act out the monologue with your partner.</p> <p>Description: This task provides a context of monologue about giving a presentation. Students are asked to complete the missing sentences with correct words or phrases by asking to their partners.</p>
Task 6	<p>Instruction: Study Carl's presentation and answer the following questions below orally.</p> <p>Description: This task leads the students to check their comprehension about texts in the previous task.</p>
LET'S STUDY	
Task 7	<p>Instruction: Study the following explanation and practice the expressions.</p> <p>Description: This task provides expressions used in presentations</p>
Task 8	<p>Instruction: Study Amanda's presentation script about food safety. Answer the following question orally and then act out the monologue with your partner.</p> <p>Description: This task provides the students dialogue monologue about food safety. Students are expected to answer questions and act out the monologue with their partner.</p>
Task 9	<p>Instruction: Work in pairs. Identify the expressions used in Amanda's presentation and discuss their functions. An example is provided below.</p> <p>Description: In this task students are expected to indentify expressions used in the presentation in the previous task and their functions.</p>
Task 10	<p>Instruction: Study the following explanation and do following instructions.</p> <p>Description: This task facilitates students to have a discussion about infinitives</p>

Task 11	<p>Instruction: Study the following explanation and practice the examples.</p> <p>Description: This task provides explanation about pitch.</p>
Task 12	<p>Instruction: Practice the words below with the correct pitches (fall/rise).</p> <p>Description: This task provides sentences for students to practice pitches. Students are expected to pronounce the sentences in the correct pitches.</p>
LET'S GET MORE PRACTICE	
Task 13	<p>Instruction: Practice each part of presentation skills including the opening, the body presentation, question and answer section and the closing. The topic of the presentation must relate to food or chemistry (You may look at the previous presentations). An outline is provided to help you.</p> <p>Description: This task provides outline of a presentation. Students are expected to develop a presentation script about food or chemistry and then present it to their friends.</p>
Task 14	<p>Instruction:</p> <ol style="list-style-type: none"> 1. Work in pairs. 2. Choose a topic to present (up to you). 3. Plan and develop the presentation for the topic. 4. Present your topic in front of your friends <p>Description: This task provides outline of a presentation. Students are expected to develop a presentation script about any topic and then present it to their friends.</p>
LET'S REFLECT	<p>Description: This part provides statements for students to answer as a reflection for what they have learnt in this unit.</p>
LET'S SUMMARIZE	<p>Description: This part provides a summary of what students have learnt in this unit.</p>
VOCABULARY LIST	<p>Description: This part provides the vocabularies that the students have found in the unit. The vocabulary features with parts of speech, phonetic transcriptions, and their Indonesian versions.</p>

The Description of the First Draft of Unit 4

Title: Today, We're Going to Discuss Eyes Disorder	
The title is taken from topic of the unit.	
LET'S START	
Tasks	Descriptions
Task 1	<p>Instruction: Study the picture below and answer the questions orally.</p> <p>Description: Task 1 is designed to introduce the topic of the unit. The task consists of two pictures; the students are expected to answer W/H questions about the picture from their previous knowledge.</p>
LET'S PRACTICE	
Task 2	<p>Instruction: Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.</p> <p>Description: This task leads the students to have background language that will be used in the unit.</p>
Task 3	<p>Instruction: In this part, you are going to listen to a discussion about HIV/AIDS. Listen to it and take notes for important information. Then, with your partner, answer the questions below by putting T if the answer is true, F if the answer is false and NC if the answer is not clear. Then, discuss your answers with your friends.</p> <p>Description: This task provides a context of monologue about comets. Students are asked to listen to the monolog and then they have to put F or T or NC in the statements provided and state their reasons.</p>
Task 4	<p>Instruction: Listen to the discussion one more time and answer the following questions with orally.</p> <p>Description: In this task students are expected to check their comprehension about the text in the previous task.</p>
Task 5	<p>Instruction: Study the discussion between John Baker (A), Dr. Laura D. Cook (B) and Dr. Billy Johnson (C). Make a group of</p>

	<p>three, and then act out the discussion. One of you acts as the moderator (John Baker) and the other two act as the speaker (Dr. Laura Cook and Dr. Billy Johnson). Then, to check your comprehension, answer the following questions.</p> <p>Description: This task provides a context of discussion about eyes disorder. Students are asked to act out the dialogues with their friends and then answers questions to check their comprehension about texts in the previous task.</p>
Task 6	<p>Instruction: Work in pairs. From the discussion in Task 5, discuss expressions used by the moderator and the speakers and their functions. Take a look at an example below.</p> <p>Description: This task provides students opportunity to identify expressions used in Task 5 and discuss their functions with friends.</p>
Task 7	<p>Instruction: During a discussion, you may find someone who interrupts. Make a group of three, each of you acts as Sarah (A), Alex (B), and John (C) Study the dialogues, the expressions and their functions. Then, act it out with your partner.</p> <p>Description: This task provides a context of discussion. Students are asked to act out the dialogues with their friends and study the expressions in the discussion.</p>
Task 8	<p>Instruction: From the dialogue in Task 5, there are some expressions used often during a discussion. Practice the following expressions.</p> <p>Description: In this task students are expected to know the expressions to interrupt in a discussion.</p>
Task 9	<p>Instruction: Work in small groups. One of you speaks for three minutes on a subject of your choice. The others must interrupt you as many times as possible, using the language from in the interruptions section (Task 6). After three minutes, another member of the group speaks, and the rest of the group interrupts him /her.</p> <p>Description:</p>

	This task facilitates students practice interrupting in a discussion.
LET'S STUDY	
Task 10	<p>Instruction: Practice the following expressions.</p> <p>Description: This task provides list of expressions used in a discussions.</p>
Task 11	<p>Instruction: Study the following monologues and act it out. Then, study the explanation about describing visual aids and numbers.</p> <p>Description: This task provides monologues for students about describing visual aids. Students are expected to study the expressions used in describing visual aids and numbers.</p>
Task 12	<p>Instruction: Have a discussion with your tutors and friends about gerunds.</p> <p>Description: This task provides students opportunity to have a discussion about gerunds.</p>
Task 13	<p>Instruction: Study the following explanation and practice the examples.</p> <p>Description: This task provides explanation about reduced form and its examples.</p>
LET'S GET MORE PRACTICE	
Task 14	<p>Instruction: Here's a dialogue about agreeing and disagreeing. Study the dialogues and act it out with your partner.</p> <p>Description: This task provides a context of discussion. Students are asked to act out the dialogues with their friends and study the expressions of agreeing and disagreeing in the discussion.</p>
Task 15	<p>Instruction: Here's is a discussion about diabetes. Work in pairs, and then act out the dialogues. Each of you acts as Roger Trump (A) and Clare Bradley (B).</p> <p>Description: This task provides a context of discussion. Students are asked to act out the dialogues with their friends.</p>
Task 16	<p>Instruction: Have a pair discussion. The topic can be range from</p>

	<p>HIV/AIDS, cataracts, diabetes or other diseases. Each of you serves as the moderator and the speaker. Make sure to use appropriate expressions. Use the box below to write your discussion script.</p> <p>Description: In this task students are expected to have a pair discussion with the topic of diseases using appropriate expressions.</p>
Task 17	<p>Instruction: In this part, you will have to make a group consist of four people. Each of you will serve as the moderator, and the speakers. Choose one of the most interesting topics below and start the discussion with your group in front of the class.</p> <p>Description: In this task students are expected to have a group discussion. Each has their own position in the discussion. Students can choose the topic of the discussion from situational cards provided.</p>
LET'S REFLECT	<p>Description: This part provides statements for students to answer as a reflection for what they have learnt in this unit.</p>
LET'S SUMMARIZE	<p>Description: This part provides a summary of what students have learnt in this unit.</p>
VOCABULARY LIST	<p>Description: This part provides the vocabularies that the students have found in the unit. The vocabulary features with parts of speech, phonetic transcriptions, and their Indonesian versions.</p>

APPENDIX E

FIRST DRAFT OF MATERIALS

English for Science

*English Speaking Materials for Tutorial Practices
for International Science Classes*



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My sincere appreciation also goes to my parents and my brothers for their love, support and encouragement throughout the development of this book. Thank you for helping me rise as high as I want and give me a great view of the world.

I would like to extend my thanks to friends of mine. Thank you for being such wonderful and caring friends.

Last but not least, I hope this book can give worthwhile contributions to help students of international science classes of Yogyakarta State University in developing their English speaking skills. Finally, critical comments and suggestions are highly appreciated.

Yogyakarta, February 2014

The Writer

PREFACE

English for Science: English Speaking Materials for Tutorial Practices of International Science Classes is designed based on the needs of students of international science classes of Faculty of Mathematics and Science of Yogyakarta State University (International Biology Education, International Physics Education, International Chemistry Education and International Science Education) to facilitate the students communicating in English according to the context of the language being used.

English for Science: English Speaking Materials for Tutorial Practices of International Science Classes is intended for intermediate students of international science classes to develop their speaking skill and access information from various fields of science. This book consists of 4 units and each unit is divided into sections. There are many activities available for the students to do individually or with other students. Students of international science classes are expected to be skillful when doing exercises, acting out dialogues, role playing and other activities that facilitate them to develop their English speaking skill.

Last but not least, the writer realizes that this book is not perfect, therefore constructive criticism and suggestions are very welcome.

Yogyakarta, February 2014

The Writer

COURSE OUTLINE

Institution : Center for Language Development of YSU

Course Title : English Speaking Tutorial for International Science Classes of
Faculty of Mathematics and Science, YSU

Course Description : As a language instruction used on international classes, English is the key in communication. It becomes the most important and essential skills that must be mastered in order to be better in sending and receiving information between students and students or students and lecturers. This course facilitates the needs of students of international classes in improving their speaking skills. This program aims to give students of international classes more opportunities to practice and improve their English speaking ability used in academic communication context. This course is held every week with total of sixteen meetings. The activities of the course consist of indoor activities i.e. English speaking tutorials and outdoor activities i.e. visiting tourism places.

Time	Topics	Skills	Duration
Week 1	Space Objects	Asking and Giving a Description	90
Week 2			90
Week 3	Scientific Theories and Laws	Asking and Giving an Explanation	90
Week 4			90
Week 5	Science in Our Daily Lives	Giving a Presentation	90
Week 6			90
Week 7			90
Week 10	Diseases	Having a Discussion	90
Week 11			90
Week 12			90

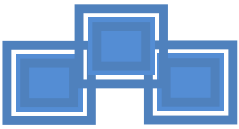
UNIT 1

WHAT DOES A COMET LOOK LIKE?



Picture 3.1
www.wired.com

Sometimes you may be asked to describe things in your surroundings or what it looks like. For example, you may talk to your friends about space objects and need to describe what a comet looks like. In this unit, you are going to learn how to describe things effectively.



A. LET'S START



TASK 1

Study the picture below and answer the questions orally.



Picture 3.2
www.uniedu.com

Questions:

1. What is the picture about?
2. Have you ever seen a comet?
3. What do you know about comet?



B. LET'S PRACTICE



TASK 2

Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.

No.	Word	Pronunciation	Part of Speech	Equivalence
1.	Unique	/jʊ'ni:k/	adj	unik
2.	Edge	/edʒ/	...	...
3.	Layer	/'leɪ.ə r /	...	...
4.	Atmosphere	/'æt.mə.sfɪə r /	...	...
5.	Appearance	/ə'pɪə.rən t s/	...	...
6.	Visit	/'vɪz.ɪt/	...	...
7.	Period	/'pɪə.ri.əd/	...	...
8.	Region	/'ri:.dʒ ə n/	...	...
9.	Carry	/'kær.i/	...	...
10.	Distant	/'dɪs.t ə nt/	...	...
11.	Dust	/dʌst/	...	...
12.	Travel	/'træv. ə l/	...	...
13.	Beyond	/bi'jɒnd/	...	...



TASK 3

In this part, you are going to listen to a monologue about Comets. Listen to it and take notes for important information. Then, answer the questions below by putting T if the answer is true, F if the answer is false and NC if the answer is not clear and state your reason. Then, discuss your answers with your friends.

No.	Statement	T/F/NC	Reason
1.	Comets are icy object which orbit the Earth.	F	Comets orbit the sun.
2.	Comets' orbit are always near the sun.	...	...
3.	When comets get closer to the sun, it stays the same.	...	...
4.	The atmosphere in comets is called a coma.	...	...
5.	A comet's tail always points away from the sun.	...	...
6.	Comets can easily be seen although they aren't near the sun.	...	...
7.	Comet's period is the time between one visit near the sun.	...	...
8.	Hayley's comet was the first comet to visit the sun.	...	...
9.	Short period comets have a period of 20 years or less.	...	...
10.	Oort cloud is the distant region of solar system.	...	...



TASK 4

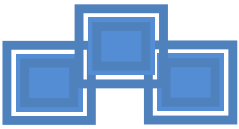
In this part, you are going to listen to a monologue about Asteroids. Listen to it and complete the following sentences with appropriate words or phrases. Then, check your comprehension by answering questions orally.



Picture 3.3
www.faktailmiah.com

Asteroids are 1) _____ small planetary objects orbiting the sun. Their 2) _____, _____, differentiate them from comets, which are made of 3) _____. Asteroids range in size from a few meters across to objects large enough to trap smaller asteroids in their gravitational pull, like moons orbiting a planet. Asteroids lack the gravitational force needed to round out like planets, so most are 4) _____. They have no atmospheres, and are not 5) _____. Hundreds of thousands of asteroids exist in the solar system, most occupying an area between Mars and Jupiter called the Asteroid belt. Despite their numbers, the combined mass of all solar system asteroids only equals the mass of the moon. Asteroids that cross the Earth's orbit are called near-earth asteroids. Astronomers have discovered approximately 4,500 near-earth asteroids, including up to 1,000 with 1 kilometer diameters; at least one asteroid with a 4 to 10 meter diameter hits the earth every year.

Adapted from: <http://monkeysee.com/play/24326-what-is-a-asteroids>



Questions:

1. What are asteroids?
2. What do asteroids look like?
3. What are asteroids made of?
4. Where is Asteroid Belt located?
5. What have astronomers discovered about asteroids?

DID YOU KNOW...?

The oldest and largest clearly visible meteorite crater site in the world is The Vredefort Dome in Free State, South Africa. It is 380km across.



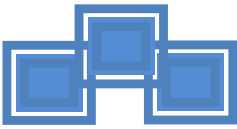
TASK 5

Work in pairs. Act out the dialogue, each of you acts as Megan and Matthew. Then, check your comprehension by answering the questions orally.

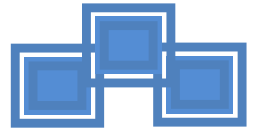
Situation: Megan is asking Matthew, an astronomer who works at NASA about comets and asteroids.

Card A	
Megan	: Imagine a place far, far away at the very edge of the Solar System. What can you found there?
Matthew	:...
Megan	: What is a comet?
Matthew	:...
Megan	: What does it look like?
Matthew	:...
Megan	: Amazing. Why does it have a tail?
Matthew	:...
Megan	: Is there any space object you can see besides a comet?
Matthew	:...
Megan	: Tell me about it.
Matthew	:...
Megan	: What's the difference between them?
Matthew	:...
Megan	: Any similarities?
Matthew	:...
Megan	: I wonder how they were formed back then.
Matthew	:...
Megan	: So, an asteroid is like a giant space rock, isn't?
Matthew	:...

Card B	
Matthew	: Well, among the most brilliant and most rare objects in the night sky. You'll probably see comets. These soaring beacons with their beautiful tails come from the outer realms of the Solar System.
Megan	:...
Matthew	: Well, a comet is basically a dusty snowball which orbit the Sun. It is made of ices, such as water, carbon dioxide, ammonia and methane, mixed with dust.
Megan	:...



Matthew	: In general, comets look like a faint smudge of light, usually larger and brighter than most other objects in the night sky. Many comets seem to have tails extending away from the main body of the comet. In essence, the appearance of a particularly striking comet is much like that of a fireball, except that comets do not move quickly, but rather slowly and ponderously
Megan	:...
Matthew	: Well, the tail is simply an extension of the comet's atmosphere or known as coma. The most interesting part about comet's tail is that it tends to point away from the Sun rather than backwards along the path of the comet's orbit!
Megan	:...
Matthew	: You might see an asteroid.
Megan	:...
Matthew	: Simply, asteroids are small objects - often rocky, metallic or both - that orbit our Sun. The majority of these minor planets, as they are also known, circle our central star in a region between Mars and Jupiter known as the asteroid belt.
Megan	:...
Matthew	: Probably, the main difference between an asteroid and a comet is what they are made of. Asteroids are made up of metals and rocky material, while comets are made up of ice, dust and rocky material.
Megan	:...
Matthew	: Yes, both of these space objects were formed during the earliest times of the solar system, around 4.5 billion years ago.
Megan	:...
Matthew	: Well, asteroids formed much closer to the Sun, where it was too warm for ices to remain solid. Comets formed farther from the sun where ices would not melt. Comets, which approach the Sun, lose material with each orbit because some of their ice melts and vaporizes to form a tail.
Megan	:...
Matthew	: You're right! Asteroids are rocky-metallic objects which range in size from about the size of pebbles to around 600 miles.
Adapted from: http://www.universetoday.com/33006/what-is-the-difference-between-asteroids-and-comets	

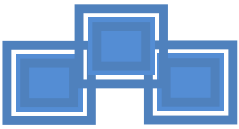


Questions:

1. Where does the dialogue probably take place?
2. What are they talking about?
3. What is the difference between comets and asteroids?
4. What makes asteroids have no ice on its surface?

DID YOU KNOW...?

Everything moves: Planets move within the Solar System, which moves within Milky Way galaxy, which moves within the Local Group of galaxies, which moves towards Virgo Cluster.



TASK 6

Work in pairs. One of you asks questions about space objects in box A and the other answers the questions using descriptions in box B.


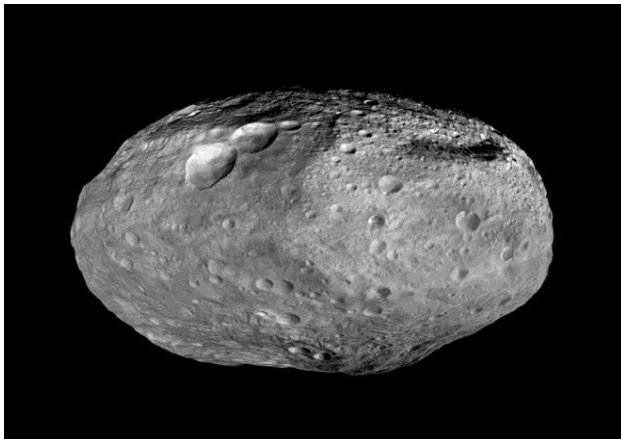
A. WHAT IS...?	An asteroid
	Tail
	The Asteroid Belt
	Near Earth asteroid
	A comet
	A coma
	The Oort Cloud

B. IT IS...	a dusty snowball which orbit the Sun
	Comet's atmosphere
	Asteroids that cross the earth's orbit
	A rocky-metallic object
	an area between Mars and Jupiter
	Part of a comet that always points away from the sun
	The distant region of solar system.



TASK 7

Still with your partner, each person chooses a picture. Indentify the shape, color and size of the object. Then, describe the object to your partner.

Comet	Differences
 <p>Picture 3.4 www.jb.man.ac.uk</p>	<p>Shape: _____</p> <p>Color: _____</p> <p>Size: _____</p>
Asteroid	
 <p>Picture 3.5 www.wired.com</p>	<p>Shape: _____</p> <p>Color: _____</p> <p>Size: _____</p>



C. LET'S STUDY



TASK 8

Practice the expressions below.

Describing Things

In task 7, Matthew describes what a comet looks like, he said:

"Well, a comet is basically a dusty snowball which orbit the Sun. It is made of ices, such as water, carbon dioxide, ammonia and methane, mixed with dust."

Notice when he describes a comet he uses adjective (dusty) and materials it made from (ices, water, ammonia). When you are describing objects you use adjectives, such as the size, color, shape, material made from, thickness, texture, etc. Look at the expressions below that can be used when asking for descriptions of things.

Asking for description	Describing
What is it?	It looks like...
What does it look like?	It's...
How big is it?	Well, it has...
How much does it weigh?	There is a...
What color is it?	There are some...
What's it made out of?	
What else can you tell me?	
Tell me about...	
What did you think of the..	
Is there a...?	
Are there (some)...?	

Look at the examples and act it out with your partner.

Expression: What does it look like?

Response: It looks like a faint smudge of light

Expression: How big is it?

Response: It's 1-10 kilometers in size.

Expression: How much does it weigh?

Response: It weighs 500-1500 pounds.

Expression: What's it made out of?

Response: It's made up of ice, dust and rocky material

Expression: What is it?

Response: It's a comet



TASK 9

Study the explanation below and practice pronouncing words with silent letters.

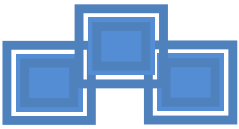
Silent letters

In task 8, you can find a dialogue where Matt says
“Well, the tail is simply an extension of the comet's atmosphere or **known** as coma.”
“known” in the sentence are pronounced /nəʊn/. The ‘k’ is not pronounced or we may call it as the silent letter.

Silent letters are letters that are not pronounced in a word.

Examples of words with silent letters:

- **Silent Vowels**
 - a: spread, aisle, boat, team
 - e: great, pie, toe
 - e: fuse, scene, lime, stove, pale
 - i: pail, business, receive, believe
 - o: people, jeopardy
 - u: guest, guess, laugh, guide
- **Silent Consonants**
 - b: doubt, debt, tomb, bomb
 - c: muscle, black, science
 - d: Wednesday, bridge, ledge, fudge
 - f: cliff, stuff, staff
 - g: campaign, foreign, sign
 - h: chemical, echo, school, ghost
 - k: knowledge, know, knee
 - l: quill, swell, tall
 - m: mnemonics
 - n: autumn, column, solemn
 - p: psychology, pneumonia, receipt
 - s: fuss, press
 - t: fasten, often, listen, soften
 - w: shadow, answer, window
 - z: jazz, buzz



TASK 10

Have a discussion with your tutors and friends about articles the, a and an.

Articles the, a and an

In the previous monologue about comets, you'll probably hear the speaker saying:
"A comet's tail always points away from the Sun, no matter which way the comet is moving."

The underlined words (A and the) are called articles.

1. What are the functions of articles?
2. What are the differences between articles the, a and an?

DID YOU KNOW...?

Boomerang Nebula is the coldest known place in the universe.



D. LET'S GET MORE PRACTICE



TASK 11

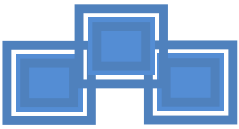
Here's a picture of a meteor. Describe the picture to your partner according to information in the box.



Picture 3.6



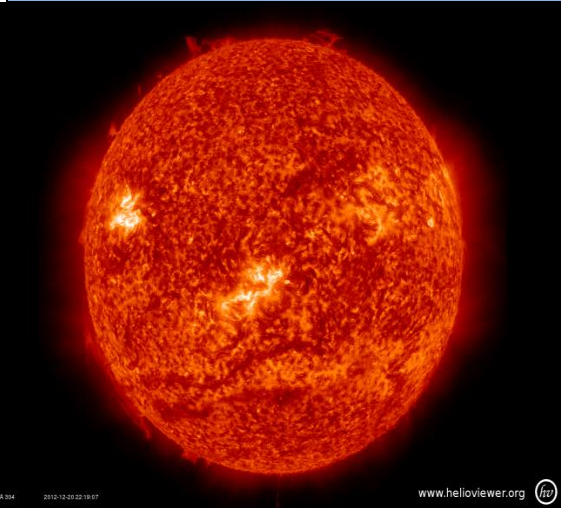

www.nym-artopraph.blogspot.com.jpg

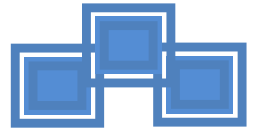
A Meteor
Streaking in our night sky Very fast Ranging in size from a marble to a basketball. Long tail Brightening our night Burn up in the atmosphere Looks like a shooting star



TASK 12

Still with your partner, choose a picture below, describe them in front of your friends.

1. Aurora	3. Stars
	
Picture 3.6 www.kaskus.co.id	Picture 3.7 www.wallpaperswala.com
2. The Sun	4. The Earth
	
Picture 3.8 www.thesuntoday.org	Picture 3.9 www.internetlooks.com



FUN SPOT

Listen to a song called Space Debris. Listen to it carefully and complete the missing lyrics then sing it together with your class.

*

The asteroids belt
The Kuiper belt
It's hard to count
These rocky mounds

1) _____
It's space debris

2) _____, come in threes
Carbonaceous C-Type are rough stony, rough stony
Silicaceous S-Type are bright shiny, bright shiny
Finally metallic M-Type metal cores you see

3) _____
Now we'll start with the Trojans
They clump and stick

4) _____
Can you see that it is time?
Apollo's this way, orbits Sun but away
Some come close to us

5) _____, thus

*

6) _____
They travel around the Sun orbiting, orbiting
The nucleus is made of ice, grit, and gas-frozen
So when we see 7) _____

Turn to meteors
Now they're breaking into grains
Of asteroids, comets
Think if you can

Time to burn up away, 8) _____
Meteors if they land
On the Earth so grand

*



E. LET'S REFLECT

Aspects	Very much	Much	Little
Understanding the description of comets, asteroids and meteors.			
Understanding expressions of describing			
Understanding silent letters			
Understanding the use of article an/a/the			
Able to describe things in space			
Vocabulary			

F. LET'S SUMMARIZE

In this unit, you have learnt about how to describe things, silent letters and the use of articles.

Key Points

1. Expressions used in asking for description and describing things.

Asking for description	Describing
What is it? What does it look like? How big is it? How much does it weigh? What color is it? What's it made out of? What else can you tell me? Tell me about... What did you think of the.. Is there a...?	It looks like... It's... Well, it has... There is a... There are some...



2. Silent letters

Silent letters are letters that are not pronounced in a word.

- **Silent Vowels**
 - a: spread, aisle, boat, team
 - e: great, pie, toe
 - e: fuse, scene, lime, stove, pale
 - i: pail, business, receive, believe
 - o: people, jeopardy
 - u: guest, guess, laugh, guide
- **Silent Consonants**
 - b: doubt, debt, tomb, bomb
 - c: muscle, black, science
 - d: Wednesday, bridge, ledge, fudge
 - f: cliff, stuff, staff
 - g: campaign, foreign, sign
 - h: chemical, echo, school, ghost
 - k: knowledge, know, knee
 - l: quill, swell, tall
 - m: mnemonics
 - n: autumn, column, solemn
 - p: psychology, pneumonia, receipt
 - s: fuss, press
 - t: fasten, often, listen, soften
 - w: shadow, answer, window
 - z: jazz, buzz



3. Articles the, a and an

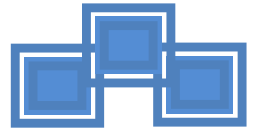
Articles are used to differentiate between things or ideas – usually expressed by nouns. The speaker/writer may be referring to a specific thing or idea, or a general one.

Article the is used:

- to refer to something which has already been mentioned.
- when both the speaker and listener know what is being talked about, even if it has not been mentioned before.
- in sentences or clauses where we define or identify a particular person or object
- to refer to objects we regard as unique (the sun, the world)
- before superlatives and ordinal numbers (the highest building, the first page)
- with adjectives, to refer to a whole group of people (the Japanese, the old)
- the names of geographical areas and oceans (the Sahara, the Atlantic)
- with decades, or groups of years (the seventies)

An/a is used

- to talk about one particular person or thing, when the listener/reader does not know which one is meant, or when it does not matter which one.
- to talk about one member of a class (job)
- to classify people and things to say what class, group, or type they belong to.
- to identify what something/someone is, or what something/someone is like.
- after certain adverbs or adjectives.
- before noun qualifiers.
- with proper names.
- after *so* or *too* + *an adjective* + *a singular noun*.
- after *such* and *waste*

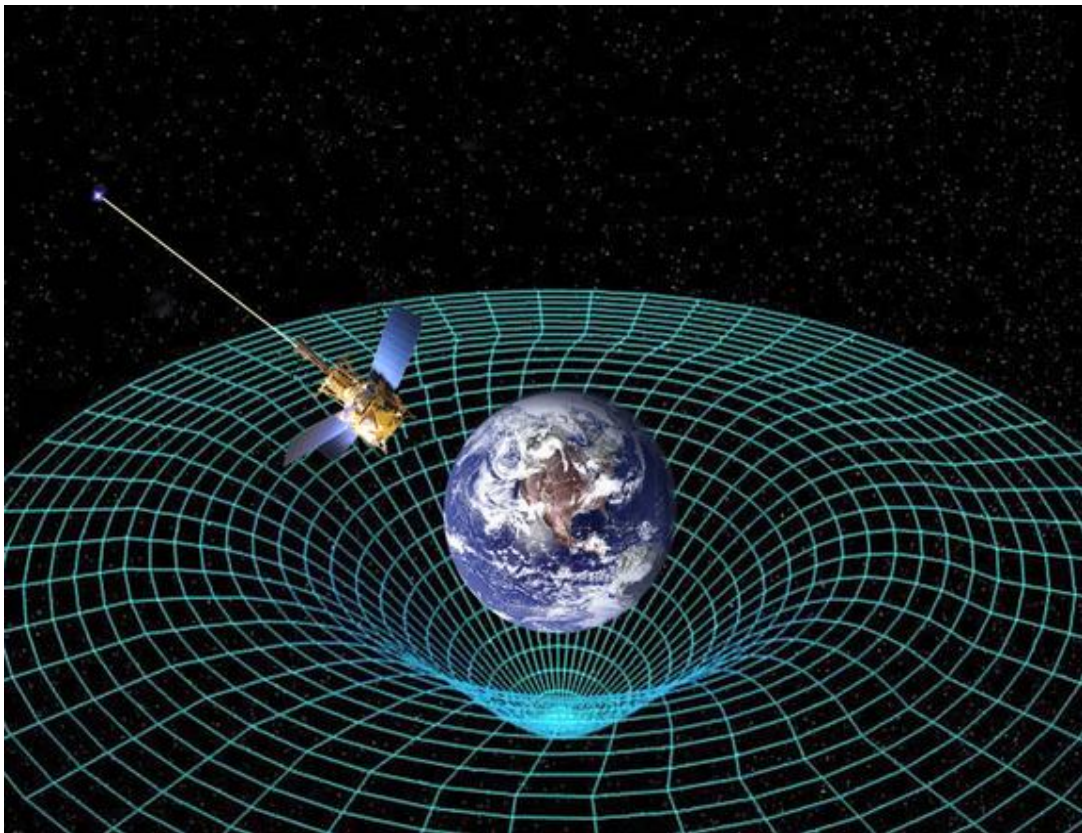


Vocabulary List

approximately /ə'prɒk.sɪ.mət.li/ (adv)	: kira-kira
chunk /tʃʌŋk/ (n)	: bongkahan
core /kɔːr/ (n)	: inti
debris /'deb.riː/ (n)	: puing
diameter /daɪ'æm.i.tə r/ (adv)	: garis tengah
dusty /'dʌs.ti/ (adj)	: berdebu
exploration /,ek.splə'reɪ.ʃ ə n/ (n)	: penjelajahan
extend /ɪk'stend/ (v)	: memperpanjang
extinction /ɪk'stɪŋk.ʃ ə n/ (n)	: kepunahan
faint /feɪnt/ (adj)	: redup
force /fɔːs/ (n)	: tenaga
grain /greɪn/ (n)	: butiran
humanity /hjuː'mæn.ə.ti/ (n)	: umat manusia
impact /'ɪm.pækt/ (n)	: dampak
lack /læk/ (n)	: kekurangan
mass /mæs/ (n)	: massa
orbit /'ɔː.bɪt/ (n)	: edaran
pebble /'peb.l/ (adv)	: kerikil
planetary /'plæn.i.tə r.i/ (adj)	: perplanetan
ponderously /'pɒn.d ə r.ə.sli/ (adv)	: dengan kaku
raw /rɔː/ (adj)	: mentah
remain /rɪ'meɪn/ (v)	: sisa
rip /rɪp/ (v)	: sobekan
smudge /smʌdʒ/ (n)	: corengan
track /træk/ (v)	: mengikuti
vaporize /'veɪ.p ə r.aɪz/ (v)	: menguap

UNIT 2

CAN YOU TELL ME ABOUT THEORY OF RELATIVITY?



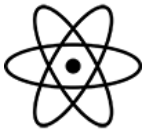
Picture 2.1

www.space.com

In the course of your study, you may sometimes need to explain technical concepts to your friends and lecturers. The ability to explain things clearly and effectively can help you in your study and future career, as well. In this unit, you will learn how to help improving your explanation skills.



A. LET'S START



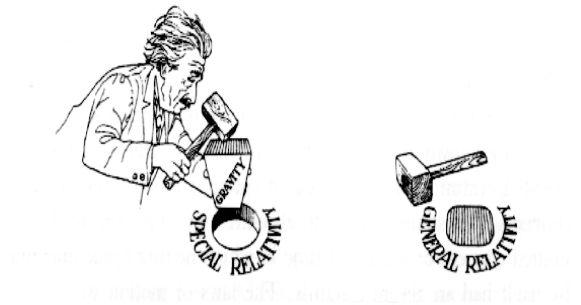
TASK 1

Below are some pictures of scientific theories/ laws. Choose and study one of them with your partners and answer the following questions orally.



Picture 2.2

www.science.howstuffworks.com



Einstein managed to fit a square peg into a round hole by modifying both the peg and the hole! His general theory of relativity resolved conflicts between Newton's theory of gravity and the special theory of relativity.

Picture 2.3

www.abys.uoregon.edu

Questions:

1. What is the picture about?
2. What theory does it refer to?
3. Who proposed the theory?



B. LET'S PRACTICE



TASK 2

Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.

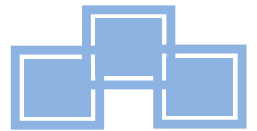
No.	Word	Pronunciation	Part of Speech	Equivalence
1.	Convince	/kən'vɪn t s/	verb	meyakinkan
2.	Constant	/'kɒn t .st ə nt/	...	...
3.	eclipse	/ɪ'klɪps/	...	...
4.	formula	/'fɔːmjʊ.lə/	...	...
5.	general	/'dʒen. ə r. ə l/	...	...
6.	headlight	/'hed.laɪ t/	...	...
7.	pass	/pɑːs/	...	...
8.	solar	/'səʊ.lə r /	...	...
9.	state	/steɪ t/	...	...
10	toss	/tɒs/	...	...



TASK 3

In this part, you are going to listen to a monologue about the theory of relativity . Listen to it and take notes for important information. Then, answer the questions below by putting T if the answer is true, F if the answer is false and NC if the answer is not clear and state your reason. Then, discuss your answers with your friends.

No.	Statement	T/F/NC	Reason
1.	In special relativity the laws of physics only apply when you are not moving.	F	The laws of physics apply no matter how fast you are moving
2.	The theory of relativity has three parts; special relativity, common relativity and general relativity.	...	...
3.	Albert Einstein invented theory of relativity.	...	...
4.	Light never travels at the same speed for all observers no matter how fast you are moving.	...	...
5.	The theory of special relativity changed the ways scientists thought about time.	...	...



TASK 4

Now listen to a monologue about gravity law and answer the following questions orally.

1. What is gravity?
2. What is a mass?
3. What happened when two objects got closer to each other?
4. How does gravity affect us?
5. Does earth gravity affect the moon?



TASK 5

Study the dialogue below. Answer the following questions orally and then act out the dialogue with your partner.

Situation : Adrian Bejan, J.A. Jones Distinguished Professor of Mechanical Engineering, Duke University, has identified a basic Law of Physics that describes and predicts how design patterns emerge over time, he contends that one can construct a “constructal theory” about any system, animate or inanimate. Below is this explanation about his law.



Picture 2.4
www.forbes.com



Card A	
Anthony Kosner	: In the simplest non-technical terms, what is the Constructal Law?
Adrian Bejan	: ...
Anthony Kosner	: What makes this a law of physics instead of just a theory?
Adrian Bejan	: ...
Anthony Kosner:	:Wait a minute, does this have anything to do with the “theory” of intelligent design?
Adrian Bejan:	: ...
Anthony Kosner:	We don’t usually think of physics this way, but the Constructal Law is quite hopeful. It’s about how things get better. Are you an optimistic person?
Adrian Bejan	: ...

Card B	
Anthony Kosner	: ...
Adrian Bejan	: Let me explain it to you, the Constructal Law is my statement that there is a universal tendency (a phenomenon) toward design in nature, in the physics of everything. This tendency occurs because all of nature is composed of flow systems that change and evolve their configurations over time so that they flow more easily, to create greater access to the currents they move.
Anthony Kosner	: ...
Adrian Bejan	: Fantastic question! Very few people know the difference. A theory is a purely mental image of how something should be. A law is a concise statement that summarizes a distinct and universal tendency in nature (the phenomenon), previously not recognized as distinct. The bottom line is that the law is one, the theories are many, and the empirical observations are immense in number. This hierarchy is the essence of the evolutionary design of science itself, which is also a constructal theory.
Anthony Kosner:	: ...
Adrian Bejan:	A new law of physics improves everyone’s thinking ability, across the board. This has been my experience with the Constructal Law, as I lecture in universities, industry, high schools, and retirement homes. Everybody gets it. Along the way people realize that catchy words like “intelligent design,” “turbulence,” “chance” and “randomness” are not predictive, are not “theory”. These are puzzles that the Constructal Law



	solves with ease, one by one.
Anthony Kosner:	...
Adrian Bejan	: When you grow up under communism you have to be an optimist, to survive.
http://www.forbes.com/sites/anthonykosner/2012/02/29/theres-a-new-law-in-physics-and-it-changes-everything/	

Questions:

1. What is Constructal law?
2. Who proposed Constructal law?
3. According to Adrian Bejan, what is the difference between a law and a theory?
4. Do you agree with “*a new law of physics improves everyone’s thinking ability, across the board*” statement? Why?
5. What do you think of Constructal law?

DID YOU KNOW...?

If you yelled for 8 years, 7 months and 6 days, you would have produced just enough sound energy to heat up one cup of coffee.



C. LET'S STUDY



TASK 6

Practice following expressions.

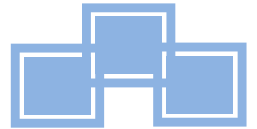
In task 6, you find the following conversation between Anthony and Adrian.

Anthony Kosner : In the simplest non-technical terms, **what is the Constructal Law?**

Adrian Bejan : **Let me explain it to you,** the Constructal Law is my statement that there is a universal tendency...

The first bolded expression is used *to ask for explanation* while the second bolded expression is used *to give explanation*. Other expressions are provided in the box below.

Asking for explanation	Giving explanation
Do you know ...?	Let me explain...
How can I ...?	Let me tell you about it...
Could you tell me...?	Let me give you some details...
Could you explain...?	All I can say is...
Could you expound on that?	What's more,
Could you fill me in on that?	That's because ...
I don't understand...	May I explain ...?
How is it that?	Let me explain you why...
Please explain to me...	As you can see that...
Is there anything you can tell us?	What you have to do is...
Would you mind telling me ...?	It is important that...
Something else I'd like to know is...	The most important point is...
Could you give me some explanation about...?	To give you more information,
Can you give me more details about that ...?	Taking into account, it was clear that...
Could you tell me about this...?	



TASK 7

Study the explanation and answer do following instructions.

Scientific Laws, Theories and Hypotheses

A very common mistake of non-scientists and, believe it or not, some scientists, is to fail to correctly distinguish between scientific laws, theories and hypotheses.

1. Have a group discussion about differences between scientific laws, theories and hypotheses.
2. Mentions examples of scientific laws, theories and hypotheses.
3. Share your answers with friends.

DID YOU KNOW...?

It takes 8 minutes 17 seconds for light to travel from the Sun's surface to the Earth.



TASK 8

Study the following explanation and practice the examples.

Linking in English

In task 4, you'll find this sentence:

"Wait a minute, does this have anything to do with the "theory" of intelligent design?"

When we say a sentence in English, we join or "link" words to each other. Because of this linking, the words in a sentence do not always sound the same as when we say them individually.

It is written like this	wait a minute
We say it like this:	Wait-ta-minute

There are basically two types of linking:

1. Linking Consonant to Vowel

When a word ends in a consonant sound, we often move the consonant sound to the beginning of the next word if it starts with a vowel sound. For example, in the phrase "turn off":

We write it like this:	Turn	Off
We say it like this:	Tur	Noff

Remember that it's the sound that matters. In the next example, "have" ends with:

- the letter "e" (vowel)
- the sound "v" (consonant)

So we link "have" to the next word "a" which begins with a vowel sound:

We write it like this:	Can I have a bit of egg?
We say it like this:	Can-nI-ha-va-bi-to-fegg?

2. Linking Vowel to Vowel

When one word ends with a vowel sound and the next word begins with a vowel sound, we link the words with a sort of W or Y sound.

If our lips are round at the end of the first word, we insert a W sound:

We write it like this:	too often	who is	so I	do all
We say it like this:	Toowoften	Whowis	sowI	dowall

If our lips are wide at the end of the first word, we insert a Y sound:

We write it like this:	Kay is	I am	the end	she asked
We say it like this:	KayYis	Iyam	theYend	sheYasked



TASK 9

Now let's try pronouncing the words.

Because it is	Can I?
Good day	Best time
Good idea	Upset about it
Read a book	Play a song
Some of it	Come on over
Some old animals	Click on it
Stop it	I need it

DID YOU KNOW...?

Laser is an abbreviation of Light Amplification by Stimulated Emission of Radiation.



D. LET'S GET MORE PRACTICE



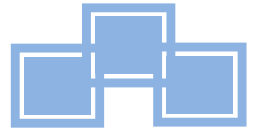
TASK 10

Study the following dialogue, and then act it out with your partner.

Situation: Stephanie and Luke are in the classroom, discussing about their favorite scientists.

Card A	
Stephanie	: If to choose one, who will be your favorite scientist?
Luke	: ...
Stephanie	: Why?
Luke	: ...
Stephanie	: You must be one of those young scientists inspired by him.
Luke	: ...
Stephanie	: I never quite understand his well known theory of relativity. Could you give me some explanation about it?
Luke	: ...
Stephanie	: So, does it mean that all movement is relative to other objects?
Luke	: ...
Stephanie	: Amazing! What about the second theory?

Card B	
Luke	: Albert Einstein, of course!
Stephanie	: ...
Luke	: Well, because he's perhaps the most famous scientist of all time. He serves as an inspiration to young scientists around the world.
Stephanie	: ...
Luke	: Yes, I am. Both his image and brilliant work on theoretical physics live on today.
Stephanie	: ...
Luke	: Let me tell you about it, Einstein revised Newton's laws of gravity to make them more accurate. We call what he developed the theory of relativity. It is actually two theories. The first is called Special Relativity. This theory states that it is impossible to determine whether or not you are moving unless you can look at another object.
Stephanie	: ...
Luke	: Exactly! For example, relative to the Earth, most meteorites move at about 25,000 miles an hour (40,233 km), but if you were standing on a meteorite looking at another meteorite going in the same direction as



Stephanie	you and at the same speed, it would not appear to move at all.
Luke	: ... : Well, the Theory of General Relativity is the one which redefined the laws of gravity. It says that it is impossible to tell the difference between gravity and the force of inertia from a moving object. <small>Adapted from: http://www.redhotpawn.com/board/showthread.php?threadid=139030</small>

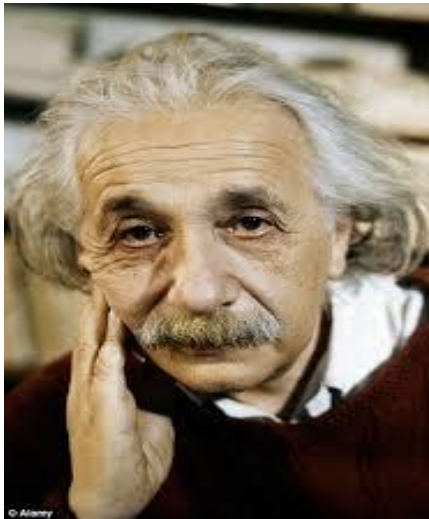

Questions:

1. Why does Luke idolize Einstein?
2. What is Einstein famous for?
3. What is the theory of Special Relativity about?
4. Who is your favorite scientist and why?



TASK 11

Work in pairs. Each person chooses a scientist picture, and then explains the scientist's theory/law orally to your partner. You may use the box beside the picture to elaborate your points.

Relativity Theory	
	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<p>Picture 2.5 www.dailymail.co.uk</p>	
Constructal Law	
	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<p>Picture 2.6 www.vasilegogea.wordpress.com</p>	



TASK 12

Have a discussion with your tutors and friends about prepositions.

Prepositions

In the previous task, you may find a few sentences consisting of prepositions.

...most meteorites move at **about** 25,000 miles an hour (40,233 km)...

...to tell the difference **between** gravity and the force of inertia...

1. What are prepositions?
2. Mentions some examples of prepositions and their meanings.
3. Make sentences containing these prepositional phrases:
 - at university
 - according to us
 - under the tree

DID YOU KNOW...?

At 25, Physicist Lawrence Bragg is the youngest person to receive a Nobel Prize.



TASK 13

Work in partner. Choose one situational card, make a dialogue based on the information provided in the box and then act it out in front of your classmates.

Theory of Parallel Universes

- Paul Steinhardt and Neil Turok
- idea that arises from string theory
- the possibility of many more dimensions to our world than the three of space and one of time that we know.

Law of Gravity

- Isaac Newton
- Sitting under an apple tree
- Everything pulled everything else to itself by a force called gravity
- Law of gravity explains how things fall on earth and how planets move around the sun and how moons move around planets.

Write you dialogue here:

A: _____

B: _____

A: _____

B: _____

A: _____

B: _____



TASK 14

In this task you have to choose one of the situations, make a dialogue with your partner and then act it out in front of your classmates.

Situation 1	Situation 2
You are a tour guide accompanying a visitor to a science museum, and then the visitor asks you to explain about a famous scientist and his/her theory.	You are in an international science seminar, your friend come late to the event and ask you to explain what has been discussed in the seminar.
Situation 3	Situation 4
You are in a classroom. Your lecturer explains you a new physics theory. One of your classmates comes late and asks you to explain what the lecturer has explained to the class.	You are having a discussion with your friend before the exam. You ask your friend to explain about the exam materials.



FUN SPOT

Listen to a song entitled History of Everything. Listen to the song carefully and complete the missing lyrics and then sing it together with your partner.

History of Everything

Our whole universe was in a hot dense state,
Then nearly fourteen billion years ago expansion started. Wait...

The Earth began to cool.

The autotrophs began to drool.

Neanderthals developed tools.

We built a wall. (We built the pyramids.)

Math, science, history, unraveling the mystery,

That all started with 1) _____!

Since "The Dawn of Man" is really not that long,

As every galaxy was formed in less time than it takes to sing this song.

A fraction of a second and the elements were made.

The bipeds stood up straight.

2) _____, _____, _____ all met their fate.

They tried to leap, but they were late,

And they all died. (They froze their ashes off.)

The ocean and Pangaea,

See ya, wouldn't wanna be ya!

Set in motion by the same big bang!

It all started with the big BANG!

It's expanding ever outward, 3) _____,

It will pause and start to go the other way:

Collapsing ever inward. We won't be here. It won't be heard.

Our best and brightest figure that it'll make an 4) _____!

Australopithecus would really have been sick of us

Debating how we're here, they're catching deer (we're catching viruses)

Religion or astronomy (Descartes or Deuteronomy)

It all 5) _____!

Music and mythology (Einstein and astrology)

It all started with a big bang!

It all started with a big BANG!



E. LET'S REFLECT

Aspects	Very much	Much	Little
Understanding theory of relativity, general relativity and gravity law			
Understanding expressions of explaining			
Understanding scientific laws, theories and hypotheses			
Understanding linking in English			
Understanding the use of prepositions			
Able to explain scientific theory and law			
Vocabulary			

F. LET'S SUMMARIZE

In this unit, you have learnt about expressions of asking and giving explanation, the differences between scientific laws, theories and hypotheses, linking in English and prepositions.

Key Points

1. Expressions used in asking for and giving explanation.

Asking for explanation	Giving explanation
Do you know ...?	Let me explain...
How can I ...?	Let me tell you about it...
Could you tell me...?	Let me give you some details...
Could you explain...?	All I can say is...
Could you expound on that?	What's more,
Could you fill me in on that?	That's because ...
I don't understand...	May I explain ...?
How is it that?	Let me explain you why...
Please explain to me...	As you can see that...
Is there anything you can tell us?	What you have to do is...
Would you mind telling me ...?	It is important that...
Something else I'd like to know is...	The most important point is...
Could you give me some explanation about....?	To give you more information,
Can you give me more details?	Taking into account, it was clear that



2. Scientific Laws, Theories and Hypotheses

A very common mistake of non-scientists and, believe it or not, some scientists, is to fail to correctly distinguish between scientific laws, theories and hypotheses. The difference is not just semantics. Conceptually, a scientific law is something very different from a theory. Following are some definitions, followed by some explanation and a few examples.

Scientific Law A scientific law is an empirical (i.e. based on experimental evidence) statement of great generality of something which seems to always be true.

Scientific Hypothesis A scientific hypothesis is a tentative explanation of an observation or pattern which has been observed in nature.

Scientific Theory A scientific theory is an explanation of a natural phenomenon with a broad range of significance and application.

The chief distinction between a scientific law, on the one hand, and a theory or hypothesis on another, is that a law is a generalization. It is NOT an explanation. It is the result of induction. It is an empirical (i.e. based on observation alone) statement of something which always appears to be true.

Hypotheses and theories, on the other hand, are an attempt to explain what has been observed. Often scientists form theories to explain laws.

There are two important distinctions between scientific hypotheses and theories. Remember that these two concepts are fairly similar to one another, while a law is something very different. Theories and hypotheses are both explanations, but a theory is different, in general, in that; It has much more experimental support and it is a much broader statement, with a wide variety of potential applications than a hypothesis. Hypotheses are more tentative, but even more importantly, they apply to a rather specific and narrow set of circumstances, while a theory applies to a great number of problems.



3. Linking in English

There are basically two types of linking:

1. Linking Consonant to Vowel

When a word ends in a consonant sound, we often move the consonant sound to the beginning of the next word if it starts with a vowel sound. For example, in the phrase "turn off":

We write it like this:	Turn	Off
We say it like this:	Tur	Noff

Remember that it's the sound that matters. In the next example, "have" ends with:

- the letter "e" (vowel)
- the sound "v" (consonant)

So we link "have" to the next word "a" which begins with a vowel sound:

We write it like this:	Can I have a bit of egg?
We say it like this:	Can-nI-ha-va-bi-to-fegg?

2. Linking Vowel to Vowel

When one word ends with a vowel sound and the next word begins with a vowel sound, we link the words with a sort of W or Y sound.

If our lips are round at the end of the first word, we insert a W sound:

We write it like this:	too often	who is	so I	do all
We say it like this:	Toowoften	Whowis	sowI	dowall

If our lips are wide at the end of the first word, we insert a Y sound:

We write it like this:	Kay is	I am	the end	she asked
We say it like this:	KayYis	Iyam	theYend	sheYasked

4. Prepositions

Prepositions indicate relationships between words or ideas. Most prepositions deal with location and are easy to learn.

about	inside	since	beneath
above	into	than	beside
after*	like	through	between
along (side)	near	toward	beyond
among	nearby	under	but
around	next to	until	by
as	off	up	despite
before	out (of)	upon	down
behind	outside	with	during
below	over	within	except
in spite of	underneath	without	in front of



G. LET'S REFLECT

Aspects	Very much	Much	Little
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Understanding expressions of explaining			
Understanding scientific laws, theories and hypotheses			
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Vocabulary			

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Could you tell me...?	Let me give you some details...
Could you explain...?	All I can say is...
Could you expound on that?	What's more,
Could you fill me in on that?	That's because ...
I don't understand...	May I explain ...?
How is it that?	Let me explain you why...
Please explain to me...	As you can see that...
Is there anything you can tell us?	What you have to do is...
Would you mind telling me ...?	It is important that...



Something else I'd like to know is... Could you give me some explanation about....? Can you give me more details?	The most important point is... To give you more information, Taking into account, it was clear that
---	---

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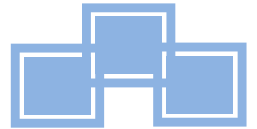
If our lips are wide at the end of the first word, we insert a Y sound:

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after*	like	through	between
along (side)	near	toward	beyond
among	nearby	under	but
around	next to	until	by
as	off	up	despite
before	out (of)	upon	down
behind	outside	with	during
below	over	within	except
in spite of	underneath	without	in front of



Vocabulary List

appear /ə'piə r / (v)	:	muncul
arise /ə'raɪz/ (v)	:	bangun
catchy /'kætʃ.i/ (adj)	:	mudah diingat
concise /kən'saɪs/ (adj)	:	ringkas
configuration /kən'fɪg.ə'reɪ.ʃ ə n/ (n)	:	konfigurasi
determine /dɪ'tɜː.mɪn/ (v)	:	menentukan
distinct /dɪ'stɪŋkt/ (adj)	:	jelas
empirical /ɪm'pɪr.i.k ə l/ (adj)	:	empiris
essence /'es. ə n t s (n)	:	pokok
evidence /'ev.ɪ.d ə n t s/ (n)	:	bukti
hierarchy /'haɪə.rɑː.ki/ (n)	:	hikarki
immense /ɪ'men t s/ (adj)	:	besar sekali
invent /ɪn'vent/ (v)	:	menemukan
mass /mæs/ (n)	:	masa
observer /əb'zɜːvə r / (n)	:	pengamat
occur /ə'kɜː r / (v)	:	terjadi
purely /pjʊə.li/ (adv)	:	semata-mata
tendency /'ten.dən t .si/ (n)	:	kecenderungan
tentative /'ten.tə.tɪv/ (adj)	:	sementara

UNIT 3

TODAY, I'LL BE TALKING ABOUT CHEMISTRY IN OUR DAILY LIVES.



Picture 3.1

www.husnaamalana.blogspot.com

You find chemistry in daily life in the foods you eat, the air you breathe, your soap, your emotions and literally every object you can see or touch. In this unit, you will learn how to present your daily lives experience on chemistry. To present information clearly and effectively is a key skill to get your message or opinion across and, today, presentation skills are required in almost every field.



A. LET'S START



TASK 1

Study the picture below and answer the questions orally.



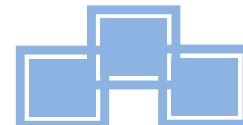
Picture 3.2
www.headingfortheexits.com



Picture 3.3
www.themanbehindthecart.com

Questions:

1. What is the man doing?
2. What do you think of the pictures?
3. What do you know about chemical in food?



B. LET'S PRACTICE



TASK 2

Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.

No.	Word	Pronunciation	Part Of Speech	Equivalence
1.	Chemical	/ 'kem.ɪ.k ə l/	n	Bahan kimia
2.	Concern	/kən 'sɜ:n/	...	...
3.	Contaminant	/kən 'tæm.ɪ.nənt/	...	...
4.	Involve	/ɪn 'vɒlv	...	...
5.	Pesticide	/ 'pes.tɪ.saɪd/	...	...
6.	Potentially	/pə ʊ 'ten. t ʃ ə l.i/	...	...
7.	Residue	/ 'rez.ɪ.dju:/	...	...
8.	Spokesperson	/ 'spəʊks.mən/	...	...
9.	Supply	/sə 'plaɪ	...	...
10.	Variety	/və 'raɪə.ti/	...	...

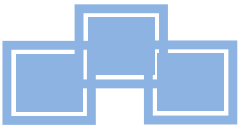


TASK 3

In this part you will listen how Carl opens his presentation and answer the following questions orally.

Situation: Tim holds a PhD in Agricultural and Environmental; he is delivering his presentation in front of his colleagues.

1. Who is Carl?
2. What is Carl's job?
3. Where does he work?
4. How did Carl open his presentation?
5. What is the topic of Carl's presentation?



TASK 4

In this part you will listen again on how Carl opens his presentation, and then identified the expressions used and act out the expressions.

Greeting:

Introducing the talk:

Ordering points

DID YOU KNOW...?

The metal with the highest melting point is tungsten, at 3410 degrees Celsius (6170F).



TASK 5

Here are Carl's presentation scripts about Basic Food Toxicology. Work in pairs. Each of you choose a script, and then complete the missing monologue with correct words or phrases by asking to your partner. Then, act out the monologue with your partner.

Script A

"Hi! My name is Carl Winter, I am a spokesperson for the Institute of Food Technologists. 1) _____ on the faculty at the University of California, Davis. Today I'll be discussing food safety issues that pertain to potentially dangerous chemical contaminants in the food supply. In the previous segment, we discussed a little bit about toxicology which is the basic science of poisons. 3) _____ principles of toxicology is that the dose makes the poison. In essence, all chemicals are toxic, if the dose of those chemicals is high enough. So it's not the presence or absence of a chemical contaminant in food that determines the potential for harm, but rather the amount of that chemical. 5) _____ illustrate this is to consider if we have a headache, we might want to take some pain relievers. If we follow the regular dosage, which might be one or two tablets of a pain reliever, hopefully, that will be a low enough dose to relieve our headaches but not enough of a dose to make us sick. If on the other hand, we decided to take the entire contents of that bottle, we might find ourselves in a hospital with an overdose. 7) _____, it's the same chemical that we're exposed to, but there's a difference in the dose; the dose makes the poison. When we talk about exposure to chemical contaminants in the food supply, fortunately, in most cases our exposure to these chemicals is very small. In the next segment, I'll discuss the dose of chemicals that we are exposed to in the food supply."

Adapted from: <http://monkeysee.com/play/13770-understanding-food-safety-and-toxicology>



Script B

"Hi! My name is Carl Winter, I am a spokesperson for the Institute of Food Technologists. I am a Food Toxicologist on the faculty at the University of California, Davis. 2) _____ food safety issues that pertain to potentially dangerous chemical contaminants in the food supply. In the previous segment, we discussed a little bit about toxicology which is the basic science of poisons. One of the most important principles of toxicology is that the dose makes the poison. In essence, all chemicals are toxic, if the dose of those chemicals is high enough. 4) _____ the presence or absence of a chemical contaminant in food that determines the potential for harm, but rather the amount of that chemical. One way to illustrate this is to consider if we have a headache, we might want to take some pain relievers. If we follow the regular dosage, which might be one or two tablets of a pain reliever, hopefully, that will be a low enough dose to relieve our headaches but not enough of a dose to make us sick. 6) _____, we decided to take the entire contents of that bottle, we might find ourselves in a hospital with an overdose. In both cases, it's the same chemical that we're exposed to, but there's a difference in the dose; the dose makes the poison. When we talk about exposure to chemical contaminants in the food supply, fortunately, in most cases our exposure to these chemicals is very small In 8) _____, I'll discuss the dose of chemicals that we are exposed to in the food supply."

Adapted from: <http://monkeysee.com/play/13770-understanding-food-safety-and-toxicology>

The functions of expressions in the box above are as follows:

So it's not	: Concluding a section
If on the other hand	: Contrasting
I am a Food Toxicologist	: Introducing yourself
In both cases	: Giving examples
In the next segment : to	: Ordering points
One of the most important	: Emphasizing
One way to	: Signposting
Today I'll be discussing	: Introducing the talk



TASK 6

Study Carl's presentation and answer the following questions below orally.

1. What is the most important principle of toxicology?
2. Can the presence of chemical contaminant in food be harmful for us?
3. What does it mean by "the dose makes poison"?
4. What will probably be discussed by Carl in the video?

DID YOU KNOW...?

A bee sting is acidic and a wasp sting is alkali. To treat a sting by one of these you should use the opposite type of chemical.



C. LET'S STUDY



TASK 7

Study the following explanation and practice the expressions.

Greeting	Hi Hello Good morning ... Good afternoon Ladies and Gentlemen Ladies and gentlemen, thank you very much for coming today Good afternoon ladies and gentlemen, Thank you for finding the time to come and join me for this presentation this afternoon
Introducing the talk	I'd like to talk about ... I'm going to discuss ... Today I'll be discussing I want to tell you about ... What I'd like to do is to explain to you ... What I'm going to do is to describe ... The purpose of today's presentation is to discuss I've invited you here today to have a look at my findings.
Ordering points (Time order)	To begin with ... At the beginning, ... At the start, ... Second(ly), ... Next, ... Finally, ... At the end, ... In the next segment
Ordering points (Listing and adding)	A second reason ... Another point ... Also ... Other factors ... In addition, ...
Showing open to questions	At the end I'd be happy to answer any of your questions... At the end, you can ask questions...



Starting a new section	Moving on to ... Turning to ... I'd like to move on ... I'd like to turning on ... I'd like to talk about ... I want to have a look at...
Transition	Let us now move on to So these were our mothod. What about the result?
Contrasting	But However On the other hand
Referring to visual aids	The slide (graph, chart) shows Here you can see Here are If you have a look at this first graph... As you can see... If you look at this slide...
Signposting	A good illustration of the... A good example of this is... Now let's look at... One way to
Giving an example	For example Such as Here is an example Let me give you an example In many cases...
Emphasising	In fact Actually, I'd like to underline It's important to bear in mind One of the most important
Concluding a section	So,
Signaling the end	Ok. That brings me to the end of my presentation. Right. That covers everything I wanted to say about...
Summarizing	To sum up then, ... In brief,... Before I finish, let me just go over... If I can briefly summarize,...



Concluding the talk	Finally, I'd like to finish by saying I'd like to conclude now with a few remarks about In conclusion...
Introducing a question	I've a question about Could I ask a question?
Closing	Thank you for listening so attentively. Thank you for your attention. I hope that this has been useful.
Clarification	Sorry, I didn't follow what you said about What did you mean when you said
More information	I was interested in what you were saying about Could you tell us more about
Checking comprehension	So you mean? Have I got this right?
Responding to answer	Ok, thanks. Perhaps I didn't make my question clear. what was I really asking was
Answering directly	Well, according to our results.... Ok-I think I can answer that quite simply
Playing for time	Er, let me see ... That's a good question
Handling complex questions	Well, those are really two different questions. Your first point is about
Dealing with awkward questions	I haven't had time to look into that, sorry. Well, I think you'd be wrong to assume that ...

DID YOU KNOW...?

When glass breaks, the cracks move at speeds of up to 3,000 miles per hour.



TASK 8

Study Amanda's presentation script about food safety. Answer the following question orally and then act out the monologue with your partner.

Ladies and gentlemen, thank you very much for coming today. My name is Amanda Johnson. Today, I'd like to talk about food safety issues that resolve from the presence of potentially dangerous chemical contaminants in our food. At the end I'd be happy to answer any of your questions.

Firstly, in the previous segment, my colleague Carl Winter has presented the basic principles of toxicology. To begin with, I'd like to underline what Carl said that the basic principle of toxicology is how the dose of it that makes the poison. It's the amount of a chemical rather than its presence or absence that determines the potential for harm. This is really important when we talk about chemical contaminants in the food supply because our laboratories are capable of detecting very tiny amount of chemicals in the food. So, we can often identify the presence of these chemicals. It's important to bear in mind that the most important thing from a toxicological perspective is to determine whether those amounts are of health concern.

If you look at this slide, we are fortunate since these days for most of the chemical contaminants that we find in the food supply, even though we can detect them, the amounts that we're exposed to are very, very low. In many cases, thousands or hundreds of thousands of times lower than amounts that we can feed laboratory animals that don't show any effects in those laboratory animals.

So, Ladies and Gentlemen what I'll be talking about in the next segment will be how scientists determine what's an acceptable level of exposure to these chemicals, and then how some of these chemical contaminants compare with respect to those allowable levels.

I'd like to finish by saying, if you are discussing about toxicological in food supply it is very crucial to determine whether those amounts are of health concern. Do you have any question?

Thank you very much and see you after the break.

Adapted from: <http://monkeysee.com/play/13772-chemical-risks-in-food>



TASK 9

Work in pairs. Identify the expressions used in Amanda's presentation and discuss their functions. An example is provided below.

Functions	Expressions
Introducing yourself	My name is Amanda Johnson.



TASK 10

Study the following explanation and do following instructions.

Infinitives
<p>In task 8, you may find a sentence like: <i>To begin with, I'd like to underline....</i></p> <p>This sentence consists of verb that is followed by to-infinitive. Infinitives are defined as to + base form of the verb.</p> <ol style="list-style-type: none">1. Have a group discussion about the functions of infinitives.2. Mentions examples of infinitive words.3. Share your answers with friends.



TASK 11

Study the following explanation and practice the examples.

Pitch

In task 8, you might find sentences like:

Do you have any questions? Or Thank you very much and see you after the break.

Those sentences have different pitches; pitch is the rise and fall of our voice when we speak. Pitch is usually described as a sound's highness or lowness. The use of pitch is called intonation, and it gives subtle meaning to our sentences beyond what the words themselves can convey. Pitch and intonation are often terms used interchangeably.

Pitch is directly related to word and syllable stress. Remember, content words (the words that give us the picture of what is happening) are stressed more during speech than function words (the grammatical words of the sentence). With pitch, one or more of the stressed content words of our speech will have a more dramatic rise of pitch than the other content words, and that pitch change falls mostly on the stressed syllable of that content word. How often we choose to change the pitch of our sentence depends on a number of variables.

Examples:

'It's over there'

This can be either an answer to a question such as

Q: 'Where is the cup?'

A: 'It's over there.'

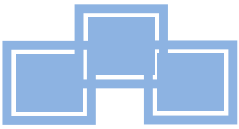
Or it could be a question:

Q: 'It's over there?'

This is just a different way of saying 'Is it over there?'

The difference between these two sentences is that for a question, your pitch **RISES** at the end of the sentences, while for a statement, it **FALLS**.

Question	It's over there?	Pitch rises at the end
Statement	It's over there.	Pitch falls at the end



TASK 12

Practice the words below with the correct pitches (fall/rise).

It's mine.	Can I ask you a question?
It's mine?	I have a question.
You're coming.	Is it important?
You're coming?	It's important.
How do you put this together?	Can you tell us more?
How DO you put this together?	I can tell you more.

DID YOU KNOW...?

The longest cells in the human body are the motor neurons. They can be up to 4.5 feet (1.37 meters) long and run from the lower spinal cord to the big toe.



D. LET'S GET MORE PRACTICE



TASK 13

Practice each part of presentation skills including the opening, the body presentation, question and answer section and the closing. The topic of the presentation must relate to food or chemistry (You may look at the previous presentations). An outline is provided to help you.

Opening:

Good Morning Ladies and Gentlemen thank you very much for coming today. My name is _____. Today, I'll be discussing _____

Body:

1. Firstly, _____

2. Secondly, _____

3. _____

Closing:

Okay. That brings me to the end of my presentation. To conclude, I'd like to say that _____

Q&A:

So, do you have any questions? _____



TASK 14

1. *Work in pairs.*
2. *Choose a topic to present (up to you).*
3. *Plan and develop the presentation for the topic.*
4. *Present your topic in front of the class.*

Opening:

Body:

1.

2.

3.

Closing:

Q & A:



E. LET'S REFLECT

Aspects	Very much	Much	Little
Understanding some examples of science in daily lives			
Understanding food toxicology			
Understanding food safety			
Understanding expressions used in a presentation			
Able to present examples of science in our daily lives			
Understanding infinitives			
Understanding pitch			
Vocabulary			

F. LET'S SUMMARIZE

In this unit, you have learnt about food toxicology and safety, how to present, infinitives and pitch.

1. Expressions used in presenting.

Greeting	Good morning ...
Introducing the talk	I'd like to talk about ...
Ordering points (Time order)	To begin with ...
Ordering points (Listing and adding)	A second reason ...
Showing open to questions	At the end, you can ask questions...
Starting a new section	Moving on to ...
Transition	Let us now move on to
Contrasting	But
Referring to visual aids	The slide (graph, chart) shows
Signposting	One way to



Giving an example	For example ...
Emphasising	In fact ...
Concluding a section	So,
Concluding the talk	Finally,
Introducing a question	I've a question about
Clarification	What did you mean when you said
More information	Could you tell us more about
Checking comprehension	So you mean?
Responding to answer	Ok, thanks.
Answering directly	Well, according to our results....
Playing for time	Er, let me see ...
Handling complex questions	Your first point is about
Dealing with awkward questions	I haven't had time to look into that, sorry.

2. Infinitives.

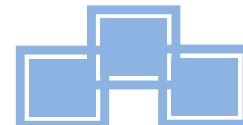
Infinitives are defined as to + base form of the verb. They have several functions.

- Used as subjects and subject complements.
 - To know me is to love me.*
 - To live in Hawaii is my lifetime dream.*
- Used as objects following certain verbs.
 - I wanted *to tell* you how much I appreciated your gift.
 - He hesitated *to ask* the embarrassing question.
- Used as a shortened form of in order to.
 - You must take this medicine (in order) *to get* well.
 - I went to the bank *to cash* a check.

Infinitives can sometimes take objects of their own.

- We hope *to find the person* who did this.
- I was asked *to make a dessert* for the potluck dinner.

This verbs are commonly followed by infinitives:



agree	consent	have	have	offer	shoot	advise
aim	continue	hesitate	hire	ought	start	allow
appear	dare	hope	instruct	plan	stop	ask
arrange	decide	hurry	invite	prefer	strive	beg
ask	deserve	intend	lead	prepare	swear	bring
attempt	detest	leap	leave	proceed	threaten	build
be able	dislike	leave	let	promise	try	buy
beg	expect	like	like	propose	use	challenge
begin	fail	long	love	refuse	wait	choose
care	forget	love	motivate	remember	want	command
choose	get	mean	order	say	wish	dare
encourage	happen	neglect	pay	expect	force	direct

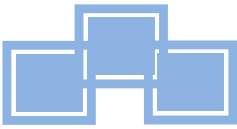
3. Pitch

Pitch is usually described as a sound's highness or lowness. The use of pitch is called intonation, and it gives subtle meaning to our sentences beyond what the words themselves can convey. Pitch and intonation are often terms used interchangeably.

Pitch is directly related to word and syllable stress. Remember, content words (the words that give us the picture of what is happening) are stressed more during speech than function words (the grammatical words of the sentence). With pitch, one or more of the stressed content words of our speech will have a more dramatic rise of pitch than the other content words, and that pitch change falls mostly on the stressed syllable of that content word. How often we choose to change the pitch of our sentence depends on a number of variables.

The difference between these two sentences is that for a question, your pitch **RISES** at the end of the sentences, while for a statement, it **FALLS**.

Question	It's over there?	Pitch rises at the end
Statement	It's over there.	Pitch falls at the end



Vocabulary List

agricultural/ ,æg.rɪ 'kʌl.tʃ ə r. ə l/ (n)	: pertanian
chemical/ 'kem.ɪ.k ə l/ (n)	: bahan kimia
container/ kən' teɪ.nə r / (n)	: wadah
contaminant/ kən'tæm.ɪ.nənt/ (n)	: zat pencemar
dosage/ dəʊ.sɪdʒ/ (n)	: takaran
dose/ dəʊs/ (n)	: dosis
entire / ɪn'taɪə r / (n)	: keseluruhan
exposure/ ɪk'spəʊ.ʒə r / (n)	: pembukaan
harm/ hɑ:m/ (v)	: melukai
illustrate / 'ɪl.ə.streɪt/ (v)	: menggambarkan
overdose/ 'əʊ.və.dəʊs/ (n)	: overdosis
pain / peɪn/ (n)	: sakit
poison/ 'pɔɪ.z ə n/ (n)	: racun
principle/ 'prɪn t .sɪ.plɪ (n)	: dasar
relieve/ rɪ'li:v/ (v)	: mengurangi
safety/ 'seɪf.ti/ (n)	: keselamatan
supply/ sə'plaɪ/ (n)	: persediaan
toxicology / ,tɒk.sɪ 'kɒl.ə.dʒi/ (n)	: ilmu tentang racun

UNIT 4

TODAY, WE'RE GOING TO DISCUSS EYES DISORDER.



Picture 4.1
www.therapearl.com

Discussion is important to learning in all disciplines because it helps us process information rather than simply receive it. As an instructional activity, discussion provides the opportunity for its participant to talk to each other and the instructor. A good discussion gives us an opportunity to formulate principles in our own words and to increase ours' sensitivity to others point of view. In this unit, you will learn how to participate in a discussion of a certain topic.



A. LET'S START



TASK 1

Study the picture below and answer the questions orally.



Picture 4.2
www.britishcouncil.org



Picture 4.3
www.sunteaching.blogspot.com



Picture 4.4
www.didikharry.blogspot.com

Questions

1. Have you ever been ill?
2. What happened to you?
3. What do you know about diseases in the pictures?
4. Can you mention other types of diseases?



B. LET'S PRACTICE



TASK 2

Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.

No.	Word	Pronunciation	Part of Speech	Equivalence
1.	Disease	/dɪ'zi:z/	n	penyakit
2.	Symptom	/'sɪm p .təm/	...	...
3.	Syndrome	/'sɪn.drə ō m	...	...
4.	Suffer	/'sʌf.ə r /	...	...
5.	Immune	/ɪ'mju:n/	...	...
6.	Germ	/dʒɜ:m/	...	...
7.	Infection	/ɪn'fek.ʃ ə n/	...	...
8.	Prevalent	/'prev. ə l.ənt/	...	...
9.	System	/'sɪs.təm/	...	...
10.	Simply	/'sɪm.pli/	...	...
11.	Epidemic	/,ep.rɪ'dem.ɪk/	...	...
12.	Devastating	/'dev.ə.steɪ.tɪŋ/	...	...
13.	Effect	/ɪ'fekt/	...	...
14.	Combat	/'kɒm.bæt/	...	...



TASK 3

In this part, you are going to listen to a discussion about HIV/AIDS. Listen to it and take notes for important information. Then, with your partner, answer the questions below by putting T if the answer is true, F if the answer is false and NC if the answer is not clear. Then, discuss your answers with your friends.

No.	Statement	T/F/NC	Reason
1.	Richard is ABC correspondent.	F	He is BBC World Service Science Correspondent.
2.	HIV refers to the virus and AIDS refers to the patient.	...	...
3.	People with HIV/AIDS were suffering from an immune system that was not working properly.	...	...
4.	You cannot have HIV without having AIDS.	...	...
5.	HIV positive means that you are infected with HIV.	...	...
6.	HIV stands for a disease, the Human Immunodeficiency Virus.	...	...
7.	AIDS stands for Acquired Immune Deficiency Syndrome.	...	...
8.	HIV/AIDS has been described as devastating epidemic.	...	...
9.	Most of young people in the city died because of AIDS.	...	...
10.	People infected with HIV will show signs of AIDS.	...	...



TASK 4

Listen to the discussion one more time and answer the following questions with orally.

1. What is the topic of the discussion?
2. Where does the discussion probably take place?
3. Who are the speakers in the discussion?
4. What are their jobs?
5. How did the Gary start the discussion?



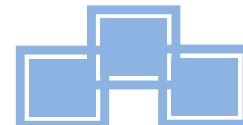
TASK 5

Study the discussion between John Baker (A), Dr. Laura D. Cook (B) and Dr. Billy Johnson (C). Make a group of three, and then act out the discussion. One of you acts as the moderator (John Baker) and the other two act as the speaker (Dr. Laura Cook and Dr. Billy Johnson). Then, to check your comprehension, answer the following questions.

Script A

John Baker	: Good morning everybody, my name is John Baker and I will conduct this discussion. Today we are going to discuss eye disorder with Dr. Laura D. Cook and Dr. Billy Johnson. On this very timely subject, but before we get started, I wanted to take a few minutes of your time. Please remain quiet throughout the discussion, and please turn your cell phones to silent mode. Now, let's start our discussion. Dr. Laura D. Cook, what are cataracts?
Dr. Laura D. Cook	: ...
John Baker	: What causes cataracts?
Dr. Laura D. Cook	:
John Baker	: Dr. Billy Johnson, besides seniors, who else is more likely to develop cataracts?
Dr. Billy Johnson	:
John Baker	: What are the symptoms of cataracts?
Dr. Billy Johnson	: ...
John Baker	: So, how are cataracts treated?
Dr. Laura D. Cook	: ...
John Baker	: What can I do to prevent cataracts?
Dr. Billy Johnson	: ...
John Baker	: Thank you very much Dr. Laura D. Cook Dr. Billy Johnson. I think that brings us to the end of the discussion. Are there any questions? Thank you for listening so attentively!

Adapted from: <http://monkeysee.com/play/11469- cataracts>



Script B

John Baker : ...
Dr. Laura D. Cook : Cataracts are a change in clarity and consistency of the lens which sits right here in the eye that usually goes along with age.

John Baker : ...
Dr. Laura D. Cook : Normally, just aging causes cataracts. Every year of age changes the clarity and the consistency of the lens. There are certain other disease processes or conditions that can cause that as well. Diabetes is one, been highly nearsighted is another or high myopia, inflammation inside of the eye, or having been on steroids in the past topically can actually accelerate cataract formation.

John Baker : ...
Dr. Billy Johnson : ...
John Baker : ...
Dr. Billy Johnson : ...
John Baker : ...
Dr. Laura D. Cook : So, the only treatment we have available right now is surgical treatment and many patients will enquire whether this means if they actually have to have an incision and yes, it does mean that you have an incision. This incision is generally just a few millimeters and doesn't need a suture or a stitch.

John Baker : ...
Dr. Billy Johnson : ...
John Baker : ...

Adapted from: <http://monkeysee.com/play/11469- cataracts>

Script C

John Baker : ...
Dr. Laura D. Cook : ...
John Baker : ...
Dr. Laura D. Cook : ...
John Baker : ...
Dr. Billy Johnson : Diabetics often will develop cataracts earlier on, patients that have a family history of cataract at an early age, patients that have been on steroids, anybody who has had eye trauma, anybody who has had inflammation inside of the eye and then there are certain syndromes, there is a whole host of chromosome syndromes and abnormalities that also can cause cataracts especially in young children.



John Baker	: ...
Dr. Billy Johnson	: So the most common complaints or symptoms are a decrease in vision or trouble with glare. When we see decrease in vision, what I really mean is that their best corrected visual acuity isn't satisfactory. The second symptom causes decrease in visual acuity or difficulty seeing or even from the sunlight and those things can really be devastating to a patient.
John Baker	: ...
Dr. Laura D. Cook	: ...
Dr. Billy Johnson	: Your options are limited in terms of prevention. If it's associated with a disease process like diabetes, controlling your blood sugar is very important. In terms of steroid use, limiting steroid use to patients and the last one, the easiest thing you can do is wear sunglasses. The more sun exposure there is and so in terms of sunglasses, wearing them at a young age and being consistent about using sunglasses with UV protection is important.
John Baker	: ...

Adapted from: <http://monkeysee.com/play/11469- cataracts>

Question:

1. What is the topic of the discussion?
2. Where does the discussion probably take place?
3. Who is Dr. Laura D. Cook?
4. Can cataracts be treated?
5. What can we do to prevent cataracts?



TASK 6

Work in pairs. From the discussion in Task 5, discuss expressions used by the moderator and the speakers and their functions. Take a look at an example below.

	Functions	Expressions
Moderator	Greeting	Good Morning

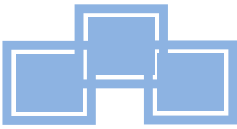


TASK 7

During a discussion, you may find someone who interrupts. Make a group of three, each of you acts as Sarah (A), Alex (B), and John (C) Study the dialogues, the expressions and their functions. Then, act it out with your partner.

Expressions	Functions
let's get down to business	: Marking a transition
any other thoughts before I comment on that	: Asking opinion
If you could go through them in order	: Suggesting
First of all	: Ordering points
sorry to hold the meeting up	: Interrupting
thanks for coming.	: thanking

Script A	
Sarah	: Right then, Alex, let's get down to business . On the agenda today for our research team meeting are selecting the time and setting for our observation. Are you quite happy with those points?
Alex	: ...
Sarah	: OK everybody, thanks for coming . Let's keep this meeting fairly brief, really just a couple of things on the agenda. First of all, as you can see, we've agree upon our focus of the research, that is understanding Asthma: how the environment, allergens, and genetics interact with the body's immune system to cause the disease and aggravate the symptoms. First of all , the observation time. I just wanted to remind everybody that next Monday will be a national holiday, I think it would be the perfect time to do our observation.
John	: ...
Sarah	: Well, any other thoughts before I comment on that?
Alex	: ...
Adapted from: http://www.bbc.co.uk/worldservice/learningenglish/1agenda.shtml	



Script B

Sarah : ...

Alex : Yeah, that's fine. **If you could go through them in order**, that'd be great.

Sarah : ...

John : ...

Sarah : ...

Alex : I don't think we've got any choice at all about it. If the university is going to give us the permission at the beginning of next month, we've got to do the observation at the same time.

Adapted from: <http://www.bbc.co.uk/worldservice/learningenglish/1agenda.shtml>

Script C

Sarah : ...

Alex : ...

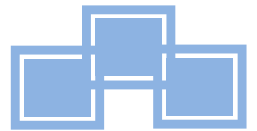
Sarah : ...

John : Actually Sean, can I just ask you- **sorry to hold the meeting up** - can I ask you about those dates, because I thought that the observation is going to be on the month after next, and I understand that everybody has got their dates, but I do feel quite strongly that we're bringing this out too soon.

Sean : ...

Alex : ...

Adapted from: <http://www.bbc.co.uk/worldservice/learningenglish/1agenda.shtml>



TASK 8

From the dialogue in Task 5, there are some expressions used often during a discussion. Practice the following expressions.

Interrupting
First of all Can I just ask you? Sorry to hold the discussion up I do feel quite strongly that... I don't think we've got any choice at all Any other thoughts?



TASK 9

Interruptions Game

Work in small groups. One of you speaks for three minutes on a subject of your choice. The others must interrupt you as many times as possible, using the language from in the interruptions section (Task 6). After three minutes, another member of the group speaks, and the rest of the group interrupts him /her.



C. LET'S STUDY



TASK 10

Practice the following expressions.

Greeting	Good Morning/ Afternoon/ Evening Ladies and gentlemen Welcome Hi/ hello
Introducing	Let me start by introducing myself. My name is... I'm in charge As some/ most of you already know, I am...
Opening a discussion	To begin with, We need to discuss . . . Let's start by (V ing) We'll start by (V ing) The problem here is . . . The important thing (here) is . . . The main thing we need to discuss is . . . Let's look at . . . It looks like . . . It appears that . . .
Expressing opinion	I think. . . I believe. . . I don't think that . . . In my opinion . . .
Adding opinion	You made a good point but I'd also like to add. . .
Asking for input	What do you think? How about you? How do you feel about that? Any ideas on that? What's your opinion on that, Martha?



	Any thoughts on that?
Responding	That sounds like a) good idea. Sounds good. The problem with that is . . . That raises the issue of . . .
Contradicting	However Yeah, but On the other hand, You may be right, but . . . I may be wrong, but . . . Correct me if I'm wrong, but . . .
Interrupting	Sorry, but. . . May I say something. . . Excuse me, Pardon me, Sorry to interrupt, May I interrupt (for a minute)? Can I add something here? I don't mean to intrude, but . . . Could I inject something here? Do you mind if I jump in here?
Holding the floor	Please let me finish. . .
Returning to your saying	As I was saying . . . Don't get me wrong. . . Anyway, Now, where was I? Where were we? What were you saying?
Clarifying your own ideas	In other words, What I mean is . . . What I'm trying to say is . . . What I wanted to say was . . . To clarify,
Asking for Clarification	What do you mean (by that)? What are you trying to say? What was that again? Could you clarify that? Could you elaborate on that?
Clarifying another's ideas	You mean . . . What you mean is . . . What you're saying is . . . (I think) what she means is . . .



	<p>What he's trying to say is . . .</p> <p>If I understand you, (you're saying that . . .)</p> <p>So, your idea is . . .</p>
Making a Suggestion/Proposal	<p>I think we should . . .</p> <p>Maybe we should . . .</p> <p>I suggest . . .</p> <p>Why don't we . . .</p> <p>How about . . .</p> <p>We could . . .</p>
Agreeing	<p>I agree.</p> <p>So do I.</p> <p>Me too.</p> <p>Me neither. (Agreeing about a negative idea.)</p> <p>I don't either (Agreeing about a negative idea.)</p> <p>You're right.</p> <p>That's right.</p> <p>Good idea.</p> <p>I think that's a good idea.</p>
Disagreeing	<p>I disagree.</p> <p>I don't think so.</p> <p>(No.) That's not right.</p> <p>Yes, but...</p> <p>(I'm sorry, but) I don't agree</p>
Giving examples	<p>For instance,</p> <p>Let me illustrate,</p> <p>To illustrate,</p>
Questions	<p>Do you have any questions?</p> <p>Are there any questions?</p> <p>Yes, the gentlemen/ladies sitting there (points).</p>
Signaling the end	<p>That brings us to the end of our discussion...</p>
Summarizing	<p>In summary,</p> <p>The conclusion is . . .</p> <p>So, we've decided to . . .</p> <p>We're going to . . . (then)</p> <p>In conclusion,</p> <p>To conclude,</p> <p>To summarize,</p> <p>To sum up,</p>

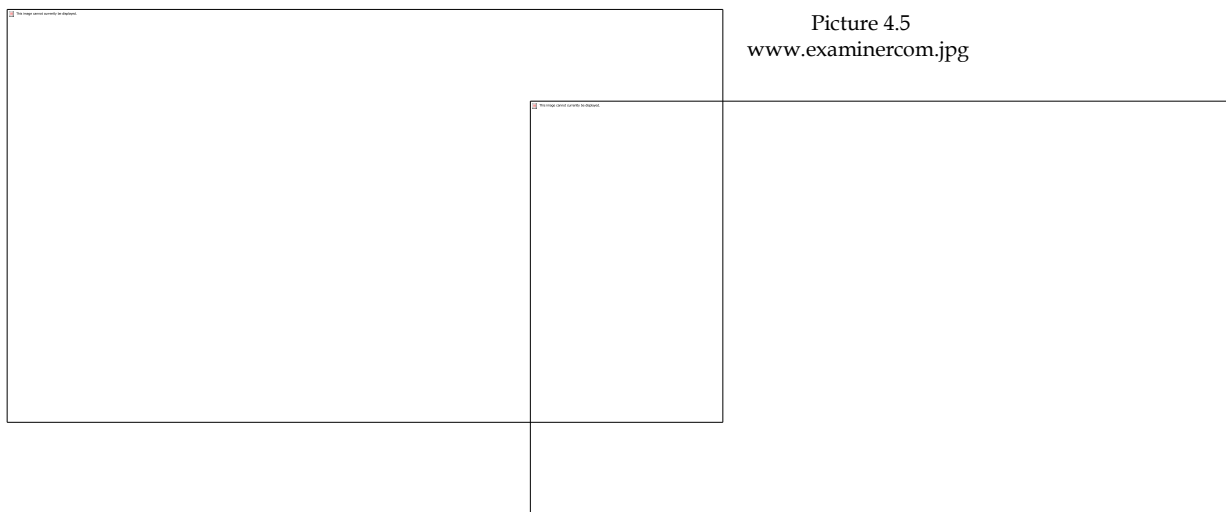


Closing	Thank you for your attention Thank you for listening
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TASK 11

Study the following monologues and act it out. Then, study the explanation about describing visual aids and numbers.



Picture 4.5
www.examiner.com/jpg

Let's take a look at these two pie charts. Here we can see four diseases in rich countries and the developing world. In general, the most significant difference is that infectious and parasitic diseases still plague millions of people in poorer countries but almost none in wealthier ones.

First, in developing countries, almost half, 46%, of all illnesses are due to infectious and parasitic diseases. Heart disease is a close second with just 3% less. Third, comes cancer with only 9%. Finally other diseases account for just a fraction, 2%, of all the illnesses.

In contrast, in affluent countries, other diseases are the biggest segment. They account for over 54%, of all illnesses. Following them comes heart disease with 24%, around/about half the number recorded for developing countries. Cancer is not far behind at a staggering 21%. Last, infectious and parasitic diseases comprise a mere 1%



of the ailments.

To conclude, there are major differences between the two regions in terms of diseases. Overall, most individuals in developing countries suffer from infectious and parasitic diseases whereas people in richer nations experience cancer, heart disease, and a wider range of other illnesses.

Adapted from: <http://www.ecospherics.net/.html>

Expressions used in describing visual aids

Introducing visual aids	Meaning of the visual
Ok. Let's take a look at... I have a transparency to show you... The first/second/next/final slide is... Have a look at this.	This shows/illustrates/refers to... This is a graph which shows... As you can see, this is... Here we can see...
Focusing attention	Check with the audience
I'd like to draw your attention to... One of the most important aspects of this is... At first glance it seems...but...	Is that clear for everyone? Is that in focus? Can everybody see that?

Expressions used in describing numbers

Ordinal numbers	Fractions	Decimals
<ul style="list-style-type: none"> 1st:First 2nd:Second 95th:ninety-fifth 101th:one hundred and first 	<ul style="list-style-type: none"> $\frac{1+x}{1-x}$: One plus x over one minus x (or divided by) $\frac{1}{2}$: a half $2\frac{1}{2}$: two and a half $\frac{1}{4}$: a quarter $\frac{3}{4}$: three quarters 	<ul style="list-style-type: none"> 0.0345 : Zero point zero three four five 0.5 :zero point five 2.5 :two point five 0.25 :zero point two five 0.75 :zero point seven five
Percentages	Units	Trigonometric functions



<ul style="list-style-type: none"> • 68% :Sixty eight per cent 	<ul style="list-style-type: none"> • 10 m: ten meters • 85,000 gal: eighty-five thousand gallons • 35oC: thirty-five degrees Celsius • 40 kg: forty kilograms (kilos) • 85 lb: eight-five pounds 	$\frac{\sin \alpha}{A} = \frac{\sin \beta}{B} = \frac{\sin \gamma}{C}$ <p>sine alpha over A equals sine beta over B...</p>
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TASK 12

Have a discussion with your tutors and friends about gerunds.

Gerunds
<p>In task 10, you probably find this sentence: <i>Speaking as a team leader, I think I'd like to hold a meeting as soon as possible.</i> The word 'Speaking' in the sentence is a gerund</p> <ol style="list-style-type: none"> 1. What are gerunds? 2. What are the functions of gerunds? 3. Mentions examples of verbs commonly followed by gerunds.



TASK 13

Study the following explanation and practice the examples.

Reduced Form			
<p>In task 12, you'll notice that Carrie said: <i>I think I'd like to hold a meeting as soon as possible</i> I'd is a reduced form of I would.</p>			
Positive Statement		Negative Statement	
Long form	Short form	Long form	Short form



is are am has have had will would	's 're 'm 's 've 'd 'll 'd	is not are not am not has not have not had not will not would not	isn't aren't I'm not hasn't haven't hadn't won't wouldn't
Examples:			
Regular		Contracted:	
I am British. He is Chinese. They are Italians. There is a man at the door. Where is the butter? What is he doing? Who is that? She is going to the beach. We are going to eat now. They are not ready yet. I will be back in a minute. There will be lots of food. I have seen that movie already. She has finished her homework. I had played that game before. We would be glad to help.		I'm British. He's Chinese. They're Italians. There's a man at the door. Where's the butter? What's he doing? Who's that? She's going to the beach. We're going to eat now. They're not ready yet. I'll be back in a minute. There'll be lots of food. I've seen that movie already. She's finished her homework. I'd played that game before. We'd be glad to help.	



D. LET'S PRACTICE MORE



TASK 14

Here's a dialogue about agreeing and disagreeing. Study the dialogues and act it out with your partner.

Sean : The observation schedule move, as you know, and Billy informed me that our topic also changed. Just wanted to see what kind of feedback you've got.

Tim : Yeah, Sean, **I really strongly disagree** with the new topic plan. I think it's divisive to change our observation topic in all of sudden. I'd be much happier if we discuss it in a meeting first

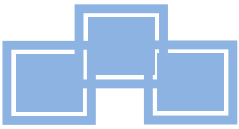
Carrie : Actually, **I think Tim is right**. I've been chatting to most of the team members They're quite keen to have a discussion first. Speaking as a team leader, I think I'd like to hold a meeting as soon as possible. **So I think Tim's discussion plan is right.**



TASK 15

Work in pairs. From the discussion in Task 14, identified expressions used by the moderator and the speakers. Then, discuss their functions. Look at the example below.

	Functions	Expressions
Moderator	Greeting	Good Morning



TASK 16

Have a pair discussion. The topic can be range from HIV/AIDS, cataracts, diabetes or other diseases. Each of you serves as the moderator and the speaker. Make sure to use appropriate expressions. Use the box below to write your discussion script.

....:	
....:	
....:	
....:	
....:	
....:	
....:	
....:	
....:	
....:	



TASK 17

In this part, you will have to make a group consist of four people. Each of you will serve as the moderator, and the speakers. Choose one of the most interesting topics below and start the discussion with your group in front of the class.

Situation 1	Situation 2
Do you think a good lifestyle is the most effective way to prevent people from sickness?	Are organic food always good for your health? Are you willing to pay more for food that is really organic?
Situation 3	Situation 4
What are the steps of being healthy?	What can we do to decrease the number of people affected by HIV/AIDS?
Situation 5	Situation 6
What are some traditional ways or medicine you have seen to cure illness?	What are bad habits that can affect our health condition?



FUN SPOT

Listen to a song about cell theory. Listen to it carefully and sing it together with your friends.

All living things are composed of cells

Cells are the basic units of structure and function in living things

New cells are produced from existing cells

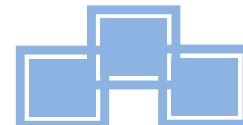
Back then was a guy named Hooke, cut some cork and he had a look



Underneath his microscope tiny rooms that he saw in groups
Empty rooms that looked like shells He's the one that called them cells
Listen up cause we're not done Cell theory had just begun
Add one scientist to know the inventor of the microscope
Anton von Leeuwenhoek saw cells move and he was like "That's dope"
Cell theory, cell theory, cell theory, cell theory, cell theory, go!
If you thought this was complete take a breath and have a seat
Two scientists to have their say Schleiden and Schwann to save the day
Schleiden said all plants have cells they are alive and we can tell
The next year Mr. Schwann could see all animals have cells that live and breathe
Oh they live and breathe Live and breathe

E. LET'S REFLECT

Aspects	Very much	Much	Little
Understanding HIV/AIDS, cataracts and diabetes			
Understanding expressions in a discussion			
Understanding scientific laws, theories and hypotheses			
Understanding gerunds			
Understanding reduced form			
Able to participate in a discussion			
Vocabulary			



F. LET'S SUMMARIZE

In this unit, you have learnt about how to discuss something, HIV/AIDS, cataracts, and diabetes, gerunds, and reduced form in English.

1. Expressions used in a discussion.

Opening a discussion	To begin with, We need to discuss . . .
Expressing opinion	I think. . . I believe. . .
Adding opinion	You made a good point but I'd also like to add. . .
Asking for input	What do you think? How about you?
Responding	That sounds like a) good idea. Sounds good.
Contradicting	However Yeah, but
Interrupting	Sorry, but. . . May I say something. . .
Holding the floor	Please let me finish. . .
Returning to your saying	As I was saying . . . Don't get me wrong. . .
Clarifying your own ideas	In other words, What I mean is . . .
Asking for Clarification	What do you mean (by that)? What are you trying to say??
Clarifying another's ideas	You mean . . . What you mean is . . .
Making a Suggestion/Proposal	I think we should . . . Maybe we should . . .
Agreeing	I agree. So do I
Disagreeing	I disagree. I don't think so.
Giving examples	For instance,
Summarizing	In summary, The conclusion is . . .



2. Gerunds.

Gerunds are defined as the -ing form of a verb. They have several functions.

1. Used as subjects and complements
 - *Skiing* is my favorite sport.
 - *Hiking* can be very strenuous.
 - *Seeing* is believing
2. Used as objects following prepositions and prepositional expressions
 - Thanks for *tending* my children.
 - The job consists of *typing*, *filing*, and *answering* the phone.
3. Used as objects following certain verbs.
 - The children enjoyed *watching* the parade.
 - Ms. Terrell avoided *paying* her taxes until it was too late.

Gerunds can sometimes take objects of their own:

- Roland is afraid of *making* mistakes.
- Sandy is *considering* leaving New York.

These verbs are commonly followed by gerunds:

Admit	Stop	Hate	Recommend
Advise	Threaten	Hesitate	Regret
Anticipate	Tolerate	Imagine	Suggest
Appreciate	enjoy	Intend	Threaten
Attempt	Quit	Keep	Tolerate
Avoid	forget	Like	Try
Begin	Recall	Love	Understand
can't help	Recollect	Mention	Suggest
Complete	finish	Mind	Go
Consider		Miss	Remember
Delay		Neglect	Resent
Deny		Postpone	Resist
Discuss		Practice	Risk
dislike		Prefer	Start

3. Reduced Form.

Positive Statement		Negative Statement	
Long form	Short form	Long form	Short form

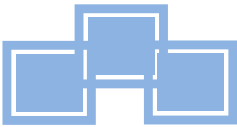


is	's	is not	isn't
are	're	are not	aren't
am	'm	am not	I'm not
has	's	has not	hasn't
have	've	have not	haven't
had	'd	had not	hadn't
will	'll	will not	won't
would	'd	would not	wouldn't

4. Describing visual aids and numbers.

Introducing visual aids	Meaning of the visual
Ok. Let's take a look at... I have a transparency to show you... The first/second/next/final slide is... Have a look at this.	This shows/illustrates/refers to... This is a graph which shows... As you can see, this is... Here we can see...
Focusing attention	Check with the audience
I'd like to draw your attention to... One of the most important aspects of this is... At first glance it seems...but...	Is that clear for everyone? Is that in focus? Can everybody see that?

Ordinal numbers	Fractions	Decimals
<ul style="list-style-type: none"> 1st:First 2nd:Second 95th:ninety-fifth 101th:one hundred and first 	<ul style="list-style-type: none"> $\frac{1+x}{1-x}$: One plus x over one minus x (or divided by) $\frac{1}{2}$: a half $2\frac{1}{2}$: two and a half $\frac{1}{4}$: a quarter $\frac{3}{4}$: three quarters 	<ul style="list-style-type: none"> 0.0345 : Zero point zero three four five 0.5 :zero point five 2.5 :two point five 0.25 :zero point two five 0.75 :zero point seven five
Percentages	Units	Trigonometric functions



<ul style="list-style-type: none"> • 68% :Sixty eight per cent 	<ul style="list-style-type: none"> • 10 m: ten meters • 85,000 gal: eighty-five thousand gallons • 35oC: thirty-five degrees Celsius • 40 kg: forty kilograms (kilos) • 85 lb: eight-five pounds 	$\frac{\sin \alpha}{A} = \frac{\sin \beta}{B} = \frac{\sin \gamma}{C}$ <p>sine alpha over A equals sine beta over B...</p>
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Vocabulary List

abnormality / ,æb.nɔ: 'mæl.ə.ti/ (n)	: abnormalitas
accelerate / ,æk 'sel.ə.reɪt/ (v)	: mempercepat
acuity / ,ə 'kju: .ə.ti/ (n)	: ketajaman
brief / bri:f/ (adj)	: singkat
clarity / 'klær.i.ti/ (n)	: kejelasan
consistency / kən 'sɪs.t ə n t .si/ (n)	: konsistensi
deficient / dɪ 'fɪʃ. ə nt/ (adj)	: kurang
devastating / 'dev.ə.steɪ.tɪŋ/ (adj)	: mengenaskan
digest / d a ɪ 'dʒest/ (v)	: mencerna
disorder / dɪ 'sɔ: .də r / (n)	: penyakit
evidence / 'ev.i.d ə n t s/ (n)	: bukti
fairly / 'feə.li/ (adv)	: secara wajar



formation /fɔː'meɪ.ʃən/ (n)	: pembentukan
incision /ɪn'sɪʒ.ən/ (n)	: torehan
infected /ɪn'fek.tɪd/ (adj)	: terinfeksi
inflammation /,ɪn.flə'meɪ.ʃən/ (n)	: peradangan
lens /lenz/ (n)	: lensa
ophthalmology /,ɒf.θæl'mɒl.ə.dʒi/ (n)	: ilmu pengobatan mata
sufferer /'sʌf.ə r.ə r/ (n)	: penderita
surgical /'sɜː.dʒɪ.kəl/ (n)	: pembedahan
symptom /'sɪm.p.təm/ (n)	: gejala
syndrome /'sɪn.drəʊ m/ (n)	: sindrom
treated /tri:t/ (v)	: diperlakukan

Appendices

UNIT 1

Task 3 & 4 transcript

What is a comet?

In this "What Is" video, we explore comets, those unique streaks of light in our night sky that rarely visit us. Comets are icy objects, typically ranging a few miles in size, which orbit our Sun. Their highly elliptical orbits carry them from close to the Sun all the way to the outer edges of the solar system. When a comet gets close to the Sun, its outer layers of ice melt and evaporate creating an atmosphere of gas and dust around the comet. This atmosphere is called a coma. Radiation from the Sun pushes some of this atmosphere into a long tail. A comet's tail always points away from the Sun, no matter which way the comet is moving. Gases in the coma and tail of a comet reflect the light from the Sun giving comets their familiar appearance. But Comets are very dark and hard to see when they aren't near the Sun. The time between one visit near the Sun and the next is called the comet's period. The first comet whose period was known was Halley's Comet. Its period is 75 years. Halley's Comet last traveled through the inner solar system in 1986. Comets with periods of 200 years or less are called short period comets. Short period comets are from a region beyond the orbit of Neptune called the Kuiper Belt. The Kuiper Belt is home to comets, asteroids, and dwarf planets. Long period comets have periods of thousands or even millions of years. Most long-period comets come from a very distant region of the solar system called the Oort cloud. The Oort cloud is about 50,000-100,000 times the distance from the Sun to Earth. Comets carry materials in from the outer solar system. Some scientist believes that water may have been brought to early Earth from a collision with a comet carrying water.

Task 5 transcript

Emerald Robinson: Hi! I'm Emerald Robinson. In this What is? video, we're going to take a closer look at asteroids. Asteroids are small planetary objects orbiting the sun, their hard, rocky bodies, differentiate them from comets, which are made of small rocks, dust and ice. Asteroids range in size from a few meters across to objects large enough to trap smaller asteroids in their gravitational pull, like moons orbiting a planet. Asteroids lack the gravitational force needed to round out like planets, so most are irregularly shaped. They have no atmospheres, and are not geologically active. Hundreds of thousands of asteroids exist in the solar system, most occupying an area between Mars and Jupiter called the Asteroid belt. Despite their numbers, the combined mass of all solar system asteroids only equals the mass of the moon. Asteroids that cross the Earth's orbit are called near-earth asteroids. Astronomers have discovered approximately 4,500 near-earth asteroids, including up to 1,000 with 1 kilometer diameters; at least one asteroid with a 4 to 10 meter diameter hits the earth every year.

Task 12 transcript

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The Asteroid belt
 The Kuiper belt
 It's hard to count
 These rocky mounds
 The universe has millions of them see
 It's space debris
 Asteroids-large pieces come in threes
 Carbonaceous C-Type are rough stony, rough stony
 Silicaceous S-Type are bright shiny, bright shiny
 Finally metallic M-Type metal cores you see
 Turn outside the belt
 Now we'll start with the Trojans
 They clump and stick
 In Jupiter's band
 Can you see that it is time?
 Apollo's this way, orbits Sun but away
 Some come close to us
 Near Earth asteroids thus

*

Comets are ice, dirty, ice, dirty
 They travel around the Sun orbiting, orbiting
 The nucleus is made of ice, grit, and gas-frozen
 So when we see the comets tail it's just now melting
 Turn to meteors
 Now they're breaking into grains
 Of asteroids, comets
 Think if you can
 They are falling all the time
 Time to burn up away, shooting stars they stay
 Meteors if they land
 On the Earth so grand

*

UNIT 2

Task 4 transcript

Hi, I am Emerald Robinson and in this What is? video we are going to discuss one of science's most famous theories; Albert Einstein's theory of relativity.

The theory of relativity has two parts; special relativity and general relativity. Special relativity states that the laws of physics apply no matter how fast you are moving. For example, the same rules of gravity applied to a brick tossed out of a

moving airplane as to one dropped off a building.

Einstein applied this principle to light, stating that the speed of light represented by c is constant. Light always travels at the same speed for all observers no matter how fast you are moving, or how fast the source of the light is moving. The light that comes from a car's headlights always moves at the same speed whether the car is parked or moving at 65 miles an hour.

The theory of special relativity changed the ways scientists thought about time. Until Einstein's theory it was thought that everyone experienced time the same way. Special relativity determined that the rate at which time passes to you depends on your speed, the faster you are moving the slower that time passes.

Special relativity is also the place where one of world's most famous mathematical formulas comes from $E=mc^2$. In this equation E stands for energy, m represents mass and c is the speed of light. In other words energy and mass are equivalent; one can't exist without the other.

Based on the theory of special relativity, Einstein became convinced that space and time are not separate. General relativity is a theory that gravity is caused by bending time and space. It's been used to explain how light bends around objects in space, like the light we see during a solar eclipse.

Task 5 transcript

Hi! I'm Emerald Robinson, and in this What Is video, we're going to discuss one of the biggest forces of nature: gravity. Most of us define gravity as the force that holds us down on the earth, or causes things to fall. But, it's a little more complicated. A better definition of gravity is the attraction between two masses.

Every object in the universe, from the smallest atom to the largest galaxy, is made of matter. The amount of matter in something makes up its mass. Things that have a lot of matter in them have a high mass, and a high gravitational force, or pull. More mass in an object means it has a greater attraction to other objects.

The gravitational force between two objects also depends on how far apart they are. The closer two objects are together, the stronger the gravitational force is between them. How do these things affect us? You and the earth both have mass. Therefore, you pull on the earth, and the earth pulls on you. However, the earth's mass is much, much larger than yours, so its gravitational force is enough to keep you down on its surface.

When you jump, you push away from the earth. But, because the earth's mass is so much bigger, its gravitational force pulls you back down. Astronauts on the moon experienced about one-sixth the gravity that they felt on earth. This is because the moon has a smaller mass than the earth. Gravity is also why we weigh less on the moon since weight in pounds or kilograms depends on the force of gravity on an object. Gravity even holds the earth's atmosphere in place, causes the ocean's tides, and keeps the moon and planets in their orbits. It's truly an important force.

Fun Spot transcript

Our whole universe was in a hot dense state,
Then nearly fourteen billion years ago expansion started. Wait...
The Earth began to cool.
The autotrophs began to drool.
Neanderthals developed tools.
We built a wall. (We built the pyramids.)
Math, science, history, unraveling the mystery,
That all started with a big bang!

Since "The Dawn of Man" is really not that long,
As every galaxy was formed in less time than it takes to sing this song.
A fraction of a second and the elements were made.
The bipeds stood up straight.
The dinosaurs all met their fate.
They tried to leap, but they were late,
And they all died. (They froze their asses off.)
The ocean and Pangaea,
See ya, wouldn't wanna be ya!
Set in motion by the same big bang!
It all started with the big BANG!
It's expanding ever outward, but one day,
It will pause and start to go the other way:
Collapsing ever inward. We won't be here. It won't be heard.
Our best and brightest figure that it'll make an even bigger bang!
Australopithecus would really have been sick of us
Debating how we're here, they're catching deer (we're catching viruses)
Religion or astronomy (Descartes or Deuteronomy)
It all started with a big bang!
Music and mythology (Einstein and astrology)
It all started with a big bang!
It all started with a big BANG!

UNIT 3

Task 3 & 4 transcript

Hi! My name is Carl Winter. I'm a spokesperson for the Institute of Food Technologists and also a faculty member in Food Toxicology, at the University of California, Davis.

Today I'll be talking about food safety issues that involve potentially dangerous chemical contaminants that make their way into the food supply. There is currently a

lot of interest and a lot of concern, concerning many of these chemical issues in food, such as, pesticide residues that might show up on fruits and vegetables, metals that might show up in seafood.

In some cases, contaminants that come from plastic containers that hold water. There is a lot of chemical issues out there, what I'm going to try to do today is to provide some of the scientific background to discuss these issues. Hopefully, you'll be able to take this information and use it to make good choices about food for yourself and for your family.

Before doing that, I'd like to first tell you a little bit about myself. I hold a PhD in Agricultural and Environmental Chemistry, and I've been a faculty member at the University of California for the last 22 years. In my role there, I am also the Director of a program called the Food Safe Program which is an educational program designed to provide information about food safety to consumers in a variety of health professionals.

When we talk about poisons, contaminants in our foods, we really need to talk about the subject of toxicology. So in the next segment, I'll be discussing some of the basic principles of toxicology which is the science of poisons.

Task 5 transcript

Hi! My name is Carl Winter, I am a spokesperson for the Institute of Food Technologists. I am a Food Toxicologist on the faculty at the University of California, Davis.

Today I'll be discussing food safety issues that pertain to potentially dangerous chemical contaminants in the food supply. In the previous segment, we discussed a little bit about toxicology which is the basic science of poisons. One of the most important principles of toxicology is that the dose makes the poison. In essence, all chemicals are toxic, if the dose of those chemicals is high enough. So it's not the presence or absence of a chemical contaminant in food that determines the potential for harm, but rather the amount of that chemical.

One way to illustrate this is to consider if we have a headache, we might want to take some pain relievers. If we follow the regular dosage, which might be one or two tablets of a pain reliever, hopefully, that will be a low enough dose to relieve our headaches but not enough of a dose to make us sick. If on the other hand, we decided to take the entire contents of that bottle, we might find ourselves in a hospital with an overdose. In both cases, it's the same chemical that we're exposed to, but there's a difference in the dose; the dose makes the poison.

When we talk about exposure to chemical contaminants in the food supply, fortunately, in most cases our exposure to these chemicals is very small. In the next segment, I'll discuss the dose of chemicals that we are exposed to in the food supply.

UNIT 4

Task 3 & transcript

Richard : One term – HIV – refers to the virus, the thing that actually causes the disease. Whereas the other term – AIDS – refers to the disease itself, the set of symptoms which the patient has.

Gary : BBC World Service Science Correspondent Richard Black.

Richard : Now, the disease was discovered first. It was then called a syndrome because what happened was: patients were turning up with a certain collection of symptoms, and when doctors see this but they don't know what's causing the symptoms, they call this a syndrome. The people were obviously suffering from an immune system that was not working properly – so hence “immune deficiency syndrome”. And it was obviously something that was not inherited, they were picking it up, they were acquiring it – hence Acquired Immune Deficiency Syndrome. Only later on did scientists find out what was actually causing this – and this is HIV – Human Immunodeficiency Virus.

Gary : If someone has AIDS – what does that mean in practical terms?

Richard : What it means basically is that their immune systems, their bodies, cannot fight off germs that come along – so any bacterium, any virus, any fungus which comes along which can infect them, will infect them, and they will become sick with it. There are other things that happen as well, for example, some infections which lead to certain types of cancer are much more prevalent in people who have AIDS. But that's basically the idea: the immune system does not work properly, you cannot fight off infections.

Gary : So what we're saying here is that you can have HIV without actually having AIDS – is that right?

Richard : That's absolutely right. Many people are infected with HIV – sometimes for years before they show the signs of AIDS.

Gary : What about the terms HIV positive and HIV negative?

Richard : HIV positive simply means that you are infected with HIV – you have the virus. HIV negative simply means that you don't.

Gary : HIV is a virus -- the Human Immunodeficiency Virus. A person infected with HIV develops AIDS -- or Acquired Immune Deficiency Syndrome – when their immune system eventually becomes too weak – or deficient – to fight off infections. It's possible to be infected with the virus, to be HIV positive, without developing the symptoms of AIDS for many years. As we've heard HIV/AIDS has been described as devastating epidemic – its impact is far reaching.

Task 7 transcript

Sarah : Right then, Alex, let's get down to business . On the agenda today for our research team meeting are selecting the time and setting for our observation. Are you quite happy with those points?

Sean : Yeah, that's fine If you could go through them in order, that'd be great.

Sean : OK everybody thanks for coming. Let's keep this meeting fairly brief, really just a couple of things on the agenda. First of all, as you can see, we've agree upon

our focus of the research, that is understanding Asthma: how the environment, allergens, and genetics interact with the body's immune system to cause the disease and aggravate the symptoms, finally, we will have a little bit of time for any other business.

Sean : First of all, the observation time. I just wanted to remind everybody that next Monday will be a national holiday, I think it would be the perfect time to do our observation.

John : Actually Sean, can I just ask you sorry to hold the meeting up – can I ask you about those dates, because I thought that the observation is going to be on the month after next, and I understand that everybody has got their dates, but I do feel quite strongly that we're bringing this out too soon.

Sean : Well any other thoughts before I comment on that ?

Carrie : I don't think we've got any choice at all about it. If the university is going to give us the permission at the beginning of next month, we've got to do the observation at the same time.

Task 13 transcript

Sean : The observation schedule move, as you know, and Billy informed me that our topic also changed. I just wanted to see what kind of feedback you've got.

Tim : Yeah, Sean, I really strongly disagree with the new topic plan. I think it's divisive to change our observation topic in all of sudden. I'd be much happier, if we discuss it in a meeting first.

Carrie : Actually, I think Tim is right. I've been chatting to most of the team members They're quite keen to have a discussion first. Speaking as a team leader, I think I'd like to hold a meeting as soon as possible. So I think Tim's discussion plan is right.

APPENDIX F

DESCRIPTIONS OF THE FINAL DRAFT OF MATERIALS

The Final Draft of Unit 1

Title: WHAT DOES A COMET LOOK LIKE?	
The title is taken from one of the expressions used in the dialog and explained in the unit. It is also related to the topic of the unit.	
LET'S START	
Tasks	Descriptions
Task 1	<p>Instruction: Study the picture below and answer the questions orally.</p> <p>Description: Task 1 is designed to introduce the topic of the unit. The task consists of a picture; the students are expected to answer W/H questions about the picture from their previous knowledge.</p>
LET'S PRACTICE	
Task 2	<p>Instruction: Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.</p> <p>Description: This task leads the students to have background language that will be used in the unit.</p>
Task 3	<p>Instruction: In this part, you are going to listen to a monologue about Comets. Listen to it and take notes for important information. Then, answer the questions below by putting T if the answer is true, F if the answer is false and NC if the answer is not clear and state your reason. Then, discuss your answers with your friends.</p> <p>Description: This task provides a context of monologue about comets. Students are asked to listen to the monolog and then they have to put F or T or NC in the statements provided and state their reasons.</p>
Task 4	<p>Instruction: In this part, you are going to listen to a monologue about Asteroids. Listen to it and complete the following sentences with appropriate words or phrases. Then, check your comprehension by answering questions orally.</p> <p>Description: This task provides a context of monologue about asteroids. Students are asked to listen to the monolog about asteroids,</p>

	identified missing information of a picture and then answering w/h questions to check their comprehension.
Task 5	<p>Instruction: Work in pairs. Act out the dialogue, each of you acts as Megan and Matthew. Then, check your comprehension by answering the questions orally.</p> <p>Description: This task provides a context of dialogues about asteroids and comets. Students are asked to act out the dialogues and answer w/h questions to check their comprehension.</p>
Task 6	<p>Instruction: How to play:</p> <ol style="list-style-type: none"> 1. Study the selected adjectives and their meanings. 2. Choose sixteen of the adjectives and write them on a bingo card provided below. 3. The tutor will randomly calls out adjectives from the list and writes them down. 4. If you have the opposite of that adjective, you can cross the word off your bingo card. 5. The winner is the one who gets all sixteen crossed off or three opposite adjectives in a row. The adjectives must be in a row vertically, horizontally or diagonally. 6. As soon as you have a winning sequence, shout out Bingo! 7. The tutor then checks the bingo card by going through the written adjectives. 8. Many rounds can be played. <p>Description: This task provides an ice-breaking game for students. Students are expected to learn some adjectives and how they are pronounced through the adjectives bingo game.</p>
Task 7	<p>Instruction: Work in pairs. One of you asks questions about space objects in box A and the other answers the questions using descriptions in box B.</p> <p>Description: This task provides names of space objects and their description. Students are to ask space objects descriptions to their partner.</p>
Task 8	Instruction:

	<p>Still with your partner, each person chooses a picture. Identify the shape, color and size of the object. Then, describe the object to your partner.</p> <p>Description: This task leads the students to have knowledge of terminology related to asteroids and comets and their descriptions. This task provides pictures of space objects. Students are expected to identify its appearance and describe it to their partner.</p>
LET'S STUDY	
Task 9	<p>Instruction: Practice the expressions below.</p> <p>Description: In this task students are given list of expressions used for describing things.</p>
Task 10	<p>Instruction: Study the explanation below and practice pronouncing words with silent letters.</p> <p>Description: This task provides explanation about silent letters.</p>
Task 11	<p>Instruction: Have a discussion with your tutors and friends about articles the, a and an.</p> <p>Description: This task facilitates students to have a discussion about articles the, a and an.</p>
Task 12	<p>Instruction: Work in pairs. One mentions words provided on the box below, another put (x) on the words being mentioned.</p> <p>Description: This task provides an ice-breaking game for students. Students are expected to learn some words and how they are pronounced.</p>
LET'S GET MORE PRACTICE	
Task 13	<p>Instruction: Here's a picture of a meteor. Describe the picture to your partner according to information in the box.</p> <p>Description: This task provides information about meteors. Students are expected to use the information for describing meteors to their partner.</p>
Task 14	Instruction:

	<p>Still with your partner, choose a picture below, describe them in front of your friends</p> <p>Description: This task provides pictures of space objects. Students are expected describe one of them with their partner.</p>
Task 15	<p>Work in pairs. Think of some objects, describe it to your friends and let your friend guesses what the object are. Look at an example below.</p>
Task 16	<p>Instruction: Work in pairs. Share to each other the weirdest objects both of you have ever seen in your life.</p> <p>Description: In this task students are expected to have a conversation with their partner by sharing the weirdest thing they have seen in life.</p>
FUN SPOT	<p>Instruction: Listen to a song called Space Debris. Listen to it carefully and complete the missing lyrics then sing it together with your class</p> <p>Description: In this part, students are given the opportunity to listen to a a song entitled Space Debris. While listening to the songs, students are asked to complete the missing lyrics and then sing it together with their friends; this activity is expected to motivate the students in learning English.</p>
LET'S REFLECT	<p>Description: This part provides statements for students to answer as a reflection for what they have learnt in this unit.</p>
LET'S SUMMARIZE	<p>Description: This part provides a summary of what students have learnt in this unit.</p>
VOCABULARY LIST	<p>Description: This part provides the vocabularies that the students have found in the unit. The vocabularies features with parts of speech, phonetic transcriptions, and their Indonesian versions.</p>

The Final Draft of Unit 2

Title: Could You Explain The Theory of Relativity?
The title is taken from one of the expressions used in the dialog and explained in

the unit. It is also related to the topic of the unit.	
LET'S START	
Tasks	Descriptions
Task 1	<p>Instruction: Below are some pictures of scientific theory and law, choose and study one of them with your partners and answer the following questions.</p> <p>Description: This task leads the students to have background knowledge about the scope of the unit topics. By choosing a picture and answering the following questions with partners, students are expected to have view about what they will learn.</p>
LET'S PRACTICE	
Task 2	<p>Instruction: Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.</p> <p>Description: This task leads the students to have background language that will be used in the unit</p>
Task 3	<p>Instruction: In this part, you are going to listen to a monologue about the theory of relativity . Listen to it and take notes for important information. Then, answer the questions below by putting T if the answer is true, F if the answer is false and NC if the answer is not clear and state your reason. Then, discuss your answers with your friends.</p> <p>Description: This task provides a context of monologue about theory of relativity. Students are asked to listen to the monolog and then they have to put F or T or NC in the statements provided and state their reasons.</p>
Task 4	<p>Instruction: Now listen to a monologue about gravity law and answer the following questions orally.</p> <p>Description: This task provides a context of monologue about one of the scientific law i.e. gravity law. Students are asked to listen to the monologue and answer comprehending questions related to the monologue.</p>
Task 5	<p>Instruction: Study the dialogue below. Answer the following questions</p>

	<p>orally and then act out the dialogue with your partner.</p> <p>Description: This task provides a context of dialogue about one of the scientific theories i.e constructal theory. Students are asked to act out the dialogues and answer comprehending questions related to the dialogue.</p>
Task 6	<p>Instruction: Tongue twisters is one way to improve your English pronunciation. It's very difficult to say tongue twisters in English so don't worry if you can't do it very well at first, just have fun!</p> <p>Description: This task provides an ice-breaking game for students. In this task, students are expected practice their pronunciation.</p>
LET'S STUDY	
Task 7	<p>Instruction: Practice following expressions.</p> <p>Description: In this task students are given list of expressions used for asking for and giving explanation.</p>
Task 8	<p>Instruction: Study the explanation and answer do following instructions</p> <p>Description: This task facilitates students to have a discussion about Scientific Laws, Theories and Hypotheses</p>
Task 9	<p>Instruction: Study the following explanation and practice the examples.</p> <p>Description: This task provides an explanation about linking in English. Students are expected to study the explanation and practice examples of linking in English.</p>
Task 10	<p>Instruction: Now let's try pronouncing the words.</p> <p>Description: This task provides list of English phrases. Students are expected to be able pronouncing the phrases correctly.</p>
Task 11	<p>Instruction:</p> <ul style="list-style-type: none"> • Make a small group. • List subjects to talk about e.g. science phenomenon, holiday, sport, etc. • Choose one person to start talking about the subject. • If the person repeats a word, hesitates or makes a

	<p>grammatical error, another person in the group can take over by saying error, hesitation or repetition.</p> <ul style="list-style-type: none"> • It is the tutors job to decide quickly if the interruption is valid. • The person who interrupts them must continue. • The winner is the person talking at the end of the minute. <p>Description: This task provides an ice-breaking game for students. In this task, students are expected to show their speaking abilities.</p>
Task 12	<p>Instruction: Study the following dialogue, and then act it out with your partner.</p> <p>Description: This task provides context of dialogue about Einstein and his theory of relativity. Students are asked to study the dialogue, act it out with their partners and answer following questions to check their comprehension.</p>
LET'S GET MORE PRACTICE	
Task 13	<p>Instruction: Work in pairs. Each person chooses a scientist picture, and then explains the scientist's theory/law orally to your partner. You may use the box beside the picture to elaborate your points.</p> <p>Description: In this task students are asked to explain a scientific theory/law discussed in the previous tasks. Pictures of examples of scientific theories are provided to help the students.</p>
Task 14	<p>Instruction: Have a discussion with your tutors and friends about prepositions.</p> <p>Description: In this task facilitated students to have a discussion about prepositions.</p>
Task 15	<p>Instruction: Work in partner. Choose one situational card, make a dialogue based on the information provided in the box and then act it out in front of your classmates.</p> <p>Description: This task provides context of information about theory of parallel universes and law of gravity. Students work in pairs and are to choose one card and explain the theory/law in a form of a dialogue.</p>

Task 16	<p>Instruction: In this task you have to choose one of the situations, make a dialogue with your partner and then act it out in front of your classmates.</p> <p>Description: This task provides context of situational cards. Students are to choose one cards and make the dialogue based on it.</p>
Task 17	<p>Instruction: Work in pairs. Explain to your friend about your favorite scientist and his/her theory/law/hypotheses/invention.</p> <p>Description: This task provides opportunity for students to share to their friends their knowledge about their favorite scientist.</p>
Fun Spot	<p>Instruction: Listen to a song entitled History of Everything. Listen to the song carefully and complete the missing lyrics and then sing it together with your partner.</p> <p>Description: In this part, students are given the opportunity to listen to a famous song from a popular American TV show, “The Big Bang Theory”. While listening to the songs, students are asked to complete the missing lyrics and then sing it together with their friends, this activity is expected to motivates the students in learning English.</p>
LET’S REFLECT	<p>Description: This part provides statements for students to answer as a reflection for what they have learnt in this unit.</p>
LET’S SUMMARIZE	<p>Description: This part provides a summary of what students have learnt in this unit.</p>
VOCABULARY LIST	<p>Description: This part provides the vocabularies that the students have found in the unit. The vocabularies features with parts of speech, phonetic transcriptions, and their Indonesian versions.</p>

The Final Draft of Unit 3

Title: Today, We’re Going to Discuss Eyes Disorder	
The title is taken from topic of the unit.	
LET’S START	
Tasks	Descriptions

Task 1	<p>Instruction: Study the picture below and answer the questions orally.</p> <p>Description: Task 1 is designed to introduce the topic of the unit. The task consists of two pictures; the students are expected to answer W/H questions about the picture from their previous knowledge.</p>
LET'S PRACTICE	
Task 2	<p>Instruction: Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.</p> <p>Description: This task leads the students to have background language that will be used in the unit.</p>
Task 3	<p>Instruction: In this part, you are going to listen to a discussion about HIV/AIDS. Listen to it and take notes for important information. Then, with your partner, answer the questions below by putting T if the answer is true, F if the answer is false and NC if the answer is not clear. Then, discuss your answers with your friends.</p> <p>Description: This task provides a context of monologue about comets. Students are asked to listen to the monolog and then they have to put F or T or NC in the statements provided and state their reasons.</p>
Task 4	<p>Instruction: Listen to the discussion one more time and answer the following questions with orally.</p> <p>Description: In this task students are expected to check their comprehension about the text in the previous task.</p>
Task 5	<p>Instruction: Study the discussion between John Baker (A), Dr. Laura D. Cook (B) and Dr. Billy Johnson (C). Make a group of three, and then act out the discussion. One of you acts as the moderator (John Baker) and the other two act as the speaker (Dr. Laura Cook and Dr. Billy Johnson). Then, to check your comprehension, answer the following questions.</p> <p>Description: This task provides a context of discussion about eyes disorder.</p>

	Students are asked to act out the dialogues with their friends and then answers questions to check their comprehension about texts in the previous task.
Task 6	<p>Instruction: Work in pairs. From the discussion in Task 5, discuss expressions used by the moderator and the speakers and their functions. Take a look at an example below.</p> <p>Description: This task provides students opportunity to identify expressions used in Task 5 and discuss their functions with friends.</p>
Task 7	<p>Instruction: During a discussion, you may find someone who interrupts. Make a group of three, each of you acts as Sarah (A), Alex (B), and John (C) Study the dialogues, the expressions and their functions. Then, act it out with your partner.</p> <p>Description: This task provides a context of discussion. Students are asked to act out the dialogues with their friends and study the expressions in the discussion.</p>
Task 8	<p>Instruction: From the dialogue in Task 5, there are some expressions used often during a discussion. Practice the following expressions.</p> <p>Description: In this task students are expected to know the expressions to interrupt in a discussion.</p>
Task 9	<p>Instruction: Work in small groups. One of you speaks for three minutes on a subject of your choice. The others must interrupt you as many times as possible, using the language from in the interruptions section (Task 6). After three minutes, another member of the group speaks, and the rest of the group interrupts him /her.</p> <p>Description: This task facilitates students practice interrupting in a discussion.</p>
LET'S STUDY	
Task 10	<p>Instruction: Practice the following expressions.</p> <p>Description: This task provides list of expressions used in a discussions.</p>
Task 11	<p>Instruction: Study the following monologues and act it out. Then, study the explanation about describing visual aids and numbers.</p>

	<p>Description: This task provides monologues for students about describing visual aids. Students are expected to study the expressions used in describing visual aids and numbers.</p>
Task 12	<p>Instruction: Have a discussion with your tutors and friends about gerunds.</p> <p>Description: This task provides students opportunity to have a discussion about gerunds.</p>
Task 13	<p>Instruction: Study the following explanation and practice the examples.</p> <p>Description: This task provides explanation about reduced form and its examples.</p>
Task 14	<p>Instruction:</p> <ol style="list-style-type: none"> 1. Make a group and sit in a circle. 2. The first person starts with any word they wish i.e. red. 3. The next person repeats the first word and adds another word which links to the first i.e. tomato. 4. The next person repeats the previous word and add another word link i.e. soup, and so on. <p>To keep this moving, only allow five seconds for each word link.</p> <p>Description: This task provides an ice-breaking game for students. In this task students are expected to be able use their vocabulary knowledge to participate in the game.</p>
LET'S GET MORE PRACTICE	
Task 15	<p>Instruction: Here's a dialogue about agreeing and disagreeing. Study the dialogues and act it out with your partner.</p> <p>Description: This task provides a context of discussion. Students are asked to act out the dialogues with their friends and study the expressions of agreeing and disagreeing in the discussion.</p>
Task 16	<p>Instruction: Work in pairs. From the discussion in Task 14, identified expressions used by the moderator and the speakers. Then, discuss their functions. Look at the example below.</p> <p>Description: In this task students are expected to identify expressions used and their functions in the discussion of the previous task.</p>
Task 17	<p>Instruction:</p>

	<p>Have a pair discussion. The topic can be range from HIV/AIDS, cataracts, diabetes or other diseases. Each of you serves as the moderator and the speaker. Make sure to use appropriate expressions. Use the box below to write your discussion script.</p> <p>Description: In this task students are expected to have a pair discussion with the topic of diseases using appropriate expressions.</p>
Task 18	<p>Instruction: In this part, you will have to make a group consist of four people. Each of you will serve as the moderator, and the speakers. Choose one of the most interesting topics below and start the discussion with your group in front of the class.</p> <p>Description: In this task students are expected to have a group discussion. Each has their own position in the discussion. Students can choose the topic of the discussion from situational cards provided.</p>
LET'S REFLECT	<p>Description: This part provides statements for students to answer as a reflection for what they have learnt in this unit.</p>
LET'S SUMMARIZE	<p>Description: This part provides a summary of what students have learnt in this unit.</p>
VOCABULARY LIST	<p>Description: This part provides the vocabularies that the students have found in the unit. The vocabulary features with parts of speech, phonetic transcriptions, and their Indonesian versions.</p>

The Final Draft of Unit 4

Title: Today, I'll Be Talking About Chemistry in Our Daily Lives	
The title is taken from topic of the unit.	
LET'S START	
Tasks	Descriptions
Task 1	<p>Instruction: Study the picture below and answer the questions orally.</p> <p>Description: Task 1 is designed to introduce the topic of the unit. The task consists of two pictures; the students are expected to answer</p>

	W/H questions about the picture from their previous knowledge.
LET'S PRACTICE	
Task 2	<p>Instruction: Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.</p> <p>Description: This task leads the students to have background language that will be used in the unit.</p>
Task 3	<p>Instruction: In this part you will listen how Carl opens his presentation and answer the following questions orally.</p> <p>Description: This task provides the context on how to open a presentation, and then they are expected to answer following questions.</p>
Task 4	<p>Instruction: In this part you will listen again on how Carl opens his presentation, and then identified the expressions used and act out the expressions.</p> <p>Description: This task provides table for students to identify expressions in opening presentation based on the audio in the previous task.</p>
Task 5	<p>Instruction: Here are Carl's presentation scripts about Basic Food Toxicology. Work in pairs. Each of you choose a script, and then complete a monologue with correct words or phrases by asking to your partner. Then, act out the monologue with your partner.</p> <p>Description: This task provides a context of monologue about giving a presentation. Students are asked to complete the missing sentences with correct words or phrases by asking to their partners.</p>
Task 6	<p>Instruction: Study Carl's presentation and answer the following questions below orally.</p> <p>Description: This task leads the students to check their comprehension about texts in the previous task.</p>
Task 7	<p>Instruction: 1. Everybody makes two long rows.</p>

	<ol style="list-style-type: none"> 2. The two people at the front of each row will battle against each other. 3. Tutors will ask a question and the first person to answer correctly between two will get to sit down. 4. The other person goes to the back of the line. <p>Description: This task provides an ice-breaking game for students to improve their confidence and speaking skill.</p>
LET'S STUDY	
Task 8	<p>Instruction: Study the following explanation and practice the expressions.</p> <p>Description: This task provides expressions used in presentations</p>
Task 9	<p>Instruction: Study Amanda's presentation script about food safety. Answer the following question orally and then act out the monologue with your partner.</p> <p>Description: This task provides the students dialogue monologue about food safety. Students are expected to answer questions and act out the monologue with their partner.</p>
Task 10	<p>Instruction: Work in pairs. Identify the expressions used in Amanda's presentation and discuss their functions. An example is provided below.</p> <p>Description: In this task students are expected to indentify expressions used in the presentation in the previous task and their functions.</p>
Task 11	<p>Instruction: Study the following explanation and do following instructions.</p> <p>Description: This task facilitates students to have a discussion about infinitives</p>
Task 12	<p>Instruction: Study the following explanation and practice the examples.</p> <p>Description: This task provides explanation about pitch.</p>
Task 13	<p>Instruction: Practice the words below with the correct pitches (fall/rise).</p> <p>Description: This task provides sentences for students to practice pitches. Students are expected to pronounce the sentences in the correct</p>

	pitches.
LET'S GET MORE PRACTICE	
Task 14	<p>Instruction:</p> <ol style="list-style-type: none"> 1. Make two groups of rows. 2. The person at the end of the row steps outside of the line 3. Tutors will whisper an expression to them a few times until they are sure they've memorized it. 4. Then have them go in and whisper it to the person in front of them. 5. This goes down the line in their row until the first person runs to the board and writes what they heard. 6. First correct team earns the point. <p>Description: This task provides an ice-breaking game. In this task students are expected to have a good concentration and pronunciation.</p>
Task 15	<p>Instruction: Practice each part of presentation skills including the opening, the body presentation, question and answer section and the closing. The topic of the presentation must relate to food or chemistry (You may look at the previous presentations). An outline is provided to help you.</p> <p>Description: This task provides outline of a presentation. Students are expected to develop a presentation script about any topic and then present it to their friends.</p>
Task 16	<p>Instruction:</p> <ol style="list-style-type: none"> 1. Work in pairs. 2. Choose a topic to present (up to you). 3. Plan and develop the presentation for the topic. 4. Present your topic in front of your friends. <p>Description: In this students are expected to develop a presentation script about any topic and then present it to their friends.</p>
LET'S REFLECT	<p>Description: This part provides statements for students to answer as a reflection for what they have learnt in this unit.</p>
LET'S SUMMARIZE	<p>Description: This part provides a summary of what students have learnt in this unit.</p>
VOCABULARY	<p>Description:</p>

LIST	This part provides the vocabularies that the students have found in the unit. The vocabulary features with parts of speech, phonetic transcriptions, and their Indonesian versions.
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APPENDIX G

FINAL DRAFT OF MATERIALS

English for Science

*English Speaking Materials for Tutorial Practices
for International Science Classes*



ACKNOWLEDGEMENTS

Alhamdulillah, praise to God the Almighty and the most Merciful. This book would not been possible without the support of many people. First of all, I would like to express my highest appreciation to Dr. Margana, M.Hum.,M.A., Ella Wulandari, S.Pd., M.A., and B. Yuniar Diyanti, S.Pd., M.Hum. who gave guidance and suggestions for the improvement of this book.

My sincere appreciation also goes to my parents and my brothers for their love, support and encouragement throughout the development of this book. Thank you for helping me rise as high as I want and give me a great view of the world.

I would like to extend my thanks to friends of mine. Thank you for being such wonderful and caring friends.

Last but not least, I hope this book can give worthwhile contributions to help students of international science classes of Yogyakarta State University in developing their English speaking skills. Finally, critical comments and suggestions are highly appreciated.

Yogyakarta, February 2014

The Writer

PREFACE

English for Science: English Speaking Materials for Tutorial Practices of International Science Classes is designed based on the needs of students of international science classes of Faculty of Mathematics and Science of Yogyakarta State University (International Biology Education, International Physics Education, International Chemistry Education and International Science Education) to facilitate the students communicating in English according to the context of the language being used.

English for Science: English Speaking Materials for Tutorial Practices of International Science Classes is intended for intermediate students of international science classes to develop their speaking skill and access information from various fields of science. This book consists of 4 units and each unit is divided into sections. There are many activities available for the students to do individually or with other students. Students of international science classes are expected to be skillful when doing exercises, acting out dialogues, role playing and other activities that facilitate them to develop their English speaking skill.

Last but not least, the writer realizes that this book is not perfect, therefore constructive criticism and suggestions are very welcome.

Yogyakarta, February 2014

The Writer

COURSE OUTLINE

Institution : Center for Language Development of YSU

Course Title : English Speaking Tutorial for International Science Classes of
Faculty of Mathematics and Science, YSU

Course Description : As a language instruction used on international classes, English is the key in communication. It becomes the most important and essential skills that must be mastered in order to be better in sending and receiving information between students and students or students and lecturers. This course facilitates the needs of students of international classes in improving their speaking skills. This program aims to give students of international classes more opportunities to practice and improve their English speaking ability used in academic communication context. This course is held every week with total of sixteen meetings. The activities of the course consist of indoor activities i.e. English speaking tutorials and outdoor activities i.e. visiting tourism places.

Time	Topics	Skills	Duration
Week 1	Space Objects	Asking and Giving a Description	90
Week 2			90
Week 3	Scientific Theories and Laws	Asking and Giving an Explanation	90
Week 4			90
Week 5	Science in Our Daily Lives	Giving a Presentation	90
Week 6			90
Week 7			90
Week 10	Diseases	Having a Discussion	90
Week 11			90
Week 12			90

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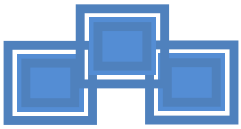
UNIT 1

WHAT DOES A COMET LOOK LIKE?



Picture 3.1
www.wired.com

Sometimes you may be asked to describe things in your surroundings or what it looks like. For example, you may talk to your friends about space objects and need to describe what a comet looks like. In this unit, you are going to learn how to describe things effectively.



A. LET'S START



TASK 1

Study the picture below and answer the questions orally.



Questions:

1. What is the picture about?
2. Have you ever seen this?
3. What do you know about this?

Picture 3.2
www.uniedu.com

DID YOU KNOW...?

Everything moves: Planets move within the Solar System, which moves within Milky Way galaxy, which moves within the Local Group of galaxies, which moves towards Virgo Cluster.



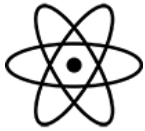
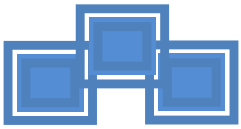
B. LET'S PRACTICE



TASK 2

Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.

No.	Word	Pronunciation	Part of Speech	Equivalence
1.	unique	/jʊˈni:k/	adj	unik
2.	edge	/edʒ/	...	...
3.	layer	/ˈleɪ.ə r /	...	...
4.	atmosphere	/ˈæt.mə.sfɪə r /	...	...
5.	appearance	/əˈpiə.rən t s/	...	...
6.	visit	/ˈvɪz.ɪt/	...	...
7.	period	/ˈpɪə.ri.əd/	...	...
8.	region	/ˈriː.dʒ ə n/	...	...
9.	carry	/ˈkær.i/	...	...
10.	distant	/ˈdɪs.t ə nt/	...	...
11.	dust	/dʌst/	...	...
12.	travel	/ˈtræv. ə l/	...	...
13.	beyond	/biˈjɒnd/	...	...



TASK 3

In this part, you are going to listen to a monologue about Comets. Listen to it and take notes for important information. Then, answer the questions below by putting T if the answer is true, F if the answer is false and NC if the answer is not clear and state your reason. Then, discuss your answers with your friends.

No.	Statement	T/F/NC	Reason
1.	Comets are icy object which orbit the Earth.	F	Comets orbit the sun.
2.	Comets' orbit are always near the sun.	...	...
3.	When comets get closer to the sun, it stays the same.	...	...
4.	The atmosphere in comets is called a coma.	...	...
5.	A comet's tail always points away from the sun.	...	...
6.	Comets can easily be seen although they aren't near the sun.	...	...
7.	Comet's period is the time between one visit near the sun.	...	...
8.	Hayley's comet was the first comet to visit the sun.	...	...
9.	Short period comets have a period of 20 years or less.	...	...
10.	Oort cloud is the distant region of solar system.	...	...



TASK 4

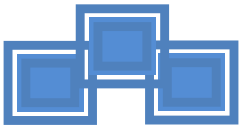
In this part, you are going to listen to a monologue about Asteroids. Listen to it and complete the following sentences with appropriate words or phrases. Then, check your comprehension by answering questions orally.



Picture 3.3
www.faktailmiah.com

Asteroids are 1)_____small planetary objects orbiting the sun. Their 2)_____,_____, differentiate them from comets, which are made of 3)_____. Asteroids range in size from a few meters across to objects large enough to trap smaller asteroids in their gravitational pull, like moons orbiting a planet. Asteroids lack the gravitational force needed to round out like planets, so most are 4)_____. They have no atmospheres, and are not 5)_____. Hundreds of thousands of asteroids exist in the solar system, most occupying an area between Mars and Jupiter called the Asteroid belt. Despite their numbers, the combined mass of all solar system asteroids only equals the mass of the moon. Asteroids that cross the Earth's orbit are called near-earth asteroids. Astronomers have discovered approximately 4,500 near-earth asteroids, including up to 1,000 with 1 kilometer diameters; at least one asteroid with a 4 to 10 meter diameter hits the earth every year.

Adapted from: <http://monkeysee.com/play/24326-what-is-a-astroids>



Questions:

1. What are asteroids?
2. What do asteroids look like?
3. What are asteroids made of?
4. Where is Asteroid Belt located?
5. What have astronomers discovered about asteroids?



TASK 5

Work in pairs. Act out the dialogue, one acts as Megan and another as Matthew. Then, check your comprehension by answering the questions orally.

Situation: Megan is asking Matthew, an astronomer who works at NASA about comets and asteroids.

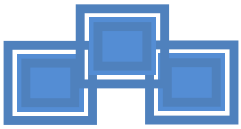
Card A	
Megan	: Imagine a place far, far away at the very edge of the Solar System. What can you found there?
Matthew	:
Megan	: What is a comet?
Matthew	:
Megan	: What does it look like?
Matthew	:
Megan	: Amazing. Why does it have a tail?
Matthew	:
Megan	: Is there any space object you can see besides a comet?
Matthew	:
Megan	: Tell me about it.
Matthew	:
Megan	: What's the difference between them?
Matthew	:
Megan	: Any similarities?
Matthew	:
Megan	: I wonder how they were formed back then.
Matthew	:
Megan	: So, an asteroid is like a giant space rock, isn't?
Matthew	:



Card B

- Matthew : Well, among the most brilliant and most rare objects in the night sky. You'll probably see comets. These soaring beacons with their beautiful tails come from the outer realms of the Solar System.
- Megan :
- Matthew : Well, a comet is basically a dusty snowball which orbit the Sun. It is made of ices, such as water, carbon dioxide, ammonia and methane, mixed with dust.
- Megan :
- Matthew : In general, comets look like a faint smudge of light, usually larger and brighter than most other objects in the night sky. Many comets seem to have tails extending away from the main body of the comet. In essence, the appearance of a particularly striking comet is much like that of a fireball, except that comets do not move quickly, but rather slowly and ponderously.
- Megan :
- Matthew : Well, the tail is simply an extension of the comet's atmosphere or known as coma. The most interesting part about comet's tail is that it tends to point away from the Sun rather than backwards along the path of the comet's orbit!
- Megan :
- Matthew : You might see an asteroid.
- Megan :
- Matthew : Simply, asteroids are small objects - often rocky, metallic or both - that orbit our Sun. The majority of these minor planets, as they are also known, circle our central star in a region between Mars and Jupiter known as the asteroid belt.
- Megan :
- Matthew : Probably, the main difference between an asteroid and a comet is what they are made of. Asteroids are made up of metals and rocky material, while comets are made up of ice, dust and rocky material.
- Megan :
- Matthew : Yes, both of these space objects were formed during the earliest times of the solar system, around 4.5 billion years ago.
- Megan :
- Matthew : Well, asteroids formed much closer to the Sun, where it was too warm for ices to remain solid. Comets formed farther from the sun where ices would not melt. Comets, which approach the Sun, lose material with each orbit because some of their ice melts and vaporizes to form a tail.
- Megan :
- Matthew : You're right! Asteroids are rocky-metallic objects which range in size from about the size of pebbles to around 600 miles.

Adapted from: <http://www.universetoday.com/33006/what-is-the-difference-between-asteroids-and-comets>



Questions:

1. Where does the dialogue probably take place?
2. What are they talking about?
3. What is the difference between comets and asteroids?
4. What makes asteroids have no ice on its surface?



TASK 6

Adjective Bingo

How to play:

1. Study the selected adjectives and their meanings.
2. Choose sixteen of the adjectives and write them on a bingo card provided below.
3. The tutor will randomly calls out adjectives from the list and writes them down.
4. If you have the opposite of that adjective, you can cross the word off your bingo card.
5. The winner is the one who gets all sixteen crossed off or three opposite adjectives in a row. The adjectives must be in a row vertically, horizontally or diagonally.
6. As soon as you have a winning sequence, shout out Bingo!
7. The tutor then checks the bingo card by going through the written adjectives.
8. Many rounds can be played.

active/passive

bad/good

brave/afraid

clean/dirty

confident/shy

deep/shallow

old/young

early/late

empty/full

fat/thin

hard/soft

hot/cold

new/old

noisy/quiet

right/wrong

sad/happy

slow/fast

small/big

ugly/beautiful

light/heavy

wet/dry



ADJECTIVE			
BINGO			

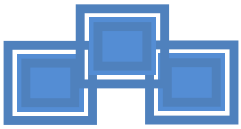


TASK 7

Work in pairs. One of you asks questions about space objects in box A and the other answers the questions using descriptions in box B.

A. WHAT IS...?

an asteroid
tail
the Asteroid Belt
near earth asteroid
a comet
a coma
the Oort Cloud




B. IT IS...	a dusty snowball which orbit the Sun.
	comet's atmosphere.
	asteroids that cross the earth's orbit.
	a rocky-metallic object.
	an area between Mars and Jupiter.
	part of a comet that always points away from the sun.
	the distant region of solar system.



TASK 8


Still with your partner, each person chooses a picture. Identify the shape, color and size of the object. Then, describe the object to your partner.

Comet	Differences
 <p>Picture 3.4 www.jb.man.ac.uk</p>	Shape:_____

	Color:_____

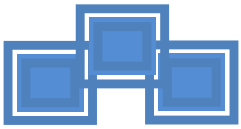
	Size:_____



Asteroid	
 <p>Picture 3.5 www.wired.com</p>	Shape: _____ _____
	Color: _____ _____
	Size: _____ _____

DID YOU KNOW...?

The oldest and largest clearly visible meteorite crater site in the world is The Vredefort Dome in Free State, South Africa. It is 380km across.



C. LET'S STUDY



TASK 9

Practice the expressions below.

Describing Things

In task 7, Matthew describes what a comet looks like, he said:

"Well, a comet is basically a dusty snowball which orbit the Sun. It is made of ices, such as water, carbon dioxide, ammonia and methane, mixed with dust."

Notice when he describes a comet he uses adjective (dusty) and materials it made from (ices, water, ammonia). When you are describing objects you use adjectives, such as the size, color, shape, material made from, thickness, texture, etc. Look at the expressions below that can be used when asking for descriptions of things.

Asking for description	Describing
What is it?	It looks like....
What does it look like?	It's....
How big is it?	Well, it has....
How much does it weigh?	There is a....
What color is it?	There are some....
What's it made out of?	
What else can you tell me?	
Tell me about....	
What did you think of the...?	
Is there a...?	
Are there (some)...?	

Look at the examples and act it out with your partner.

Expression: What does it look like?

Response : It looks like a faint smudge of light

Expression: How big is it?

Response : It's 1-10 kilometers in size.

Expression: How much does it weigh?

Response : It weighs 500-1500 pounds.

Expression: What's it made out of?

Response : It's made up of ice, dust and rocky material

Expression: What is it?

Response : It's a comet



TASK 10

Study the explanation below and practice pronouncing words with silent letters.

Silent letters

In task 8, you can find a dialogue where Matt says
“Well, the tail is simply an extension of the comet's atmosphere or **known** as coma.”
“known” in the sentence are pronounced /nəʊn/. The ‘k’ is not pronounced or we may call it as the silent letter.

Silent letters are letters that are not pronounced in a word.

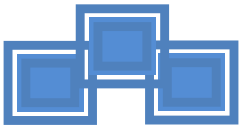
Examples of words with silent letters:

1. Silent Vowels

a: spread, boat, team
e: great, pie, toe
e: fuse, scene, lime, stove, pale
i: pail, business
o: people, sophomore
u: guest, guess, laugh, guide

2. Silent Consonants

b: doubt, debt, tomb, bomb
c: muscle, black, science
d: bridge, ledge, fudge
g: campaign, foreign, sign
h: chemical, echo, school, ghost
k: knowledge, know, knee
l: talk, walk, could, should, half
m: mnemonics
n: autumn, column, solemn
p: psychology, pneumonia, receipt
s: aisle, island
t: fasten, often, listen, soften
th: asthma, isthmus, northeaster
w: shadow, answer, two, wrong
z: rendezvous



TASK 11

*Have a discussion with your tutors and friends on articles **the**, **a** and **an**.*

*Articles **the**, **a** and **an***

In the previous monologue about comets, you'll probably hear the speaker saying: "A comet's tail always points away from the Sun, no matter which way the comet is moving."

The underlined words (A and the) are called articles.

1. What are the functions of articles?
2. What are the differences between articles the, a and an?
3. Make three sentences orally using articles the, a and an.

DID YOU KNOW...?

Boomerang Nebula is the coldest known place in the universe.

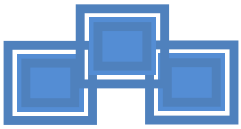


TASK 12

SOUND GAME

Work in pairs. One mentions words provided on the box below, another put (x) on the words being mentioned.

(a) chip (b) cheap	(a) field (b) fill	(a) sit (b) sheet	(a) two (b) too
(a) fit (b) feet	(a) seal (b) shield	(a) sick (b) six	(a) steal (b) still
(a) sheep (b) ship	(a) back (b) bag	(a) see (b) she	(a) meat (b) meet
(a) be (b) bee	(a) for (b) four	(a) toe (b) tow	(a) buy (b) by
(a) sail (b) sale	(a) sea (b) see	(a) beat (b) beet	(a) stake (b) steak
(a) bare (b) bear	(a) dear (b) deer	(a) pain (b) plain	(a) weather (b) whether
(a) flea (b) flee	(a) sell (b) cell	(a) pane (b) plane	(a) hair (b) hare
(a) no (b) know	(a) hour (b) our	(a) sense (b) cents	(a) aunt (b) ant



D. LET'S GET MORE PRACTICE



TASK 13

Here is a picture of a meteor. Describe the picture to your partner according to information in the box.



Picture 3.6

www.nym-artopraph.blogspot.com.jpg

A Meteor
streaking in our night sky very fast ranging in size from a marble to a basketball long tail brightening our night burned up in the atmosphere looking like a shooting star



TASK 14

Still with your partner, choose a picture below, describe them in front of your friends.

1. Aurora



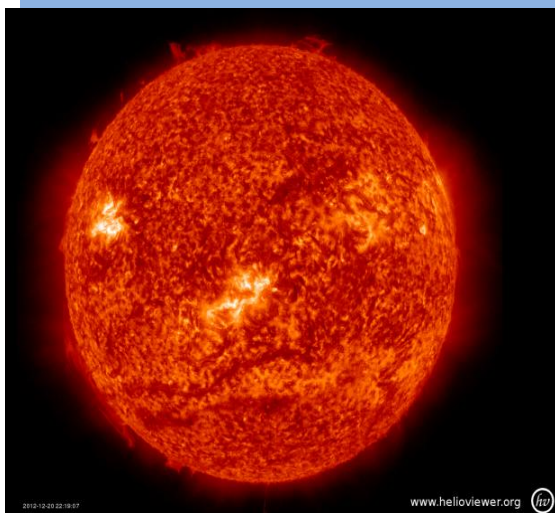
Picture 3.6
www.kaskus.co.id

4. Stars



Picture 3.7
www.wallpaperswala.com

2. The Sun

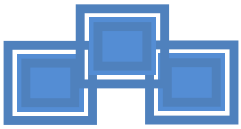


Picture 3.8
www.thesuntoday.org

5. The Earth



Picture 3.9
www.internetlooks.com



TASK 15

Work in pairs. Think of some objects, describe it to your friends and let your friend guesses what the objects are. Look at an example below.

I was named after the king of the gods in Roman mythology. My atmosphere made up mostly of hydrogen and helium. I have four large moons and many smaller moons which orbit around me. Who am I?





TASK 16

Work in pairs. Share to each other the weirdest objects both of you have ever seen in your life.

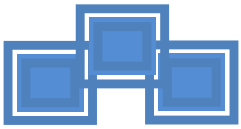
A living rock?! That's so weird!



Picture 3.9
www.geekologie.com

DID YOU KNOW...?

Pyura chilensis is a sea creature that lives on the rocky coast of Chile and Peru. And if you've never seen one of these before, you'll probably be interested to know that in Chile, they are fished commercially, and the locals eat them raw or cooked with salad and rice because apparently they're delicious.



FUN SPOT

Listen to a song called Space Debris. Listen to it carefully and complete the missing lyrics, then sing it together with your friends.

*

The asteroids belt
The Kuiper belt
It's hard to count
These rocky mounds

1) _____,
It's space debris

2) _____, come in threes
Carbonaceous C-Type are rough stony, rough stony
Silicaceous S-Type are bright shiny, bright shiny
Finally metallic M-Type metal cores you see

3) _____,
Now we'll start with the Trojans
They clump and stick

4) _____,
Can you see that it is time?
Apollo's this way, orbits Sun but away
Some come close to us

5) _____, thus

*

6) _____,
They travel around the Sun orbiting, orbiting
The nucleus is made of ice, grit, and gas-frozen
So when we see 7) _____,

Turn to meteors
Now they're breaking into grains
Of asteroids, comets
Think if you can

Time to burn up away, 8) _____,
Meteors if they land
On the Earth so grand

*



E. LET'S REFLECT

Aspects	Very much	Much	Little
Understanding the description of comets, asteroids and meteors.			
Understanding expressions of describing			
Understanding silent letters			
Understanding the use of article an/a/the			
Able to describe things in space			
Vocabulary			

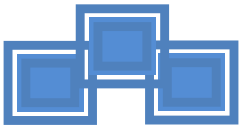
F. LET'S SUMMARIZE

In this unit, you have learnt about how to describe things, silent letters and the use of articles.

Key Points

1. Expressions used in asking for description and describing things.

Asking for description	Describing
What is it? What does it look like? How big is it? How much does it weigh? What color is it? What's it made out of? What else can you tell me? Tell me about... What did you think of the...? Is there a...?	It looks like.... It's.... Well, it has.... There is a.... There are some....



2. Silent letters

Silent letters are letters that are not pronounced in a word.

a. Silent Vowels

a: spread, boat, team
e: great, pie, toe
e: fuse, scene, lime, stove, pale
i: pail, business
o: people, sophomore
u: guest, guess, laugh, guide

b. Silent Consonants

b: doubt, debt, tomb, bomb
c: muscle, black, science
d: bridge, ledge, fudge
g: campaign, foreign, sign
h: chemical, echo, school, ghost
k: knowledge, know, knee
l: talk, walk, could, should, half
m: mnemonics
n: autumn, column, solemn
p: psychology, pneumonia, receipt
s: aisle, island
t: fasten, often, listen, soften
th: asthma, isthmus, northeaster
w: shadow, answer, two, wrong
z: rendezvous



3. Articles the, a and an

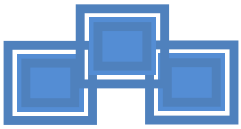
Articles are used to differentiate between things or ideas – usually expressed by nouns. The speaker/writer may be referring to a specific thing or idea, or a general one.

Article the is used:

- a. to refer to something which has already been mentioned.
- b. when both the speaker and listener know what is being talked about, even if it has not been mentioned before.
- c. in sentences or clauses where we define or identify a particular person or object.
- d. to refer to objects we regard as unique (the sun, the world).
- e. before superlatives and ordinal numbers (the highest building, the first page).
- f. with adjectives, to refer to a whole group of people (the Japanese, the old).
- g. with the names of geographical areas and oceans (the Sahara, the Atlantic).
- h. with decades, or groups of years (the seventies).

An/a is used:

- a. to talk about one particular person or thing, when the listener/reader does not know which one is meant, or when it does not matter which one.
- b. to talk about one member of a class (job).
- c. to classify people and things to say what class, group, or type they belong to.
- d. to identify what something/someone is, or what something/someone is like.
- e. after certain adverbs or adjectives.
- f. before noun qualifiers.
- g. with proper names.
- h. after *so* or *too* + *an adjective* + *a singular noun*.
- i. after *such* and *waste*.

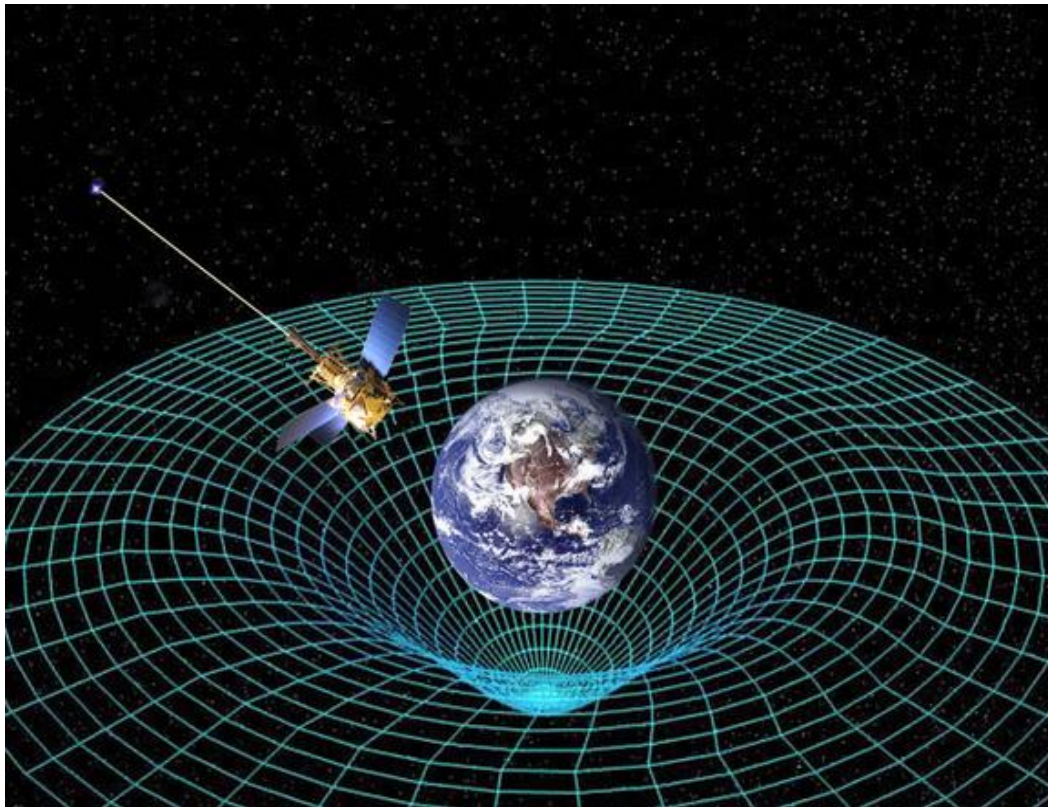


Vocabulary List

approximately /ə'prɒk.sɪ.mət.li/ (adv)	: kira-kira
chunk /tʃʌŋk/ (n)	: bongkahan
core /kɔːr/ (n)	: inti
debris /'deb.riː/ (n)	: puing
diameter /daɪ'æm.ɪ.tə r/ (adv)	: garis tengah
dusty /'dʌs.ti/ (adj)	: berdebu
exploration /,ek.splə'reɪ.ʃ ə n/ (n)	: penjelajahan
extend /ɪk'stend/ (v)	: memperpanjang
extinction /ɪk'stɪŋk.ʃ ə n/ (n)	: kepunahan
faint /feɪnt/ (adj)	: redup
force /fɔːs/ (n)	: tenaga
grain /greɪn/ (n)	: butiran
humanity /hjuː'mæn.ə.ti/ (n)	: umat manusia
impact /'ɪm.pækt/ (n)	: dampak
lack /læk/ (n)	: kekurangan
mass /mæs/ (n)	: massa
orbit /'ɔː.bɪt/ (n)	: edaran
pebble /'peb.l/ (adv)	: kerikil
planetary /'plæn.ɪ.t ə r.i/ (adj)	: perplanetan
ponderously /'pɒn.d ə r.ə.sli/ (adv)	: dengan kaku
raw /rɔː/ (adj)	: mentah
remain /rɪ'meɪn/ (v)	: sisa
rip /rɪp/ (v)	: sobekan
smudge /smʌdʒ/ (n)	: corengan
track /træk/ (v)	: mengikuti
vaporize /'veɪ.p ə r.aɪz/ (v)	: menguap

UNIT 2

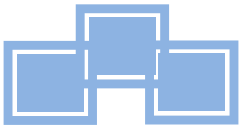
CAN YOU TELL ME ABOUT THEORY OF RELATIVITY?



Picture 2.1

www.space.com

In the course of your study, you may sometimes need to explain technical concepts to your friends and lecturers. The ability to explain things clearly and effectively can help you in your study and future career, as well. In this unit, you will learn how to help improving your explanation skills.



A. LET'S START



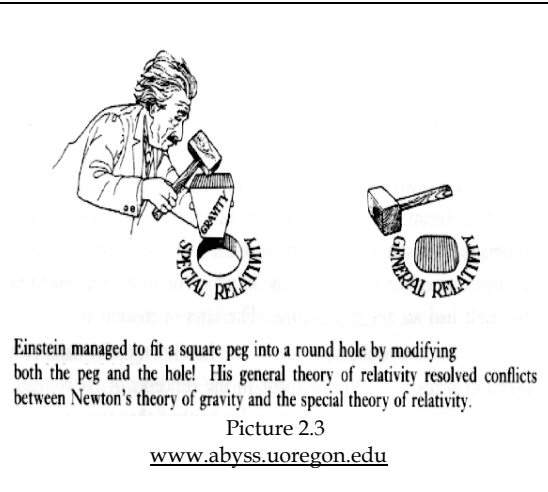
TASK 1

Below are some pictures of scientific theories / laws. Choose and study one of them with your partners and answer the following questions orally.



Picture 2.2

www.science.howstuffworks.com



Einstein managed to fit a square peg into a round hole by modifying both the peg and the hole! His general theory of relativity resolved conflicts between Newton's theory of gravity and the special theory of relativity.

Picture 2.3

www.abys.uoregon.edu

Questions:

1. What is the picture about?
2. What theory does it refer to?
3. Who proposed the theory?



B. LET'S PRACTICE



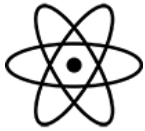
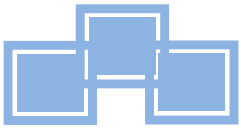
TASK 2

Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.

No.	Word	Pronunciation	Part of Speech	Equivalence
1.	convince	/kən'vɪn t s/	verb	meyakinkan
2.	constant	/'kɒn t .st ə nt/	...	...
3.	eclipse	/r'klɪps/	...	...
4.	formula	/'fɔ:ljʊ.lə/	...	...
5.	general	/'dʒen. ə r. ə l/	...	...
6.	headlight	/'hed.laɪt/	...	...
7.	pass	/pɑ:s/	...	...
8.	solar	/'səʊ.lə r /	...	...
9.	state	/steɪt/	...	...
10	toss	/tɒs/	...	...

DID YOU KNOW...?

If you yelled for 8 years, 7 months and 6 days, you would have produced just enough sound energy to heat up one cup of coffee.



TASK 3

In this part, you are going to listen to a monologue about the theory of relativity. Listen to it and take notes for important information. Then, answer the questions below by putting T if the answer is true, F if the answer is false and NC if the answer is not clear and state your reason. Then, discuss your answers with your friends.

No.	Statement	T/F/NC	Reason
1.	In special relativity, the laws of physics only apply when you are not moving.	F	The laws of physics apply no matter how fast you are moving
2.	The theory of relativity has three parts; special relativity, common relativity and general relativity.	...	...
3.	Albert Einstein invented theory of relativity.	...	...
4.	Light never travels at the same speed for all observers no matter how fast you are moving.	...	...
5.	The theory of special relativity changed the ways scientists thought about time.	...	...



TASK 4

Now listen to a monologue about gravity law and answer the following questions orally.

1. What is gravity?
2. What is a mass?
3. What happened when two objects got closer to each other?
4. How does gravity affect us?



5. Does earth gravity affect the moon?



TASK 5

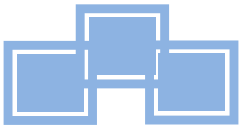
Study the dialogue below. Answer the following questions orally and then act out the dialogue with your partner.

Situation : Adrian Bejan, J.A. Jones Distinguished Professor of Mechanical Engineering, Duke University, has identified a basic Law of Physics that describes and predicts how design patterns emerge over time, he contends that one can construct a “constructal theory” about any system, animate or inanimate. Below is this explanation about his law.



Picture 2.4
www.forbes.com

Card A	
Anthony Kosner	: In the simplest non-technical terms, what is the Constructal Law?
Adrian Bejan	:
Anthony Kosner	: What makes this a law of physics instead of just a theory?
Adrian Bejan	:
Anthony Kosner	: Wait a minute, does this have anything to do with the “theory” of intelligent design?
Adrian Bejan	:
Anthony Kosner	: We don’t usually think of physics this way, but the Constructal Law is quite hopeful. It’s about how things get better. Are you an optimistic person?
Adrian Bejan	:



Card B

Anthony Kosner :

Adrian Bejan : Let me explain it to you, the Constructal Law is my statement that there is a universal tendency (a phenomenon) toward design in nature, in the physics of everything. This tendency that occurs because all of nature is composed of flow systems change and evolve their configurations over time so that they flow more easily, to create greater access to the currents they move.

Anthony Kosner :

Adrian Bejan : Fantastic question! Very few people know the difference. A theory is a purely mental image of how something should be. A law is a concise statement that summarizes a distinct and universal tendency in nature (the phenomenon), previously not recognized as distinct. The bottom line is that the law is one, the theories are many, and the empirical observations are immense in number. This hierarchy is the essence of the evolutionary design of science itself, which is also a constructal theory.

Anthony Kosner :

Adrian Bejan : A new law of physics improves everyone's thinking ability, across the board. This has been my experience with the Constructal Law, as I lecture in universities, industry, high schools, and retirement homes. Everybody gets it. Along the way people realize that catchy words like "intelligent design," "turbulence," "chance" and "randomness" are not predictive, are not "theory". These are puzzles that the Constructal Law solves with ease, one by one.

Anthony Kosner :

Adrian Bejan : When you grow up under communism you have to be an optimist, to survive.

<http://www.forbes.com/sites/anthonykosner/2012/02/29/theres-a-new-law-in-physics-and-it-changes-everything/>

Questions:

1. What is Constructal law?
2. Who proposed Constructal law?
3. According to Adrian Bejan, what is the difference between a law and a theory?
4. Do you agree with "*a new law of physics improves everyone's thinking ability, across the board*" statement? Why?
5. What do you think of Constructal law?

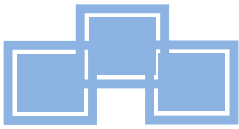


TASK 6

Tongue twister is one way to improve your English pronunciation. It's very difficult to say tongue twisters in English so don't worry if you can't do it very well at first, just have fun!

How fast can you say it?

Twenty tongue-tying tongue twisters to twist you tongue a ton	
1.	She sells sea shells by the sea shore.
2.	Eleven owls licked eleven little liquorice lollipops.
3.	If you want to buy, buy, if you don't want to buy, bye bye!
4.	The big bug bit the little beetle, but the little beetle bit the big bug back.
5.	If a noisy noise annoys an onion, an annoying noisy noise annoys an onion more!
6.	Please peel this peck of pickled peppers Peter Piper picked.
7.	Surely Shirley shall sell Sheila's seashells by the seashore.
8.	If two witches were watching two watches, which witch would watch which watch?
9.	Which witch wishes to switch a witch wristwatch for a Swiss wristwatch?
10.	How much wood would a woodchuck chuck if a woodchuck could chuck wood?
11.	The skunk sat on a stump and thunk the stump stunk, but the stump thunk the skunk stunk.
12.	The butter Betty Botter bought could make her batter bitter, so she thought she'd better buy some better butter!
13.	Not many an anemone is enamored of an enemy anemone.
14.	Five fine Florida florists fried fresh flat flounder fish fillet.
15.	Red rubber baby buggy bumpers bounce.
16.	A three-toed tree toad loved a two-toed he-toad that lived in a too-tall tree.
17.	The sixth sick sheik's sixth sheep's sick.
18.	Freshly-fried flying fish.
19.	Peter Piper picked a peck of pickled peppers.
20.	Mix a box of mixed biscuits with a boxed biscuit mixer.



C. LET'S STUDY



TASK 7

Practice following expressions.

In task 6, you find the following conversation between Anthony and Adrian.

Anthony Kosner : In the simplest non-technical terms, **what is the Constructal Law?**

Adrian Bejan : **Let me me explain it to you**, the Constructal Law is my statement that there is a universal tendency....

The first bolded expression is used *to ask for explanation* while the second bolded expression is used *to give explanation*. Other expressions are provided in the box below.

Asking for explanation	Giving explanation
Do you know ...? How can I ...? Could you tell me...? Could you explain...? Could you expound on that? Could you fill me in on that? I don't understand... How is it that? Please explain to me... Is there anything you can tell us? Would you mind telling me ...? Something else I'd like to know is... Could you give me some explanation about....? Can you give me more details about that ...? Could you tell me about this...?	Let me explain.... Let me tell you about it.... Let me give you some details.... All I can say is.... What's more, That's because May I explain ...? Let me explain you why.... As you can see that.... What you have to do is.... It is important that.... The most important point is.... To give you more information, Taking into account, it was clear that....



TASK 8

Study the explanation and do the following instructions.

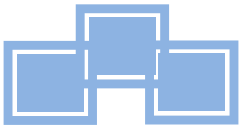
Scientific Laws, Theories and Hypotheses

A very common mistake of non-scientists and, believe it or not, some scientists, is to fail to correctly distinguish between scientific laws, theories and hypotheses.

1. Have a group discussion about differences between scientific laws, theories and hypotheses.
2. Mentions examples of scientific laws, theories and hypotheses.
3. Share your answers with friends.

DID YOU KNOW...?

It takes 8 minutes 17 seconds for light to travel from the Sun's surface to the Earth.



TASK 9

Study the following explanation and practice the examples.

Linking in English

In task 4, you'll find this sentence:

"Wait a minute, does this have anything to do with the "theory" of intelligent design?"

When we say a sentence in English, we join or "link" words to each other.

Because of this linking, the words in a sentence do not always sound the same as when we say them individually.

It is written like this	wait a minute
We say it like this:	Wait-ta-minute

There are basically two types of linking:

1. Linking Consonant to Vowel

When a word ends in a consonant sound, we often move the consonant sound to the beginning of the next word if it starts with a vowel sound.

For example, in the phrase "turn off":

We write it like this:	Turn	Off
We say it like this:	Tur	Noff

Remember that it's the sound that matters. In the next example, "have" ends with:
the letter "e" (vowel)

the sound "v" (consonant)

So we link "have" to the next word "a" which begins with a vowel sound:

We write it like this:	Can I have a bit of egg?
We say it like this:	Can-nI-ha-va-bi-to-fegg?

2. Linking Vowel to Vowel

When one word ends with a vowel sound and the next word begins with a vowel sound, we link the words with a sort of W or Y sound.

If our lips are round at the end of the first word, we insert a W sound:

We write it like this:	too often	who is	so I	do all
We say it like this:	Toowoften	Whowis	sowI	dowall

If our lips are wide at the end of the first word, we insert a Y sound:

We write it like this:	Kay is	I am	the end	she asked
We say it like this:	KayYis	Iyam	theYend	sheYasked

3. Make three sentences orally and pay attention to linking words.



TASK 10

Now let's try pronouncing the words.

Because it is	Can I?
Good day	Best time
Good idea	Upset about it
Read a book	Play a song
Some of it	Come on over
Some old animals	Click on it
Stop it	I need it
Push it	Like a
Take it	Find out
Put it in	Ed had edited it
Take a book over there	Line up
Let it	Caught it
Ate out	Bat an eye
Meet at eight o'clock	Eight of them

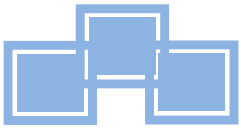


TASK 11

Speaking for one minute game.

How to play:

1. Make a small group.
2. List subjects to talk about e.g. science phenomenon, holiday, sport, etc.
3. Choose one person to start talking about the subject.
4. If the person repeats a word, hesitates or makes a grammatical error, another person in the group can take over by saying error, hesitation or repetition.
5. It is the tutors' job to decide quickly if the interruption is valid.
6. The person who interrupts them must continue.
7. The winner is the person talking at the end of the minute.



D. LET'S GET MORE PRACTICE



TASK 12

Study the following dialogues, and then act them out with your partner.

Situation: Stephanie and Luke are in the classroom discussing about their favorite scientists.



Picture 2.5
www.wosucascades.edu

DID YOU KNOW...?

Laser is an abbreviation of Light Amplification by Stimulated Emission of Radiation.



Card A

Stephanie : If to choose one, who will be your favorite scientist?

Luke :

Stephanie : Why?

Luke :

Stephanie : You must be one of those young scientists inspired by him.

Luke :

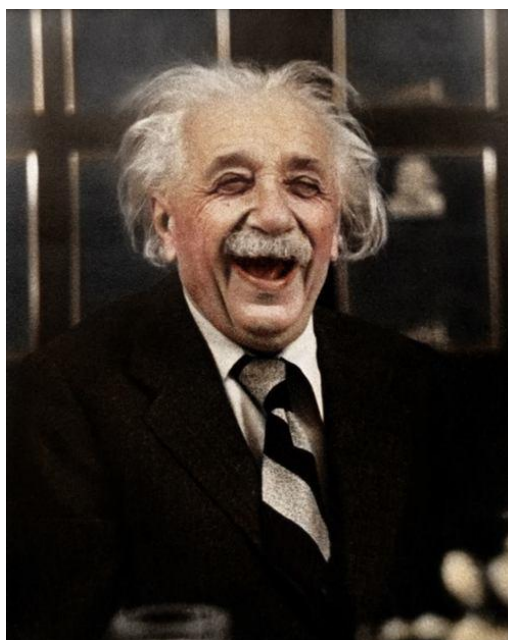
Stephanie : I never quite understand his well-known theory of relativity. Could you give me some explanation about it?

Luke :

Stephanie : So, does it mean that all movement is relative to other objects?

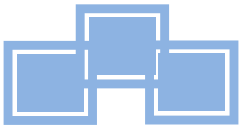
Luke :

Stephanie : Amazing! What about the second theory?



Picture 2.5

www.brainpickings.org



Card B

Luke : Albert Einstein, of course!

Stephanie :

Luke : Well, because he's perhaps the most famous scientist of all time. He serves as an inspiration to young scientists around the world.

Stephanie :

Luke : Yes, I am. Both his image and brilliant work on theoretical physics live on today.

Stephanie :

Luke : Let me tell you about it, Einstein revised Newton's laws of gravity to make them more accurate. We call what he developed the theory of relativity. It is actually two theories. The first is called Special Relativity. This theory states that it is impossible to determine whether or not you are moving unless you can look at another object.

Stephanie :

Luke : Exactly! For example, relative to the Earth, most meteorites move at about 25,000 miles an hour (40,233 km), but if you were standing on a meteorite looking at another meteorite going in the same direction as you and at the same speed, it would not appear to move at all.

Stephanie :

Luke : Well, the Theory of General Relativity is the one which redefined the laws of gravity. It says that it is impossible to tell the difference between gravity and the force of inertia from a moving object.

Adapted from: <http://www.redhotpawn.com/board/showthread.php?threadid=139030>

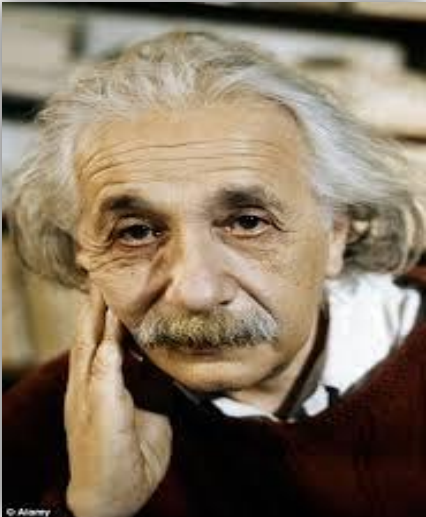
Questions:

1. Why does Luke idolize Einstein?
2. What is Einstein famous for?
3. What is the theory of Special Relativity about?
4. Who is your favorite scientist and why?




TASK 13

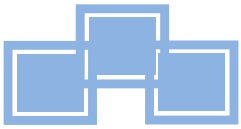
Work in pairs. Each person chooses a scientist picture, and then explains the scientist's theory/law orally to your partner. You may use the box beside the picture to elaborate your points.

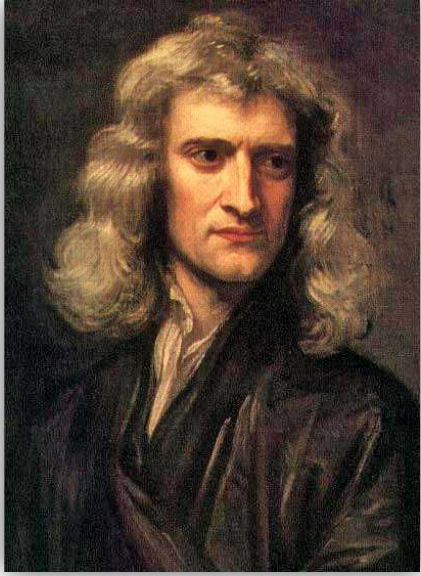
Relativity Theory	
	

Picture 2.6
www.dailymail.co.uk

Constructal Law	
	

Picture 2.7
www.vasilegogea.wordpress.com



Law of Gravity	
	
Picture 2.8 en.wikipedia.org	



TASK 14

Have a discussion with your tutors and friends on prepositions.

Prepositions
<p>In the previous task, you may find a few sentences consisting of prepositions. ...most meteorites move at about 25,000 miles an hour (40,233 km)... ...to tell the difference between gravity and the force of inertia...</p> <ol style="list-style-type: none">1. What are prepositions?2. Mentions some examples of prepositions and their meanings.3. Make sentences containing these prepositional phrases:<ol style="list-style-type: none">a. at universityb. according to usc. under the tree



TASK 15

Work in partner. Choose one situational card, make a dialogue based on the information provided in the box and then act it out in front of your classmates.

Theory of Parallel Universes

1. Paul Steinhardt and Neil Turok
2. idea that arises from string theory
3. the possibility of many more dimensions to our world than the three of space and one of time that we know

Law of Gravity

4. Isaac Newton
5. sitting under an apple tree
6. everything pulled everything else to itself by a force called gravity
7. Law of gravity explains how things fall on earth and how planets move around the sun and how moons move around planets.

Write you dialogue here:

A: _____

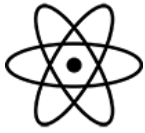
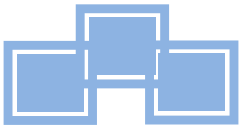
B: _____

A: _____

B: _____

A: _____

B: _____



TASK 16

In this task you have to choose one of the situations, make a dialogue with your partner and then act it out in front of your classmates.

Situation 1	Situation 2
You are a tour guide accompanying a visitor to a science museum, and then the visitor asks you to explain about a famous scientist and his/her theory.	You are in an international science seminar, your friend come late to the event and ask you to explain what has been discussed in the seminar.
Situation 3	Situation 4
You are in a classroom. Your lecturer explains you a new physics theory. One of your classmates comes late and asks you to explain what the lecturer has explained to the class.	You are having a discussion with your friend before the exam. You ask your friend to explain about the exam materials.



TASK 17

Work in pairs. Explain to your friend about your favorite scientist and his/her theory/law/hypotheses/invention.



FUN SPOT

Listen to a song entitled History of Everything. Listen to the song carefully and complete the missing lyrics and then sing it together with your partner.

History of Everything

Our whole universe was in a hot dense state,
Then nearly fourteen billion years ago expansion started. Wait...

The Earth began to cool.

The autotrophs began to drool.

Neanderthals developed tools.

We built a wall. (We built the pyramids.)

Math, science, history, unraveling the mystery,

That all started with 1) _____!

Since "The Dawn of Man" is really not that long,

As every galaxy was formed in less time than it takes to sing this song.

A fraction of a second and the elements were made.

The bipeds stood up straight.

2) _____, _____, _____ all met their fate.

They tried to leap, but they were late,

And they all died. (They froze their ashes off.)

The ocean and Pangaea,

See ya, wouldn't wanna be ya!

Set in motion by the same big bang!

It all started with the big BANG!

It's expanding ever outward, 3) _____,

It will pause and start to go the other way:

Collapsing ever inward. We won't be here. It won't be heard.

Our best and brightest figure that it'll make an 4) _____!

Australopithecus would really have been sick of us

Debating how we're here, they're catching deer (we're catching viruses)

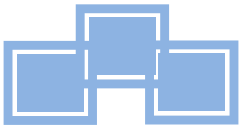
Religion or astronomy (Descartes or Deuteronomy)

It all 5) _____!

Music and mythology (Einstein and astrology)

It all started with a big bang!

It all started with a big BANG!



E. LET'S REFLECT

Aspects	Very much	Much	Little
Understanding theory of relativity, general relativity and gravity law			
Understanding expressions of explaining			
Understanding scientific laws, theories and hypotheses			
Understanding linking in English			
Understanding the use of prepositions			
Able to explain scientific theory and law			
Vocabulary			



F. LET'S SUMMARIZE

In this unit, you have learnt about expressions of asking and giving explanation, the differences between scientific laws, theories and hypotheses, linking in English and prepositions.

Key Points

1. Expressions used in asking for and giving explanation.

Asking for explanation	Giving explanation
Do you know ...? How can I ...? Could you tell me...? Could you explain...? Could you expound on that? Could you fill me in on that? I don't understand... How is it that? Please explain to me... Is there anything you can tell us? Would you mind telling me ...? Something else I'd like to know is... Could you give me some explanation about...? Can you give me more details?	Let me explain... Let me tell you about it... Let me give you some details... All I can say is... What's more, That's because ... May I explain ...? Let me explain you why... As you can see that... What you have to do is... It is important that... The most important point is... To give you more information, Taking into account, it was clear that

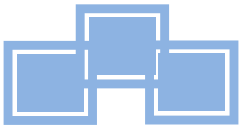
2. Scientific Laws, Theories and Hypotheses

A very common mistake of non-scientists and, believe it or not, some scientists, is to fail to correctly distinguish between scientific laws, theories and hypotheses. The difference is not just semantics. Conceptually, a scientific law is something very different from a theory. Following are some definitions, followed by some explanation and a few examples.

Scientific Law. A scientific law is an empirical (i.e. based on experimental evidence) statement of great generality of something which seems to always be true.

Scientific Hypothesis. A scientific hypothesis is a tentative explanation of an observation or pattern which has been observed in nature.

Scientific Theory. A scientific theory is an explanation of a natural phenomenon with a broad range of significance and application.



The chief distinction between a scientific law, on the one hand, and a theory or hypothesis on another, is that a law is a generalization. It is NOT an explanation. It is the result of induction. It is an empirical (i.e. based on observation alone) statement of something which always appears to be true.

Hypotheses and theories, on the other hand, are an attempt to explain what has been observed. Often scientists form theories to explain laws.

There are two important distinctions between scientific hypotheses and theories. Remember that these two concepts are fairly similar to one another, while a law is something very different. Theories and hypotheses are both explanations, but a theory is different, in general, in that; it has much more experimental support and it is a much broader statement, with a wide variety of potential applications than a hypothesis. Hypotheses are more tentative, but even more importantly, they apply to a rather specific and narrow set of circumstances, while a theory applies to a great number of problems.

3. Linking in English

There are basically two types of linking:

1. Linking Consonant to Vowel

When a word ends in a consonant sound, we often move the consonant sound to the beginning of the next word if it starts with a vowel sound.

For example, in the phrase "turn off":

We write it like this:	Turn	Off
We say it like this:	Tur	Noff

Remember that it's the sound that matters. In the next example, "have" ends with:

- the letter "e" (vowel)
- the sound "v" (consonant)

So we link "have" to the next word "a" which begins with a vowel sound:

We write it like this:	Can I have a bit of egg?
We say it like this:	Can-nI-ha-va-bi-to-fegg?

2. Linking Vowel to Vowel

When one word ends with a vowel sound and the next word begins with a vowel sound, we link the words with a sort of W or Y sound.

If our lips are round at the end of the first word, we insert a W sound:

We write it like this:	too often	who is	so I	do all
We say it like this:	Toowoften	Whowis	sowI	dowall

If our lips are wide at the end of the first word, we insert a Y sound:

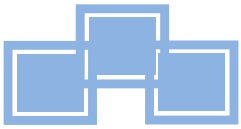
We write it like this:	Kay is	I am	the end	she asked
We say it like this:	KayYis	Iyam	theYend	sheYasked

4. Prepositions



Prepositions indicate relationships between words or ideas. Most prepositions deal with location and are easy to learn.

about	inside	since	beneath
above	into	than	beside
after*	like	through	between
along (side)	near	toward	beyond
among	nearby	under	but
around	next to	until	by
as	off	up	despite
before	out (of)	upon	down
behind	outside	with	during
below	over	within	except
in spite of	underneath	without	in front of



Vocabulary List

appear /ə'pɪər/ (v)	: muncul
arise /ə'raɪz/ (v)	: bangun
catchy /'kætʃ.i/ (adj)	: mudah diingat
concise /kən'saɪs/ (adj)	: ringkas
configuration /kən'fɪg.ə'reɪ.ʃən/ (n)	: konfigurasi
determine /dɪ'tɜːmɪn/ (v)	: menentukan
distinct /dɪ'stɪŋkt/ (adj)	: jelas
empirical /ɪm'pɪr.i.kəl/ (adj)	: empiris
essence /'es.əntəs/ (n)	: pokok
evidence /'ev.ɪ.dəntəs/ (n)	: bukti
hierarchy /'haɪə.rɑː.ki/ (n)	: hikarki
immense /ɪ'menst/ (adj)	: besar sekali
invent /ɪn'vent/ (v)	: menemukan
mass /mæs/ (n)	: masa
observer /əb'zɜːvər/ (n)	: pengamat
occur /ə'kɜːr/ (v)	: terjadi
purely /pʊə.li/ (adv)	: semata-mata
tendency /'ten.dən.tsi/ (n)	: kecenderungan
tentative /'ten.tə.tɪv/ (adj)	: sementara

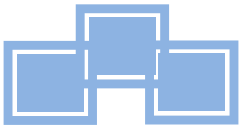
UNIT 3

TODAY, WE'RE GOING TO DISCUSS EYES DISORDER.



Picture 4.1
www.therapearl.com

Discussion is important to learning in all disciplines because it helps us process information rather than simply receive it. As an instructional activity, discussion provides the opportunity for its participant to talk to each other and the instructor. A good discussion gives us an opportunity to formulate principles in our own words and to increase ours' sensitivity to others point of view. In this unit, you will learn how to participate in a discussion of a certain topic.



A. LET'S START



TASK 1

Study the picture below and answer the questions orally.



Picture 4.2
www.britishcouncil.org



Picture 4.3
www.sunteaching.blogspot.com



Picture 4.4
www.didikharry.blogspot.com

Questions

1. Have you ever been ill?
2. What happened to you?
3. What do you know about diseases in the pictures?
4. Can you mention other types of diseases?



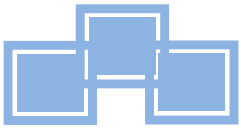
B. LET'S PRACTICE



TASK 2

Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.

No.	Word	Pronunciation	Part of Speech	Equivalence
1.	disease	/dɪ'zi:z/	n	penyakit
2.	symptom	/'sɪm p .təm/	...	...
3.	syndrome	/'sɪn.drə ō m	...	...
4.	suffer	/'sʌf.ə r /	...	...
5.	immune	/'ɪmjʊ:n/	...	...
6.	germ	/dʒɜ:m/	...	...
7.	infection	/ɪn'fek.ʃ ə n/	...	...
8.	prevalent	/'prev. ə l.ənt/	...	...
9.	system	/'sɪs.təm/	...	...
10.	simply	/'sɪm.pli/	...	...
11.	epidemic	/,ep.rɪ'dem.ɪk/	...	...
12.	devastating	/'dev.ə.steɪ.tɪŋ/	...	...
13.	effect	/ɪ'fekt/	...	...
14.	combat	/'kɒm.bæt/	...	...



TASK 3

In this part, you are going to listen to a discussion about HIV/AIDS. Listen to it and take notes for important information. Then, with your partner, answer the questions below by putting T if the answer is true, F if the answer is false and NC if the answer is not clear. Then, discuss your answers with your friends.

No.	Statement	T/F/NC	Reason
1.	Richard is ABC correspondent.	F	He is BBC World Service Science Correspondent.
2.	HIV refers to the virus and AIDS refers to the patient.	...	...
3.	People with HIV/AIDS were suffering from an immune system that was not working properly.	...	...
4.	You cannot have HIV without having AIDS.	...	...
5.	HIV positive means that you are infected with HIV.	...	...
6.	HIV stands for a disease, the Human Immunodeficiency Virus.	...	...
7.	AIDS stands for Acquired Immune Deficiency Syndrome.	...	...
8.	HIV/AIDS has been described as devastating epidemic.	...	...
9.	Most of young people in the city died because of AIDS.	...	...
10.	People infected with HIV will show signs of AIDS.	...	...



TASK 4

Listen to the discussion one more time and answer the following questions with orally.

1. What is the topic of the discussion?
2. Where does the discussion probably take place?
3. Who are the speakers in the discussion?
4. What are their jobs?
5. How did the Gary start the discussion?



TASK 5

Study the discussion between John Baker (A), Dr. Laura D. Cook (B) and Dr. Billy Johnson (C). Make a group of three, and then act out the discussion. One of you acts as the moderator (John Baker) and the other two act as the speaker (Dr. Laura Cook and Dr. Billy Johnson). Then, to check your comprehension, answer the following questions.

Script A

John Baker : Good morning everybody, my name is John Baker and I will conduct this discussion. Today we are going to discuss eye disorder with Dr. Laura D. Cook and Dr. Billy Johnson. On this very timely subject, but before we get started, I wanted to take a few minutes of your time. Please remain quiet throughout the discussion, and please turn your cell phones to silent mode. Now, let's start our discussion. Dr. Laura D. Cook, what are cataracts?

Dr. Laura D. Cook:

John Baker : What causes cataracts?

Dr. Laura D. Cook:

John Baker : Dr. Billy Johnson, besides seniors, who else is more likely to develop cataracts?

Dr. Billy Johnson :

John Baker : What are the symptoms of cataracts?

Dr. Billy Johnson : ...

John Baker : So, how are cataracts treated?

Dr. Laura D. Cook: ...

John Baker : What can I do to prevent cataracts?

Dr. Billy Johnson : ...

John Baker : Thank you very much Dr. Laura D. Cook Dr. Billy Johnson. I think that brings us to the end of the discussion. Are there any questions? Thank you for listening so attentively!

Adapted from: <http://monkeysee.com/play/11469- cataracts>

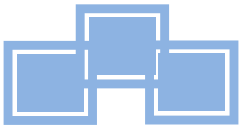
Script B

John Baker :

Dr. Laura D. Cook: Cataracts are a change in clarity and consistency of the lens which sits right here in the eye that usually goes along with age.

John Baker :

Dr. Laura D. Cook: Normally, just aging causes cataracts. Every year of age changes the clarity and the consistency of the lens. There



are certain other disease processes or conditions that can cause that as well. Diabetes is one, been highly nearsighted is another or high myopia, inflammation inside of the eye, or having been on steroids in the past topically can actually accelerate cataract formation.

John Baker :

Dr. Billy Johnson :

John Baker :

Dr. Billy Johnson :

John Baker :

Dr. Laura D. Cook: So, the only treatment we have available right now is surgical treatment and many patients will enquire whether this means if they actually have to have an incision and yes, it does mean that you have an incision. This incision is generally just a few millimeters and doesn't need a suture or a stitch.

John Baker :

Dr. Billy Johnson :

John Baker :

Adapted from: <http://monkeysee.com/play/11469- cataracts>

Script C

John Baker :

Dr. Laura D. Cook:

John Baker :

Dr. Laura D. Cook:

John Baker :

Dr. Billy Johnson : Diabetics often will develop cataracts earlier on, patients that have a family history of cataract at an early age, patients that have been on steroids, anybody who has had eye trauma, anybody who has had inflammation inside of the eye and then there are certain syndromes, there is a whole host of chromosome syndromes and abnormalities that also can cause cataracts especially in young children.

John Baker :

Dr. Billy Johnson : So the most common complaints or symptoms are a decrease in vision or trouble with glare. When we see decrease in vision, what I really mean is that their best corrected visual acuity isn't satisfactory. The second symptom causes decrease in visual acuity or difficulty seeing or even from the sunlight and those things can really be devastating to a patient.

John Baker :

Dr. Laura D. Cook:

Dr. Billy Johnson : Your options are limited in terms of prevention. If it's



associated with a disease process like diabetes, controlling your blood sugar is very important. In terms of steroid use, limiting steroid use to patients and the last one, the easiest thing you can do is wear sunglasses. The more sun exposure there is and so in terms of sunglasses, wearing them at a young age and being consistent about using sunglasses with UV protection is important.

John Baker :

Adapted from: <http://monkeysee.com/play/11469-cataracts>

Question:

1. What is the topic of the discussion?
2. Where does the discussion probably take place?
3. Who is Dr. Laura D. Cook?
4. Can cataracts be treated?
5. What can we do to prevent cataracts?



TASK 6

Work in pairs. From the discussion in Task 5, discuss expressions used by the moderator and the speakers and their functions. Take a look at an example below.

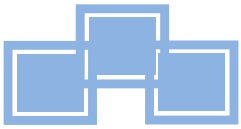
	Functions	Expressions
Moderator	Greeting	Good Morning



TASK 7

During a discussion, you may find someone who interrupts. Make a group of three, each of you acts as Sarah (A), Alex (B), and John (C) Study the dialogues, the expressions and their functions. Then, act it out with your partner.

Expressions	Functions
Let's get down to business.	: Marking a transition
Any other thoughts before I comment on that?	: Asking opinion
If you could go through them in order, . . .	: Suggesting
First of all, . . .	: Ordering points
Sorry to hold the meeting up.	: Interrupting
Thanks for coming.	: Thanking



Script A

Sarah : Right then, Alex, **let's get down to business**. On the agenda today for our research team meeting are selecting the time and setting for our observation. Are you quite happy with those points?

Alex :

Sarah : OK everybody, **thanks for coming**. Let's keep this meeting fairly brief, really just a couple of things on the agenda. First of all, as you can see, we've agree upon our focus of the research, that is understanding Asthma: how the environment, allergens, and genetics interact with the body's immune system to cause the disease and aggravate the symptoms. **First of all**, the observation time. I just wanted to remind everybody that next Monday will be a national holiday, I think it would be the perfect time to do our observation.

John :

Sarah : Well, **any other thoughts before I comment on that?**

Alex :

Adapted from: <http://www.bbc.co.uk/worldservice/learningenglish/1agenda.shtml>

Script B

Sarah :

Alex : Yeah, that's fine. **If you could go through them in order**, that'd be great.

Sarah :

John :

Sarah :

Alex : I don't think we've got any choice at all about it. If the university is going to give us the permission at the beginning of next month, we've got to do the observation at the same time.

Adapted from: <http://www.bbc.co.uk/worldservice/learningenglish/1agenda.shtml>

Script C

Sarah :

Alex :

Sarah :

John : Actually Sean, can I just ask you- **sorry to hold the meeting up** - can I ask you about those dates, because I thought that the observation is going to be on the month after next, and I understand that everybody has got their dates, but I do feel quite strongly that we're bringing this out too soon.

Sean :

Alex :

Adapted from: <http://www.bbc.co.uk/worldservice/learningenglish/1agenda.shtml>



TASK 8

From the dialogue in Task 5, there are some expressions used often during a discussion. Practice the following expressions.

Interrupting
First of all, Can I just ask you? Sorry to hold the discussion up. I do feel quite strongly that.... I don't think we've got any choice at all. Any other thoughts?

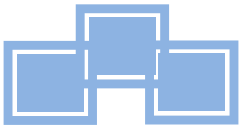


TASK 9

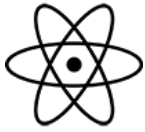
Interruptions Game

How to play:

1. Work in small groups.
2. One of you speaks for three minutes on a subject of your choice.
3. The others must interrupt you as many times as possible, using the language from in the interruptions section (Task 6).
4. After three minutes, another member of the group speaks, and the rest of the group interrupts him /her.



C. LET'S STUDY



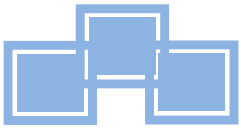
TASK 10

Practice the following expressions.

Greeting	Good Morning/ Afternoon/ Evening Ladies and gentlemen Welcome Hi/ hello
Introducing	Let me start by introducing myself. My name is.... I'm in charge.... As some/ most of you already know, I am....
Opening a discussion	To begin with, We need to discuss.... Let's start by (V ing).... We'll start by (V ing).... The problem here is.... The important thing (here) is.... The main thing we need to discuss is.... Let's look at.... It looks like.... It appears that....
Expressing opinion	I think.... I believe.... I don't think.... In my opinion....
Adding opinion	You made a good point but I'd also like to add....
Asking for input	What do you think? How about you? How do you feel about that? Any ideas on that? What's your opinion on that, Martha? Any thoughts on that?
Responding	That sounds like a) good idea. Sounds good. The problem with that is.... That raises the issue of....
Contradicting	However, Yeah, but....



	<p>On the other hand, You may be right, but.... I may be wrong, but.... Correct me if I'm wrong, but....</p>
Interrupting	<p>Sorry, but.... May I say something.... Excuse me, Pardon me, Sorry to interrupt, May I interrupt (for a minute)? Can I add something here? I don't mean to intrude, but.... Could I inject something here? Do you mind if I jump in here?</p>
Holding the floor	<p>Please let me finish....</p>
Returning to your saying	<p>As I was saying.... Don't get me wrong.... Anyway, Now, where was I? Where were we? What were you saying?</p>
Clarifying your own ideas	<p>In other words, What I mean is.... What I'm trying to say is.... What I wanted to say was.... To clarify,</p>
Asking for Clarification	<p>What do you mean (by that)? What are you trying to say? What was that again? Could you clarify that? Could you elaborate on that?</p>
Clarifying another's ideas	<p>You mean.... What you mean is.... What you're saying is.... (I think) what she means.... What he's trying to say is.... If I understand you, (you're saying that....) So, your idea is....</p>
Making a Suggestion/Proposal	<p>I think we should.... Maybe we should.... I suggest.... Why don't we.... How about.... We could....</p>

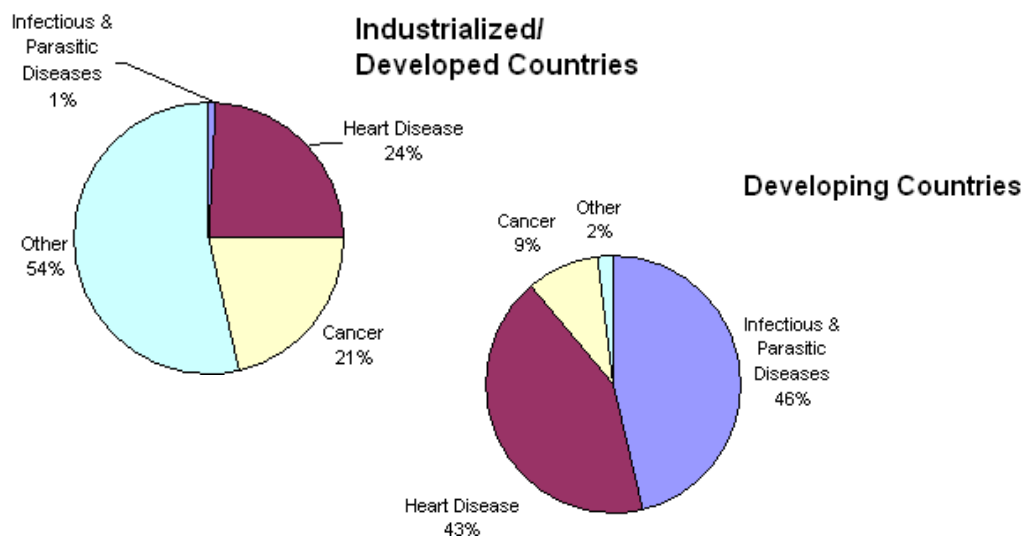


Agreeing	I agree. So do I. Me too. Me neither. (Agreeing about a negative idea.) I don't either (Agreeing about a negative idea.) You're right. That's right. Good idea. I think that's a good idea.
Disagreeing	I disagree. I don't think so. (No.) That's not right. Yes, but... (I'm sorry, but) I don't agree
Giving examples	For instance, Let me illustrate, To illustrate,
Questions	Do you have any questions? Are there any questions? Yes, the gentlemen/ladies sitting there (points).
Signaling the end	That brings us to the end of our discussion....
Summarizing	In summary, The conclusion is.... So, we've decided to.... We're going to.... (then) In conclusion, To conclude, To summarize, To sum up,
Closing	Thank you for your attention Thank you for listening



TASK 11

Study the following monologues and act it out. Then, study the explanation about describing visual aids and numbers.



Picture 4.5
www.examinercom.jpg

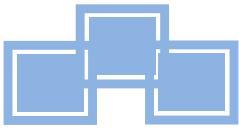
Let's take a look at these two pie charts. Here we can see four diseases in rich countries and the developing world. In general, the most significant difference is that infectious and parasitic diseases still plague millions of people in poorer countries but almost none in wealthier ones.

First, in developing countries, almost half, 46%, of all illnesses are due to infectious and parasitic diseases. Heart disease is a close second with just 3% less. Third, comes cancer with only 9%. Finally other diseases account for just a fraction, 2%, of all the illnesses.

In contrast, in affluent countries, other diseases are the biggest segment. They account for over 54%, of all illnesses. Following them comes heart disease with 24%, around/about half the number recorded for developing countries. Cancer is not far behind at a staggering 21%. Last, infectious and parasitic diseases comprise a mere 1% of the ailments.

To conclude, there are major differences between the two regions in terms of diseases. Overall, most individuals in developing countries suffer from infectious and parasitic diseases whereas people in richer nations experience cancer, heart disease, and a wider range of other illnesses.

Adapted from: <http://www.ecospherics.net/.html>



Expressions used in describing visual aids

1.	Introducing visual aids	Ok. Let's take a look at.... I have a transparency to show you.... The first/second/next/final slide is.... Have a look at this.
2.	Focusing attention	I'd like to draw your attention to.... One of the most important aspects of this is.... At first glance it seems....but....
3.	Meaning of the visual	This shows/illustrates/refers to.... This is a graph which shows.... As you can see, this is.... Here we can see....
4.	Check with the audience	Is that clear for everyone? Is that in focus? Can everybody see that?

Expressions used in describing numbers

Ordinal numbers	Fractions	Decimals
1. 1 st :First 2. 2 nd :Second 3. 95 th :ninety-fifth 4. 101 th :one hundred and first	1. $\frac{1+x}{1-x}$: One plus x over (or divided by) one minus x 2. $\frac{1}{2}$: a half 3. $2\frac{1}{2}$: two and a half 4. $\frac{1}{4}$: a quarter 5. $\frac{3}{4}$: three quarters	1. 0.0345 : Zero point zero three four five 2. 0.5 :zero point five 3. 2.5 :two point five 4. 0.25 :zero point two five 0.75 :zero point seven five

Percentages	Units	Trigonometric functions
68% :Sixty eight per cent	1. 10 m: ten meters 2. 85,000 gal: eighty-five thousand gallons 3. 35oC: thirty-five degrees Celsius 4. 40 kg: forty kilograms (kilos) 5. 85 lb: eight-five pounds	$\frac{\sin \alpha}{A} = \frac{\sin \beta}{B} = \frac{\sin \gamma}{C}$ sine alpha over A equals sine beta over B...



TASK 12

Have a discussion with your tutors and friends about gerunds.

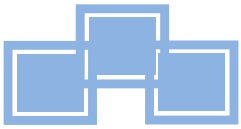
Gerunds
<p>In task 10, you probably find this sentence:</p> <p><i>Speaking as a team leader, I think I'd like to hold a meeting as soon as possible.</i></p> <p>The word 'Speaking' in the sentence is a gerund</p> <ol style="list-style-type: none"> 1. What are gerunds? 2. What are the functions of gerunds? 3. Mentions examples of verbs commonly followed by gerunds. 4. Make three sentences using gerunds.



TASK 13

Study the following explanation and practice the examples.

Reduced Form			
<p>In task 12, you'll notice that Carrie said:</p> <p><i>I think I'd like to hold a meeting as soon as possible</i></p> <p>I'd is a reduced form of I would.</p>			
Positive Statement		Negative Statement	
Long form	Short form	Long form	Short form
Is are am has have had will would	's 're 'm 's 've 'd 'll 'd	is not are not am not has not have not had not will not would not	isn't aren't I'm not hasn't haven't hadn't won't wouldn't



Examples:	
Regular	Contracted:
I am British.	I'm British.
He is Chinese.	He's Chinese.
They are Italians.	They're Italians.
There is a man at the door.	There's a man at the door.
Where is the butter?	Where's the butter?
What is he doing?	What's he doing?
Who is that?	Who's that?
She is going to the beach.	She's going to the beach.
We are going to eat now.	We're going to eat now.
They are not ready yet.	They're not ready yet.
I will be back in a minute.	I'll be back in a minute.
There will be lots of food.	There'll be lots of food.
I have seen that movie already.	I've seen that movie already.
She has finished her homework.	She's finished her homework.
I had played that game before.	I'd played that game before.
We would be glad to help.	We'd be glad to help.



TASK 14

Word Link

How to play:

1. This is a word association game.
2. Make a group and sit in a circle.
3. The first person starts with any word they wish i.e. red.
4. The next person repeats the first word and adds another word which links to the first i.e. tomato.
5. The next person repeats the previous word and add another word link i.e. soup, and so on.
6. To keep this moving, only allow five seconds for each word link.



D. LET'S PRACTICE MORE



TASK 15

Here's a dialogue about agreeing and disagreeing. Study the dialogues and act it out with your partner.

Sean : The observation schedule move, as you know, and Billy informed me that our topic also changed. Just wanted to see what kind of feedback you've got.

Tim : Yeah, Sean, **I really strongly disagree** with the new topic plan. I think it's divisive to change our observation topic in all of sudden. I'd be much happier if we discuss it in a meeting first.

Carrie : Actually, **I think Tim is right**. I've been chatting to most of the team members. They're quite keen to have a discussion first. Speaking as a team leader, I think I'd like to hold a meeting as soon as possible. **So I think Tim's discussion plan is right.**



TASK 16

Here's a discussion about diabetes. Work in pairs, and then act out the dialogues. Each of you acts as Roger Trump (A) and Clare Bradley (B).

Roger Trump : Good Afternoon. Welcome to the science club, today we will be hearing a discussion about diabetes. Before we start the let me introduce myself, I'm Roger Trump. Now, let's begin our discussion, I want to invite our speaker, Dr. Clare Bradley. Thank you very much for coming, Dr. Clare Bradley. She is a Senior Vice President and Chief Medical Officer of IPRO; New York's Medicare quality improvement organization. Let's begin our discussion. Dr. Bradley, most people know someone who has diabetes, what is your comment on that?

Dr. Clare Bradley :

Roger Trump : What is diabetes?

Dr. Clare Bradley :

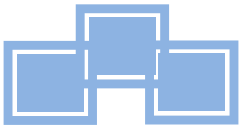
Roger Trump : What happens to our body when there is no insulin?

Dr. Clare Bradley :

Roger Trump : What are types of diabetes?

Dr. Clare Bradley :

Roger Trump : Does every pregnant woman can have the chance of having gestational diabetes?



Dr. Clare Bradley :

Roger Trump : Thank you very much Dr. Clare Bradley. That was a very interesting discussion. If you have any questions, please raise your hand. Yes, the lady sitting in the second row please.

Lisa Stinson : Dr. Clare Bradley, our family the history of diabetes. Since I have two children, can diabetes be prevented?

Dr. Clare Bradley :

Roger Trump : Thank you Doctor. Are there any other questions? Okay, that'll bring us to the end of the discussion. Thank you for joining us Dr. Clare Bradley. Thank you very much for your attention and see you next time!

Adapted from: <http://monkeysee.com/play/19780-understanding-diabetes>

Roger Trump :

Dr. Clare Bradley : Actually, 24 million Americans have this disease. Diabetes is the sixth leading cause of death in the United States. It is a chronic disease with many risk factors, including many that can be changed. There are an estimated one-and-a-half million newly diagnosed cases per year. More than five-and-a-half-million people age 20 years and older remain undiagnosed even though they have diabetes.

Roger Trump :

Dr. Clare Bradley : Let me explain what diabetes is, most of the food we eat turns into glucose. After food is digested, the glucose is transported into the blood, and then enters cells. Insulin is a hormone produced by the body that helps the body use sugar as a source of energy. In diabetes, the body fails to produce insulin or does not use it properly.

Roger Trump :

Dr. Clare Bradley : When there is no insulin or not enough insulin, the glucose cannot enter the cells. This leads to high sugar levels in the blood.

Roger Trump :

Dr. Clare Bradley : There are three main types of diabetes; Type 1, Type 2, and gestational diabetes. Type 1 makes up about 5-10% of all cases of diabetes. In Type 1, the pancreas fails to produce insulin. The most common type of diabetes is Type 2; 90-95% of all diabetes cases are Type 2. Type 2 diabetes usually appears after the age of 40. The third type of diabetes is gestational diabetes which occurs in 2-5% of pregnant women.

Roger Trump :

Dr. Clare Bradley : No. It occurs more frequently in African-American,



Roger Trump

Lisa Stinson

Bradley

Roger Trump

Hispanic, and Native American women with a family history of diabetes.

:

: Dr. Clare Bradley, our family the history of diabetes. Since I have two children, can diabetes be prevented? Dr. Clare

: Your children have a high risk of having diabetes. However, diabetes can be prevented but depends on the type of diabetes. Type 1 diabetes can't be prevented. Doctors can't even tell who will get it and who won't. In type 1 diabetes, a person's immune system attacks the pancreas and destroys the cells that make insulin. No one knows for sure why this happens, but scientists think it has something to do with genes. Sometimes, you can prevent type 2 diabetes. There are several things you can do to prevent diabetes type 2, such as try to eat foods that are low in fat, limit fast food and sugary sodas, and try to do something that gets you moving every day.

: ...

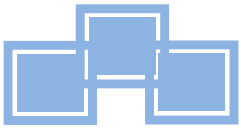
Adapted from: <http://monkeysee.com/play/19780-understanding-diabetes>



TASK 17

Work in pairs. From the discussion in Task 14, identified expressions used by the moderator and the speakers. Then, discuss their functions. Look at the example below.

	Functions	Expressions
Moderator	Greeting	Good Morning



TASK 18

Have a pair discussion. The topic can be range from HIV/AIDS, cataracts, diabetes or other diseases. Each of you serves as the moderator and the speaker. Make sure to use appropriate expressions. Use the box below to write your discussion script.

...	_____

...	_____

...	_____

...	_____

...	_____

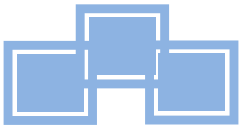
...	_____



TASK 19

In this part, you will have to make a group consist of four people. Each of you will serve as the moderator, and the speakers. Choose one of the most interesting topics below and start the discussion with your group in front of the class.

Situation 1	Situation 2
Do you think a good lifestyle is the most effective way to prevent people from sickness?	Are organic food always good for your health? Are you willing to pay more for food that is really organic?
Situation 3	Situation 4
What are the steps of being healthy?	What can we do to decrease the number of people affected by HIV/AIDS?
Situation 5	Situation 6
What are some traditional ways or medicine you have seen to cure illness?	What are bad habits that can affect our health condition?



FUN SPOT

Listen to a song about cell theory. Listen to it carefully and sing it together with your friends.

All living things are composed of cells

Cells are the basic units of structure and function in living things

New cells are produced from existing cells

Back then was a guy named Hooke, cut some cork and he had a look

Underneath his microscope tiny rooms that he saw in groups

Empty rooms that looked like shells He's the one that called them cells

Listen up cause we're not done Cell theory had just begun

Add one scientist to know the inventor of the microscope

Anton von Leeuwenhoek saw cells move and he was like "That's dope"

Cell theory, cell theory, cell theory, cell theory, cell theory, go!

If you thought this was complete take a breath and have a seat

Two scientists to have their say Schleiden and Schwann to save the day

Schleiden said all plants have cells they are alive and we can tell

The next year Mr. Schwann could see all animals have cells that live and breathe

Oh they live and breathe Live and breathe



E. LET'S REFLECT

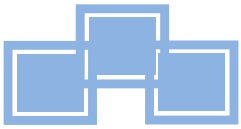
Aspects	Very much	Much	Little
Understanding HIV/AIDS, cataracts and diabetes			
Understanding expressions in a discussion			
Understanding scientific laws, theories and hypotheses			
Understanding gerunds			
Understanding reduced form			
Able to participate in a discussion			
Vocabulary			

F. LET'S SUMMARIZE

In this unit, you have learnt about how to discuss something, HIV/AIDS, cataracts, and diabetes, gerunds, and reduced form in English.

1. Expressions used in a discussion.

Opening a discussion	To begin with, We need to discuss....
Expressing opinion	I think.... I believe....
Adding opinion	You made a good point but I'd also like to add....
Asking for input	What do you think? How about you?
Responding	That sounds like a) good idea. Sounds good.
Contradicting	However Yeah, but....
Interrupting	Sorry, but.... May I say something....
Holding the floor	Please let me finish....
Returning to your saying	As I was saying....



	Don't get me wrong. . .
Clarifying your own ideas	In other words, What I mean is . . .
Asking for Clarification	What do you mean (by that)? What are you trying to say??
Clarifying another's ideas	You mean . . . What you mean is . . .
Making a Suggestion/Proposal	I think we should . . . Maybe we should . . .
Agreeing	I agree. So do I
Disagreeing	I disagree. I don't think so.
Giving examples	For instance,
Summarizing	In summary, The conclusion is . . .

2. Gerunds.

Gerunds are defined as the -ing form of a verb. They have several functions.

1. Used as subjects and complements
 - a. *Skiing* is my favorite sport.
 - b. *Hiking* can be very strenuous.
 - c. *Seeing* is believing
2. Used as objects following prepositions and prepositional expressions
 - a. Thanks for *tending* my children.
 - b. The job consists of *typing*, *filing*, and *answering* the phone.
3. Used as objects following certain verbs.
 - a. The children enjoyed *watching* the parade.
 - b. Ms. Terrell avoided *paying* her taxes until it was too late.

Gerunds can sometimes take objects of their own:

- a. Roland is afraid of *making* mistakes.
- b. Sandy is *considering* leaving New York

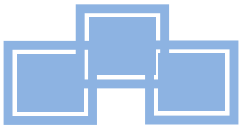


These verbs are commonly followed by gerunds:

Admit	Stop	Hate	Recommend
Advise	Threaten	Hesitate	Regret
Anticipate	Tolerate	Imagine	Suggest
Appreciate	enjoy	Intend	Threaten
Attempt	Quit	Keep	Tolerate
Avoid	forget	Like	Try
Begin	Recall	Love	Understand
can't help	Recollect	Mention	Suggest
Complete	finish	Mind	Go
Consider		Miss	Remember
Delay		Neglect	Resent
Deny		Postpone	Resist
Discuss		Practice	Risk
dislike		Prefer	Start

3. Reduced Form.

Positive Statement		Negative Statement	
Long form	Short form	Long form	Short form
is are am has have had will would	's 're 'm 's 've 'd 'll 'd	is not are not am not has not have not had not will not would not	isn't aren't I'm not hasn't haven't hadn't won't wouldn't



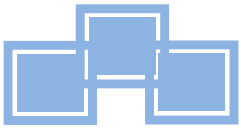
4. Describing visual aids and numbers.

1.	Introducing visual aids	Ok. Let's take a look at.... I have a transparency to show you.... The first/second/next/final slide is.... Have a look at this.
2.	Focusing attention	I'd like to draw your attention to.... One of the most important aspects of this is.... At first glance it seems....but....
3.	Meaning of the visual	This shows/illustrates/refers to.... This is a graph which shows.... As you can see, this is.... Here we can see....
4.	Check with the audience	Is that clear for everyone? Is that in focus? Can everybody see that?

Ordinal numbers	Fractions	Decimals
1. 1 st :First 2. 2 nd :Second 3. 95 th :ninety-fifth 4. 101 th :one hundred and first	1. $\frac{1+x}{1-x}$: One plus x over one minus x (or divided by) 2. $\frac{1}{2}$: a half 3. $2\frac{1}{2}$: two and a half 4. $\frac{1}{4}$: a quarter 5. $\frac{3}{4}$: three quarters	6. 0.0345 : Zero point zero three four five 7. 0.5 :zero point five 8. 2.5 :two point five 1. 0.25 :zero point two five 0.75 :zero point seven five



Percentages	Units	Trigonometric functions
68% :Sixty eight per cent	1. 10 m: ten meters 2. 85,000 gal: eighty-five thousand gallons 3. 35oC: thirty-five degrees Celsius 4. 40 kg: forty kilograms (kilos) 5. 85 lb: eight-five pounds	$\frac{\sin \alpha}{A} = \frac{\sin \beta}{B} = \frac{\sin \gamma}{C}$ sine alpha over A equals sine beta over B...



Vocabulary List

abnormality /æb.nɔ:'mæl.ə.ti/ (n)	: abnormalitas
accelerate /ək'sel.ə.reɪt/ (v)	: mempercepat
acuity /ə'kju:.ə.ti/ (n)	: ketajaman
brief /brɪ:f/ (adj)	: singkat
clarity /'klær.i.ti/ (n)	: kejelasan
consistency /kən'sɪs.t ə n t .si/ (n)	: konsistensi
deficient /dɪ'fɪʃ. ə nt/ (adj)	: kurang
devastating /'dev.ə.steɪ.tɪŋ/ (adj)	: mengenaskan
digest /d ɪ dʒest/ (v)	: mencerna
disorder /dɪ'sɔ:.dɔ r / (n)	: penyakit
evidence /'ev.i.d ə n t s/ (n)	: bukti
fairly /'feə.li/ (adv)	: secara wajar
formation /fɔ:'meɪ.ʃ ə n/ (n)	: pembentukan
incision /ɪn'sɪʒ. ə n/ (n)	: torehan
infected /ɪn'fek.tɪd/ (adj)	: terinfeksi
inflammation /ɪn.flə'meɪ.ʃ ə n/ (n)	: peradangan
lens /lenz/ (n)	: lensa
ophthalmology /ɒf.θæl'mɒl.ə.dʒi/ (n)	: ilmu pengobatan mata
sufferer /'sʌf. ə r.ə r / (n)	: penderita
surgical /'sɜ:.dʒɪ.k ə l/ (n)	: pembedahan
symptom /'sɪm p .təm/ (n)	: gejala
syndrome /'sɪn.drə ŋ m/ (n)	: sindrom
treated /tri:t/ (v)	: diperlakukan

UNIT 4

TODAY, I'LL BE TALKING ABOUT CHEMISTRY IN OUR DAILY LIVES.



Picture 3.1

www.husnaamalana.blogspot.com

You find chemistry in daily life in the foods you eat, the air you breathe, your soap, your emotions and literally every object you can see or touch. In this unit, you will learn how to present your daily lives experience on chemistry. To present information clearly and effectively is a key skill to get your message or opinion across and, today, presentation skills are required in almost every field.



A. LET'S START



TASK 1

Study the picture below and answer the questions orally.



Picture 3.2
www.headingfortheexits.com



Picture 3.3
www.themanbehindthecart.com

Questions:

1. What is the man doing?
2. What do you think of the pictures?
3. What do you know about chemical in food?

DID YOU KNOW...?

A bee sting is acidic and a wasp sting is alkali. To treat a sting by one of these you should use the opposite type of chemical.



B. LET'S PRACTICE



TASK 2

Below are some words you are going to find in Task 3. Find their Indonesian versions in the dictionary and then repeat after your tutor.

No.	Word	Pronunciation	Part Of Speech	Equivalence
1.	chemical	/ˈkem.ɪ.kəl/	n	bahan kimia
2.	concern	/kənˈsɜːn/	...	...
3.	contaminant	/kənˈtæm.ɪ.nənt/	...	...
4.	involve	/ɪnˈvɒlv/	...	...
5.	pesticide	/ˈpes.tɪ.saɪd/	...	...
6.	potentially	/pə ʊ ˈten. t ʃ ə l.i/	...	...
7.	residue	/ˈrez.ɪ.djuː/	...	...
8.	spokesperson	/ˈspəʊks.mən/	...	...
9.	supply	/səˈplaɪ/	...	...
10.	variety	/vəˈraɪə.ti/	...	...

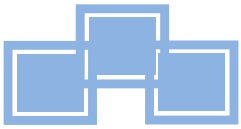


TASK 3

In this part you will listen how Carl opens his presentation and answer the following questions orally.

Situation: Tim holds a PhD in Agricultural and Environmental; he is delivering his presentation in front of his colleagues.

1. Who is Carl?
2. What is Carl's job?
3. Where does he work?
4. How did Carl open his presentation?
5. What is the topic of Carl's presentation?



TASK 4

In this part you will listen again on how Carl opens his presentation, and then identified the expressions used and act out the expressions.

Greeting:

Introducing the talk:

Ordering points:

DID YOU KNOW...?

The metal with the highest melting point is tungsten, at 3410 degrees Celsius (6170F).



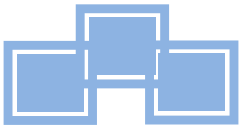
TASK 5

Here are Carl's presentation scripts about Basic Food Toxicology. Work in pairs. Each of you choose a script, and then complete the missing monologue with correct words or phrases by asking to your partner. Then, act out the monologue with your partner.

Script A

"Hi! My name is Carl Winter, I am a spokesperson for the Institute of Food Technologists. 1) _____ on the faculty at the University of California, Davis. Today I'll be discussing food safety issues that pertain to potentially dangerous chemical contaminants in the food supply. In the previous segment, we discussed a little bit about toxicology which is the basic science of poisons. 3) _____ principles of toxicology is that the dose makes the poison. In essence, all chemicals are toxic, if the dose of those chemicals is high enough. So it's not the presence or absence of a chemical contaminant in food that determines the potential for harm, but rather the amount of that chemical. 5) _____ illustrate this is to consider if we have a headache, we might want to take some pain relievers. If we follow the regular dosage, which might be one or two tablets of a pain reliever, hopefully, that will be a low enough dose to relieve our headaches but not enough of a dose to make us sick. If on the other hand, we decided to take the entire contents of that bottle, we might find ourselves in a hospital with an overdose. 7) _____, it's the same chemical that we're exposed to, but there's a difference in the dose; the dose makes the poison. When we talk about exposure to chemical contaminants in the food supply, fortunately, in most cases our exposure to these chemicals is very small. In the next segment, I'll discuss the dose of chemicals that we are exposed to in the food supply."

Adapted from: <http://monkeysee.com/play/13770-understanding-food-safety-and-toxicology>



Script B

"Hi! My name is Carl Winter, I am a spokesperson for the Institute of Food Technologists. I am a Food Toxicologist on the faculty at the University of California, Davis. 2) _____ food safety issues that pertain to potentially dangerous chemical contaminants in the food supply. In the previous segment, we discussed a little bit about toxicology which is the basic science of poisons. One of the most important principles of toxicology is that the dose makes the poison. In essence, all chemicals are toxic, if the dose of those chemicals is high enough. 4) _____ the presence or absence of a chemical contaminant in food that determines the potential for harm, but rather the amount of that chemical. One way to illustrate this is to consider if we have a headache, we might want to take some pain relievers. If we follow the regular dosage, which might be one or two tablets of a pain reliever, hopefully, that will be a low enough dose to relieve our headaches but not enough of a dose to make us sick. 6) _____, we decided to take the entire contents of that bottle, we might find ourselves in a hospital with an overdose. In both cases, it's the same chemical that we're exposed to, but there's a difference in the dose; the dose makes the poison. When we talk about exposure to chemical contaminants in the food supply, fortunately, in most cases our exposure to these chemicals is very small In 8) _____, I'll discuss the dose of chemicals that we are exposed to in the food supply."

Adapted from:<http://monkeysee.com/play/13770-understanding-food-safety-and-toxicology>

The functions of expressions in the box above are as follows:

So it's not	: Concluding a section
If on the other hand	: Contrasting
I am a Food Toxicologist	: Introducing yourself
In both cases	: Giving examples
In the next segment : to	: Ordering points
One of the most important	: Emphasizing
One way to	: Signposting
Today I'll be discussing	: Introducing the talk



TASK 6

Study Carl's presentation and answer the following questions below orally.

1. What is the most important principle of toxicology?
2. Can the presence of chemical contaminant in food be harmful for us?
3. What does it mean by "the dose makes poison"?
4. What will probably be discussed by Carl in the video?

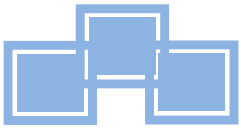


TASK 7

Line up game.

How to play:

1. Everybody makes two long rows.
2. The two people at the front of each row will battle against each other.
3. Tutors will ask a question and the first person to answer correctly between two will get to sit down.
4. The other person goes to the back of the line.



C. LET'S STUDY



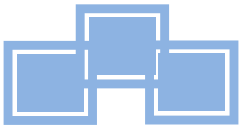
TASK 8

Study the following explanation and practice the expressions.

Greeting	Hi Hello Good moorning Good afternoon Ladies and Gentlemen Ladies and gentlemen, thank you very much for coming today Good afternoon ladies and gentlemen, Thank you for finding the time to come and join me for this presentation this afternoon
Introducing the talk	I'd like to talk about I'm going to discuss Today I'll be discussing I want to tell you about What I'd like to do is to explain to you What I'm going to do is to describe The purpose of today's presentation is to discuss I've invited you here today to have a look at my findings.
Ordering points (Time order)	To begin with At the begining, At the start, Second(ly), Next, Finally, At the end, In the next segment
Ordering points (Listing and adding)	A second reason Another point Also Other factors In addition,
Showing open to questions	At the end I'd be happy to answer any of your questions... At the end, you can ask questions...



Starting a new section	Moving on to Turning to I'd like to move on I'd like to turning on I'd like to talk about I want to have a look at....
Transition	Let us now move on to So these were our method. What about the result?
Contrasting	But However On the other hand
Referring to visual aids	The slide (graph, chart) shows Here you can see Here are If you have a look at this first graph.... As you can see.... If you look at this slide....
Signposting	A good illustration of the.... A good example of this is.... Now let's look at.... One way to....
Giving an example	For example Such as Here is an example Let me give you an example In many cases....
Emphasising	In fact Actually, I'd like to underline It's important to bear in mind One of the most important....
Concluding a section	So,
Signaling the end	Ok. That brings me to the end of my presentation. Right. That covers everything I wanted to say about....
Summarizing	To sum up then, In brief.... Before I finish, let me just go over.... If I can briefly summarize....
Concluding the talk	Finally, I'd like to finish by saying I'd like to conclude now with a few remarks about In conclusion....



Introducing a question	I've a question about Could I ask a question?
Closing	Thank you for listening so attentively. Thank you for your attention. I hope that this has been useful.
Clarification	Sorry, I didn't follow what you said about What did you mean when you said
More information	I was interested in what you were saying about Could you tell us more about
Checking comprehension	So you mean? Have I got this right?
Responding to answer	Ok, thanks. Perhaps I didn't make my question clear. what was I really asking was
Answering directly	Well, according to our results.... Ok-I think I can answer that quite simply
Playing for time	Er, let me see That's a good question
Handling complex questions	Well, those are really two different questions. Your first point is about
Dealing with awkward questions	I haven't had time to look into that, sorry. Well, I think you'd be wrong to assume that

DID YOU KNOW...?

When glass breaks, the cracks move at speeds of up to 3,000 miles per hour.



TASK 9

Study Amanda's presentation script about food safety. Answer the following question orally and then act out the monologue with your partner.

Ladies and gentlemen, thank you very much for coming today. My name is Amanda Johnson. Today, I'd like to talk about food safety issues that resolve from the presence of potentially dangerous chemical contaminants in our food. At the end I'd be happy to answer any of your questions.

Firstly, in the previous segment, my colleague Carl Winter has presented the basic principles of toxicology. To begin with, I'd like to underline what Carl said that the basic principle of toxicology is how the dose of it that makes the poison. It's the amount of a chemical rather than its presence or absence that determines the potential for harm. This is really important when we talk about chemical contaminants in the food supply because our laboratories are capable of detecting very tiny amount of chemicals in the food. So, we can often identify the presence of these chemicals. It's important to bear in mind that the most important thing from a toxicological perspective is to determine whether those amounts are of health concern.

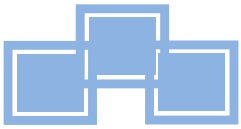
If you look at this slide, we are fortunate since these days for most of the chemical contaminants that we find in the food supply, even though we can detect them, the amounts that we're exposed to are very, very low. In many cases, thousands or hundreds of thousands of times lower than amounts that we can feed laboratory animals that don't show any effects in those laboratory animals.

So, Ladies and Gentlemen what I'll be talking about in the next segment will be how scientists determine what's an acceptable level of exposure to these chemicals, and then how some of these chemical contaminants compare with respect to those allowable levels.

I'd like to finish by saying, if you are discussing about toxicological in food supply it is very crucial to determine whether those amounts are of health concern. Do you have any question?

Thank you very much and see you after the break.

Adapted from: <http://monkeysee.com/play/13772-chemical-risks-in-food>



TASK 10

Work in pairs. Identify the expressions used in Amanda's presentation and discuss their functions. An example is provided below.

Functions	Expressions
Introducing yourself	My name is Amanda Johnson.



TASK 11

Study the following explanation and do following instructions.

Infinitives
<p>In task 8, you may find a sentence like: <i>To begin with, I'd like to underline....</i></p> <p>This sentence consists of verb that is followed by to-infinitive. Infinitives are defined as to + base form of the verb.</p> <ol style="list-style-type: none">1. Have a group discussion about the functions of infinitives.2. Mentions examples of infinitive words.3. Share your answers with friends.4. Make three sentences orally using infinitives.



TASK 12

Study the following explanation and practice the examples.

Pitch
<p>In task 8, you might find sentences like:</p> <p><i>Do you have any questions? Or Thank you very much and see you after the break.</i></p> <p>Those sentences have different pitches; pitch is the rise and fall of our voice when we speak. Pitch is usually described as a sound's highness or lowness. The use of pitch is called intonation, and it gives subtle meaning to our sentences beyond what the words themselves can convey. Pitch and intonation are often terms used interchangeably.</p>



Pitch is directly related to word and syllable stress. Remember, content words (the words that give us the picture of what is happening) are stressed more during speech than function words (the grammatical words of the sentence). With pitch, one or more of the stressed content words of our speech will have a more dramatic rise of pitch than the other content words, and that pitch change falls mostly on the stressed syllable of that content word. How often we choose to change the pitch of our sentence depends on a number of variables.

Examples:

'It's over there'

This can be either an answer to a question such as

Q: 'Where is the cup?'

A: 'It's over there.'

Or it could be a question:

Q: 'It's over there?'

This is just a different way of saying 'Is it over there?'

The difference between these two sentences is that for a question, your pitch **RISES** at the end of the sentences, while for a statement, it **FALLS**.

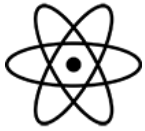
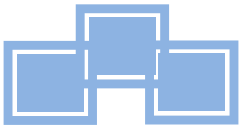
Question	It's over there?	Pitch rises at the end
Statement	It's over there.	Pitch falls at the end



TASK 13

Practice the words below with the correct pitches (fall/rise).

It's mine.	Can I ask you a question?
It's mine?	I have a question.
You're coming.	Is it important?
You're coming?	It's important.
How do you put this together?	Can you tell us more?
How DO you put this together?	I can tell you more.



TASK 14

Broken telephone game.

How to play:

1. Make two groups of rows.
2. The person at the end of the row steps outside of the line
3. Tutors will whisper an expression to them a few times until they are sure they've memorized it.
4. Then have them go in and whisper it to the person in front of them.
5. This goes down the line in their row until the first person runs to the board and writes what they heard.
6. First correct team earns the point.

DID YOU KNOW...?

The longest cells in the human body are the motor neurons. They can be up to 4.5 feet (1.37 meters) long and run from the lower spinal cord to the big toe.



D. LET'S GET MORE PRACTICE



TASK 15

Practice each part of presentation skills including the opening, the body presentation, question and answer section and the closing. The topic of the presentation must relate to food or chemistry (You may look at the previous presentations). An outline is provided to help you.

Opening:

Good Morning Ladies and Gentlemen thank you very much for coming today.
My name is _____. Today, I'll be
discussing_____

Body:

1. Firstly, _____

2. Secondly, _____

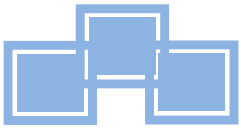
3. _____

Closing:

Okay. That brings me to the end of my presentation. To conclude, I'd like to say that

Q&A:

So, do you have any
questions? _____



TASK 16

1. *Work in pairs.*
2. *Choose a topic to present (up to you).*
3. *Plan and develop the presentation for the topic.*
4. *Present your topic in front of your friends.*

Opening:

Body:

1.

2.

3.

Closing:

Q & A:

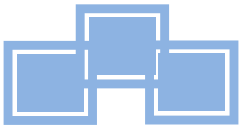


FUN SPOT

Read aloud the poem.

Chemistry Love Poem

I am attracted to you
Like an electron to a proton
Together we form an ionic bond
Though we are opposite charged ions
I am drawn towards you
Our love is unique as an orbital
For only two electrons can fill this space
As my love for you increases
My energy level rises
I am in this excited state
Increasing the tendency to form a chemical bond
I was an element
It took you to make me a compound substance
Falling in love with you is a chemical reaction
Which cause my love for you to grow
Ours is an exothermic love
Each for giving off love not just absorbing it
Sometimes you do something especially nice
Which speeds up the chemical process
Like a catalyst in my increasing love for you
I realize we have our inhibition periods
And sometimes I am selfish enough
To be an endothermic reaction
Only absorbing your love
The feeling I have for you is so intense
It cannot be measured in kilojoules
Often I have to make a qualitative elementary analysis
To understand and love you more
But I don't expect to know your empirical formula
You are too complex a person for that
When you are gone
I am a noble gas
An inert substance
When I am without you
The world seems still
And I am at equilibrium



E. LET'S REFLECT

Aspects	Very much	Much	Little
Understanding some examples of science in daily lives			
Understanding food toxicology			
Understanding food safety			
Understanding expressions used in a presentation			
Able to present examples of science in our daily lives			
Understanding infinitives			
Understanding pitch			
Vocabulary			

F. LET'S SUMMARIZE

In this unit, you have learnt about food toxicology and safety, how to present, infinitives and pitch.

1. Expressions used in presenting.

Greeting	Good morning ...
Introducing the talk	I'd like to talk about ...
Ordering points (Time order)	To begin with ...
Ordering points (Listing and adding)	A second reason ...
Showing open to questions	At the end, you can ask questions...
Starting a new section	Moving on to ...
Transition	Let us now move on to
Contrasting	But
Referring to visual aids	The slide (graph, chart) shows
Signposting	One way to
Giving an example	For example ...



Emphasising	In fact
Concluding a section	So,
Concluding the talk	Finally,
Introducing a question	I've a question about
Clarification	What did you mean when you said
More information	Could you tell us more about
Checking comprehension	So you mean?
Responding to answer	Ok, thanks.
Answering directly	Well, according to our results....
Playing for time	Er, let me see ...
Handling complex questions	Your first point is about
Dealing with awkward questions	I haven't had time to look into that, sorry.

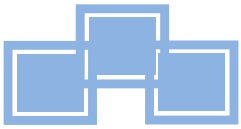
2. Infinitives.

Infinitives are defined as to + base form of the verb. They have several functions.

1. Used as subjects and subject complements.
 - a. *To know me is to love me.*
 - b. *To live in Hawaii is my lifetime dream.*
2. Used as objects following certain verbs.
 - a. I wanted *to tell* you how much I appreciated your gift.
 - b. He hesitated *to ask* the embarrassing question.
3. Used as a shortened form of in order to.
 - a. You must take this medicine (in order) *to get* well.
 - b. I went to the bank *to cash* a check.

Infinitives can sometimes take objects of their own.

- a. We hope *to find the person* who did this.
- b. I was asked *to make a dessert* for the potluck dinner.



These verbs are commonly followed by infinitives:

agree	consent	have	have	offer	shoot	advise
aim	continue	hesitate	hire	ought	start	allow
appear	dare	hope	instruct	plan	stop	ask
arrange	decide	hurry	invite	prefer	strive	beg
ask	deserve	intend	lead	prepare	swear	bring
attempt	detest	leap	leave	proceed	threaten	build
be able	dislike	leave	let	promise	try	buy
beg	expect	like	like	propose	use	challenge
begin	fail	long	love	refuse	wait	choose
care	forget	love	motivate	remember	want	command
choose	get	mean	order	say	wish	dare
encourage	happen	neglect	pay	expect	force	direct

3. Pitch

Pitch is usually described as a sound's highness or lowness. The use of pitch is called intonation, and it gives subtle meaning to our sentences beyond what the words themselves can convey. Pitch and intonation are often terms used interchangeably.

Pitch is directly related to word and syllable stress. Remember, content words (the words that give us the picture of what is happening) are stressed more during speech than function words (the grammatical words of the sentence). With pitch, one or more of the stressed content words of our speech will have a more dramatic rise of pitch than the other content words, and that pitch change falls mostly on the stressed syllable of that content word. How often we choose to change the pitch of our sentence depends on a number of variables.

The difference between these two sentences is that for a question, your pitch RISES at the end of the sentences, while for a statement, it FALLS.

Question	It's over there?	Pitch rises at the end
Statement	It's over there.	Pitch falls at the end



Vocabulary List

agricultural/ˌæɡ.rɪˈkʌl.tʃ ə r. ə l/ (n)	: pertanian
chemical/ˈkem.ɪ.k ə l/ (n)	: bahan kimia
container/kənˈteɪ.nə r / (n)	: wadah
contaminant/kənˈtæm.ɪ.nənt/ (n)	: zat pencemar
dosage/dəʊ.sɪdʒ/ (n)	: takaran
dose/dəʊs/ (n)	: dosis
entire /ɪnˈtaɪə r / (n)	: keseluruhan
exposure/ɪkˈspəʊ.ʒə r / (n)	: pembukaan
harm/hɑ:m/ (v)	: melukai
illustrate /ˈɪl.ə.streɪt/ (v)	: menggambarkan
overdose/ˈəʊ.və.dəʊs/ (n)	: overdosis
pain /peɪn/ (n)	: sakit
poison/ˈpɔɪ.z ə n/ (n)	: racun
principle/ˈprɪn t .sɪ.pl (n)	: dasar
relieve/rɪˈli:v/ (v)	: mengurangi
safety/ˈseɪf.ti/ (n)	: keselamatan
supply/səˈplaɪ/ (n)	: persediaan
toxicology /ˌtɒk.sɪˈkɒl.ə.dʒi/ (n)	: ilmu tentang racun

Appendices

UNIT 1

Task 3 & 4 transcript

What is a comet?

In this "What Is" video, we explore comets, those unique streaks of light in our night sky that rarely visit us. Comets are icy objects, typically ranging a few miles in size, which orbit our Sun. Their highly elliptical orbits carry them from close to the Sun all the way to the outer edges of the solar system. When a comet gets close to the Sun, its outer layers of ice melt and evaporate creating an atmosphere of gas and dust around the comet. This atmosphere is called a coma. Radiation from the Sun pushes some of this atmosphere into a long tail. A comet's tail always points away from the Sun, no matter which way the comet is moving. Gases in the coma and tail of a comet reflect the light from the Sun giving comets their familiar appearance. But Comets are very dark and hard to see when they aren't near the Sun. The time between one visit near the Sun and the next is called the comet's period. The first comet whose period was known was Halley's Comet. Its period is 75 years. Halley's Comet last traveled through the inner solar system in 1986. Comets with periods of 200 years or less are called short period comets. Short period comets are from a region beyond the orbit of Neptune called the Kuiper Belt. The Kuiper Belt is home to comets, asteroids, and dwarf planets. Long period comets have periods of thousands or even millions of years. Most long-period comets come from a very distant region of the solar system called the Oort cloud. The Oort cloud is about 50,000-100,000 times the distance from the Sun to Earth. Comets carry materials in from the outer solar system. Some scientist believes that water may have been brought to early Earth from a collision with a comet carrying water.

Task 5 transcript

Emerald Robinson: Hi! I'm Emerald Robinson. In this What is? video, we're going to take a closer look at asteroids. Asteroids are small planetary objects orbiting the sun, their hard, rocky bodies, differentiate them from comets, which are made of small rocks, dust and ice. Asteroids range in size from a few meters across to objects large enough to trap smaller asteroids in their gravitational pull, like moons orbiting a planet. Asteroids lack the gravitational force needed to round out like planets, so most are irregularly shaped. They have no atmospheres, and are not geologically active. Hundreds of thousands of asteroids exist in the solar system, most occupying an area between Mars and Jupiter called the Asteroid belt. Despite their numbers, the combined mass of all solar system asteroids only equals the mass of the moon. Asteroids that cross the Earth's orbit are called near-earth asteroids. Astronomers have discovered approximately 4,500 near-earth asteroids, including up to 1,000 with 1 kilometer diameters; at least one asteroid with a 4 to 10 meter diameter hits the earth every year.

Task 12 transcript

*

The Asteroid belt
The Kuiper belt
It's hard to count
These rocky mounds
The universe has millions of them see
It's space debris
Asteroids-large pieces come in threes
Carbonaceous C-Type are rough stony, rough stony
Silicaceous S-Type are bright shiny, bright shiny
Finally metallic M-Type metal cores you see
Turn outside the belt
Now we'll start with the Trojans
They clump and stick
In Jupiter's band
Can you see that it is time?
Apollo's this way, orbits Sun but away
Some come close to us
Near Earth asteroids thus

*

Comets are ice, dirty, ice, dirty
They travel around the Sun orbiting, orbiting
The nucleus is made of ice, grit, and gas-frozen
So when we see the comets tail it's just now melting
Turn to meteors
Now they're breaking into grains
Of asteroids, comets
Think if you can
They are falling all the time
Time to burn up away, shooting stars they stay
Meteors if they land
On the Earth so grand

*

UNIT 2

Task 4 transcript

Hi, I am Emerald Robinson and in this What is? video we are going to discuss one of science's most famous theories; Albert Einstein's theory of relativity.

The theory of relativity has two parts; special relativity and general relativity. Special relativity states that the laws of physics apply no matter how fast you are moving. For example, the same rules of gravity applied to a brick tossed out of a

moving airplane as to one dropped off a building.

Einstein applied this principle to light, stating that the speed of light represented by c is constant. Light always travels at the same speed for all observers no matter how fast you are moving, or how fast the source of the light is moving. The light that comes from a car's headlights always moves at the same speed whether the car is parked or moving at 65 miles an hour.

The theory of special relativity changed the ways scientists thought about time. Until Einstein's theory it was thought that everyone experienced time the same way. Special relativity determined that the rate at which time passes to you depends on your speed, the faster you are moving the slower that time passes.

Special relativity is also the place where one of world's most famous mathematical formulas comes from $E=mc^2$. In this equation E stands for energy, m represents mass and c is the speed of light. In other words energy and mass are equivalent; one can't exist without the other.

Based on the theory of special relativity, Einstein became convinced that space and time are not separate. General relativity is a theory that gravity is caused by bending time and space. It's been used to explain how light bends around objects in space, like the light we see during a solar eclipse.

Task 5 transcript

Hi! I'm Emerald Robinson, and in this What Is video, we're going to discuss one of the biggest forces of nature: gravity. Most of us define gravity as the force that holds us down on the earth, or causes things to fall. But, it's a little more complicated. A better definition of gravity is the attraction between two masses.

Every object in the universe, from the smallest atom to the largest galaxy, is made of matter. The amount of matter in something makes up its mass. Things that have a lot of matter in them have a high mass, and a high gravitational force, or pull. More mass in an object means it has a greater attraction to other objects.

The gravitational force between two objects also depends on how far apart they are. The closer two objects are together, the stronger the gravitational force is between them. How do these things affect us? You and the earth both have mass. Therefore, you pull on the earth, and the earth pulls on you. However, the earth's mass is much, much larger than yours, so its gravitational force is enough to keep you down on its surface.

When you jump, you push away from the earth. But, because the earth's mass is so much bigger, its gravitational force pulls you back down. Astronauts on the moon experienced about one-sixth the gravity that they felt on earth. This is because the moon has a smaller mass than the earth. Gravity is also why we weigh less on the moon since weight in pounds or kilograms depends on the force of gravity on an object. Gravity even holds the earth's atmosphere in place, causes the ocean's tides, and keeps the moon and planets in their orbits. It's truly an important force.

Fun Spot transcript

Our whole universe was in a hot dense state,
Then nearly fourteen billion years ago expansion started. Wait...
The Earth began to cool.
The autotrophs began to drool.
Neanderthals developed tools.
We built a wall. (We built the pyramids.)
Math, science, history, unraveling the mystery,
That all started with a big bang!

Since "The Dawn of Man" is really not that long,
As every galaxy was formed in less time than it takes to sing this song.
A fraction of a second and the elements were made.
The bipeds stood up straight.
The dinosaurs all met their fate.
They tried to leap, but they were late,
And they all died. (They froze their asses off.)
The ocean and Pangaea,
See ya, wouldn't wanna be ya!
Set in motion by the same big bang!
It all started with the big BANG!
It's expanding ever outward, but one day,
It will pause and start to go the other way:
Collapsing ever inward. We won't be here. It won't be heard.
Our best and brightest figure that it'll make an even bigger bang!
Australopithecus would really have been sick of us
Debating how we're here, they're catching deer (we're catching viruses)
Religion or astronomy (Descartes or Deuteronomy)
It all started with a big bang!
Music and mythology (Einstein and astrology)
It all started with a big bang!
It all started with a big BANG!

UNIT 3

Task 3 & transcript

Richard : One term – HIV – refers to the virus, the thing that actually causes the disease. Whereas the other term – AIDS – refers to the disease itself, the set of symptoms which the patient has.

Gary : BBC World Service Science Correspondent Richard Black.

Richard : Now, the disease was discovered first. It was then called a syndrome because what happened was: patients were turning up with a certain collection of symptoms, and when doctors see this but they don't know what's

causing the symptoms, they call this a syndrome. The people were obviously suffering from an immune system that was not working properly – so hence “immune deficiency syndrome”. And it was obviously something that was not inherited, they were picking it up, they were acquiring it – hence Acquired Immune Deficiency Syndrome. Only later on did scientists find out what was actually causing this – and this is HIV – Human Immunodeficiency Virus.

Gary : If someone has AIDS – what does that mean in practical terms?

Richard : What it means basically is that their immune systems, their bodies, cannot fight off germs that come along – so any bacterium, any virus, any fungus which comes along which can infect them, will infect them, and they will become sick with it. There are other things that happen as well, for example, some infections which lead to certain types of cancer are much more prevalent in people who have AIDS. But that’s basically the idea: the immune system does not work properly, you cannot fight off infections.

Gary : So what we’re saying here is that you can have HIV without actually having AIDS – is that right?

Richard : That’s absolutely right. Many people are infected with HIV – sometimes for years before they show the signs of AIDS.

Gary : What about the terms HIV positive and HIV negative?

Richard : HIV positive simply means that you are infected with HIV – you have the virus. HIV negative simply means that you don’t.

Gary : HIV is a virus -- the Human Immunodeficiency Virus. A person infected with HIV develops AIDS -- or Acquired Immune Deficiency Syndrome -- when their immune system eventually becomes too weak -- or deficient -- to fight off infections. It’s possible to be infected with the virus, to be HIV positive, without developing the symptoms of AIDS for many years. As we’ve heard HIV/AIDS has been described as devastating epidemic – its impact is far reaching.

Task 7 transcript

Sarah : Right then, Alex, let’s get down to business . On the agenda today for our research team meeting are selecting the time and setting for our observation. Are you quite happy with those points?

Sean : Yeah, that’s fine If you could go through them in order, that’d be great.

Sean : OK everybody thanks for coming. Let’s keep this meeting fairly brief, really just a couple of things on the agenda. First of all, as you can see, we’ve agree upon our focus of the research, that is understanding Asthma: how the environment, allergens, and genetics interact with the body’s immune system to cause the disease and aggravate the symptoms, finally, we will have a little bit of time for any other business.

Sean : First of all, the observation time. I just wanted to remind everybody that next Monday will be a national holiday, I think it would be the perfect time to do our observation.

John : Actually Sean, can I just ask you sorry to hold the meeting up – can I ask you about those dates, because I thought that the observation is going to be on the

month after next, and I understand that everybody has got their dates, but I do feel quite strongly that we're bringing this out too soon.

Sean : Well any other thoughts before I comment on that ?

Carrie : I don't think we've got any choice at all about it. If the university is going to give us the permission at the beginning of next month, we've got to do the observation at the same time.

Task 13 transcript

Sean : The observation schedule move, as you know, and Billy informed me that our topic also changed. I just wanted to see what kind of feedback you've got.

Tim : Yeah, Sean, I really strongly disagree with the new topic plan. I think it's divisive to change our observation topic in all of sudden. I'd be much happier, if we discuss it in a meeting first.

Carrie : Actually, I think Tim is right. I've been chatting to most of the team members They're quite keen to have a discussion first. Speaking as a team leader, I think I'd like to hold a meeting as soon as possible. So I think Tim's discussion plan is right.

UNIT 4

Task 3 & 4 transcript

Hi! My name is Carl Winter. I'm a spokesperson for the Institute of Food Technologists and also a faculty member in Food Toxicology, at the University of California, Davis.

Today I'll be talking about food safety issues that involve potentially dangerous chemical contaminants that make their way into the food supply. There is currently a lot of interest and a lot of concern, concerning many of these chemical issues in food, such as, pesticide residues that might show up on fruits and vegetables, metals that might show up in seafood.

In some cases, contaminants that come from plastic containers that hold water. There is a lot of chemical issues out there, what I'm going to try to do today is to provide some of the scientific background to discuss these issues. Hopefully, you'll be able to take this information and use it to make good choices about food for yourself and for your family.

Before doing that, I'd like to first tell you a little bit about myself. I hold a PhD in Agricultural and Environmental Chemistry, and I've been a faculty member at the University of California for the last 22 years. In my role there, I am also the Director of a program called the Food Safe Program which is an educational program designed to provide information about food safety to consumers in a variety of health professionals.

When we talk about poisons, contaminants in our foods, we really need to talk about the subject of toxicology. So in the next segment, I'll be discussing some of the basic principles of toxicology which is the science of poisons.

Task 5 transcript

Hi! My name is Carl Winter, I am a spokesperson for the Institute of Food Technologists. I am a Food Toxicologist on the faculty at the University of California, Davis.

Today I'll be discussing food safety issues that pertain to potentially dangerous chemical contaminants in the food supply. In the previous segment, we discussed a little bit about toxicology which is the basic science of poisons. One of the most important principles of toxicology is that the dose makes the poison. In essence, all chemicals are toxic, if the dose of those chemicals is high enough. So it's not the presence or absence of a chemical contaminant in food that determines the potential for harm, but rather the amount of that chemical.

One way to illustrate this is to consider if we have a headache, we might want to take some pain relievers. If we follow the regular dosage, which might be one or two tablets of a pain reliever, hopefully, that will be a low enough dose to relieve our headaches but not enough of a dose to make us sick. If on the other hand, we decided to take the entire contents of that bottle, we might find ourselves in a hospital with an overdose. In both cases, it's the same chemical that we're exposed to, but there's a difference in the dose; the dose makes the poison.

When we talk about exposure to chemical contaminants in the food supply, fortunately, in most cases our exposure to these chemicals is very small. In the next segment, I'll discuss the dose of chemicals that we are exposed to in the food supply.

APPENDIX H

MATERIALS VALIDATION

LEMBAR EVALUASI MATERI BAHASA INGGRIS

REKOMENDASI

Mengacu pada hasil penilaian maka English for Science: English Speaking Materials for Tutorial


Practices for International Science Classes ini dinyatakan:

No.	Nama Unit	Sangat Tidak Layak	Tidak Layak	Layak	Sangat Layak
1.	Unit 1: What Does A Comet Look Like?				✓
2.	Unit 2: Can Tell Me about Theory of Relativity?				✓
3.	Unit 3: Today, I'll Be Talking about Chemistry in Our Daily Lives.				✓
4.	Unit 4: Today, We're Going to Discuss Eyes Disorder.				✓

Tanpa revisi	<input type="checkbox"/>
Dengan revisi	<input checked="" type="checkbox"/> - instruction writing - appropriacy the between the materials presented in the book and the source they're taken from

Yogyakarta, Maret 2014

Evaluator Materi,


(Ella Wulandari, M.A.)

- Please consider looking for
another authentic sample
of discussion.

LEMBAR EVALUASI MATERI BAHASA INGGRIS

REKOMENDASI

Mengacu pada hasil penilaian maka English for Science: English Speaking Materials for Tutorial Practices for International Science Classes ini dinyatakan:

No.	Nama Unit	Sangat Tidak Layak	Tidak Layak	Layak	Sangat Layak
1.	Unit 1: What Does A Comet Look Like?			✓	
2.	Unit 2: Can You Tell Me about Theory of Relativity?			✓	
3.	Unit 3: Today, I'll Be Talking about Chemistry in Our Daily Lives.			✓	
4.	Unit 4: Today, We're Going to Discuss Eyes Disorder.			✓	

Tanpa revisi	<input type="checkbox"/>
Dengan revisi	<input checked="" type="checkbox"/> <ul style="list-style-type: none"> - Menambah games (ice-breaking or other language games), tongue twister, dll - memberi gambar agar tidak terlalu "sederhana" dan "kosong" - Partial practice perlu ditambah terutama untuk unit 3 & 4.

Yogyakarta, Maret 2014

Evaluatur Materi,



B. Yuniar Dyant
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