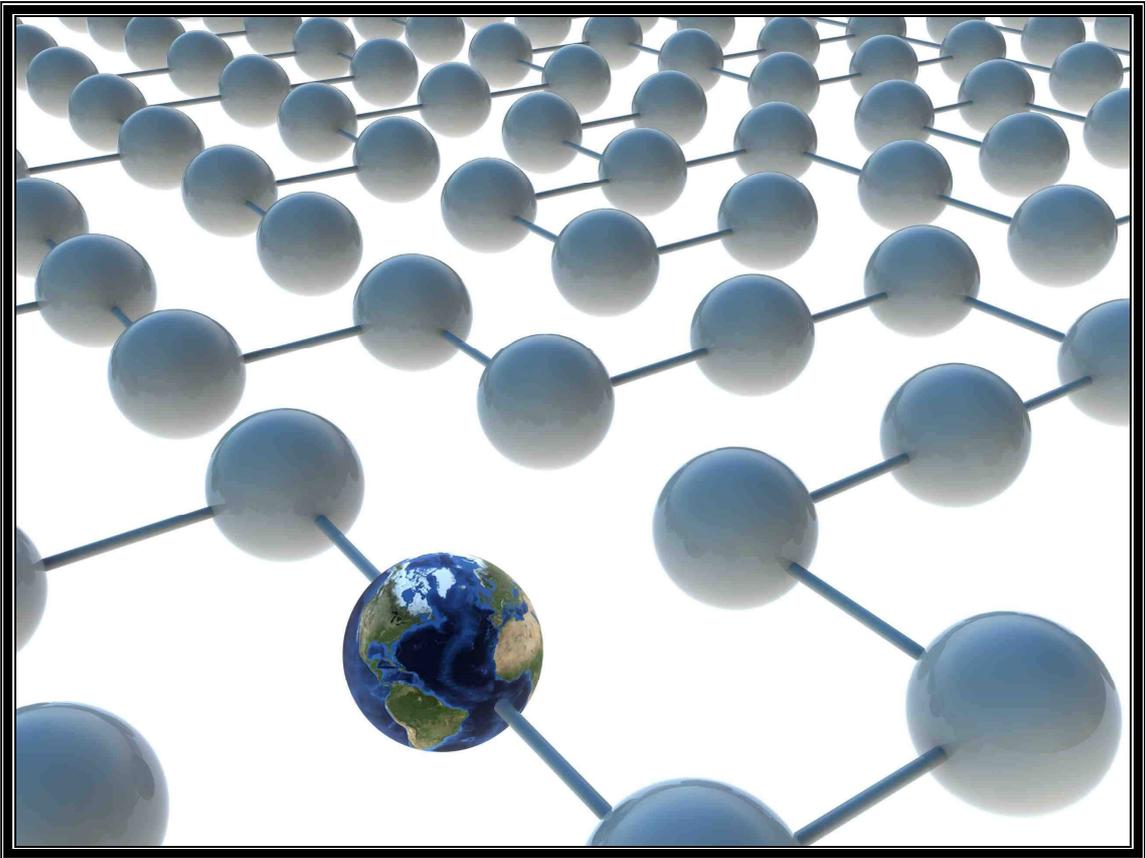


EAP in Engineering and Computer Sciences I



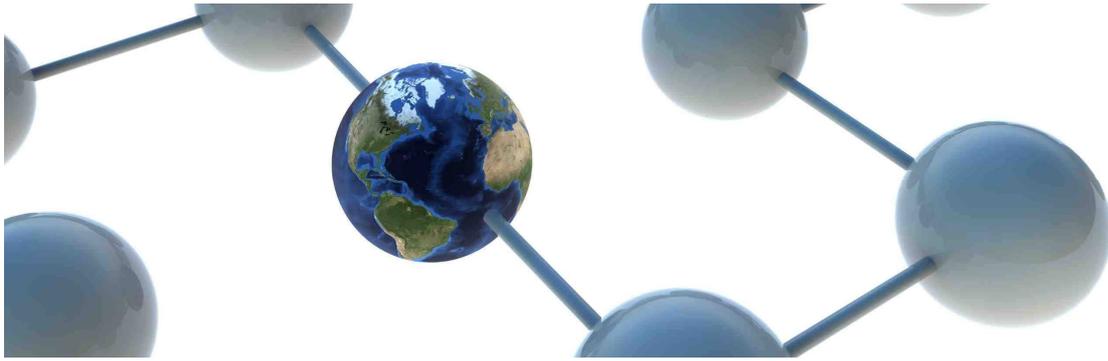
Anita Afacan

Nil Akpınar-Wilsing

Edited by Aynur Yürekli

**IZMIR UNIVERSITY OF ECONOMICS
SCHOOL OF FOREIGN LANGUAGES**

EAP in Engineering and Computer Sciences I



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Anita Afacan
Nil Akpınar-Wilsing

FOREWORD

This book has been designed for first year university level students who pursue their academic studies in an English medium higher education institution. It aims to equip students with the necessary academic skills by exposing them to the content of Engineering and Computer Sciences. It follows a content-based integrated approach in which listening, speaking, reading and writing skills are explained, illustrated and practiced. “*EAP in Engineering and Computer Sciences*” consists of two books. These books are modular in nature and they follow the process from academic input (listening/reading) to academic output (speaking/writing) throughout the units.

Book I consists of *Listening and Note-taking* and *Academic Speaking Skills* modules, whereas Book II consists of *Academic Reading* and *Academic Writing Skills* modules.

In the first module of “*EAP in Engineering and Computer Sciences I*”, Listening and Note-taking skills are developed by training students in making written records in note form of important/relevant information from a lecture or discussion and then using this information in the output task at the end of each unit.

In the second module, Academic Speaking Skills are developed by training students in coping with the challenges of researching and giving a coherent academic presentation on a topic that relates to their field of study.

I truly believe that this book will be a great asset for Freshman students who are studying at the Faculty of Engineering and Computer Sciences.

Aynur Yürekli, Coordinator
Izmir University of Economics
Undergraduate English Program

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INTRODUCTION TO ACADEMIC SKILLS

By the end of this unit students will be able to:

- understand the course
- explain what academic skills are
- explain the connection between input and output

TARGET OUTPUT

At the end of this unit, I will be asked to:
'answer questions about the benefits of this course'

Part A: DISCUSSION



1 Consider alone and then in groups the following questions:

a) List at least 5 of the skills which you consider as “academic”.

b) Discuss to what extent you think you are capable of doing these in English. Give yourself a score out of 5. 5=very good, 4=good, 3=average, 2=bad, 1=very bad. Then, calculate your group average for each skill.

Part B: READING

1. Read the following text and choose the best description. Be prepared to justify your choice.

- a) The text explains how long the course takes and what students will have to do. It tells us which courses to choose and why.
- b) The text explains the difference between studying at school and studying at university and explains each part of the course.
- c) The text explains the connection between what we study in our departments and learning English. It also tells us about academic skills.

WELCOME TO ENG 101

ACADEMIC SKILLS IN ENGLISH I & II is a one-year course which will help you deal with life at University.

1 Maybe when you were at High School, the most important thing for you was to get a good mark and pass your exams. What was the best way to do this? Well, most of the time you learnt everything your book and textbook told you until you knew it by heart and then repeated exactly the same information in the exams.

2 This technique was probably very successful at school but won't work at University. Why not? Well, university isn't just something to pass. It is also a preparation course for adulthood. The big difference between children and adults is the ability to think for yourself, NOT just repeat exactly what your professor tells you in lectures. The key things you will be tested on is your ability to find different pieces of information, evaluate them and then use them to create your own opinions, ideas or creations. The aim of this course is to give you the skills that will enable you to do this.

3 Another difference between University and school is that everything finishes with a real OUTPUT (production), for example, a paper, a presentation or a creation like a piece of art, or a model etc. To do this, you will need to do research quickly and effectively, take notes from reading and lectures, take part in discussions and be able to use source texts effectively, which will be the INPUT for your task. However, the most important part is putting everything together, analyzing and synthesizing the information you gathered and turning it into an output. These are the skills ENG 101 and ENG 102 will help you to develop.

4 There are four modules spread over the two semesters. The length and content of these modules will depend on your faculty. However, for everyone, the course will start with the "Introduction to Academic Skills ENG 101" unit, which you are doing now. This will give you a general idea of the course, what is expected of you in your departments and help you to understand the skills that you will need to collect information for output. This will mean looking at how we process information that comes from oral/written input, how we use books and articles and how we evaluate the information we have.

5 In the first semester two main modules will be covered:

The first one, the Listening and Note-taking Module focuses on the skill of academic listening and how you record important information from a lecture or discussion and then use this information for output. It also shows subskills for making note-taking more efficient and easy, like using charts and abbreviations.

6 The module called Speaking for Academic Purposes starts with an Introduction to Research Unit, in which you will be familiarized with the basics of doing research. However, the module particularly focuses on two different situations, general speaking skills related to an academic context and giving presentations. Both of these tasks you will be called on to do during your time at this university so you need to know how to present your ideas and opinions coherently and persuasively. At the end of the first semester, you will also be expected to give a short presentation as part of your final grade.

7 In the second semester you will cover two other main modules as well:

The Academic Reading Module focuses on how to select the appropriate texts, how to read quickly and effectively and how to take relevant information from texts and use it for output. It offers you practice in various skills such as identifying main ideas, understanding an author's point of view, skimming, scanning.

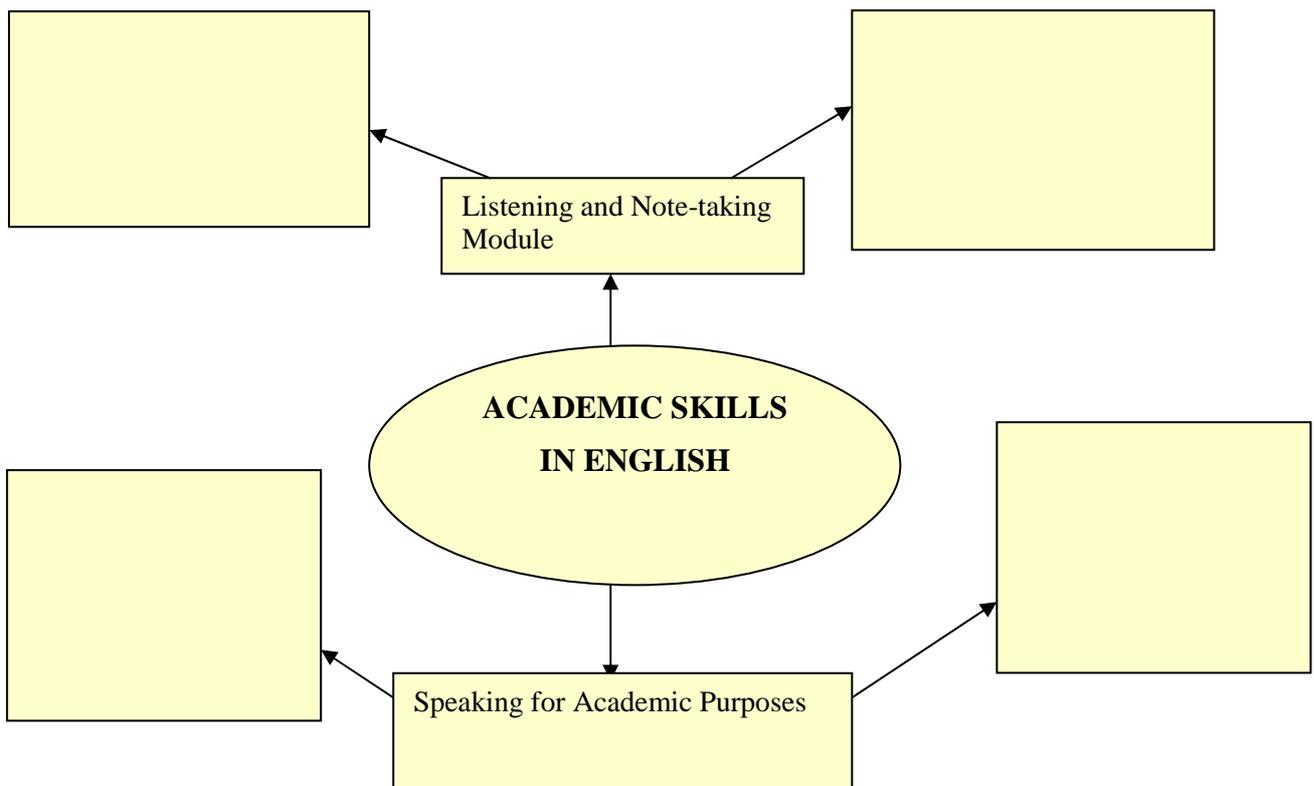
8 Finally, Academic Writing is a key module. Most of the output you will be required to do in this module will be written and you will need to make sure that your writing is coherent, concise, persuasive and makes good use of sources and information to support your arguments. At the end of the second semester, you will be asked to write an essay as part of your final assessment.

9 ENG 101 is not an English course. We assume that if you have passed the Entrance Exam or Proficiency Exam, then you are capable of following an academic course using the English language. Therefore, it will be up to you to make up for any deficiencies you might have in your use of English. However, we do recognise that there is a different type of vocabulary needed to study in English and you will be given support in learning the necessary words (the AWL or Academic Word list) for your respective faculties.

10 In conclusion, this course will help you develop the necessary academic skills so that you can efficiently gather information from different sources, select the pieces of information that you need to do a given task, and organize/produce your output. It is an important course in the sense that you will be required to do tasks that relate directly to your department needs.

G. Kempton, 2008.

2. Read the text again and complete the following chart with the sub-skills involved in the first semester modules.



3. a) Label the objectives in the box with the right modules. One has been done for you.

1. Academic Reading
2. Speaking for Academic Purposes
3. Listening and Note-taking
4. Academic Writing

By the end of the course I will be able to.....

Identify the main idea – 1&2

Develop an argument

Understand important points

Take notes

Write an essay

Participate in a discussion

Quote correctly

Describe a process and developments

Understand supporting ideas

Use sources

Use abbreviations

Understand an author's point of view

Use graphs when giving a speech

Cite references

Read efficiently

Get the general idea of a lecture

Differentiate between facts and opinions

Make a presentation

b) With your partner, choose two objectives for each module that you want to develop in this course. Justify your choice to the class.

1. Academic Reading

a) _____

b) _____

2. Speaking for Academic Purposes

a) _____

b) _____

3. Listening and Note taking

a) _____

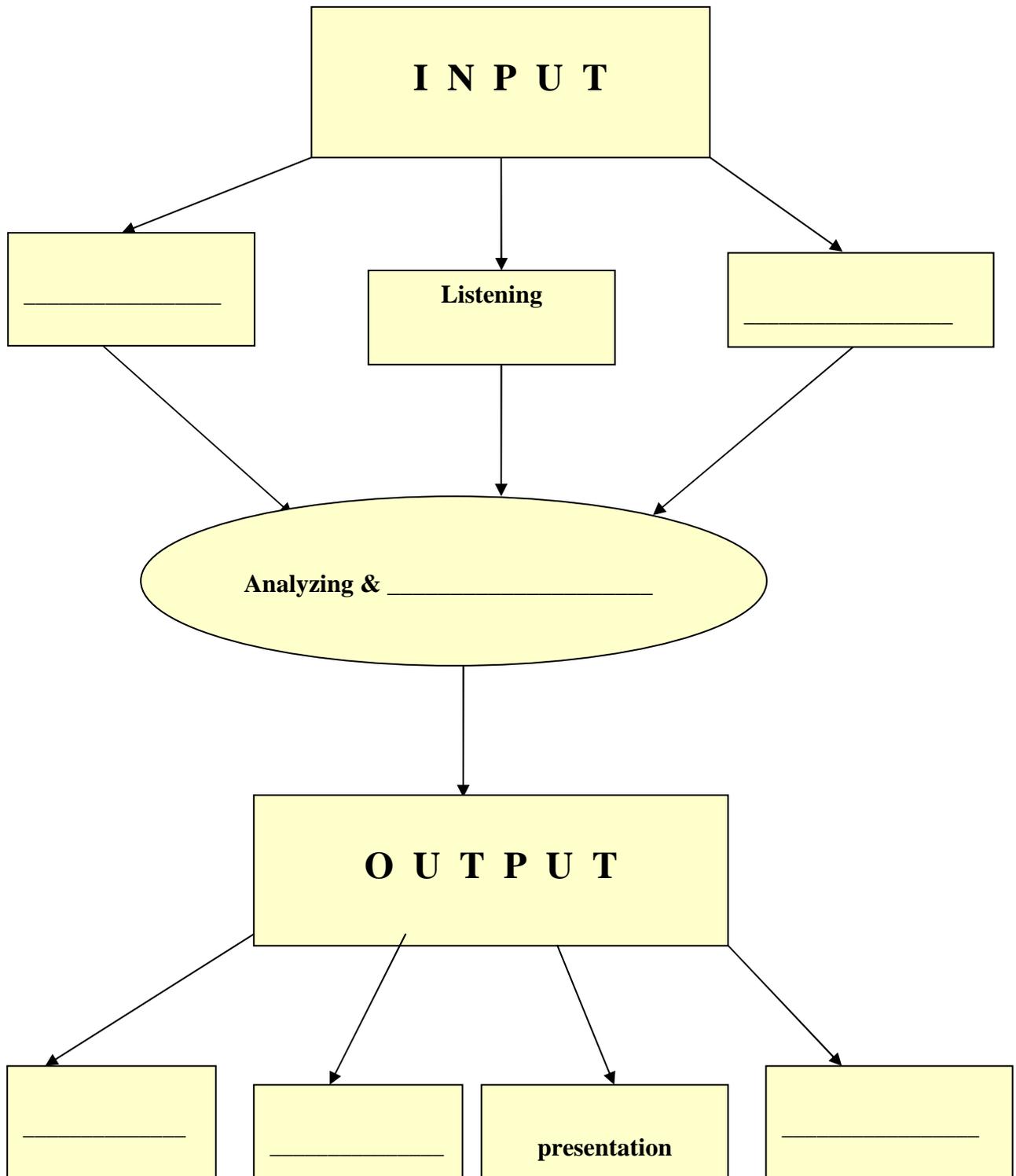
b) _____

4. Academic Writing

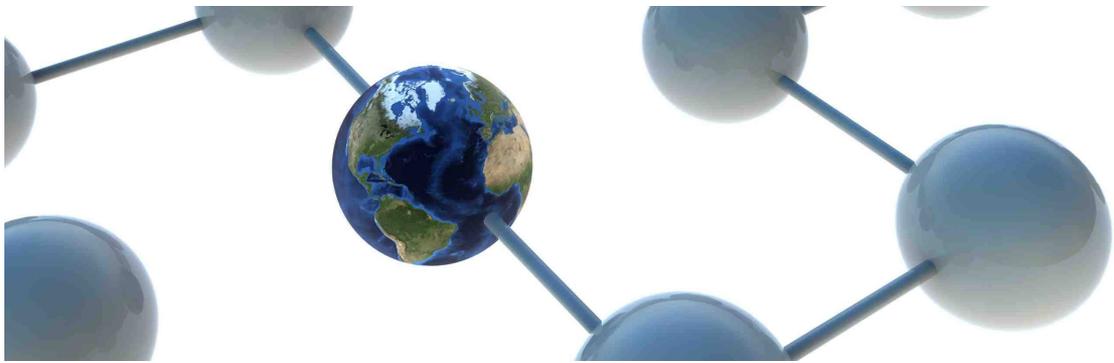
a) _____

b) _____

4. Below is a chart that shows the input-output process. Read paragraph 3 again and together with a partner, fill in the missing information.



MODULE ONE



Listening & Note-taking Skills

UNIT I: STARTING POINT

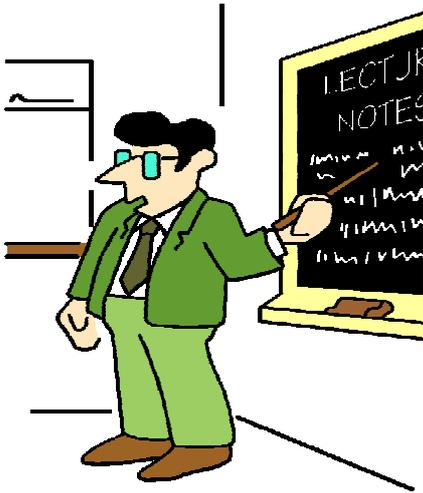
By the end of this unit, I will be able to:

- identify the purpose of a spoken text
- use a suggested note-taking method
- take notes while listening
- summarize spoken texts and lectures

TARGET OUTPUT

At the end of this unit, I will be asked to:

'write a summary on one aspect of note-taking'



Part A: DISCUSSION

1. Consider the following questions alone:

a) What reasons do people have for listening to others?

b) Why do they listen at university?

c) What is the difference between academic and non-academic listening?

Part B: LISTENING (1)

1. Listen to the following short talk on academic listening and compare the speaker's ideas to the ones you gave in Part A above.

2. Listen again and take notes on the important points mentioned.

3. Exchange books with a partner and analyze their note-taking skills. Use the following questions to help you:

- a) How are the words written?
_____ in full _____ in short form
- b) How is the information organized?
_____ in a list _____ in a chart _____ in a diagram
- c) How is the most important information shown?
_____ highlighted _____ underlined _____ in capitals

4. Discuss your findings with the rest of the class.

ACADEMIC SKILL TIP: CHOOSING A NOTE-TAKING METHOD

In order to get the most from your lessons, you must develop a note-taking method that works for you. You can do this by looking at different ways of note-taking and deciding which one is suitable for your learning style. Work on a method that will gradually help you to structure and organise your notes to make your note-taking speed and comprehension better.

- Start each lecture on a new page; date and number each page.
- Write on one side of the paper only. You can set them out side-by-side for easier reviewing when studying for an exam.
- Leave blank spaces. This allows you to add comments or note questions later.
- Make your notes as brief as possible.
- Develop a system of abbreviations and symbols you can use wherever possible.
- Note all unfamiliar vocabulary or concepts you don't understand. This reminds you to look them up later.

Part C: LISTENING (2)

1. Answer the following question individually.

How can a person be successful in lectures?

2. Compare your answers in groups.

3. Prepare a brief summary of the most important or most interesting ideas and present this report to the rest of the class.

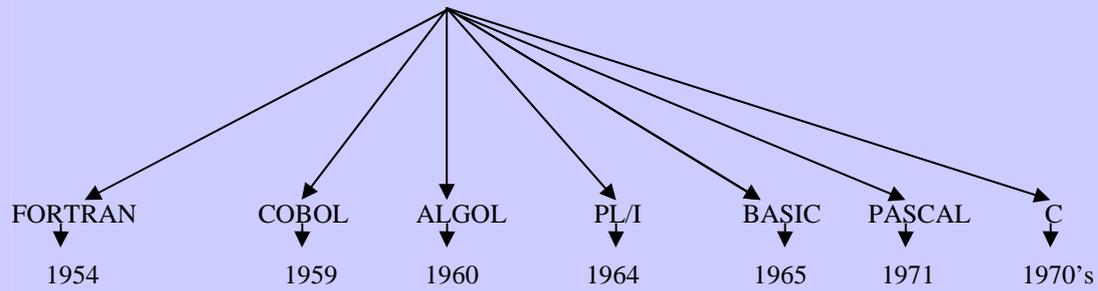
4. Listen to a short talk on how to succeed in lectures and check whether your predictions in exercise 3 above were correct.

5. Look at the academic skill tip box overleaf and examine the note-taking example. Complete the box with advantages of using this method.

ACADEMIC SKILL TIP: NOTE TAKING METHODS 1

Example: The Mapping Method

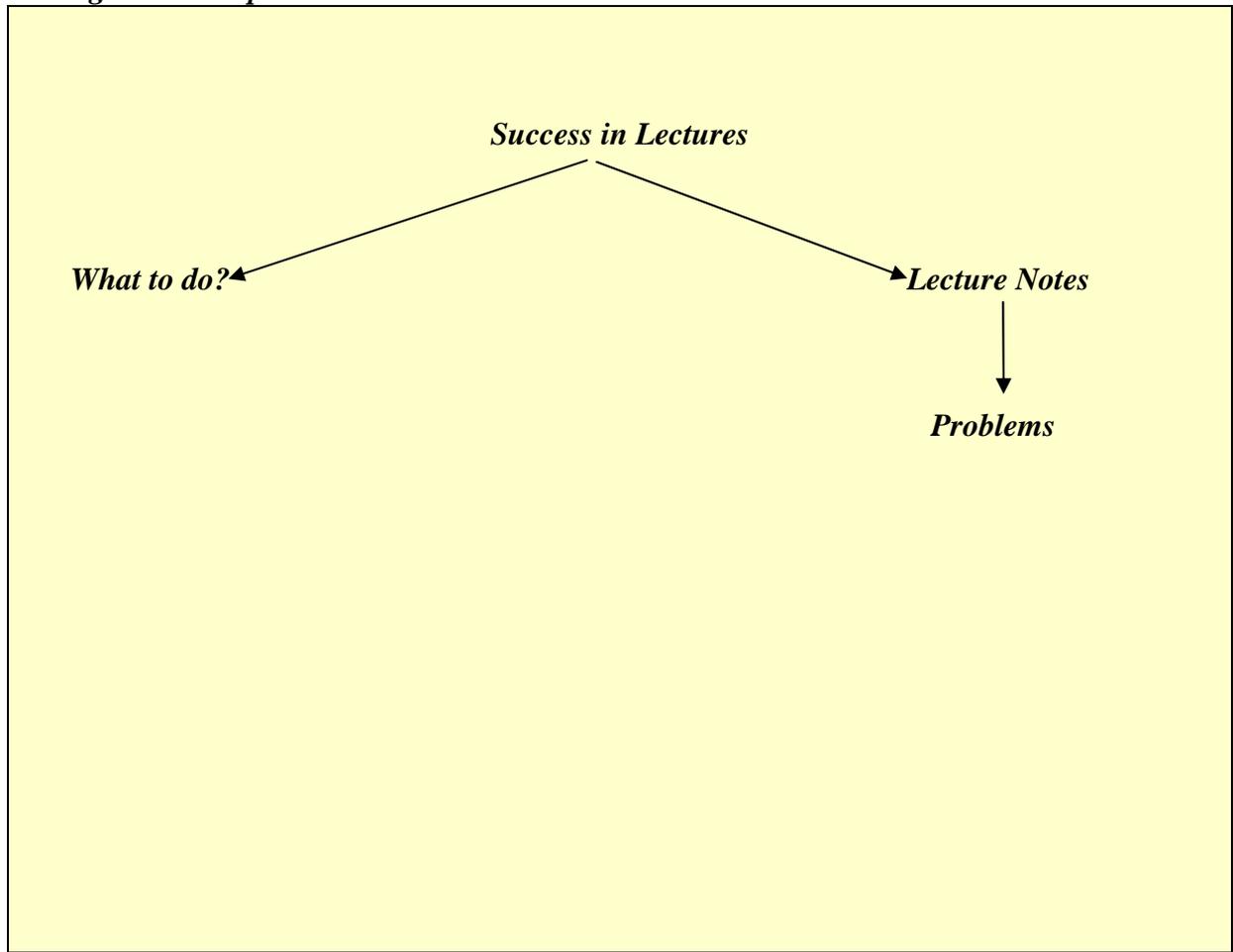
High level computer languages – (artificial lang. used 2 give comps. commands)



Advantages of Mapping Method:

- makes notes clearer
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

6. Listen again and complete the notes on the important points mentioned using the note-taking method explained above.



7. Use your notes to answer the questions given below.

a) What is the author's opinion of student attitude?

1. It is not important; lecturers give students everything they need.
2. It is as important as the lecturer's attitude.
3. It is the most important factor in understanding a lecture.

b) What is the author's opinion of lecture notes? Give reasons for your answer.

c) Do you agree or disagree with the author's opinions? Discuss in groups and be prepared to say why/why not (give at least three reasons NOT given in the text).



Part D: LISTENING (3)

Look at the notes below taken from a short talk given by Erdal Çalışkan, a graduate of the IUE Computer Department.

He talks about how he became a successful student.

1. Work out what the abbreviations and symbols used in the notes given mean.

2. Compare your answers with a partner.

3. Listen and check your answers.

KEY TO MY UNIVERSITY SUCCESS

1st thing I realized - not @ prim./high school

I was the 1 who should study b/c this would b my professn.

Profs - only responsible 4 showing u the way - U r the 1s who r responsible 4 learning things

- 2 do this, u figure out a successful way/plan.

tried so many ways - only solution - 2 study day-by-day & take good notes – works 4 me

When u start dpt, u notice - each prof will teach u a ch. ~ 100 pgs in 2/3 hrs.

I can prove it 2 u w/ - easy calculatj. U have 6 lec.s 1st term. Means u have 2 learn 600 pgs a wk. ∴ u should keep up w/ the profs

2nd point - note taking – target - 2 learn subject in lecture. Try not 2 miss lessons, b/c - only a st. can understand what he means while taking notes

If u don't take notes – in midterm period, u will b lost in sea of notes which don't blong 2 u

- u won't b able 2 understand them

4. Use the symbols from exercise 1. and others that you already know to complete the table below.

=	Equals	↓	Decrease
≠	Not equal	↑	Increase, More
	Therefore	#	Number
b/c		etc.	And so on (et cetera)
	And	def.	Definition
>	More than	nec.	Necessary
<	Less than	w/	
→	Causes, Produces	w/o	Without
←	Is the result of	@	
~	About, Approximately	b/4	Before
i.e.	That is (id est)	MI	Main Idea
e.g.	For Example		To, too,
	pages	wk	
prof			are
lec		b	
	chapter	professn	profession
dpt			

5. How would you abbreviate the following terms?

- a) programs and programming languages _____
- b) frequently asked questions _____
- c) computer-aided design _____
- d) what you see is what you get _____

6. Listen to three sentences read by your teacher and write them in the shortest way possible.

- a) _____
- b) _____
- c) _____

7. Read the academic skill tip box below explaining another note-taking method and underline the important steps needed in this method.

ACADEMIC SKILL TIP: NOTE-TAKING METHODS 2

The Outlining Method:

Begin writing the most general information on the left, with each more specific group of facts indented with spaces to the right. Show relationships between different ideas by indenting them. (Levels of importance will be indicated by distance from the major point.)

Example:

Scientific method: (pp. 4-9 *Contemporary Society* textbook)

- Scientific observation must be made
 - systematically
 - accurately and precisely
 - under controlled conditions

-by a trained observer
concepts
theories
research
-variables: dependent & independent

Steps

- a. select & define topic
- b. review literature
- c. form hypothesis
- d. develop research design
- e. conduct research (collect, classify, analyze data)
- f. verify data
- g. evaluate results
- h. validate original hypothesis

8. Listen to the second part of the talk by Erdal Çalışkan. Take notes on the actual process of note-taking using abbreviations and the outlining method explained above.

Lecture Note-taking (pp. ENG 101 course book)

Influences students academic success

Take own notes

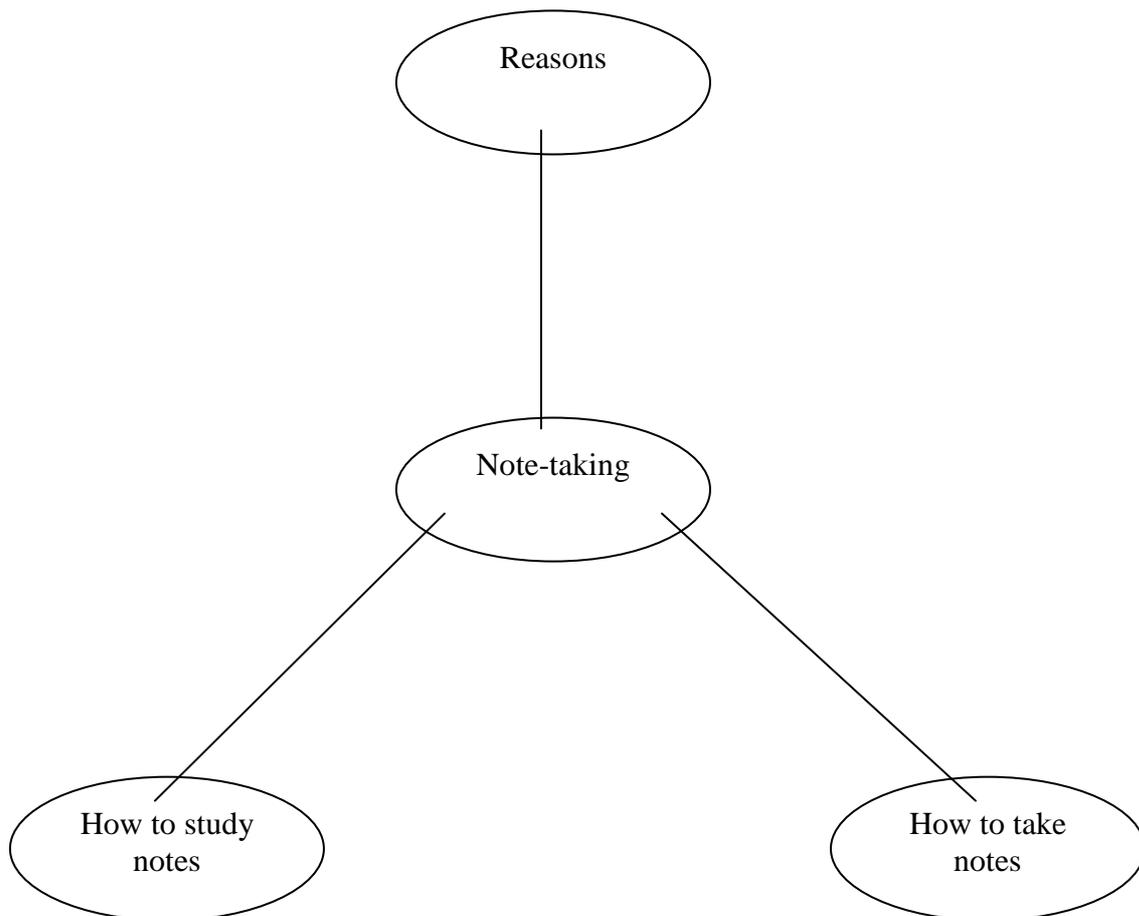
In lecs.

Notes

Method

Pay attention to your notes

9. Look at the notes you have taken in the previous listening exercises, and in groups rearrange them using the empty map below. Be prepared to explain your map to the rest of the class. Add extra sections if necessary.



UNIT II: ROBOTS – PAST, PRESENT & FUTURE

By the end of this unit, I will be able to:

- distinguish main ideas
- differentiate important and irrelevant information
- write about similarities & differences

TARGET OUTPUT

At the end of this unit, I will be asked to:

‘write a report to compare early robots with robots of today’



Part A: DISCUSSION

1. Answer the following questions individually.

a) What is a robot?

b) What are the benefits of robots for people?

c) What are the drawbacks of robots for society?

2. Discuss your answers in groups.

3. Present one of your answers to the rest of the class.

Part B: READING

1. Read the title of the article below and predict what the text will be about.

2. Quickly read the text to check your prediction.

THE ROBOTICS REVOLUTION

Robots in use today do jobs that are especially difficult for human workers. These are the types of jobs that require great strength or pose great danger. For example, robots are particularly useful in the auto-manufacturing industry where parts of automobiles must be welded together. A welding tool used by a human worker weighs about 100 lbs or more and it is difficult to handle. As mechanical supermen, robots may be called upon to do anything from moving heavy **components** between workstations on a factory floor to carrying bags of cement.

Spray painting is another task suited to robots because robots do not need to breathe. Unlike human painters, they are unaffected by the poisonous fumes. What's more, robots are better at the task, not because they are faster or cheaper than humans, but because they work in places where humans cannot.

NOTES

Third in the list of useful jobs for robots is the assembly of electronic components. Robots shine at installing chips in printed circuit boards because of the capability that robots have that people don't. A robot, once properly programmed, will not put a chip in the wrong place. This automatic **accuracy** is particularly valuable in this kind of industry because **locating** and fixing mistakes are costly.

Earlier robots were usually blind and deaf but newer types of robots are fitted with video cameras and other sensing devices that can **detect** heat, texture, size, and sound. These robots are used in space projects, nuclear reactor stations, and underwater exploration research.

In their efforts to expand the **range** of robotic applications, researchers are looking beyond traditional designs to examine a variety of potential models from the biological world. The industrial arm is a classic example. Scientists have been able to model robots to imitate the vertebrate spine of a snake in order to paint the interior of automobiles. They have simulated the movement of the muscle **structure** of an elephant's trunk in an attempt to create a robotic arm capable of lifting heavy objects. Scientists have also emulated the **flexibility** of an octopus where the tentacles can **conform** to the fragile objects of any shape and hold them with **uniform**, gentle pressure. A variation of this design can be used to handle animals, turn hospital patients in their beds, or lift a small child.

The challenge of **equipping** robots with the skills to operate independently, outside of a factory or laboratory, has taxed the ingenuity and creativity of academic, military, and industrial scientists for years. Simply put, robot hands – like robot legs, or eyes, or reasoning powers – have a long way to go before they can approach what biological evolution has achieved over the course of hundreds of millions of years. Much more will have to happen in laboratories around the world before robots can be compared to nature's handiwork.

In the meantime, the robotics revolution is already beginning to change the kind of work people do. The boring and dangerous jobs are now assumed by robots. In the future, more and more humans will be required for tasks that machines cannot do. There are some industrialists who hope that by the year 2020 all their employees will be knowledgeable workers, no longer standing on assembly lines but rather sitting at desks and computer terminals to deal with information. These changes are already under way, and their pace accelerates each year.

Adapted from Oxford English for Computing: K Boeckner and P C Brown. OUP 1993

* Remember all bold words are on your course wordlist and need attention

3. Read the text again and using the method outlined below complete the tasks that follow.

ACADEMIC SKILL TIP: NOTE-TAKING METHODS 3

The Charting Method:

If a lecture or a text has a distinct format (such as chronological or classification), when taking notes, you may set up your paper by drawing columns and labeling appropriate headings in a table.

Example: Chart format for a computer programming class:

<i>dates</i>	<i>language</i>	<i>uses</i>	<i>made up of</i>
1954	FORTRAN	solving scien. & math. problems	formulae + Eng. phrases

a) Complete the mind map below with reasons why certain jobs and environments are suitable for robots.

Area of work	Expertise of robots	Advantages of robots

b) Make notes on the limitations of robots and how these are changing people's jobs.

Limitations of robots	How people's jobs are changing

c) The following words are taken from the text. Complete the chart with the appropriate word forms.

Noun	Noun (person)	Verb	Adjective	Adverb
component	-	-	-	-
accuracy	-	-		
	-	locate	-	-
		detect		-
range	-		-	-

Noun	Noun (person)	Verb	Adjective	Adverb
structure	-			-
flexibility	-	-		-
		conform		-
	-	-	uniform	
	-	equip	-	-

d) Use all the notes above to write a summary of robotics; do not look back at the text. Use some of the AWL vocabulary from the chart above.

Part C: LISTENING

1. Listen to a short lecture on robots and order the following information as you hear it.

		<u>Order</u>
Idea 1	A machine carrying a human operator	_____
Idea 2	Flexible industrial machines	_____
Idea 3	Attempts to make task performing machines	_____
Idea 4	Automatic information processing	_____
Idea 5	'Shakey' – Stanford Research Institute's robot	_____
Idea 6	Origin of the word 'robot'	_____

2. Listen to the first part of the lecture again and fill in the blanks with phrases you hear that indicate background information.

ACADEMIC SKILL TIP: BACKGROUND INFORMATION

At the start of a lesson your lecturer might revise parts of a previous lesson or go over some homework exercise you should have done.

They do this to get you thinking about the subject before they give you new information.

This background information may be introduced using phrases such as: *As we know*

Welcome to the National Science Museum's new exhibition: Robots: past, present, and future. This lecture is intended to guide you through the exhibits. _____

that we should start with a brief review of the history of robots in the twentieth century.

_____ that the history of robots goes back a long way before our own century. _____, people have tried to invent machines to

perform a whole variety of tasks, such as writing, drawing, or even playing musical instruments.

_____ that the word 'robot' was invented by the Czech playwright, Karl Capek. It comes from the Czech word for 'work'. Incidentally, in Capek's play 'Rossum's Universal Robots', which came to London in 1921, the robots became so intelligent and disillusioned with their human masters that they revolted.

_____ that they destroyed the humans and created a new world inhabited by robots. This theme of ungrateful robots rebelling against their human creator is one that has been used by many science fiction writers.

ACADEMIC SKILL TIP: DIGRESSION

Sometimes your lecturer may stop talking about the subject of the lecture and talk instead about another subject or something personal, then carry on with the subject at a later time: this is called digressing.

Digression may be introduced using phrases such as: *While I remember...*

3. Read the first part of the lecture again in Part C exercise 2 and find the phrase that indicates digression.

ACADEMIC SKILL TIP: VISUALS

During a lesson your lecturer may use visual aids i.e. handouts, overhead slides, PowerPoint presentations etc.

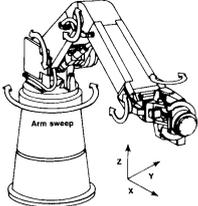
They will use phrases to introduce them, and to tell you when to look at them.

Visual information may be referred to using phrases such as: *Here we can see ...*

4. Listen to the second part of the lecture and complete the following tasks. The lecturer refers to some of the following visual aids.

a) Tick (✓) which of the graphics above are referred to during the lecture.

b) Write down the phrases used to refer to the graphics.

1	 _____ _____	2	 _____ _____
3	 _____ _____	4	 _____ _____
5	 _____ _____	6	 _____ _____

5. Phrases that could be used to give background information, introduce visuals, and digress are given in the box below. Place them under the appropriate headings.

Incidentally	As we know	As we have already seen	On this graph
Take a look at this	The ... shows	Before I forget	As you can see
We all understand	While I remember	It's clear that	By the way
It is understood	Here we can see	The vertical axis represents	

Background	Visuals	Digression

Part D: WRITING

1. Consider your own opinion of the following statement.

“Early robots and the robots of today are completely different.”

ACADEMIC SKILL TIP: COMPARE & CONTRAST WRITING GUIDE

When comparing or contrasting two things, similarities or differences are focused on. While writing about these similarities or differences, transitions can be used.

- **Transitions that show comparison include:**
 Both X and Y ... X and Y are the same... X and Y are alike...
- **Transitions which show contrast include:**
 Unlike X, Y ... While X is ..., Y is... X isHowever, Y is...

2. Use the space provided to make notes on your opinion. You may consider their characteristics and the kind of tasks they do.

<i>Similarities</i>	<i>Differences</i>

component	accuracy	locate	detect	range
structure	flexibility	conform	uniform	equip

3. Using the ideas above and at least three AWL words from the above box (for alternative word forms refer to Part B exercise 3. c), write your response to the statement:

“Early robots and the robots of today are completely different.”

UNIT III: THE LANGUAGE OF TECHNOLOGY

By the end of this unit, I will be able to:

- identify signal words that show lecture organisation
- listen for and understand information markers on importance, examples and clarification
- recognise reformulated information
- paraphrase ideas from a text

TARGET OUTPUT

At the end of this unit, I will be asked to:

'write a response to a given opinion of computer languages'



Part A: DISCUSSION

1. Answer the following questions individually.

- What are the words on the right?
- Do you know any of them?
- What do they stand for?
- What are they used for?
- What other programming languages are you familiar with?
- How similar are these languages to natural languages?

FORTRAN
COBOL
ALGOL
PL/I
BASIC
C
JAVA
AJAX

2. Compare your answers in groups.

3. Present a summary of your ideas to the rest of the class.

Part B: READING

1. Complete the table below by reading the text that follows.

Language	Developed	Function	Characteristic
FORTRAN			
	1959		
		Mathematical & scientific purposes	

			Combines features of COBOL & ALGOL
BASIC			
		To support UNIX operating system	
JAVA			
	2005		

PROGRAMS AND PROGRAMMING LANGUAGES	NOTES
<p>Computers can deal with different kinds of problems if they are given the right instructions for what to do. Instructions are first written in one of the high-level languages, e.g. FORTRAN, COBOL, ALGOL, PL/I, PASCAL, BASIC or C, depending on the type of problem to be solved. A program written in one of these languages is often called a source program, and it cannot be directly processed by the computer until it has been compiled, which means interpreted into machine code. Usually a single instruction written in a high-level language, when transformed into machine code, results in several instructions. Here is a brief description of some of the many high-level languages:</p> <p>FORTRAN is the acronym for FORmula TRANslation. This language is used for solving scientific and mathematical problems. It consists of algebraic formulae and English phrases. It was first introduced in the United States in 1954.</p> <p>COBOL is the acronym for Common Business-Oriented Language. This language is used for commercial purposes. COBOL, which is written using English statements, deals with problems that do not involve a lot of mathematical calculations. It was first introduced in 1959.</p> <p>ALGOL is for the acronym for ALGORithmic Language. Originally called IAL, which means International Algebraic Language. It is used for mathematical and scientific purposes. ALGOL was first introduced in Europe in 1960.</p> <p>PL/I Programming Language I developed in 1964 to combine features of COBOL and ALGOL. Consequently, it is used for data processing as well as scientific applications.</p> <p>BASIC is the acronym for Beginner's All-purpose Symbolic Instruction Code. Developed in 1965 at Dartmouth College in the United States for use by students who required a simple language to begin programming.</p> <p>C developed in the 1970s to support the UNIX operating system. C is a highly portable general-purpose language.</p> <p>JAVA is a programming language originally developed by James Gosling in 1995.</p>	

The language derives much of its syntax from C and C++. Java is general-purpose, concurrent, class-based, object-oriented, and is intended to let application developers "write once, run anywhere". Java is considered by many as one of the most influential programming languages of the 20th century, and widely used from general software to web application software.

AJAX. The term "Ajax" (shorthand for asynchronous JavaScript and XML) was coined in 2005 by Jesse James Garrett and is a group of interrelated web development techniques used on the client-side to create interactive web applications. With Ajax, web applications can retrieve data from the server asynchronously in the background without interfering with the display and behaviour of the existing page.

When a program written in one of these high-level languages is designed to do a specific type of work such as calculate a company's payroll or calculate the stress factor on a roof, it is called an applications program. Institutions either **purchase** these programs as packages or commission their own programmers to write them to meet the specifications of the users.

The program that is produced after the source code has been **converted** into machine code is referred to as an object program or object module. This is done by a computer program called a compiler, which is unique for each computer. Consequently, a computer needs its own compiler for the various high-level languages if it is expected to accept programs written in those languages. For example, in order that an IBM RS/6000 may process a program in FORTRAN, it needs to have a compiler that would understand that particular model and the FORTRAN language as well.

The compiler is a systems program which may be written in any language, but the computer's operating system is a true systems program which controls the central processing unit (CPU), the input, the output, and the secondary memory devices. Another systems program is the **linkage** editor, which fetches required systems routines and links them to the object module (the source program in machine code). The resulting program is then called the load module, which is the program directly executable by the computer. Although systems programs are part of the software, they are usually provided by the manufacturer of the machine.

Unlike systems programs, software packages are sold by various vendors and not necessarily by the computer manufacturer. They are a set of programs designed to perform certain applications which conform to the particular specifications of the user. Payroll is an example of such a package which allows the user to input data – hours worked, pay rates, special **deductions**, names of employees – and get salary calculations as output. These packages are coded in machine language (0s and 1s) on magnetic tapes or disks which can be purchased, leased, or rented by users who choose the package that most closely **corresponds** to their needs.

Adapted from Oxford English for Computing: K Boeckner and P C Brown. OUP 1993

*** Remember all bold words are on your course wordlist and need attention**

2. Read the text again and underline the sections where the following ideas are expressed.

a) Systems programs control the work of computer systems.

b) Software packages are not always sold by the manufacturer.

c) If one high-level instruction is translated into machine code it generally becomes several instructions.

d) Usually, systems programs are supplied by the producer.

e) Programmers may be required to write software for their employers.

3. Read the skill tip box on paraphrasing and complete the given task.

ACADEMIC SKILL TIP: PARAPHRASING

Paraphrasing involves changing a text so that it is quite dissimilar to the source yet retains all the meaning. You can paraphrase by using your own words.

This means changing the structure of the sentence(s) and/or changing the vocabulary in terms of synonyms or antonyms, definitions or changing word structure so that it is easier for you to understand.

Look at the example below and find all the differences.

Original: *Computers can deal with different kinds of problems if they are given the right instructions for what to do.*

Paraphrased: *When given the correct commands for something, computers can solve a variety of problems.*

List the structural and vocabulary differences below:

Of course when paraphrasing, you must also show whose work you are using. You must include information on whose idea it is.

For example, in the text you have just read, the ideas belong to K Boeckner and P C Brown in a book written in 1994. When paraphrasing from this text, we would include this information

Boeckner and Brown (1994)

You also need to incorporate it into your sentence using phrases like ‘*According to...*’ or a reporting verb such as ‘*state*’ or ‘*claim*’ or ‘*report*’.

4. Compare the underlined sections in the text with the above sentences in exercise 2 and note how they are different in the space provided.

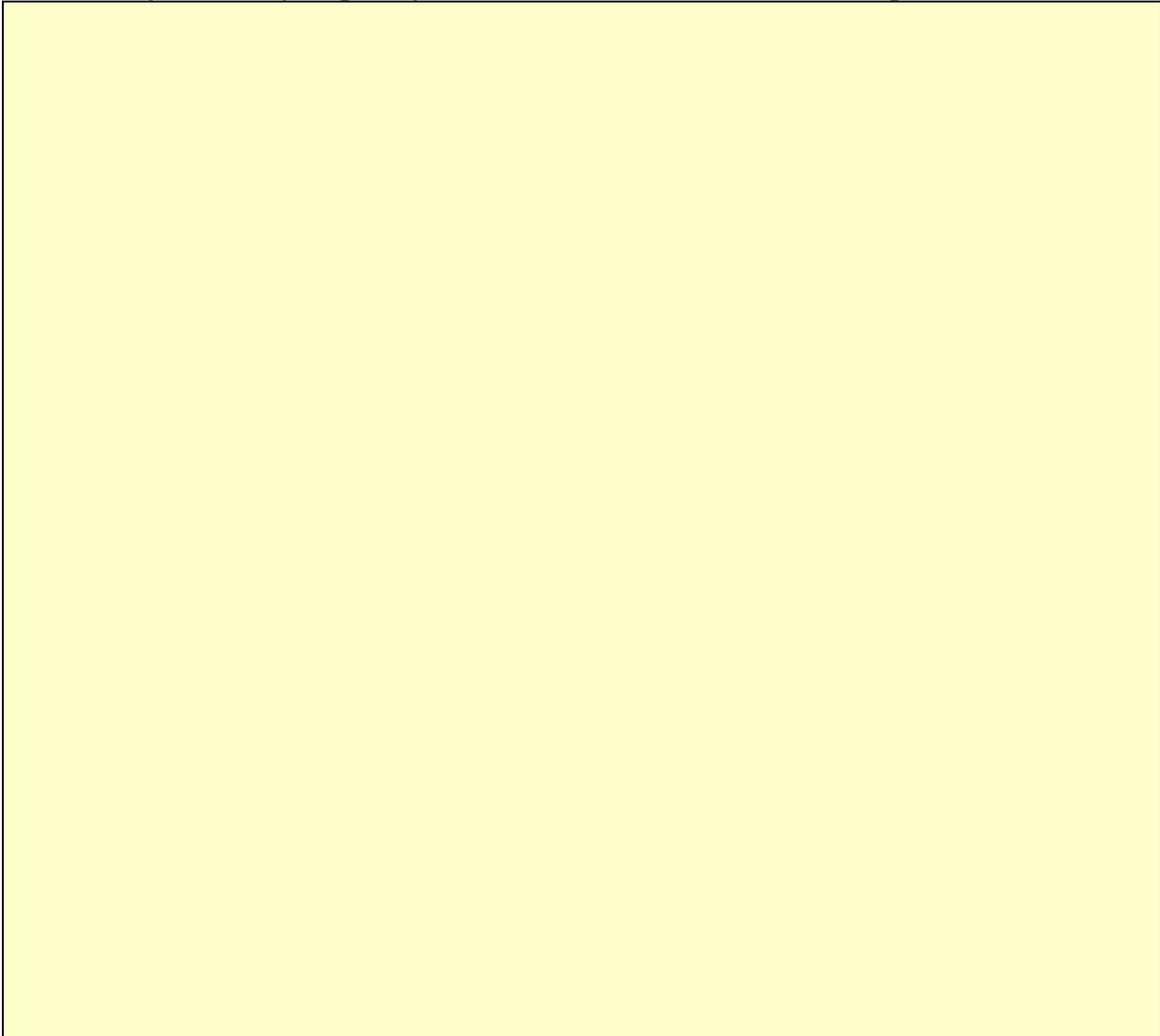
1. Listen to the first part of a lecture on natural and artificial languages and decide on why the lecturer is talking about this subject and what he is going to focus on.

ACADEMIC SKILL TIP: IMPORTANT INFORMATION

When you take notes, it is not possible for you to write down every word. You have to distinguish between the important and the less important information. Your lecturer will use specific signals to focus your attention on the important points when they are reached in the lecture.

Important information may be introduced using phrases such as: *I want to stress...*

2. Listen again to the first part of a lecture and take notes on the main points mentioned.



3. List any linking phrases used to identify importance.

_____	_____
_____	_____
_____	_____

ACADEMIC SKILL TIP: EXAMPLES

In lectures, it is common to make generalisations (general statements, laws, principles etc.) which are often supported with examples. Signals are used to help you understand which generalisations the examples refer to.

Examples may be introduced using phrases such as: *The following is a case in point*

4. Listen to the next part of the lecture and take notes on the similarities and differences between natural and artificial languages.

5. Listen again and identify the structures the speaker uses to give examples.

_____	_____
_____	_____
_____	_____

6. Listen to the end of the talk and write down what question the lecturer is asked.

7. How does the lecturer answer the question? What structures are used?

ACADEMIC SKILL TIP: CLARIFICATION

Your lecturers will try to explain the meaning of difficult ideas etc. To do this they may repeat information in different words, i.e. paraphrase what has already been said.

It is important for you to recognise that this is the same information expressed differently and is not new information.

This re-telling, or clarification, may be introduced using phrases such as: *in other words*

8. Phrases that could be used to emphasise importance, give examples and clarify are given in the box below. Place them under the appropriate headings.

Or rather	For instance	I want to stress	For example	Remember
Namely	Furthermore	Don't forget that	Or you could say	
What's more	i.e.	You only have to think of		

Importance	Examples	Clarification

Part D: WRITING

1. Read the statements below and choose the one you agree with.

- a) 'Learning a programming language is like learning any natural language. The only difference is that you are communicating with a machine instead of another person.'
- b) 'I get annoyed when I hear people comparing programming languages with natural languages. They have almost nothing in common.'

2. Use the space below to make notes from the reading and listening sections of this unit to support your chosen statement.

process	compile	interpret	transform	formula
purchase	convert	linkage	deduction	correspond

UNIT IV: INTELLIGENCE - A NEW DEFINITION

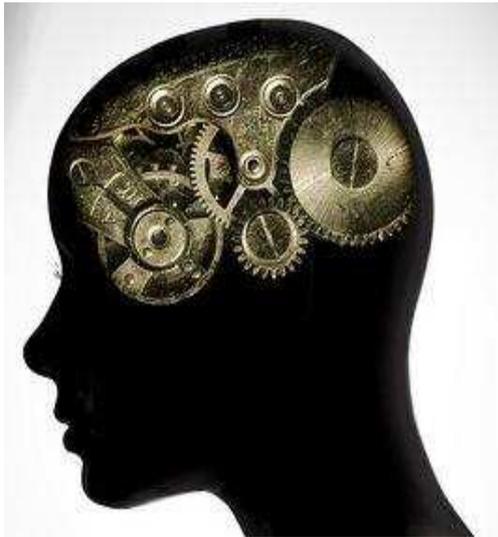
By the end of this unit, I will be able to:

- listen for and understand information markers to understand definitions, further & contrasting information, cause, effect, lists and classifications
- recognize the speaker's attitude
- evaluate a text

TARGET OUTPUT

At the end of this unit, I will be asked to:

'write a response to a question about computers replacing human beings'



Part A: DISCUSSION

1. Discuss the following questions in groups.

a) What do you think artificial intelligence means?

b) Can you think of any machines that may use artificial intelligence? e.g. ATMs

c) How do you think these machines affect our lives?

2. Share your answers with the rest of the class.

Part B: LISTENING

1. You are going to listen to a short lecture on artificial intelligence. In pairs, write down any questions you would like to be answered.

ACADEMIC SKILL TIP: MORE INFORMATION MARKERS

Sometimes lecturers use words or phrases that show the links between ideas. Listening for these words and phrases can help you understand the lecture.

The lecturers may....

- give the order of new points by using various links e.g. To begin with.
- define terms. It is important to note them down as words can have specific meanings in different subjects.
- give further information about a topic by using linkers, such as *moreover*,...
- present contrasting information e.g. *In contrast*,...
- make classifications e.g. *X may be classified according to*...
- focus on the causes or the effects of a certain problem e.g. because of...

2. Look at the notes below and predict what information is missing.

ARTIFICIAL INTELLIGENCE

- Used to produce not only _____ but also _____.
- One example task that we use AI for is _____.
- AI systems: used by businesses and hospitals & built into common home computer software e.g. _____ and _____, we all know and love.
- 4 branches of AI:
 1. _____
 2. _____
 3. _____
 4. _____
- Two reasons why computers cannot solve problems & achieve goals as well as humans:
 1. lack of _____
 2. not being able to learn from _____
- AI, or artificial intelligence, is the attempt to program computers to have _____ and _____.
- The applications of AI can only grow in _____ and _____.

3. Listen to the lecture and check your predictions.

4. Discuss your predictions. Are different answers acceptable?

5. Using the notes above, answer the following questions.

a) What is the professor's opinion of computer games? Tick the most appropriate answer.

- _____ She thinks they are a complete waste of time.
 _____ She thinks they can teach programmers a lot about AI.
 _____ She thinks they have not been developed very well.
 _____ She thinks they are fun.

b) Is the professor optimistic or pessimistic about the future applications of AI? Give reasons for your answer.

6. Look at the signals given in the table below and categorize them under the following headings: defining, listing, giving further information, giving contrasting information, classifying and giving causes and effects.

Although... X consists of N categories... First of all... By X, I mean... Besides...
 Y and Z are types of X. So... Furthermore.... To begin with... Not only...but (also)...
 X can be divided into N classes. Secondly... On the other hand... X is called... Also...
 Alternatively... Then... Because... X is known as... X is... But... Moreover...
 In order to... This term is used generally to mean... Therefore... We can add that...
 However... X may be classified according to... The reason for... X may be defined as...
 Lastly... The next point I'd like to make is....

<i>DEFINING</i>	<i>LISTING</i>	<i>FURTHER INFORMATION</i>
<i>CONTRASTING INFORMATION</i>	<i>CLASSIFYING</i>	<i>CAUSE & EFFECT</i>

7. It is important to show these links in your notes by using symbols or abbreviations. Which symbols or abbreviations would you use to show these relationships?

- Defining: _____ e.g. DEF. _____
- Listing: _____
- Further information: _____
- Contrasting information: _____
- Classifying: _____
- Cause and Effect: _____

Part C: READING

1. Read the article below and, in groups, discuss the questions that follow it.

THE EVOLUTION OF INTELLIGENCE	NOTES
<p>Intelligence, as we understand it, is the ability to comprehend a given set of events, to analyze its results and to use the knowledge gathered to interpret, predict or conceptualize other similar or dissimilar occurrences.</p> <p>Human intelligence has always been directed towards creation. Humans have expressed their intelligence through the creation of new structures and objects. Human creation has now progressed towards replicating the human image, not through reproduction alone but also through scientific wizardry. With the rapid development of computing and robotics over the past few decades, humans today find themselves on the verge of a long awaited goal - to assemble a non-human device that can understand, analyze and interpret information and use the same to predict or conceptualise similar or dissimilar occurrences. In other words, a device that is intelligent.</p> <p>Known commonly as AI, this involves the creation of a device that will successfully imitate humans. Much progress has been made in the field of AI. We can see a lot of semi-intelligent devices today. For instance, remote sensing satellites, brightness adjusting televisions, dishwashers and ovens that work with a single button are all minor examples of AI. However, a lot remains to be done in the as yet science-fiction world of Androids and the like.</p> <p>The reason for still being behind the world of science-fiction is because the living brain is a highly complex network of transmitters, receivers and semiconductor pathways. Developing purely logic-based programs (as we see in the computers of today) can only create machines not intelligence. To illustrate this difference, the living brain is capable of storing seemingly insignificant data which can be retrieved decades later if it can come in handy. A simple computer, on the other hand, cannot store any data on its own; it reads and records only that information which it has been programmed to assimilate - no more and no less. Even for highly advanced chess playing computers like Deep Blue/Deep Thought, the mechanism of "thought" follows the same pattern - these machines only retrieve information relating to the thousands of moves that have been incorporated into them and would, in all probability, stand helpless in front of a really novel approach to the game.</p> <p>Another problem that needs to be overcome is that of inference. The machines of today can only think rationally. But for real intelligence, irrational thinking is quite frequently needed. There are many examples that</p>	

could be given here such as the discovery of the structure of benzene - August Kekule had a dream of snakes devouring themselves, tail first and thus forming rings; and that was how Kekule chanced upon the possibility of the benzene molecule being circular in structure. We can easily understand how his brain had stored the information relating to benzene (which was his immediate project) and substituted the possible structure on a real life example which, however irrational, pointed Kekule in the right direction. However, the computing devices of today simply cannot think in this way.

Thirdly, there is the problem of **integration** - to be successful, an AI device must be able to integrate two or more dissimilar events. For example, through imaging and **subsequent** analysis, a computing device can understand, say, the normal manner of walking, stepping, or running of a person. However, if that person jumps up in amazement on receiving surprising news, the computer would fail to understand the change in their movement and might decide that s/he is ill which would be a completely false assumption. The problem is mainly due to the fact that while in the case of humans, most assumptions and decisions are based on common sense gained through practical experience; in the case of logical machines, decisions are based on a set of "yes" "no" type protocols. Thus, logical intelligence leaves precious little space for **ambiguity**, while ambiguity perhaps is the most common occurrence in the animal kingdom. One way to override this problem (as proposed by John McCarthy, 1959) would be to create programs which **enable** the AI device to arrive at several possible conclusions by observing one single event. It should then correlate these reasons with the person's facial expressions and other factors such as the tone of voice, the event immediately preceding the jump, etc. Thus formalized, common sense can be **induced** into the AI device.

So where do we stand now? Is Artificial Intelligence in the form of a "Terminator" character a real and distinct possibility? In this author's opinion, it is, though not in the near future. As discussed earlier, we are already seeing bits and pieces of AI around us; the problem that remains to be solved is how to integrate these pieces to make them into a whole that has similar **capabilities** to the human brain. And while the task is difficult, it is not insurmountable. With new programming theories and proposals coming up everyday, perhaps in another fifty years life as we know it will regularly look to AI for support.

Adapted from articles: A. R. Choudhury <http://ai-depot.com/Intro.html>
<http://www.buzzle.com/editorials/4-17-2004-53064.asp>

* **Remember all bold words are on your course wordlist and need special attention**

According to the author,...

a) what is intelligence?

b) what are the main obstacles facing the creators of AI?

c) what is the future of AI?

2. Each of the following target words appears in the reading. Match each target word with its definition.

- | | |
|--------------------|---|
| ___ 1. occurrence | a. a general notion or idea |
| ___ 2. assemble | b. to take in or include as a part or parts |
| ___ 3. concept | c. qualities, abilities, features that can be used or developed |
| ___ 4. incorporate | d. the state or quality of being logical or sensible |
| ___ 5. infer | e. something that happens; event; incident |
| ___ 6. rationality | f. to guess by reasoning or judge from evidence |
| ___ 7. ambiguity | g. to put or fit together; put together the parts of |
| ___ 8. capability | h. an unclear, indefinite word, expression, meaning |

3. Each sentence below contains a paraphrase or synonym for one of the target words above. Read each sentence and then match it with the most appropriate word.

a) Misunderstanding can easily happen if there is *an unclear meaning* in a message.

b) To truly understand *an event*, it must be looked at from all sides.

c) New computer languages usually *include* parts of other older languages.

d) Some of the most important discoveries were made when people did not use *logic*.

4. Find the common points between the lecture and the reading on artificial intelligence. Make notes in the box below.

Part D: LISTENING



1. Listen to the beginning of a lecture on Artificial Intelligence and write down the main points that will be covered.

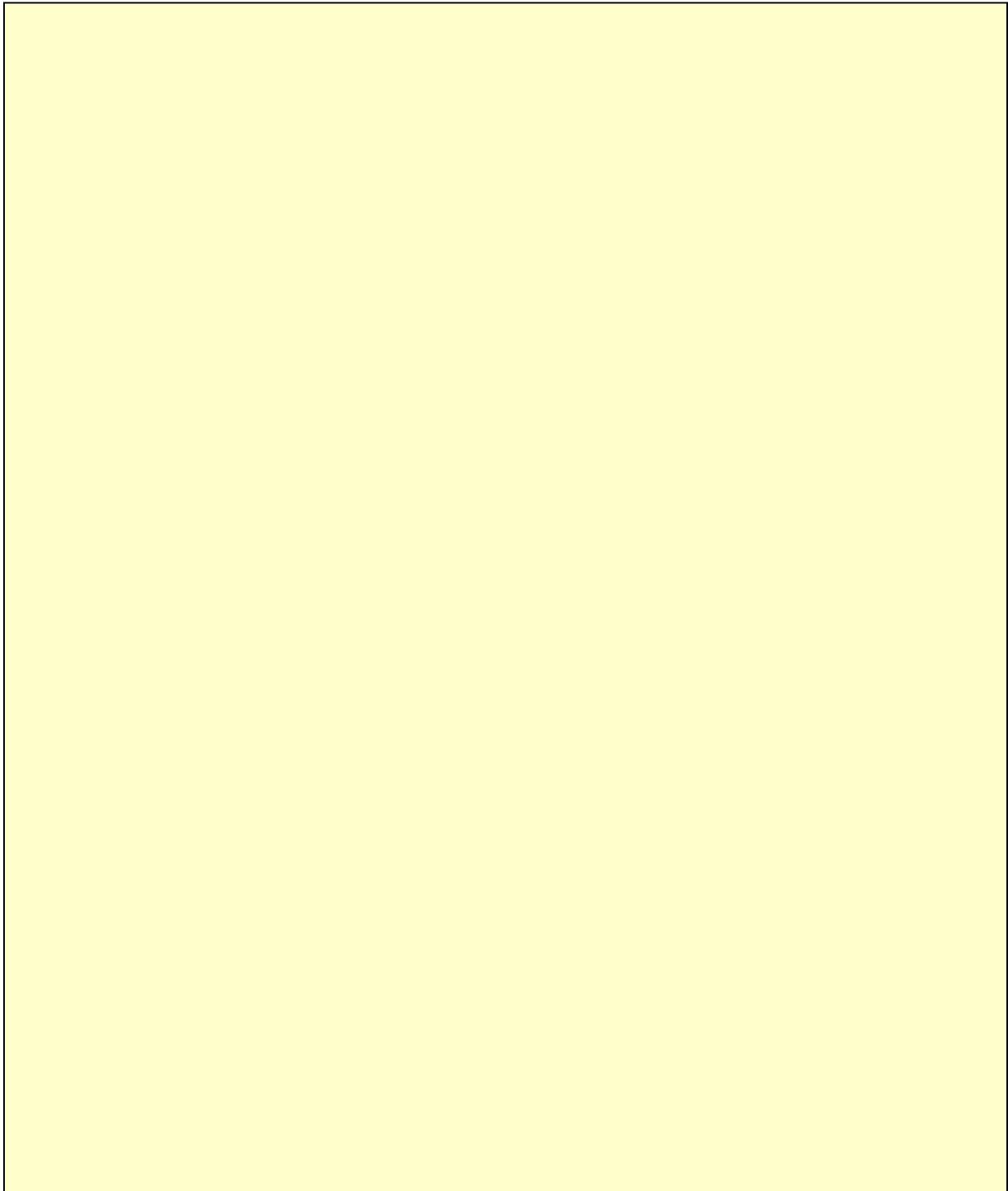
a) _____

b) _____

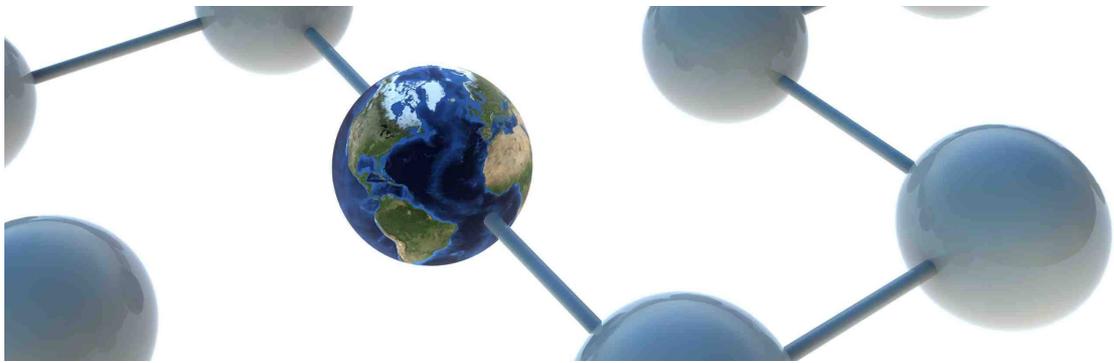
c) _____

2. Look at the main points and, in pairs, brainstorm what the lecturer may say about each one.

3. Listen to the complete lecture and take notes under the headings you have made. Use one of the methods that you have learned in this module.



MODULE TWO



Speaking for Academic Purposes

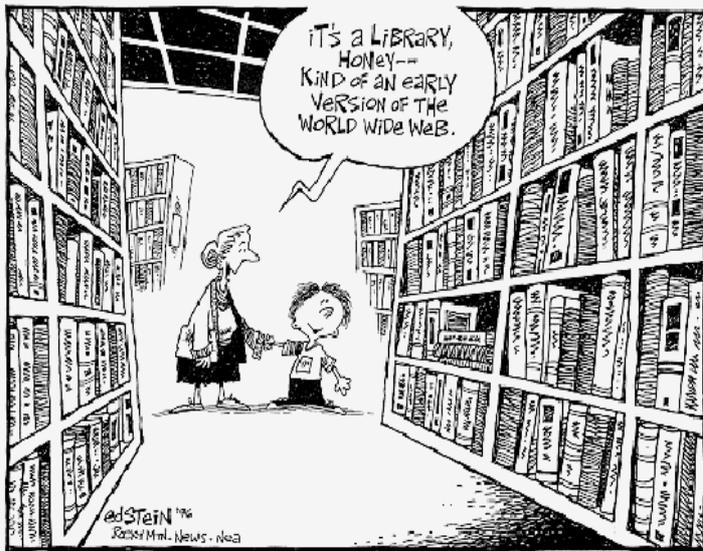
INTRODUCTION TO RESEARCH

By the end of this unit, I will be able to:

- use different sources for research
- identify cases of plagiarism
- define the basics of an academic presentation

TARGET OUTPUT

At the end of this unit, I will be asked to:
‘give an oral summary on how to structure a presentation’



Part A: DISCUSSION

1. Discuss the following in groups of three or four:

Suppose that you are going to give a presentation on “the dangers of global warming”. Which sources would you use to do your research? List the three most useful ones in order of importance.

- a) _____
- b) _____
- c) _____

2. Based on the decision of your group, prepare a brief summary of the reasons for your choices.

3. Both the internet and the library are useful sources for information. However, both have their disadvantages as well. In groups, try to come up with as many disadvantages as possible for both.

DISADVANTAGES OF	
<i>The Internet</i>	<i>The Library</i>

Part B: READING

WIKIPEDIA – IS IT REALLY RELIABLE?	NOTES
<p>By Discoverie - Posted on July 11th, 2006</p> <p>Wikipedia is a free, widely used online encyclopedia, wherein the entries can be modified by <i>anyone</i>.</p> <p>That is where the catch is.</p> <p>I am not totally against Wikipedia. Wikipedia gives the opportunity for anyone to create an encyclopedia entry, which was once a class project in college. It can be used as a quick - yet crude - research tool, just to get a general idea of a topic. Some professors sometimes borrow images from Wikipedia to illustrate certain points in class. Many articles are reviewed, or scrutinized, by the world; Wikipedia's hope/argument is that since the people who read Wikipedia include those who are knowledgeable on the subject(s), any mistake found on the article can be easily corrected by them. In time, the information presented in the article will be "balanced" or almost (or totally) accurate. I think that Wikipedia provides a good service to the global community by providing easily accessible information.</p> <p>However, as a warning to college students, Wikipedia is not truly peer-reviewed like academic journals, such as <i>Nature</i>, <i>Science</i>, and <i>Journal of Counseling Psychology</i> (which you usually have to subscribe to or access through a library/university). Many professors do not accept Wikipedia as a reference in college research papers. Since the articles can be modified by anyone, some of the information can actually be false or inaccurate; vandalism can occur. (If you cite a certain statement from an entry, there is a chance that it may be altered by the time your professor checks it out.) Also, you do not know who the authors are, which is important when doing your Reference List.</p> <p>Just like Google, you cannot trust everything on Wikipedia. It is still OK to check it out for a rough idea of a particular subject and maybe borrow pictures or get some information. However, bear in mind that the information you get from any kind of source, including Wikipedia, is not yours, which means that it has to be cited. Otherwise, you might run the danger of 'stealing' information, which is called plagiarism and is an academic offense. So, if you would like to do a presentation and/or research paper with good quality and reliable information, you can use the library, e-journals, and/or databases as long as you acknowledge the source.</p> <p>Adapted from an article by Rod Collins - Posted on October 13th 2007 from http://www.rodcollins.com/wordpress/problems-and-dangers-using-wikipedia-beware</p>	

***Remember all bold words are on your course wordlist and need special attention.**

1. Match the words with their synonyms.

- a) scrutinize _____ adapt
- b) modify _____ quote, mention
- c) cite _____ examine, analyze, study

WHERE HAVE ALL THE LIBRARIES GONE?

NOTES

In recent years the WWW revolution has made people, especially students, question the importance of using books as part of their study. The WWW is now not only able to provide articles and journals direct to your desk but even whole books can be read online. Such a situation relieves students of having to walk up and down corridors of dusty libraries, trying to find one book in a million which may not even be there because someone has either taken it out, lost it or stolen it. It also means that students will not have to learn the confusing **coding** systems that librarians spend many happy hours creating so as to further disorientate and confuse new students. After all, which librarian actually wants their books to leave the library where they can be damaged or even never returned.

Optimistic computer geeks may well believe that computers could mean the end of libraries in universities but they are dead wrong. That is neither the aim of the WWW nor is it likely to ever happen.

Firstly, recent medical research strongly suggests that reading from a computer screen is far more damaging to the eyes than reading off paper. To avoid this, students would be forced to print out everything which means hours and hours of waiting and tons of ink to buy.

Secondly, although many articles do exist on the internet, most of these articles and the journals they come from **require** the researcher to become a paying subscriber. To my knowledge, all university libraries are still free and this is a key issue if you are students struggling to make ends meet.

Finally, university libraries, if efficiently run, usually stock those books that are recommended by the university departments. This means that if there is a book you really need for your course, chances are that it will not only be in the library, but there will be multiple copies of it.

Having said all this, not all university libraries are efficiently run and the **challenge** sounded by the WWW makes it imperative that university libraries really do get their acts together and make sure they are providing university students with all their needs, and consequently that universities are supplying enough money to the librarians to make sure the right books are on the shelves.

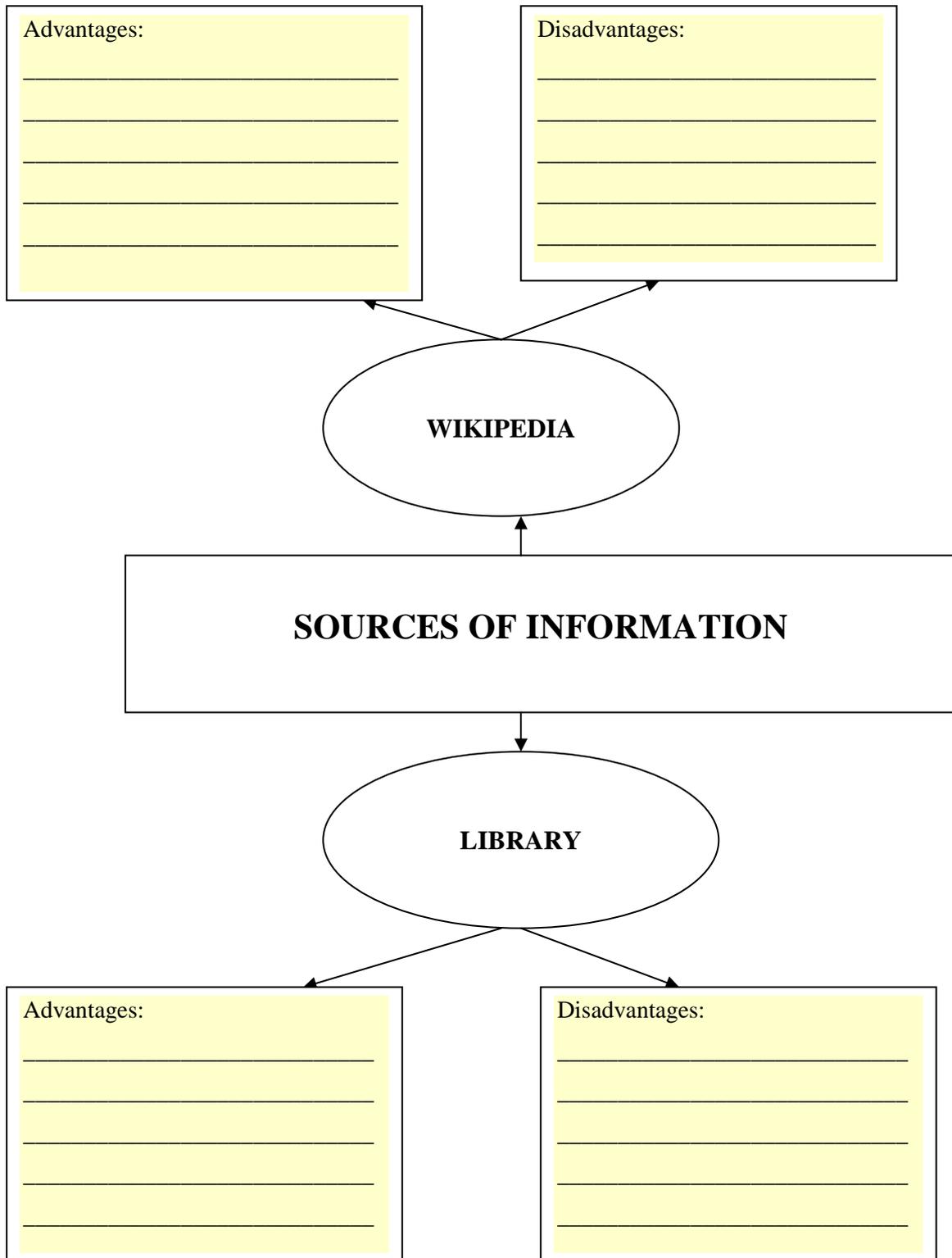
Universities' libraries are going nowhere, but the WWW will go a long way to ensuring that university libraries try harder to satisfy their customers, the students. G. Kempton, 2008.

* Remember all bold words are on your course wordlist and need special attention

2. Match the words with their definitions.

- a) code ____ something that tests strength, skill, or ability, especially in a way that is interesting
- b) require ____ to put a set of numbers, letters, or symbols on something to show what it is or give information about it.
- c) challenge ____ a law or rule says you must do it or have it

3. Read the two texts above and take notes on the advantages and disadvantages of Wikipedia and libraries in the boxes given.



ACADEMIC SKILL TIP: WRITING A SUMMARY

A summary is a general restatement of the main idea of a passage in your own words. It highlights the major points and tries to give the essence of a source in as few words as possible. Thus, when writing a summary, make sure that ...

- The source is included.
E.g. According to Green (2007),
Green (2007) states that
.....(Green, 2007).
- It includes all the main points.
- The language is different from the original.
- It does NOT include details and examples.
- It does NOT include your own opinions.

3. Read the academic skill tip box on summarizing and check the summary of the text “Wikipedia: Is it really reliable?” below.

Wikipedia is not a reliable source. Because Wikipedia is not truly peer-reviewed like academic journals such as Nature, Science and Journal of Counselling Psychology and because its entries can be changed by anyone, it cannot be trusted as a primary resource and as a result is now not accepted by many university lecturers. If it is used in research, it should only be used as a starting point for someone. The information found there can then be verified using more reliable and detailed sources such as libraries, databases and e-journals. I think we should not use information from Wikipedia at all.

Take notes of your ideas here:

4. Rewrite the corrected version of the summary below.

5. The text below describes the situation of a student. Read the situation and in groups, discuss:

- a) what the problem is.
- b) how this situation relates to the last paragraph of the text on Wikipedia.

Chris just found some good stuff on the Web for his science presentation about sharks. He highlights a paragraph that explains that most sharks grow to be only 3 to 4 feet long and can't hurt people. Chris uses this information in his presentation and adds some other information from Wikipedia as well. He talks about every single detail of sharks, as if he has been a shark expert throughout his life.

Uh-oh. Chris just made a big mistake. Suddenly he finds himself in trouble, not only with his teacher but with the whole school.

Take notes of your discussion here:

A large yellow rectangular area with a black border, intended for students to take notes during their discussion. The text 'Take notes of your discussion here:' is positioned at the top left of this area.

Part C: LISTENING

1. Below is a list of statements about giving a presentation. Write “DO” next to the ones which you think should be done, and “DON’T”, next to the ones that should be avoided. Complete the statement with your justification. The first one has been done as an example.

<i>DO/DON'T</i>	<i>STATEMENT</i>	<i>REASON</i>
<i>DO</i>	Introduce yourself and your topic	<i>Because the audience needs to know who you are and what you will be talking about</i>
	Memorize your presentation	
	Look at the audience all the time	
	Speak in a very loud voice	
	Wear interesting and different clothes	
	Write the whole presentation on a piece of paper	
	Use the same tone of voice throughout the presentation	
	Prepare an outline for your presentation	
	Use as many visuals as possible	
	Tell your audience how long your presentation will be	

2. Share your answers with the class.

3. You will watch a video by Rosemary Jane and John Cross on how to give a successful academic presentation. The video consists of five sections. After each section do the task that follows.

Section 1 THE INTRODUCTION

a) What does a speaker need to cover in the introduction of a speech?

Section 2 TRANSITIONS AND SIGNPOSTING

a) What is signposting?

b) Note down the transition words that Rosemary Jane and John Cross mention as examples.

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

Section 3 HELPING THE AUDIENCE TO UNDERSTAND

a) What are some ways of helping the audience to understand and follow the presentation?

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

Section 4 THE CONCLUSION

a) How does John Cross signal that he is starting the conclusion?

b) What are the things that John Cross covers in his conclusion?

Section 5 QUESTIONS

a) How does John Cross invite the audience to ask questions?

UNIT I: JUST ONE CLICK AWAY

By the end of this unit, I will be able to:

- identify the structure of a speech
- introduce a topic
- sequence a speech
- summarise and conclude a speech
- outline a process

TARGET OUTPUT

At the end of this unit, I will be asked to:

'outline a talk on a process'



Part A: DISCUSSION

1. Do the following individually.

Write five things you know about search engines.

a)

b)

c)

d)

e)

2. In groups, compare what you already know and compile a summary of the most important things to share with the class.

3. Listen to the information presented by the other groups in the class. Decide what other information you would like to learn on this subject.

Part B: LISTENING

1. Listen to the talk on the history of search engine development and match the correct time with the corresponding development.

Time Period	Development
<ol style="list-style-type: none"> 1. early 1970's 2. late 1980's 3. December 1993 4. in 1994 5. In 1996 6. Around 2000 7. In 2004 8. 2007 9. 2009 	<ol style="list-style-type: none"> _____ a. 'Web Crawler' comes out _____ b. introduction of 'Jump Station' _____ c. Google starts to gain popularity <u> 1 </u> d. the invention of the internet _____ e. Microsoft starts work on own engine _____ f. Netscape creates a master engine _____ g. Microsoft launches Bing _____ h. use of Archie _____ i. Google becomes most popular in world

2. Transfer the developments above into the correct order in the notes below.

3. Listen again and add details for each development.

History of Search engines	Details
<ol style="list-style-type: none"> 1. <i>Invention of Internet</i> 2. _____ 3. _____ 4. _____ 	

5. _____

6. _____

7. _____

8. _____

9. _____

3. Using your notes, decide if the following statements are true or false.

- a) Search engines are so important today that their names have become part of our language. (T) ___ (F) ___
- b) Archie and Veronica are important people in the world of search engines. (T) ___ (F) ___
- c) The first engine to be known by the public was called Jump Station. (T) ___ (F) ___
- d) Search engines like we know today have been around for about 40 years. (T) ___ (F) ___

Part C: READING

1. Read the text below and underline the parts that mention the stages search engines go through.

HOW SEARCH ENGINES WORK	NOTES
Internet search engines are special sites on the Web that are designed to help people find information stored on other sites. Search engines use automated software programs known as spiders or bots to survey the Web and build databases of their version of the information available on the web. Before a search engine can tell you where a file or document is, it must be found. To find information on the hundreds of millions of Web pages that exist, a search engine employs special software robots, called spiders, to build lists of the words found on Web sites. When a spider is building its lists, the process is called Web crawling.	
How does any spider start its travels over the Web? The usual starting points	

are lists of heavily used servers and very popular pages. The spider will begin with a popular site, indexing the words on its pages and following every link found within the site. In this way, the spidering system quickly begins to travel, spreading out across the most widely used **portions** of the Web.

In order to build and **maintain** a useful list of words, a search engine's spiders have to look at a lot of pages. Web documents are retrieved by these programs and **analyzed**. The data is collected from each web page and then added to the search engine index.

When you enter a query at a search engine site, your input is checked against the search engine's index of all the web pages it has analyzed. The best urls or page addresses are then returned to you as hits, ranked in order with the best results at the top. Most search engines do their text query and retrieval using keywords.

Unless the author of the Web document **specifies** the keywords for that document using something called meta tags, it's up to the search engine to determine them. Essentially, this means that search engines pull out and **index** words that appear to be **significant**. Since engines are software programs, not **rational** human beings, they work according to rules **established** by their **creators** for what words are usually important in a broad **range** of documents. The title of a page, for example, usually gives useful information about the subject of the page (if it doesn't, it should!). Words that are mentioned towards the beginning of a document (think of the "topic sentence" in a high school essay, where you lay out the subject you intend to discuss) are given more weight by most search engines. The same goes for words that are repeated several times throughout the document.

Some search engines index every word on every page. Others index only part of the document. Full-text indexing systems generally pick up every word in the text except commonly **occurring** stop words such as "a," "an," "the," "is," "and," "or," and "www." Some of the search engines **discriminate** upper case from lower case; others store all words without reference to capitalization.

There are differences in the ways various search engines work, but they all perform three basic tasks:

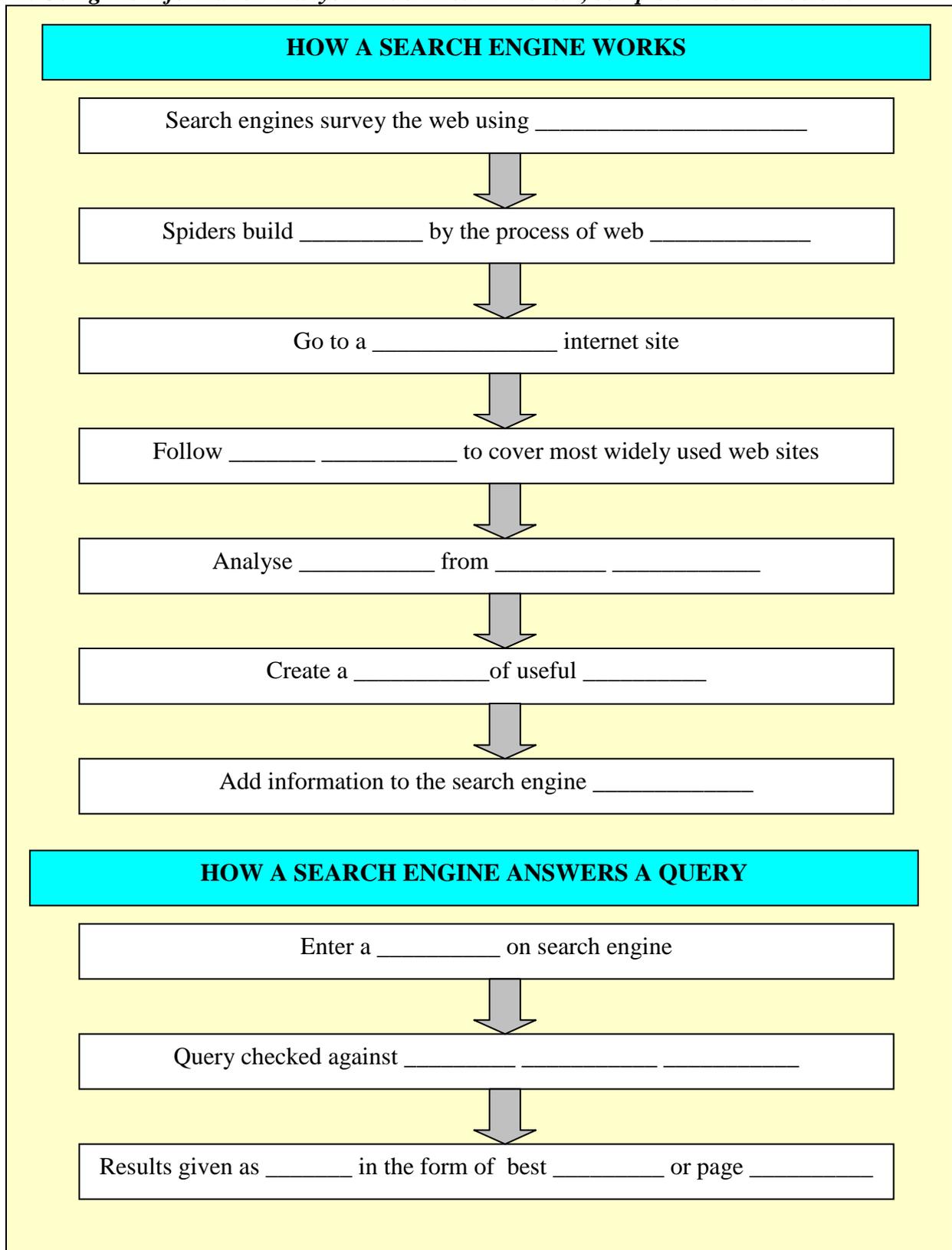
1. They search the Internet -- or select pieces of the Internet -- based on important words.
2. They keep an index of the words they find, and where they find them.
3. They allow users to look for words or combinations of words found in that index.

Early search engines held an index of a few hundred thousand pages and documents, and received maybe one or two thousand inquiries each day. Today, a top search engine will index hundreds of millions of pages, and **respond** to tens of millions of queries per day.

Adapted from <http://computer.howstuffworks.com/internet/basics/search-engine.htm>

*** Remember all bold words are on your course wordlist and need special attention**

2. Using the information that you underlined in the text, complete the chart below.



3. The following words are taken from the text. Complete the chart with the appropriate word forms.

Noun	Noun (person)	Verb	Adjective	Adverb
	-	automate		-
	-	survey	-	-
portion	-	-	-	-
	-	maintain	-	-
		analyse		-
	-	specify		
	-	index	-	-
	-		significant	
	-	establish	-	-
	creator			
	-	discriminate	-	-
	-	respond		

4. Check your answers with the mini-dictionary.

5. Read the text below giving advice on how to use search engines effectively and summarise the information in the space provided underneath.

BUILDING A SEARCH	NOTES
<p>Searching through an index involves a user building a query and submitting it through the search engine. The query can be quite simple, a single word at minimum. Building a more complex query requires the use of special symbols known as 'Boolean operators' that allow you to refine and extend the terms of the search.</p> <p>There are many different operators that can be used, but the most common ones are explained below:</p> <ul style="list-style-type: none"> • AND - All the terms joined by "AND" must appear in the pages or documents. Some search engines substitute the operator "+" for the word AND. • OR - At least one of the terms joined by "OR" must appear in the pages or documents. • NOT - The term or terms following "NOT" must not appear in the pages or documents. Some search engines substitute the operator "-" for the word NOT. • FOLLOWED BY - One of the terms must be directly followed by the other. • NEAR - One of the terms must be within a specified number of words of the other. • Quotation Marks - The words between the quotation marks are treated as a phrase, and that phrase must be found within the document or file. <p>If these symbols are used when making a search on the net, then the results obtained will be much more useful than if a single word or phrase is used. Therefore, the best advice to people using search engines is this; familiarize yourselves with these symbols and use them.</p> <p>Adapted from http://computer.howstuffworks.com/internet/basics/search-engine4.htm</p>	

SUMMARY:

Part D: PREPARATION FOR PRESENTATION

1. Complete the following Academic Skill Tip Box using the phrases given below.

Good morning/afternoon/evening	I'd like to talk (to you) today about ...	Welcome to my talk
The focus of my presentation is...	Please interrupt me if there's something that needs clarifying.	
The topic of my speech is...	If you have any comments or questions, I'll be happy to hear them.	
Would you like to give me your suggestions?	I've divided my presentation into four parts/sections.	
In brief... I'm going to present the recent...	In short... I'd be glad to try and answer any questions...	
The subject can be looked at under the following headings ...	We are here today to learn about...	
I'll come to that a bit later on.	Thank you all for coming here	Glad to see so many people here

ACADEMIC SKILL TIP: USEFUL LANGUAGE FOR PRESENTATIONS	
Introducing	e.g. Good morning, my name is...
Statement of intent	e.g. The purpose of this talk is to update you on ...
Sequencing	e.g. We can break this area down into the following fields: ...
Summarising	e.g. To sum up...

Inviting others to contribute	e.g. So that explains our main point. Does anyone have any comments or questions?
Responding to feedback	e.g. That's a (very) good question. Let me answer that like this ...

2. Which of the structures above do not lend themselves to the presentation you will give in ENG 101 course?

Read through the tip box below for the language needed for describing a process.

ACADEMIC SKILL TIP: TALKING ABOUT A PROCESS

A process involves sequential steps. That's to say, there are several single steps that occur one after the other. In order to make the sequence of events easier to understand, linking words/phrases are used. These include words like *after*, *while*, *then*, *during* and *before* and phrases such as *at the beginning*, *after doing this*, *after completing this stage*, *before going any further*. As well as using linking words, there are several other things to keep in mind.

Tense

- most processes are explained in the present tense, unless the speaker is telling an actual process s/he carried out or a historical one.

For example:

Search engines use automated software programs known as spiders or bots to survey the Web.

'JumpStation' used a web robot to find web pages.

Voice

- the passive voice is used when the process is carried out by an unimportant agent. The active voice is used to emphasise the person or object that is carrying out the process.

For example:

Automated software programs are used to survey the Web.

In order to build and maintain a useful list of words, a search engine's spiders look at a lot of pages.

Commands

- the speaker can use the imperative form if s/he wants to instruct the audience on what to do. This could be done if giving advice on something.

For example:

Familiarize yourselves with these symbols and use them.

3. In groups, you are going to prepare an outline for a presentation on one of the following topics:

- The history of search engines
- How search engines work & how to use a search engine effectively to search for a specific topic

4. Complete the following outline for your presentation. Look back at the tip boxes in this unit to help you. Make sure you include at least three of the AWL words from Part C exercise 3.

Process:

Opener:

Background information:

Steps or stages:

UNIT II: NEW AGE OF TECHNOLOGY

By the end of this unit, I will be able to:

- state an opinion and give support to it
- comment on a given opinion
- challenge a given opinion
- give a talk on a problem and its solution

TARGET OUTPUT

At the end of this unit, I will be asked to:

‘describe a problem and explain its solution’



Part A: DISCUSSION

1. Consider the following questions:

- a) What do you see in the picture?
- b) Would you do the same? Why/why not?
- c) What is your opinion of new technology? You may want to consider convenience, usefulness, health, etc.
- d) List three reasons for your opinion.

2. Discuss your answers in groups.

3. Prepare a brief summary of the most important or most interesting ideas and present this report to the rest of the class.

Part B: READING

1. Read the article below and answer the question that follows.

MIS-TECH-NOLOGY

By profession, I'm a designer, working for hours on my computer and communicating mostly through the Internet and a mobile phone. As well as designing, I also do some work as a writer mostly talking about the technology I use. Most people, including myself, tend to **assume** that technology is a wholly positive thing with endless **benefits** for humanity. What people, again myself included, tend to overlook is that almost all good things have negative sides, too. This is what I want to focus on today. If we **assess** the situation from a neutral perspective, and look at society and how it has changed since the **expansion** of computer based technology, we can see health **issues** being reported in the press as well as moral ones such as a rise in cyber crimes and fraud. We can **conclude** from this that there is a dark side to technology.

First let's deal with the issues concerning society's physical well being. As we know, the use of mobile phones **involves** the emission of waves and these have an **impact** on human health. It has been proved that these emissions increase the risk of many different diseases affecting the heart, brain and reproductive system. The people most at risk from these emissions are the

NOTES

young, who are the ones who seem to use these technologies the most.

If we now look at events where people misuse this technology, we can see other types of problems **emerging**. The mobile virus has already **occupied** more than its fair share of newspaper space. Now there is software available, which when installed on a mobile, makes someone other than the caller pay for the call. Other wonderful options are available on mobiles for those who wish to use them for the circulation of adult rated material such as the circulation of graphic violent or sexual pictures. How's that for benefitting society?

There are other examples that could be added here like the use of technology to blackmail people or spy on them. In a recent case in India, a 32 year old man, living in a rich suburban area in Delhi, was arrested for conspiring to carry out a very well organised plan, whereby he demanded 242 million dollars from 3 different groups of people and communicated everything through his mobile phone and the internet. He told these parties, how and where to deposit the money through online banking. He claimed that failure to deposit the exact amount by any party would result in the death of their child.

In another case brought about because of the wonderful advancements in everyday technology, a man was arrested for installing hidden cameras in girls' hostel rooms. This happens because the cameras **available** to the public today are such good value and such high quality that they can easily be installed and used without detection. Is this really something we want to be available to the general public?

With all these great examples of how humans make use of technology, predictions are already being made that say that the next world war will not be fought in open fields, but will be organized and played on the Internet. Hackers will be the generals, commanders and captains. Keyboards and screens will be their **ultimate** weapons. A country's borders will be the servers of that country's computer networks and other countries will try to break into them using hackers. Once a country loses control of its servers, they will lose the battle. Instead of multi-million dollar deals involving tanks, guns and missiles used for defense, we'll have million dollar deals with the makers of anti-virus software.

This all might sound like imagination gone wild, but taking into consideration the speed at which technology is changing the world around us, and the sort of things some people seem to use technology for, this sort of future seems much closer than expected. We should all beware of the Digital Virus!

Adapted from S. Shah

retrieved 9/06/2008 from <http://www.buzzle.com/editorials/1-14-2005-64240.asp>

***Remember all bold words are on your course wordlist and need special attention**

What is the author's opinion of technology?

2. All of the following target words appear in the reading. Match each target word with its definition.

- | | |
|--------------------------|--|
| ___ 1. <i>assume</i> | a. to estimate or judge the value |
| ___ 2. <i>benefit</i> | b. point, matter, or dispute |
| ___ 3. <i>assess</i> | c. influence; effect |
| ___ 4. <i>expand</i> | d. maximum; decisive; conclusive |
| ___ 5. <i>issue</i> | e. to increase in extent, size, volume, scope |
| ___ 6. <i>conclude</i> | f. to take or fill up |
| ___ 7. <i>involve</i> | g. to come up or arise |
| ___ 8. <i>impact</i> | h. readily obtainable; accessible |
| ___ 9. <i>emerge</i> | i. to believe something without having proof |
| ___ 10. <i>occupy</i> | j. to include as a necessary circumstance, condition, or consequence |
| ___ 11. <i>available</i> | k. something that is advantageous or good |
| ___ 12. <i>ultimate</i> | l. to determine by reasoning; deduce; infer |

3. Paraphrase the following sentences from the text. Make sure that you change the words in bold and the structure of the sentences.

a) Most people, including myself, tend to **assume** that technology is a wholly positive thing with endless **benefits** for humanity.

b) As we know, the use of mobile phones **involves** the emission of waves and these have an **impact** on human health.

c) If we **assess** the situation from a neutral perspective, and look at society and how it has changed since the **expansion** of computer based technology, we can see health **issues** being reported in the press as well as moral ones such as a rise in cyber crimes and fraud.

4. Do you agree or disagree with the author's opinion? Why/why not? Look at the skill tip box, and using one of the phrases, state your own opinion about technology.

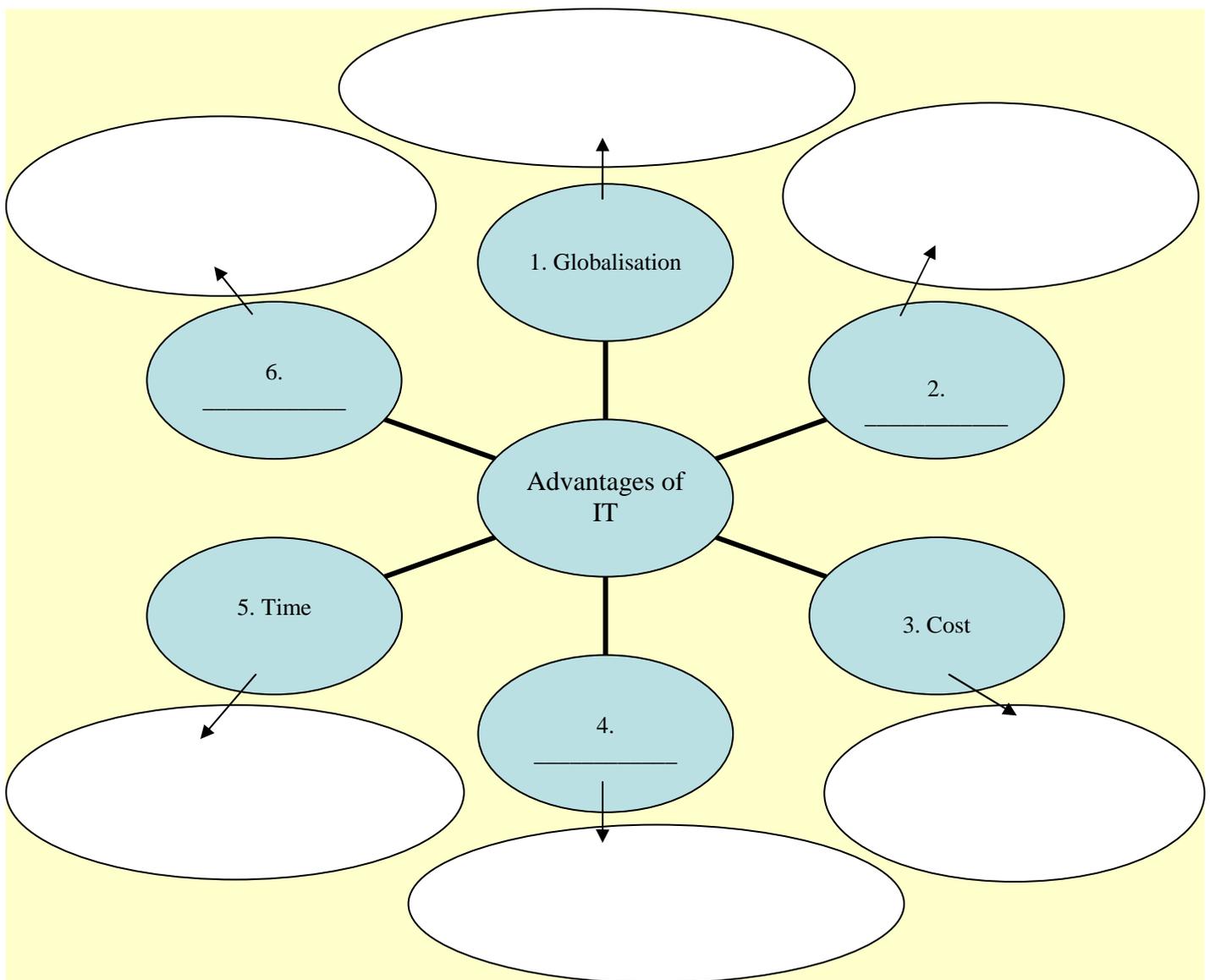
ACADEMIC SKILL TIP: GIVING OPINIONS

1. We use these when we are presenting our opinions directly
 - My (own) (personal) view (on this matter) is that...
 - Personally, I think that...
 - In my opinion...
 - As far as I can see, ...
2. We use these when we want to give an opposing idea before our own
 - It is sometimes said that ..., but my own view is that ...
 - It is widely believed that However, personally, I think that ...
 - I understand both sides of the argument, but on balance I think that ...

5. Compare your ideas with the rest of the class.

Part C: LISTENING

1. Listen to the introduction to a short lecture given by Professor Garrett on the advantages of information technology (IT) and fill in the missing titles.



2. Listen to the rest of the lecture and make notes under the titles in your mind-map.

3. Look at your partner's notes and compare the ideas that you have included. Check to see if there is anything that you want to add to your notes.

4. Find 3 relevant ideas from the reading 'Mis-technology' by Shah and the notes you made from the listening by Garrett to support the opinion of technology you gave in Reading Section exercise 4.

5. In pairs, using the phrases from the skill tip box below, write your opinions with support from the ideas of Shah or Garrett you chose in exercise 4 above.

ACADEMIC SKILL TIP: SUPPORTING YOUR OPINION WITH RESEARCH

In academic environments, you have to support your ideas by giving evidence, statistics and expert opinion. Some useful phrases to do this are given below.

- It is the view of X that ...
- As X points out ...
- In a study of Y, X is of the opinion that...
- X explains that ...
- According to X, ...

(Note: X = author or person; Y = topic or subject)

- **Example:** *In my opinion* technology is beneficial because *as Garrett explains* it helps people and businesses to communicate more efficiently.
- **Example:** *Many people believe that* all technology is beneficial. *However, personally I can't agree with this view* because there are also harmful sides to technology. *According to Shah,* computer viruses could be the weapons of the next world war.

a) _____

b) _____

c) _____

6. Using the information from exercises 4 and 5, discuss and support your opinions in groups. Use phrases from all the tip boxes to help you express your opinion and support it in your discussion.

Part D: SPEAKING

1. Look at the phrases below and put them into the correct column in the tip box.

It is necessary to point out that ...	I agree entirely.
I agree with X when he says that ...	I completely disagree.
I don't think so.	Well, you have a point there, but ...
It is important to remember that ...	That's a good point.
I don't agree.	I see what you mean, but ...
I think so, too.	X is certainly correct in saying that ...
The first thing that we have to consider is ...	

ACADEMIC SKILL TIP: COMMENTING ON ANOTHER POINT OF VIEW

In any discussion, people need to show whether they agree or disagree with the other speaker(s). They also need to present their own opinion. Some common phrases to use are:

Agreeing	Disagreeing	Presenting your own opinion

SCIENTIFIC RESEARCH - A NEW SOCIETY



You are members of a radical scientific organisation known for its ground-breaking research. You are going to establish a peaceful community on an uninhabited island. For this study, you must choose 3 technological items that the community can take with them.

1. In groups, analyze the situation, decide on the three technological items that you think would be most useful. Remember the limitations of living in an isolated place.

2. Get ready to explain and defend your final decisions to the rest of the class. Use at least three of the AWL words from the box below.

assume	benefit	assess	expand	issue	conclude
involve	impact	emerge	occupy	available	ultimate

For preparation of your ideas, complete the following outline:

Situation:

Describe the situation that you have analysed.

Identification and description of a problem:

What kind of problems do you expect to encounter?

What are the limitations facing people living in an isolated place?

Discussion of solutions to the problem:

What are your reasons for choosing these particular items?

Why are your items a better choice than other technological products?

Evaluation and support of proposed solution:

What possible questions do you think the other students may ask you after your presentation?

How will you answer these questions?

ACADEMIC SKILL TIP: PRESENTING A PROBLEM-SOLUTION TALK

In a problem-solution talk, the speaker can organise the information into several sections. First, a description of the situation is given. Then the speaker moves on to the problems identified. After that, there is usually a discussion of one or more solutions or responses to the problem. Finally, the speaker may conclude with an evaluation of the solutions given. In some cases, two of the sections can be combined.

When talking about each section, the best way to separate information is to use listing connectors such as:

- First, second, third, furthermore, in addition, moreover, also, finally etc...

To link the separate parts together, there are several types of linkers that can be used:

To move from the situation to the problem, the speaker can use:

- But, however, although, nevertheless
- Unfortunately, sadly
- The problem is that... an unfortunate result of this is...

When moving onto the solution, a speaker can use:

- In order to reduce the...
- One way to control this would be...
- One solution to this problem is...

When talking about the evaluation stage, the speaker must provide evidence that the chosen solution is viable. This can be done by backing up choices with other people's opinions. See other tip boxes (Giving Opinions, Supporting your opinion with research & Commenting on another point of view) in this unit for more information.

3. Give your presentation to the rest of the class. Make sure you use the phrases from the tip boxes in this unit while explaining your solution.

UNIT III: THE GAMING GENERATION

By the end of this unit, I will be able to:

- ask questions
- ask for clarification
- illustrate and explain a point
- give examples by referring to research
- interrupt and deal with interruptions
- use effective body language
- give a persuasive speech

TARGET OUTPUT

At the end of this unit, I will be asked to:

'give a persuasive talk on computer games'

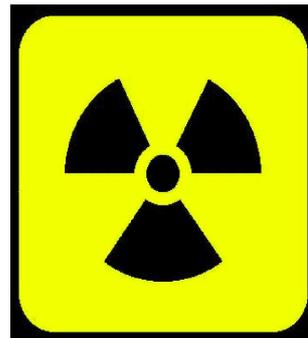
Part A: DISCUSSION

equipment assemble modify simulate

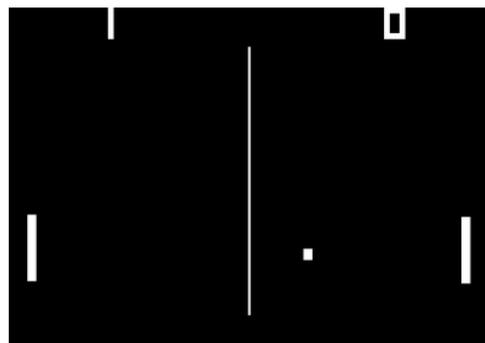
1. In groups, write definitions for the words above.

2. Check answers with the rest of the class.

3. Look at the pictures below and the words you wrote definitions for and try to work out their connection to computer games.



William Higinbotham



4. Share your ideas with the rest of the class.

Tip: most questions start with :
Who- What- Where- Why- When- How-

5. Write down 5 questions that you would ask someone to find out the story behind the pictures.

<i>Questions</i>	<i>Answers</i>
<i>Did</i>?	
<i>Was/Were</i>?	
<i>Who</i>?	
<i>What</i>?	
<i>Where</i>?	
<i>When</i>?	
<i>Why</i>?	
<i>How</i>?	

6. Work in groups. One person in the group will have the original story. Ask your questions to this person to find out about the real story and make notes on the answers in the table above.

7. Recreate the story orally using the words given below.

equipment assemble modify simulate

8. Use the questions below to complete the skill tip box.

- Have you got that?
- Could you explain what you meant when you said that...?
- Is that clear enough?
- Are you with me so far?
- Could you give an example of ...?
- Could you be more specific about...?
- Could you go over that again?

ACADEMIC SKILL TIP: ASKING FOR CLARIFICATION

In speaking, you may not always understand what the other person is saying. Therefore, you may need to ask for clarification.

- _____
- _____
- _____
- _____

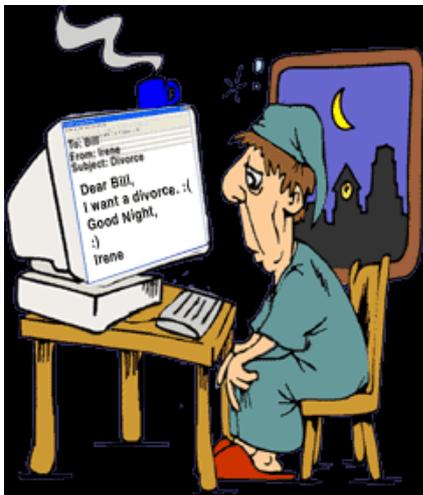
When speaking, people often check to make sure that others understand them.

- _____
- _____
- _____

9. Share your story with the rest of the class. The other groups may ask you questions so be prepared to answer questions about it. Use the phrases given in the tip box as necessary.

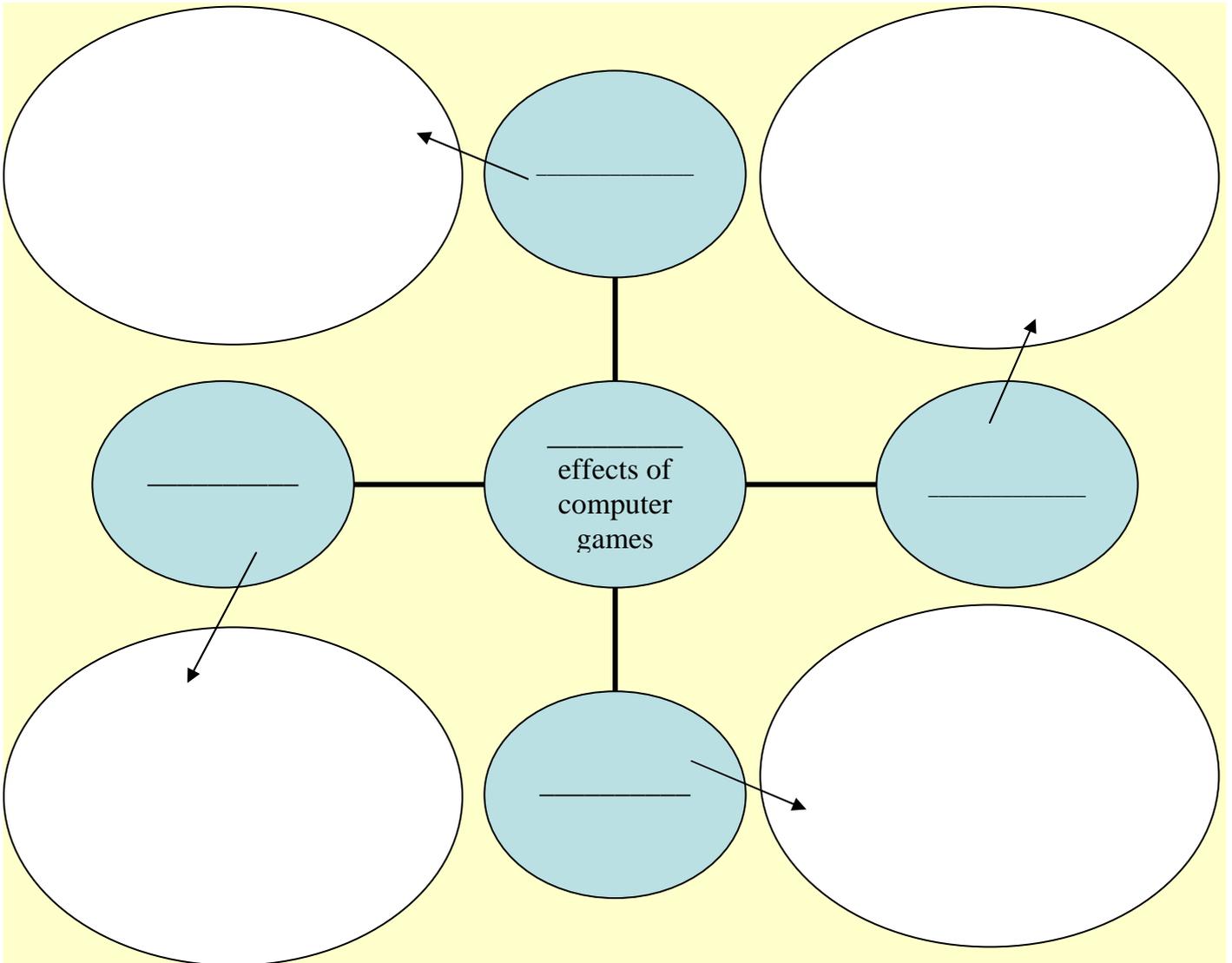
10. Check your story with the original. Make a note of any interesting similarities or differences.

Part B: LISTENING 1



1. Look at the picture on the left and guess what the listening is about.

2. Listen to the introductory part of a lecture by A. McBeath and fill in the section titles in the mind-map below.



3. Listen to the whole lecture and make notes under the section headings in the map.

4. Compare your notes with a partner. Check to see if there is anything that you want to add to your notes.

Part B: LISTENING 2

1. Skim through the text about incidents that have been linked to computer games and work out what kind of information is missing.

2. Listen to the incidents and fill in the missing information.

INCIDENTS LINKED TO COMPUTER GAMES

Several incidents which people have claimed were caused by computer games in recent decades have helped fuel controversy.

- On December 1, 1997, 14 year old American Michael Carneal killed 3 and injured _____ others in the Heath High School shooting after playing Doom, Quake, Nightmare Creatures, and Resident Evil, and accessing some pornographic sites. Carneal also owned The Basketball Diaries, a film which includes a high school student dreaming about _____ his teacher and some classmates, which sparked many debates on internet forums about whether the film about _____, or the game where a character shoots aliens is more at fault.
- On June 25, 2003, two American step brothers, Joshua and William Buckner, aged 14 and 16, respectively, used a rifle to fire at _____ on Interstate 40 in Tennessee, killing a _____ and wounding a _____. The two shooters told investigators they had been inspired by Grand Theft Auto III.
- On July 5, 2004, Cody Posey killed and buried his _____ after supposedly being inspired by _____: Vice City, despite at no point in the game does the main character bury someone he has killed, nor does anyone in the game kill their parents.
- On May 24, 2005, the _____ of a South Korean couple died of suffocation after being left _____ for 5 hours while her parents played World of Warcraft at an Internet cafe.
- In August 2005, 28-year-old South Korean Lee Seung Seop _____ after playing Starcraft for _____ straight.
- In September 2007, a Chinese man in Guangzhou, China, died after playing Internet _____ for _____ consecutive days in an internet cafe.

Adapted from: http://en.wikipedia.org/wiki/Video_game_controversy

3. Compare your answers with a partner.

4. In pairs, discuss whether there is enough evidence to prove that computer games caused these events.

Part C: READING

1. Read the article below and answer the questions that follow.

THE EFFECTS OF GAMES	NOTES
<p>Video and computer games are periodically criticized in the media. Examples include Mortal Kombat, Doom, and Grand Theft Auto. A frequently-cited example is the extremely popular Grand Theft Auto III by Rockstar Games, in which a principal game activity is carjacking.</p> <p>This criticism has been going on for perhaps twenty years now... for the ten years</p>	

before that, tabletop role-playing games like 'Dungeons and Dragons' filled this position - and were linked with all manner of unpleasant **incidents**. Because games are usually in the firing line, it's always nice to see news articles which have something positive to say.

Computer games can improve children's health despite research showing excessive playing causes aggression in the young, a new study claims.

Nottingham Trent University professor Mark Griffiths said they can be a powerful distraction for youngsters undergoing painful cancer treatment. He also argues that games can help develop social skills for children with attention disorders including autism. Mr. Griffith's claims are made in the British Medical Journal.

This isn't the first time positive **aspects** of video gaming have been **cited**... CESA, the Japanese Computer Entertainment Suppliers Association, has claimed that games provide a healthy outlet for aggressive tendencies (I can't find an online link to their report that works to cite, alas). Not that long ago, it was reported that playing games sharpened mental faculties. Not to mention the news that playing video games improves hand eye co-ordination necessary for keyhole surgery.

Until recently, the top ten best selling games of all time contained only one violent game, GTA: Vice City at number eight. Now it probably contains two.

It strikes me that there are two elements driving the disparity of representation for video games. Firstly, so much development money is invested in violent video games that the current market for violent games is saturated. This creates the impression that 'all games are violent'. Secondly, because the marketing departments of games know how to advertise these violent games, and do not seem to know how to promote anything else, the media presence of games - on TV and cinema trailers, for instance - seems to **intensify** this impression of games.

Although I do not **advocate enforcing** such a rule, it would perhaps be healthy if publishers committed to funding and promoting a certain **proportion** of non-violent games each year. This would diversify their portfolio of product, with sound commercial benefits, as well as potentially balancing out the public face of the industry.

That said, politicians always need scapegoats, and journalists need scandal. Games will remain in the firing line until we **diversify** the audience for games to the extent that they are as universal as film or TV. Or until some new form of media comes along and **displaces** games as the new lightning rod of outrage.

Adapted from an article 'only_a_game' retrieved <http://onlyagame.typepad.com/2005/07>

***Remember all bold words are on your course wordlist and need special attention**

a) What is the author's opinion of computer games?

- b) What does the author use to support this opinion? Tick the most appropriate answer.
- _____ His own experience
 _____ Books
 _____ Online reports
 _____ Journal articles

2. The following words are highlighted in the text. Find them and give a synonym or definition for each one.

- a) principal _____

- b) incident _____

- c) aspect _____

- d) proportion _____

- e) displace _____

3. The other target words from the text are given below. Complete the chart with the appropriate word forms.

Noun	Noun (person)	Verb	Adjective	Adverb
	-	cite	-	-
	-	intensify		
		advocate	-	-
	-	enforce	-	-
	-	diversify		

4. Check your answers in the mini dictionary.

5. Using the opinions from the reading and the notes you made from the listening, fill in the following table.

	For Computer games	Against Computer games
Physical Health		

Mental Health		
Education/ Intelligence		
Other		

6. Decide whether you are for or against computer games and underline ideas from the box that you agree with.

7. Look at the phrases below and put them into the correct section of the skill tip box below.

- I'm coming to that in a minute.
- I'd prefer to deal with that point later.
- Before you go on...
- May I interrupt at this point?
- Can I just say that...?
- That's an interesting point that I will come back to later.
- Excuse me...

ACADEMIC SKILL TIP: INTERRUPTING & DEALING WITH INTERRUPTIONS

When other people are speaking, you may want to interrupt them to add a point or to ask a question. To do this, some common phrases are:

- _____
- _____
- _____
- _____

Sometimes, you may not want to deal with the questions immediately. At such times, you may say:

- _____
- _____
- _____

8. Use the ideas that you underlined in the table and others of your own to try to persuade your friends to take your side of the argument. Use the phrases from the tip box to deal with interruptions.

Part D: SPEAKING

1. Choose one of the following ideas to present to the class as a persuasive speech.

- Children should be allowed to play computer games.
- Children should not be allowed to play computer games.

ACADEMIC SKILL TIP: GIVING A PERSUASIVE TALK

In a persuasive talk, a subject which people do not agree on is being described. Therefore, the speaker must acknowledge both sides of the subject and then explain and defend his or her ideas on the subject. A person's ability to persuade depends on how well ideas are thought out, explained and supported. Just like a problem – solution talk, the speaker must link all ideas together to show the connection between them. Refer back to unit 2 'Presenting a problem-solution talk' for ways to do this.

In addition to this, the speaker must use evidence to support what is being said.

When considering what evidence can be used to support a claim, there are different options available:

- Stories and personal anecdotes
- Statistics
- Research findings
- Other people's opinions
- General knowledge and facts
- Pictures

What evidence is used depends on what best supports the speaker's claim.

2. Get ready to explain and defend your opinion to the rest of the class. Use at least three of the AWL words from the box below.

principal	incident	aspect	cite	intensify
advocate	enforce	proportion	diversify	displace

For preparation, complete the following outline:

Introduction to situation:

Describe the situation in general.

Your opinion:

What do you believe about this subject?

Are there any limitations that you would add to your belief?

Evidence to support your opinion:

What are your reasons for holding this opinion?

Why is this opinion stronger than the opposing one?

Evaluation of your opinion:

What possible questions do you think the other students may ask you after your presentation?

How will you answer these questions?

ACADEMIC SKILL TIP: USING EFFECTIVE BODY LANGUAGE

In addition to the content and language structures used in a presentation, another important factor needed is effective use of body language. Body language is divided into several different features:

- **Eye contact**

Try to divide your audience into groups and move your eyes from one group to another to include the whole audience.

- **Voice**

Keep your tone interested without being too expressive and vary your volume, stressing important parts of the speech more than the others.

- **Hand gestures**

Avoid putting your hands in your pockets or behind your back. Use gestures to strengthen the message you are giving. This can be done by using gestures to do things such as point out something on a visual or count when listing information or giving a sequence of events.

- **Facial expressions**

Remember to smile and be as natural with your expressions as possible. This will help to build a friendly, open relationship with the audience.

- **Movement**

Avoid distracting behaviour like pulling on your sleeve, scratching, playing with your hair or pacing up and down. Move during the presentation, but do it gradually and not all the time.

3. Give your presentation to the rest of the class. Make sure you use the phrases from the tip boxes in this unit while explaining your opinion and pay attention to your body language.

Be prepared to answer questions during your presentation and ask questions when listening to others' presentations.

UNIT IV: GRAPHS – THE PERFECT SOLUTION!

By the end of this unit, I will be able to:

- check the audience is following
- invite others to contribute
- give a talk describing graphs and illustrations

At the end of this unit, I will be asked to:

‘give a talk describing graphs’



Part A: DISCUSSION

1. Answer the questions below in pairs.

a) Write a definition for the term ‘graph’.

b) What are the differences between a pie chart, a bar graph and a line graph?

c) What are the advantages of using graphs to show data?

d) How do you think the words ‘nodes’ and ‘edges’ are related to graphs?

2. Share your answers with the rest of the class.

Part B: READING

1. Read the text below and check your answers to the above questions.

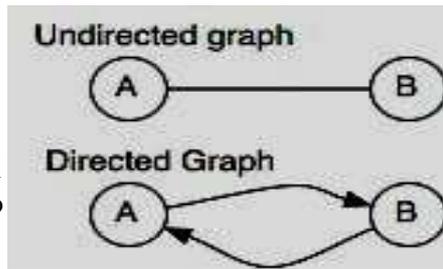
WHAT IS A GRAPH ?

A graph is a pictorial representation of the connections that exist between different items. There are many different types of graph like a pie chart, which represents data in a circle divided into a series of segments. Each segment represents a particular category. Another example is a bar graph, which shows data either horizontally or vertically. The important point about bar graphs is their bar length or height—the greater their length or height, the greater their value. Line graphs are yet another example and are more popular than all other graphs combined because their visual characteristics **reveal** data **trends** clearly. Line graphs, especially useful in the fields of statistics and science, are one of the most common tools used to present data. A line graph is a visual comparison of how two variables—shown on the x- and y-

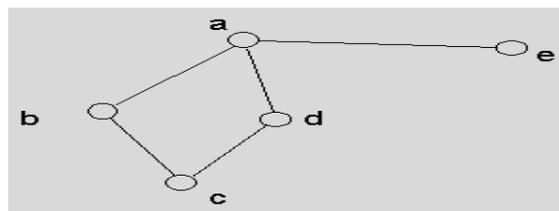
NOTES

axes—are related or vary with each other. It shows related information by drawing a continuous line between all the points on a grid.

Mathematically, a graph is a collection of nodes and edges. Nodes are locations that are connected together by the edges of the graph. The nodes in a graph represent people or animals, organizations, cities, countries, etc. and the lines represent relationships among them. To illustrate this kind of graph, if you had two small towns connected by a two-way road, you could represent this as a graph with two nodes, each node representing a town, and one edge, the road, connecting the two towns together. In addition to the undirected graph, in which the edge is a two-way connection, there are directed graphs, in which edges connect only one way. For instance, you could represent the previous example of two cities connected by a road as a directed graph consisting of two nodes and two edges, each edge connecting one of the nodes to the other. In the city example, it may also be convenient to record the distance between the two cities; this can be expressed by adding a 'weight' to an edge, which is a number that usually corresponds to the distance covered by an edge (the distance between two nodes).



It is important to keep in mind that the length of the lines does not usually mean anything. This is because all it is representing is that there is or is not a relationship. Similarly, the orientation of the drawing means nothing. For example, node 'e' in the graph below could have been placed in the middle of the drawing; this would not mean anything different. The only thing that matters is what is connected to what.



Computer scientists have developed a great deal of theory about graphs and operations on them. One reason for this is they **facilitate** problem solving. Graphs can be used to represent many problems in computer science that are otherwise **abstract**. Finding a way to represent the solution to a problem as a graph can present new approaches to solving the problem or even lead directly to a solution **derived** from graph theory. This sort of technique is often used when discussing algorithmic efficiency. Another reason for using graphs is that many problems that computers are used to solve involve representing relationships between objects, places, or concepts.

Because graphs can be either directed or undirected, they are a flexible method of showing connections. For example, you can describe who knows who in a room as a collection of nodes, each representing a person, and directed edges, each representing that one person knows another.

Adapted from an article by Stephen P. Borgatti 1996
from <http://www.analytictech.com/mb021/graphtheory.htm>

* Remember all bold words are on your course wordlist and need special attention

2. Answer the following questions according to the text.

a) After defining what nodes are, how does the writer help the reader understand them in more detail?

b) How does the writer help the reader understand directed graphs?

c) Why does the writer use the example of relationships between people in a room?

d) Are these explanations necessary? Why/Why not?

e) What structures does the writer use to give explanations?

3. Using the information from the text, complete the following tip box. Add any other structures that you know.

ACADEMIC SKILL TIP: ILLUSTRATING A POINT

In presentations, it is often necessary to give examples and extra explanation when talking about complex situations. To introduce examples/explanations, common phrases are:

- _____ *like*..... ..
- _____
- _____
- _____
- _____

4. The following target words appear in the reading. Match each target word with its definition.

- | | |
|-------------------|--|
| ___ 1. reveal | a. theoretical; not applied or practical |
| ___ 2. trend | b. obtain from a source or origin; originate |
| ___ 3. abstract | c. a general tendency or pattern |
| ___ 4. derive | d. to make easier or less difficult |
| ___ 5. facilitate | e. to lay open to view; display; exhibit |

Part C: LISTENING: VIDEO

1. Watch the video on “Graphs and Trends” and fill in the academic skill tip box below.

ACADEMIC SKILL TIP: DESCRIBING TRENDS, CHARTS & GRAPHS

- **the phrases used to refer to a graph:**
a) _____
b) _____
c) _____
d) _____
- **language used to describe bar graphs & line graphs**
Describing change:
a) Upward movement - e.g. to increase

- b) Downward movement – e.g. to decrease

- c) An end to movement – e.g. to flatten out

- d) No movement – e.g. to remain stable

Adjectives & adverbs that describe how big/small and fast/slow the change is:
e.g. dramatically

Describing causes:

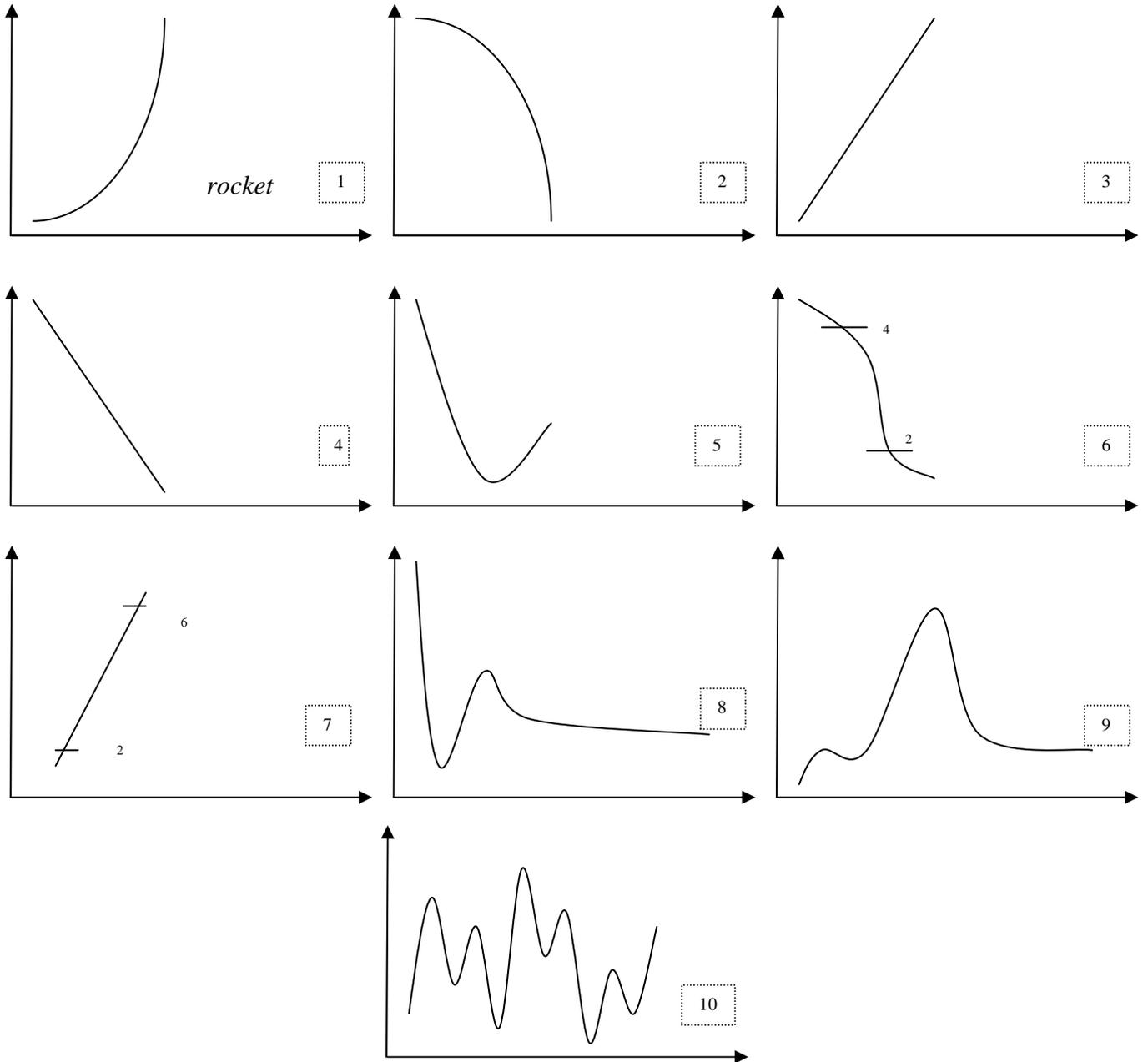
- **language used to describe pie charts**
e.g. Washing machines represent 15 % of sales.

2. Add the structures given below to the academic skill tip box.

stay (at) the same level / plunge / lessen / stabilize / boom / to remain constant / quickly / go down / slump / grow / rocket / go up / expand / gradually / level off

3. Match the following words to the graphs below:

recover improve rocket lessen triple stabilize plunge peak fluctuate bottom out halve



4. Choose other words from the Academic Tip Box in exercise 1. to describe each graph:

Graph 1	<u>boom</u>	<u>expand</u>	Graph 2	_____	_____
Graph 3	_____	_____	Graph 4	_____	_____
Graph 5	_____	_____	Graph 6	_____	_____
Graph 7	_____	_____	Graph 8	_____	_____
Graph 9	_____	_____	Graph 10	_____	_____

Part D: PREPARATION FOR PRESENTATION

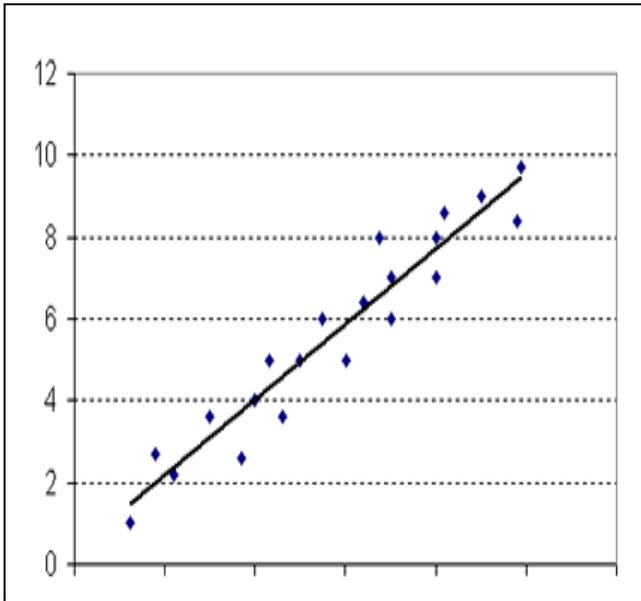
1. Use the structures given in the box to complete the academic skill tip.

Comparable to / Differs from / To be as...as / is different from / Both ...and / While / On the other hand / Neither ... nor / Whereas / Not only ...but also /Although / Similarly / However / On the contrary / In the same way / Likewise / In contrast / Correspondingly / Contrary to / Like / Unlike / To be the same as / More... than / To be similar to / To resemble / -er ... than / Not as ...as / To be equal to / Contrasts with

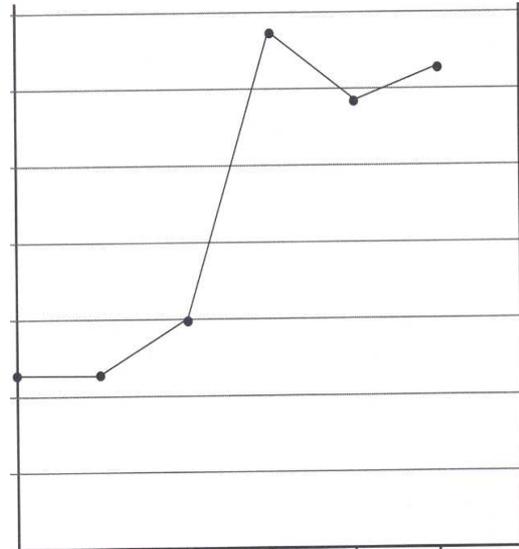
ACADEMIC SKILL TIP: COMPARISON & CONTRAST	
<p>To show <u>Comparison</u></p> <p>e.g. To be as...as</p> <ul style="list-style-type: none">• _____• _____	<p>To show <u>Contrast</u></p> <p>e.g. In opposition to</p> <ul style="list-style-type: none">• _____• _____

2. In pairs, choose two of the graphs overleaf and decide what kind of information they are showing. Make notes on their features and any similarities and/or differences they have.

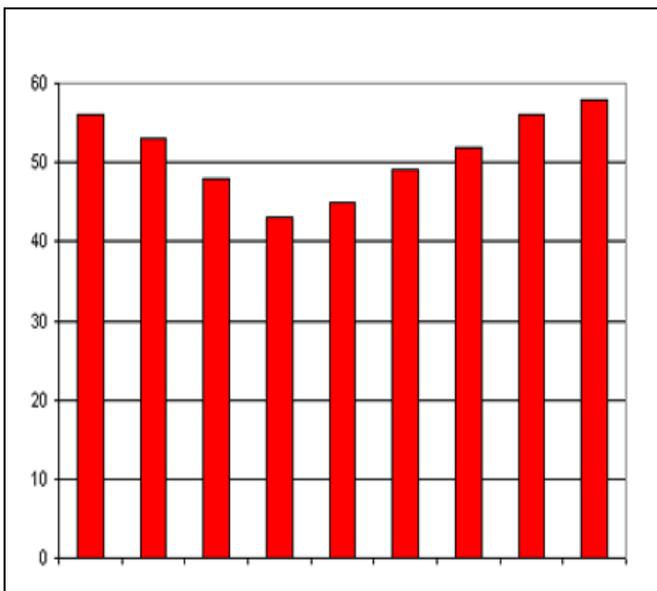
Graph 1



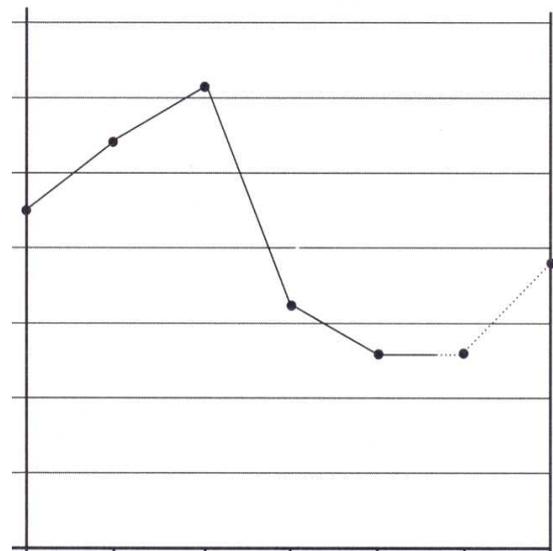
Graph 2



Graph 3



Graph 4



ACADEMIC SKILL TIP: DESCRIBING/EXPLAINING ILLUSTRATIONS

Describing or explaining an object or an illustration is a routine activity while giving a presentation. When beginning the description, it is important to define what it is that is being described. A definition of the item or an explanation of exactly what the illustration represents will help the audience to understand its general purpose. The use of visuals to strengthen a presentation is very common, but it is something that is not always done well. There are certain things that can be done to make the explanation of visuals easier.

The most important point is organisation. This can be done:

- from general to specific

The object/illustration is introduced and its major parts are given. Then each part in turn is described in detail including any sub parts.

- spatially

The object/illustration can be explained from top to bottom (or vice versa), left to right (or vice versa), front to back or clockwise/anticlockwise.

- order of importance

Some objects/illustrations may consist of a more important part and then less important ones. The object can be described either from the most important to least important or vice versa.

- logically

If the relationship between parts of an object or illustration has to be done in a certain order for it to make sense, then the speaker can use this logic to explain the items.

There are other things that can be done to improve a description. These include:

- pointing with words

For example, This is a... These are... Here you have the... This is the....and that is the... This is called a.... And next is the... This is the upper....and below it is the lower...

- using non verbal behaviour

In addition, the use of certain structures/vocabulary items can be used to make the description as rich as possible. See structures from this unit for useful options.

3. Get ready to explain and defend your final decisions to the rest of the class by completing the following outline:

Situation:

Explain what the statistics you are going to explain are.

Description of the first graph:

What features can be seen in the graph?

What do these features show?

Description of the second graph:

What features can be seen in the graph?

What do these features show?

Comparison of graphs:

In what ways are the graphs similar?

In what ways are they different?

Evaluation and support of your description and comparison:

What possible questions do you think the other students may ask you after your presentation?

How will you answer these questions?

4. Give your presentation to the rest of the class. Make sure you use at least five of the phrases/vocabulary items from the tip boxes and exercises in this unit while explaining your solution.

5. While the other pairs are giving their presentations, use the following criteria to give constructive feedback. For this exercise, you do not need to give feedback on visual aids.

Note: Remember that the other groups will also do this to you, so make your feedback as helpful as possible. Avoid being rude or negative.

poor satisfactory
 good excellent

System

general organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
introduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ending	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
connections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
relevance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
length	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Manner

audience contact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
interest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
assurance/confidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Body language

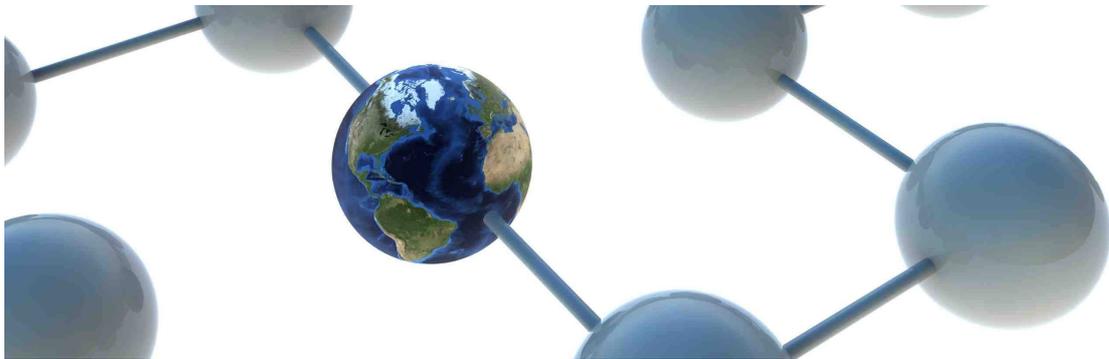
stance and posture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
hands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
eye contact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
movement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
facial expression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Visual aids

number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
relevance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall impression

English for Academic Purposes



Mini-Dictionary (Faculty of Engineering and Computer Sciences)

Entries taken from: Longman Dictionary of Contemporary English (2003), Harlow (UK): Pearson Education

Note: Transitive and Intransitive Verbs

Transitive verbs have an object.

e.g. advocate *Some people still advocate genetic engineering of plants and animals.*

Intransitive verbs have no object.

e.g. fluctuate *Cholesterol levels fluctuate during the day.*

Some verbs can be both transitive and intransitive.

e.g. intensify *The fighting in the civil war intensified in the summer months.* (intransitive)

His mother's death intensified his loneliness. (transitive)

A

abstract (adjective) [\neq concrete]

1 based on general ideas or principles rather than specific examples or real events

By the age of seven, children are capable of thinking in abstract terms.

Human beings are the only creatures capable of abstract thought (=thinking about ideas).

2 existing only as an idea or quality rather than as something real that you can see or touch [\neq concrete]:
the abstract nature of beauty

3 abstract paintings, designs etc consist of shapes and patterns that do not look like real people or things

SYNONYMS: conceptual, theoretical

accurate (adjective)

1 correct and true in every detail [\neq inaccurate]

The brochure tries to give a fair and accurate description of each hotel.

Police believe Derek gave a reasonably accurate account of what happened.

2 measured or calculated correctly [\neq inaccurate]

It is difficult to get accurate figures on population numbers.

3 a machine that is accurate is able to do something in an exact way without making a mistake

The cutter is accurate to within $\frac{1}{2}$ a millimetre.

accurately (adverb)

It's impossible to predict the weather accurately.

accuracy (noun) [uncountable]

1 the ability to do something in an exact way without making a mistake:

He passes the ball with unerring accuracy.

2 the quality of being correct or true [\neq inaccuracy]

accuracy of: worries about the accuracy of government statistics

advocate (verb) [transitive]

to publicly say that something should be done

Extremists were openly advocating violence.

Some people still advocate genetic engineering of plants and animals as the greatest single technology that will feed the world.

SYNONYMS: defend, propose, support

advocate (noun) [countable]

1 someone who publicly supports someone or something

advocate of

She's a passionate advocate of natural childbirth.

advocate for

an advocate for the disabled

2 a lawyer who speaks in a court of law, especially in Scotland

SYNONYMS: defender, proponent, supporter

advocacy (noun) [uncountable]

She is well-known for her advocacy of human rights.

ambiguous (adj) [\neq unambiguous]

something that is ambiguous is unclear, confusing, or not certain, especially because it can be understood in more than one way

The language in the Minister's statement is highly ambiguous.
His role in the matter is ambiguous.
The results of the experiments were ambiguous and they will have to be done again.

ambiguously (adv)

The legislation had been ambiguously worded.

ambiguity (noun) plural **ambiguities** [uncountable and countable]

the state of being unclear, confusing, or not certain, or things that produce this effect
ambiguity in

There was an element of ambiguity in the president's reply.

analyse (verb) [transitive]

1 to examine or think about something carefully, in order to understand it:

She still needs to analyse the data.

You need to sit down and analyse why you feel so upset.

Joe had never tried to analyze their relationship.

2 to examine a substance to see what it is made of:

The cell samples are analyzed by a lab.

3 to examine someone's mental or emotional problems by using psychoanalysis

SYNONYMS: study, do research, carry out research

analysis (noun) plural **analyses**

1 [uncountable and countable] a) a careful examination of something in order to understand it better

analysis of: a detailed analysis of the week's news

Further analysis of the data is needed.

do/carry out/conduct an analysis: They were doing some type of statistical analysis.

b) the way in which someone describes a situation or problem, and says what causes it to happen

analysis of: Do you agree with Marx's analysis of the failure of free-market capitalism?

2 [uncountable and countable] a careful examination of a substance to see what it is made of

analysis of: analysis of genetic material

for analysis: Blood samples were sent for analysis.

You'll get the results when the analysis is complete.

3 [uncountable] a process in which a doctor makes someone talk about their past experiences, relationships etc in order to help them with mental or emotional problems [= psychoanalysis]

She's been in analysis for three years.

SYNONYMS: examination, check, study

analyst (noun) [countable]

1 someone whose job is to think about something carefully in order to understand it, and often to advise other people about it

Political analysts expect the Social Democrats to win.

A systems analyst is someone whose job is to look after a company's computer and software needs.

2 a doctor who helps people who have mental or emotional problems by making them talk about their experiences and relationships

analytical (adverb)

Some students have a more analytical approach to learning.

approach (verb)

1 move towards [intransitive and transitive] to move towards or nearer to someone or something:

As I approached the house, I noticed a light on upstairs.

She heard footsteps approaching.

2 ask [transitive] to ask someone for something, or ask them to do something, especially when you are asking them for the first time or when you are not sure if they will do it

approach somebody for something: Students should be able to approach teachers for advice.

approach somebody/something about (doing) something: The charity approached several stores about giving food aid.

I have already been approached by several other companies (=offered a job, work etc).

3 future event [intransitive and transitive] if an event or a particular time approaches, or you approach it, it is coming nearer and will happen soon:

She was then approaching the end of her career.

The time is fast approaching when we will have to make a decision.

With winter approaching, many animals are storing food.

4 deal with [transitive] to begin to deal with a situation or problem in a particular way or with a particular attitude

approach a problem/task/matter etc: It might be possible to approach the problem in a different way.

SYNONYMS: contact, advance, come /go towards

approach (noun)

1 method [countable] a method of doing something or dealing with a problem

approach to: a new approach to teaching languages

He decided to adopt a different approach and teach the Bible through story-telling.

This book takes an unorthodox approach to art criticism.

organizations which take a positive approach to creative thinking

2 ask [countable] a request from someone, asking you to do something for them:

They made a direct approach to the minister of education.

3 the approach of something is the fact that it is getting closer:

the approach of autumn

It's a sign of the approach of middle age.

4 movement towards [uncountable] movement towards or near to something:

Our approach frightened the birds.

SYNONYMS: way, method, technique

aspect (noun)

1 [countable] one part of a situation, idea, plan etc that has many parts

aspect of: Dealing with people is the most important aspect of my work.

Alcoholism affects all aspects of family life.

2 [countable] the direction in which a window, room, front of a building etc faces:

a south-facing aspect

3 [singular, uncountable]: literary: the appearance of someone or something:

The storm outside gave the room a sinister aspect.

SYNONYMS: part, side, feature

assemble (verb)

1 [intransitive and transitive] if you assemble a large number of people or things, or if they assemble, they are gathered together in one place, often for a particular purpose

A large crowd had assembled outside the American embassy.

She had assembled a collection of her favourite songs.

2 [transitive] to put all the parts of something together

The aircraft will continue to be assembled in France.

SYNONYMS: collect, construct, manufacture

assess (verb) [transitive]

1 to make a judgment about a person or situation after thinking carefully about it [= judge]

assess the impact/extent/effectiveness etc of something: a report to assess the impact of advertising on children

assess what/how etc: The technique is being tried in classrooms to assess what effects it may have.

be assessed as something: Many of the adults were assessed as having learning difficulties.

2 to calculate the value or cost of something

be assessed at something: The value of the business was assessed at £1.25 million.

SYNONYMS: estimate, judge, evaluate

assessment (noun) [uncountable and countable]

1 a process in which you make a judgment about a person or situation, or the judgment you make

What's Michael's assessment of the situation?

Assessment is by means of a written exam at the end of the course.

a reading assessment test

2 a calculation about the cost or value of something

a tax assessment

automate (verb) [transitive]

to start using computers and machines to do a job, rather than people

Cash machines automate two basic functions of a bank - deposits and withdrawals.

Other monitoring devices may also be connected and data acquisition is fully automated.

automatic (adjective)

1 an automatic machine is designed to work without needing someone to operate it for each part of a process:

an automatic weapon

an automatic gearbox

My camera is fully automatic.

2 something that is automatic always happens as a result of something you have done, especially because of a rule or law:

Littering results in an automatic fine.

3 done without thinking, especially because you have done the same thing many times before:

Practise the breathing techniques until they become automatic.

SYNONYM: mechanical

automation (noun) [uncountable]

the use of computers and machines instead of people to do a job

available (adjective) [≠ unavailable]

1 something that is available is able to be used or can easily be bought or found:

Tickets are available from the box office.

available to: Not enough data is available to scientists.

available to do something: Funds are available to assist teachers who want to attend the conference.

available for: No figures are available for the number of goods sold.

Meetings were held to update employees as soon as new information became available.

Further building can continue when money is made available.

2 [not before noun] someone who is available is not busy and has enough time to talk to you:

Mr Collins was not available for comment on Thursday night.

3 someone who is available does not have a wife, boyfriend etc, and therefore may want to start a new romantic relationship with someone else

SYNONYMS: free, spare usable

availability (noun) [uncountable]

Unemployment rates are high because the availability of jobs is limited.

B

beneficial (adj) [≠ damaging]

having a good effect

a drug that has a beneficial effect on the immune system

Cycling is highly beneficial to health and the environment.

beneficially (adverb)

benefit (noun)

1 advantage [uncountable and countable]- an advantage, improvement, or help that you get from something

The new credit cards will be of great benefit to our customers.

I never had the benefit of a university education.

We want him to get maximum benefit from the course.

2 money from government [uncountable and countable]: money provided by the government to people who are sick, unemployed, or have little money [= welfare American English]

unemployment/housing/child etc benefit

You might be entitled to housing benefit.

3 extra things [countable usually plural]

extra money or other advantages that you get as part of your job or from insurance that you have:

We offer an excellent benefits package.

medical benefits

SYNONYMS: advantage, help, aid

benefit (verb) past tense and past participle **benefited**, present participle **benefiting** [intransitive and transitive]

if you benefit from something or it benefits you, it gives you an advantage, improves your life, or helps you in some way:

They are working together to benefit the whole community.

benefit from/by: Many thousands have benefited from the new treatment.

They would benefit by reducing their labour costs.

benefit greatly/enormously/considerably etc: I'm sure you'll benefit greatly from the visit.

SYNONYMS: help, aid

C

capable (adjective) [≠ incapable]

1 capable of (doing) something: having the qualities or ability needed to do something:

I don't think he's capable of murder.

The company isn't capable of handling an order that large.

I'm perfectly capable of looking after myself, thank you!

2 able to do things well:

a strong, capable woman

SYNONYMS: efficient, effective, well-organised

capability (noun) plural **capabilities** [countable]

1 the natural ability, skill, or power that makes a machine, person, or organization able to do something, especially something difficult:

the country's manufacturing capability

capability to do something

Does the company have the capability to change to meet market needs?

I can speak French, but simultaneous translation is beyond my capabilities (=too difficult).

2 the ability that a country has to take a particular kind of military action

military/nuclear etc capability: America's nuclear capability

SYNONYMS. ability, capacity, skill

challenge (noun)

1 [uncountable and countable] something that tests strength, skill, or ability, especially in a way that is interesting

The company is ready to meet the challenges of the next few years.

Martins now faces the biggest challenge of his career.

2 [countable] when someone refuses to accept that someone or something is right and legal

a direct challenge to the Governor's authority

The president faces a strong challenge from nationalists.

3 [countable] when someone tries to win something or invites someone to try to beat them in a fight

The Prime Minister narrowly avoided a leadership challenge last year.

challenge (verb) [transitive]

1 to refuse to accept that something is right, fair, or legal

a boy with a reputation for challenging the authority of his teachers

Viewpoints such as these are strongly challenged by environmentalists.

2 to invite someone to compete or fight against you, or to try to win something

After lunch Carey challenged me to a game of tennis.

Liverpool are challenging for the title (=in a position where they could win) .

3 to test the skills or abilities of someone or something

Every teacher ought to be challenging kids to think about current issues.

challenging (adj)

difficult in an interesting or enjoyable way

Teaching young children is a challenging and rewarding job.

challengingly (adv)

cite (verb) [transitive] formal

1 to mention something as an example, especially one that supports, proves, or explains an idea or situation:

The judge cited a 1956 Supreme Court ruling in her decision.

cite something as something: Several factors have been cited as the cause of the unrest.

2 to give the exact words of something that has been written, especially in order to support an opinion or prove an idea [= quote]:

The passage cited above is from a Robert Frost poem.

3 to order someone to appear before a court of law

cite somebody for something

Two managers had been cited for similar infractions.

SYNONYMS: quote, mention, name

citation (noun) [countable]

The Oxford English Dictionary's first citation for the word "garage" is from 1902.

SYNONYMS: quotation, mention

code (noun)

1 [countable] a set of rules, laws, or principles that tell people how to behave

The Torah is the basis for all the Jewish laws and their moral code.

Each state in the US has a different criminal and civil code.

2 [uncountable and countable] a system of words, letters, or symbols that you use instead of ordinary writing, so that the information can only be understood by someone else who knows the system

All reports must be sent in code.

They didn't realise that we'd broken their secret code.

3 [countable] a set of numbers, letters, or symbols that shows what something is or gives information about it

Goods that you order must have a product code.

code (verb) [transitive usually passive]

1 to put a set of numbers, letters, or symbols on something to show what it is or give information about it

Each path is coded to show the level of difficulty.

2 to put a message into code so that it is secret

compile (verb)[transitive]

1 to make a book, list, record etc, using different pieces of information, music etc

The document was compiled by the Department of Health

compile something from/for something: The report was compiled from a survey of 5000 households.

2 technical: to put a set of instructions into a computer in a form that it can understand and use

SYNONYMS: write, compose

compilation (noun)

1 [countable] a book, list, record etc which consists of different pieces of information, songs etc

compilation of

a compilation of love songs

compilation CD/album/tape

A team of four were involved in the compilation of the book.

2 [uncountable] the process of making a book, list, record etc from different pieces of information, songs etc

dictionary compilation

A new compilation of his best songs is now available.

SYNONYM: collection

component (noun) [countable]

one of several parts that together make up a whole machine, system etc [= constituent]:

companies that make electronic components for computer products

component of: each component of their work

key/major/important etc component: Exercise is one of the key components of a healthy lifestyle.

SYNONYMS: part, bit, piece

concept (noun) [countable]

an idea of how something is, or how something should be done

concept of: the concept of total patient care

the concept of infinite space

concept that: the concept that we are citizens of one world

a new concept in business travel

our basic concepts of decent human behaviour

It's very simple, once you grasp the concept.

SYNONYMS: theory, idea, notion

conceptualize (verb) also **conceptualise** (British English) [intransitive and transitive]

to form an idea

How do older people conceptualize their health?

conclude (verb)

1 [transitive] to decide that something is true after considering all the information you have

conclude that

The report concluded that the school should be closed immediately.

conclude from something that

Richardson concluded from his studies that equality between the sexes is still a long way off.

2 [transitive] formal to complete something you have been doing, especially for a long time

When the investigation is concluded, the results will be sent to the US Attorney's office.

Francis, having concluded his business with James, left for Miami.

3 [intransitive and transitive] to end something such as a meeting, book, event, or speech by doing or saying one final thing

conclude with

Each chapter concludes with a short summary.

SYNONYMS: complete, end

conclusion (noun)

1 [countable] something you decide after considering all the information you have

These are the report's main conclusions.

conclusion (that)

I soon came to the conclusion that she was lying.

It is still too early to reach a conclusion on this point.

The police came to the inescapable conclusion that the children had been murdered.

2 [countable] formal the end or final part of something

conclusion of

At the conclusion of the meeting, little progress had been made.

3 in conclusion

used in a piece of writing or a speech to show that you are about to finish what you are saying

In conclusion, I would like to say how much I have enjoyed myself today.

convert (verb)

1 a) [transitive] to change something into a different form of thing, or to change something so that it can be used for a different purpose or in a different way

convert something to/into something: They converted the spare bedroom into an office.

The stocks can be easily converted to cash.

b) [intransitive] to change into a different form of thing, or change into something that can be used for a different purpose or in a different way

convert to/into: a sofa that converts into a bed

In the process, the light energy converts to heat energy.

2 a) [transitive] to persuade someone to change to a different religion

convert somebody to something: European missionaries converted thousands to Christianity.

b) [intransitive] to change to a different religion

convert to: She converted to Catholicism.

SYNONYMS: adapt, modify, customise

conversion (noun) [uncountable and countable]

1 when you change something from one form, purpose, or system to a different one

conversion into

The warehouse was undergoing conversion into apartments.

conversion of

the conversion of waste into usable products

conversion to

The British conversion to the metric system took place in the 1970s.

2 when someone changes from one religion or belief to a different one

conversion to

a conversion to vegetarianism

SYNONYMS: change, adaptation

convertible (adj)

1 an object that is convertible can be folded or arranged in a different way so that it can be used as something else

a convertible sofa

2 technical able to be exchanged for the money of another country

a convertible currency

correspond (verb) [intransitive]

1 if two things or ideas correspond, the parts or information in one relate to the parts or information in the other:

The two halves of the document did not correspond.

correspond with/to: The numbers correspond to points on the map.

2 to be very similar to or the same as something else

correspond to: The French 'baccalauréat' exam roughly corresponds to British A levels.

3 to write letters to someone and receive letters from them

For the next three years they corresponded regularly.

correspond with: She stopped corresponding with him after the death of her mother.

SYNONYMS: agree, coincide, contact

create (verb) [transitive]

1 to make something exist that did not exist before:

Some people believe the universe was created by a big explosion.

Her behaviour is creating a lot of problems.

The new factory is expected to create more than 400 new jobs.

2 to invent or design something:

This dish was created by our chef Jean Richard.

Philip Glass created a new kind of music.

The software makes it easy to create colourful graphs.

SYNONYMS: invent, make, produce

creation (noun)

1 [uncountable] the act of creating something

creation of

The plan should result in the creation of 2000 new jobs.

the creation of a single European currency

2 [countable] something that has been created

The dress is a fantastic creation in green, gold, and white.

Most countries have systems of government that are relatively modern creations.

creator (noun)

1 [countable] someone who made or invented a particular thing

creator of

Walt Disney, the creator of Mickey Mouse

creative (adj) [≠ uncreative, unproductive, untalented]

1 involving the use of imagination to produce new ideas or things

This job is so boring. I wish I could do something more creative. I teach creative writing at Trinity College. the creative process of writing a poem Diaghilev did his great creative work in France. a creative solution to the problem

2 someone who is creative is very good at using their imagination to make things

You're so creative! I could never make my own clothes.

creativity (noun) [uncountable]

the ability to use your imagination to produce new ideas, make things etc:

artistic creativity

Teachers have been attacked for stopping creativity in their pupils.

Editors complain about the lack of creativity in the ideas put to them.

SYNONYMS: productive, original, inventive

D

deduct (verb) [transitive] [≠add, increase, raise]

to take away an amount or part from a total

deduct something from something

The payments will be deducted from your salary.

SYNONYMS: subtract, reduce, withdraw

deduction (noun) [uncountable and countable]

1 the process of using the knowledge or information you have in order to understand something or form an opinion, or the opinion that you form

Children will soon make deductions about the meaning of a word.

2 the process of taking away an amount from a total, or the amount that is taken away

After deductions for tax etc, your salary is about £700 a month.

SYNONYMS: conclusion, subtraction

derive (verb)

1 [transitive] to get something, especially an advantage or a pleasant feeling, from something

derive something from something

Medically, we will derive great benefit from this technique.

derive pleasure/enjoyment etc: Many students derived enormous satisfaction from the course.

2 also be derived [intransitive and transitive] to develop or come from something else

derive from: This word is derived from Latin.

patterns of behaviour that derive from basic beliefs

3 [transitive] technical: to get a chemical substance from another substance

be derived from something

The enzyme is derived from human blood.

SYNONYMS: come from, originate, develop from

derivation (noun) [countable, uncountable +of]

(technical) the origin of something, especially a word

detect (verb) [transitive]

to notice or discover something, especially something that is not easy to see, hear etc:

Many forms of cancer can be cured if detected early.

difficult/impossible/easy/possible etc to detect

detect a change/difference: : Dan detected a change in her mood.

SYNONYMS: notice, note, observe

detectable (adj)

The drug is detectable in the patient's body for up to three months after it has been taken.

detection (noun) [uncountable]

when something is found that is not easy to see, hear etc, or the process of looking for it

detection of

Early detection of the disease is vital.

discriminate (verb)

1 [intransitive]to treat a person or group differently from another in an unfair way

discriminate against

Under federal law, it is illegal to discriminate against minorities and women.

discriminate on the grounds/basis of something It was found that the company still discriminated on the basis of race in promotions.

2 [intransitive and transitive]to recognize a difference between things

discriminate between

Newborn babies can discriminate between a man's and a woman's voice.

discriminate something from something

the process of learning to discriminate fact from opinion

SYNONYMS: differentiate, distinguish, separate

discrimination (noun)

1 the practice of treating one person or group differently from another in an unfair way

laws to prevent discrimination

discrimination against

widespread discrimination against older people in the job market

The most common victims of age discrimination are employees in their mid-50s.

2 the ability to recognize the difference between two or more things, especially the difference in their quality

shape discrimination

Discrimination between these two shades of blue is difficult.

SYNONYMS: differentiate, separate, tell the difference between

displace (verb) [transitive]

1 to take the place or position of something or someone

Coal has been displaced by natural gas as a major source of energy

2 to make a group of people or animals have to leave the place where they normally live

Fifty thousand people have been displaced by the fighting.

3 to force something out of its usual place or position

The water displaced by the landslides created a tidal wave.

SYNONYM: replace

diverse (adj)

very different from each other

subjects as diverse as pop music and archaeology

It is difficult to design a program that will meet the diverse needs of all our users.

diversely (adverb)

diversify (verb) past tense and past participle **diversified**, present participle **diversifying**, third person singular **diversifies**

1 [intransitive and transitive] if a business, company, country etc diversifies, it increases the range of goods or services it produces

diversify (away) from: farmers forced to diversify away from their core business

diversify into: The company is planning to diversify into other mining activities.

We need to diversify the economy.

2 [intransitive and transitive] to change something or to make it change so that there is more variety:

User requirements have diversified over the years.

3 [intransitive] (technical) to put money into several different types of investment instead of only one or two

diversify into: Spread the risk by diversifying into dollar bonds.

c: branch out

SYNONYMS: adapt, change

diversity (noun)

1 [uncountable]the fact of including many different types of people or things
cultural/ethnic/linguistic etc diversity

The curriculum will take account of the ethnic diversity of the population.

2 [singular]a range of different people, things, or ideas
a diversity of opinions

E

emerge (verb) [intransitive]

1 to appear or come out from somewhere

The flowers emerge in the spring.

emerge from

The sun emerged from behind the clouds.

2 if facts emerge, they become known after being hidden or secret

Eventually the truth emerged .

Later it emerged that the judge had employed an illegal immigrant.

3 to come out of a difficult experience

emerge from

She emerged from the divorce a stronger person.

SYNONYMS: come out, appear

emergence (noun) [uncountable]

1 when something begins to be known or noticed

emergence of

the emergence of Japan as a world leader

2 when someone or something comes out of a difficult experience

emergence from

the company's emergence from bankruptcy

enable (verb) [transitive]

to make it possible for someone to do something, or for something to happen

enable somebody/something to do something: The loan enabled Jan to buy the house.

There are plans to enlarge the runway to enable jumbo jets to land.

SYNONYMS: make something possible, allow, permit

enforce (verb) [transitive]

1 to make people obey a rule or law

enforce a law/ban etc

Governments make laws and the police enforce them.

Parking restrictions will be strictly enforced .

2 to make something happen or force someone to do something

enforce something on somebody

It is unlikely that a record company would enforce its views on an established artist.

SYNONYM: impose

enforceable (adjective) [≠unenforceable]

The recommendations are not legally enforceable.

enforcement (noun) [uncountable]

when people are made to obey a rule, law etc

She's looking for a career in law enforcement, i.e. the police.

They should also be given and encouraged to use enforcement powers where necessary.

equip (verb) past tense and past participle **equipped** present participle **equipping** [transitive]

1 to provide a person or place with the things that are needed for a particular kind of activity or work
equip somebody/something with something

They spent a lot of money equipping the school with new computers.

He equipped himself with a hammer and nails.

2 to give someone the information and skills that they need to do something

equip somebody with something

We equip students with the skills they will need once they leave college.

We must equip young teachers to deal with difficult children.

SYNONYMS: prepare, provide, supply

equipment (noun)

1 [uncountable]the tools, machines, clothes etc that you need to do a particular job or activity

a shop selling camping equipment

some brand new computer equipment

2 [singular] the process of equipping someone or something

equipment of

A lot of money was spent on the equipment of the new hospital.

establish (verb) [transitive]

1 to set up or start a company, organization, system, etc that is intended to exist or continue for a long time [= found]

The city of Boerne was established by German settlers in the 1840s.

Our goal is to establish a new research centre in the North.

2 to begin a relationship with someone or a situation that will continue

establish relations/links/contact etc (with somebody)

Hungary established diplomatic relations with Chile in 1990.

I wondered why he should bother to try and establish contact with me.

3 to find out facts that will prove that something is true:

The police must establish the facts of the case before proceeding.

SYNONYMS: determine, identify, found

establishment (noun)

1 [countable] formal an organization or institution, especially a business, shop etc

a top class training establishment

2 the establishment

the group of people in a society or profession who have a lot of power and influence and are often opposed to any kind of change or new ideas

Young people are supposed to rebel against the Establishment.

3 [uncountable] the act of starting an organization, relationship, or system

the establishment of NATO in 1949

expand (verb)

1 [intransitive and transitive]to become larger in size, number, or amount, or to make something become larger

Water expands as it freezes.

Sydney's population expanded rapidly in the 1960s.

2 [intransitive and transitive] if a company, business etc expands, or if someone expands it, they open new shops, factories etc

The computer industry has expanded greatly over the last decade.

the rapidly expanding field of information technology

3 [intransitive] (literary) to become more confident and start to talk more

After a few whiskies he started to expand a little.

SYNONYMS: develop, enlarge, increase

expandable (adj)

able to be increased or made larger

expansion (noun)

1 [uncountable and countable]when something increases in size, range, amount etc

expansion of

The rapid expansion of cities can cause social and economic problems.

2 [uncountable and countable] when a company, business etc becomes larger by opening new shops, factories etc

The industry has just undergone a period of rapid expansion .

SYNONYM: growth

F

facilitate (verb) [transitive]

(formal) to make it easier for a process or activity to happen:

Computers can be used to facilitate language learning.

SYNONYMS: make something easier, simplify, ease

facilitator (noun) [countable]

- 1 someone who helps a group of people discuss things with each other or do something effectively
- 2 (technical) something that helps a process to take place

flexible (adjective) [≠inflexible]

- 1 a person, plan etc that is flexible can change or be changed easily to suit any new situation:

We can be flexible about your starting date.

Our new computer software is extremely flexible.

The government needs a more flexible approach to education.

- 2 something that is flexible can bend or be bent easily:

shoes with flexible rubber soles

flexibility (noun) [uncountable]

- 1 the ability to change or be changed easily to suit a different situation:

Employees expect flexibility in the workplace.

- 2 the ability to bend or be bent easily:

Stretching exercises will help your flexibility.

flexibly (adv)

Today's schedule of events is organized flexibly so that people can decide for themselves what they want to do.

fluctuate (verb) [intransitive] [≠ remain, stay]

if a price or amount fluctuates, it keeps changing and becoming higher and lower

Cholesterol levels in the blood fluctuate in the course of a day.

fluctuate between

Prices were volatile, fluctuating between \$20 and \$40.

fluctuate around

The number of children in the school fluctuates around 100.

Insect populations fluctuate a lot from year to year.

SYNONYM: vary

fluctuation (noun) [uncountable and countable]

a change in a price, amount, level etc

fluctuation in

the fluctuation in interest rates

Prices are subject to fluctuation.

SYNONYM: variation

formula (noun) plural **formulas** or **formulae**

- 1 [singular] a method or set of principles that you use to solve a problem or to make sure that something is successful:

We're still searching for a peace formula.

formula for: a formula for the withdrawal of US forces from the area

- 2 [countable] a series of numbers or letters that represent a mathematical or scientific rule:

the formula for calculating distance

Sugar is represented by the simple formula CHO.

- 3 [countable] a list of the substances used to make a medicine, fuel, drink etc, showing the amounts of each substance that should be used:

Our products are handmade from traditional formulas.

formulate (verb) [transitive]

- 1 to develop something such as a plan or a set of rules, and decide all the details of how it will be done

formulate a policy/plan/strategy etc

Tawney formulated Labour Party education policy in 1922.

formulate an idea/theory

Charles Darwin formulated the theory of natural selection.

- 2 to think carefully about what to say, and say it clearly

We are studying the situation but have not formulated any response yet.

SYNONYM: plan

formulation (noun) [uncountable and countable]

The formulation of clear objectives is very important for the success of our project.

G

H

I

impact (noun)

1 [countable] the effect or influence that an event, situation etc has on someone or something
impact on/upon: We need to assess the impact on climate change.

impact of: an international meeting to consider the environmental impacts of global warming
2 [uncountable and countable] the force of one object hitting another:

The force of the impact knocked the breath out of her.

3 on impact: at the moment when one thing hits another:

The plane's wing was damaged on impact.

SYNONYMS: effect, blow, collision

impact (verb) [intransitive and transitive] especially American English

to have an important or noticeable effect on someone or something

impact on/upon

The Food Safety Act will progressively impact on the way food businesses operate.

[intransitive and transitive] especially American English

to have an important or noticeable effect on someone or something

impact on/upon

The Food Safety Act will progressively impact on the way food businesses operate.

How is the growth of e-commerce likely to impact the retail sector?

incident [countable]

1 an event, especially one that is unusual, important, or violent

A spokesman said it was an isolated incident.

Friday's shooting incident in East London led to several arrests.

without incident

The plane landed without incident.

2 a serious disagreement between two countries

You could have caused a major diplomatic incident.

cS: event, happening, occurrence

incidental (adj)

1 happening or existing in connection with something else that is more important

The concert is just for fun, really. Any profit we make from it will be incidental.

2 [not before noun] naturally happening as a result of something

incidental to

Drinking too much is almost incidental to working in a bar.

incidentally (adv)

1 [sentence adverb] used to add more information to what you have just said, or to introduce a new subject that you have just thought of

Incidentally, where were you born?

The wine, incidentally, goes very well with a nice piece of cheese.

2 in a way that was not planned, but as a result of something else

Quite incidentally, I got some useful information at the party.

SYNONYM: by the way

incorporate (verb) [transitive]

to include something as part of a group, system, plan etc

incorporate something into/in something: We've incorporated many environmentally-friendly features into the design of the building.

Our original proposals were not incorporated in the new legislation.

SYNONYM: include

incorporation (noun) [uncountable]

A user's guide is incorporated with most new software.

index (noun) [countable]

1 plural indexes: an alphabetical list of names, subjects etc at the back of a book, with the numbers of the pages where they can be found

You will find the information more quickly if you look in the index.

SYNONYMS: contents, bibliography

index (verb) [transitive] [usually passive]

1 if documents, information etc are indexed, an index is made for them

The reports are indexed by subject and location.

2 to arrange for the level of wages, pensions etc to increase or decrease according to the level of prices

index to (British English) demands that wages be indexed to the rise in prices

index for (American English) an amount indexed for inflation

induce (verb) [transitive]

1 (formal) to persuade someone to do something, especially something that does not seem wise

induce somebody to do something

Nothing would induce me to vote for him again.

2 medical to make a woman give birth to her baby, by giving her a special drug

She had to be induced because the baby was four weeks late. The doctor decided to induce labour .

3 (formal) to cause a particular physical condition

These drugs may induce comas in some patients.

SYNONYMS: bring about, encourage, generate

induction (noun)

1 [uncountable and countable]the introduction of someone into a new job, company, official position etc, or the ceremony at which this is done

induction course/programme/period etc a two-day induction course Mrs Simpson is responsible for the induction of new library staff.

2 [uncountable and countable] medical the process of making a woman give birth to her baby by giving her a special drug

3 [uncountable] technical the production of electricity in one object by another that already has electrical or magnetic power

4 [uncountable] technical a process of thought that uses known facts to produce general rules or principles

infer (verb) past tense and past participle **inferred** present participle **inferring** [transitive]

to form an opinion that something is probably true because of information that you have

infer something from something

A lot can be inferred from these statistics.

It is easy to infer that the marriage was not a very happy one.

infer that

From the evidence we can infer that the victim knew her killer.

inference (noun)

1 [countable]something that you think is true, based on information that you have

draw/make inferences (about/from something) What inferences have you drawn from this evidence?

2 [uncountable] when someone infers something

by inference

He was portrayed as a hero and, by inference, Thompson as the villain.

integrate (verb) [intransitive and transitive] [\neq divide, separate]

1 if two or more things integrate, or if you integrate them, they combine or work together in a way that makes something more effective

integrate (something) into/with something: Colourful illustrations are integrated into the text.

Transport planning should be integrated with energy policy.

computers of different makes that integrate with each other

2 to become part of a group or society and be accepted by them, or to help someone do this

integrate (somebody) into/with something: We're looking for people who can integrate with a team.

Many children with learning difficulties are integrated into ordinary classes.

SYNONYMS: combine, incorporate, join

integration (noun) [uncountable]

1 the combining of two or more things so that they work together effectively

integration of

the integration of data from other surveys

2 when people become part of a group or society and are accepted by them

integration into

The family unit is supported by its integration into a wider social network.

intense (adjective)

1 having a very strong effect or felt very strongly:

Young people today are under intense pressure to succeed.

the intense heat of the desert

The pain was so intense I couldn't sleep.

He took an intense interest in all religious matters.

a look of intense dislike

2 intense activity is very serious, uses a lot of effort, and often involves doing a great deal in a very short time:

The job demands intense concentration.

At least 3000 people were killed in a week of intense fighting.

SYNONYMS: strong, powerful, deep

intensely (adv)

He disliked Mathematics intensely.

intensity (noun)

1 [uncountable] the quality of being felt very strongly or having a strong effect

The intensity of the hurricane was frightening.

2 [uncountable] the quality of being serious and having very strong feelings or opinions

He spoke with great intensity.

3 [uncountable and countable] technical the strength of something such as light or sound

an instrument which measures light intensity

intensify (verb) past tense and past participle **intensified**, present participle **intensifying**, third person

singular **intensifies** [intransitive and transitive]

to increase in degree or strength, or to make something do this:

In June the civil war intensified.

His mother's death intensified his loneliness.

SYNONYMS: increase, grow, climb

interpret (verb)

1 [intransitive and transitive] to translate spoken words from one language into another:

They spoke good Spanish, and promised to interpret for me.

2 [transitive] to believe that something someone does or something that happens has a particular meaning

interpret something as something: His refusal to work late was interpreted as a lack of commitment to the company.

3 [transitive] to explain the meaning of something:

Freud's attempts to interpret the meaning of dreams

SYNONYMS: infer, translate, understand by

interpretation (noun) [uncountable and countable]

the way in which someone explains or understands an event, information, someone's actions etc:

One possible interpretation is that they want you to resign.

It's difficult to put an accurate interpretation on (=explain) the survey results.

What exactly the author meant by that statement is open to interpretation (=able to be understood or explained in different ways).

SYNONYMS: understanding, reading

involve (verb) [transitive]

1 if an activity or situation involves something, that thing is part of it or a result of it:

What will the job involve?

I didn't realize putting on a play involved so much work.

involve doing something: Running your own business usually involves working long hours.

2 to include or affect someone or something:

These changes will involve everyone on the staff.

There have been four accidents involving Forest Service planes.

SYNONYMS: include, entail

involvement (noun)

1 [uncountable] the act of taking part in an activity or event, or the way in which you take part in it

School officials say they welcome parental involvement.

His new book examines the United States' involvement in World War II.

The police have been looking into Harris's possible involvement with a series of robberies.

2 [countable] something that you take part in or spend time doing

sporting involvements

her political involvements
SYNONYM: participation

issue (noun)

1 subject/problem [countable] a subject or problem that is often discussed or argued about, especially a social or political matter that affects the interests of a lot of people

How the issue is resolved is crucial.

They're clouding the issue with uninformed judgements.

The key issue is whether workers should be classified as 'employees'.

Economic issues should get more attention.

2 magazine [countable] a magazine or newspaper printed for a particular day, week, or month

issue of: the January issue of Newsweek

the current/latest issue: Have you seen the latest issue?

SYNONYMS: subject, topic, question

J

K

L

linkage (noun)

1 [uncountable and countable] formal: a link

linkage between: the linkage between wages and prices

While we will continue to give economic support, there must be linkages to democratic reform.

2 [uncountable and countable] a system of links or connections

3 [singular, uncountable] a condition in a political or business agreement, by which one country or company agrees to do something, only if the other promises to do something in return

SYNONYM: connection

locate (verb)

1 [transitive] to find the exact position of something:

We couldn't locate the source of the radio signal.

2 be located in/near etc something to be in a particular position or place [= be situated]:

The business is located right in the center of town.

3 [transitive] to put or build something in a particular place:

Large retail chains are usually only prepared to locate stores in areas of high population density.

SYNONYMS: be, stand, be based

location (noun)

1 [countable] a particular place, especially in relation to other areas, buildings etc:

His apartment is in a really good location.

its isolated geographical location

2 [countable] the position of something

location of: The map shows the precise location of the crash.

3 [uncountable] the act of finding the position of something:

The main problem for engineers was the location of underground rivers in the area.

SYNONYMS: place, spot, site

M

maintain (verb) [transitive]

1 to make something continue in the same way or at the same standard as before:

Careers Officers maintain contact with young people when they have left school.

The hotel prides itself on maintaining high standards.

How can we maintain control of spending?

2 level/rate: to make a level or rate of activity, movement etc stay the same:

It is important to maintain a constant temperature inside the greenhouse.

This is the most efficient way to build up and maintain a reasonable level of physical fitness.

3 say: to strongly express your belief that something is true [= claim]

maintain (that) - Critics maintain that these reforms will lead to a decline in educational standards.

4 look after something: to keep a machine, building etc in good condition by checking and repairing it regularly:
The report found that safety equipment had been very poorly maintained.
The company is responsible for maintaining public telephone boxes.
SYNONYMS: continue, keep up, preserve, claim

maintenance (noun) [uncountable]

1 the repairs, painting etc that are necessary to keep something in good condition
the cost of repairs and maintenance
maintenance of

The caretaker is responsible for the maintenance of the school buildings.
Sales of large-scale data storage devices also increased strongly, while earnings from computer maintenance services hardly changed.

2 the act of making a state or situation continue
maintenance of

The purpose of the UN is the maintenance of international peace and security.
SYNONYMS: care, preservation, upkeep

modify (verb) past tense and past participle **modified**, present participle **modifying**, third person singular **modifies** [transitive]

to make small changes to something in order to improve it and make it more suitable or effective [= adapt]:
The feedback will be used to modify the course for next year.

The regulations can only be modified by a special committee.

SYNONYMS: adapt, convert, customise

modification (noun)

1 [countable] a small change made in something such as a design, plan, or system
We've made one or two modifications to the original design.

They have used the same process for almost 50 years with only minor modifications .

2 [uncountable and countable] the act of modifying something, or the process of being modified

The review resulted in the modification of our security procedures.

SYNONYMS: adaption, adjustment, change

O

occupy (verb) past tense and past participle **occupied**, present participle **occupying**, third person singular **occupies** [transitive]

1 stay in a place: to live or stay in a place:

He occupies the house without paying any rent.

The building was purchased and occupied by its new owners last year.

2 fill time: if something occupies you or your time, you are busy doing it:

Football occupies most of my leisure time.

occupy somebody with (doing) something: Only six percent of police time is occupied with criminal incidents.

3 control by force: to enter a place in a large group and keep control of it, especially by military force
an occupying army

Students occupied Sofia university on Monday.

4 fill space: to fill a particular amount of space:

Family photos occupied almost the entire wall.

SYNONYMS: be in use, be taken, populated

occupation (noun)

1 [countable] a job or profession

Please state your name, address and occupation.

professional and managerial occupations

2 [uncountable] when a large group of people enter a place and take control of it, especially by military force
occupation of

the German occupation of France

The area is under occupation (=controlled by a foreign army) .

3 [countable] a way of spending your time

One of my childhood occupations was collecting stamps.

4 [uncountable] when someone lives or stays in a building or place

When the first scientists came to the region they found little evidence of human occupation.

occur (verb) past tense and past participle **occurred**, present participle **occurring** [intransitive] formal

1 to happen:

A third of accidental deaths occur in the home.

The explosion occurred at 5.30 a.m.

2 [always + adverb/preposition]:to happen or exist in a particular place or situation

occur in/among etc: Whooping cough occurs mainly in young children.

The highest rates of unemployment occur in the inner urban areas.

SYNONYMS: happen, take place, arise

occurrence (noun)

1 [countable] something that happens

Laughter was a rare occurrence in his classroom.

Flooding in the area is a common occurrence.

2 [singular] the fact of something happening

occurrence of: The frequent occurrence of earthquakes in the area means that the buildings must be specifically designed to withstand the force.

SYNONYMS: event, incident, phenomenon

P

portion (noun)

1 [countable]a part of something larger, especially a part that is different from the other parts
portion of

The front portion of the rocket breaks off.

The rent on his portion of the apartment was \$500 a month.

2 [countable]an amount of food for one person, especially when served in a restaurant

Do you have any children's portions?

SYNONYMS: share, part, piece

principal (adj) [only before noun]

most important

His principal reason for making the journey was to visit his family.

Teaching is her principal source of income.

SYNONYMS: key, main, major

principally (adv)

mainly

The money is principally invested in stocks and shares.

We met principally to discuss the future of the school.

proportion (noun)

1 [C usually singular also + plural verb British English] part of something. A part of a number or amount, considered in relation to the whole

proportion of: The proportion of women graduates has increased in recent years.

Every parent is asked to contribute a proportion of the total cost.

2 relationship [uncountable and countable] the relationship between two things in size, amount, importance etc

the proportion of something to something: What's the proportion of boys to girls in your class?

3 correct scale [uncountable] the correct or most suitable relationship between the size, shape, or position of the different parts of something:

Builders must learn about scale and proportion.

SYNONYMS: percentage, ratio, rate

proportional (adjective) something that is proportional to something else is in the correct or most suitable relationship to it in size, amount, importance etc

proportional to

The punishment should be proportional to the crime.

The usefulness of most Web sites is directly proportional to the benefits it offers to the people who visit it.

proportionally (adverb)

Unemployment is proportionally much higher in the north of the country.

purchase (verb) [transitive]

formal: to buy something:

You can purchase insurance on-line.

the growing demand to purchase goods on credit

Where did you purchase the car?

SYNONYMS: buy, get, acquire

purchase (noun)

1 [uncountable and countable] formal: something you buy, or the act of buying it
 She paid for her purchases and left.
 I enclose my receipt as proof of purchase.

Q

R

range (noun)

1 variety of things/people [countable usually singular]: a number of people or things that are all different, but are all of the same general type

range of : a range of services

The drug is effective against a range of bacteria.

2 limits [countable]: the limits within which amounts, quantities, ages etc vary
 age/price/temperature etc range: toys suitable for children in the pre-school age range
 a temperature range of 72-85°

3 products [countable]: a set of similar products made by a particular company or available in a particular shop
 range of : a new range of kitchenware

The watches in this range are priced at £24.50.

We have a very large product range.

Sansui planned to improve its product range to include DVD equipment.

SYNONYMS: collection, selection, variety

range (verb)

1 include [intransitive always + adverb/preposition]

a) to include a variety of different things or people in addition to those mentioned

range from something to something: The show had a massive audience, ranging from children to grandparents.

b) if prices, levels, temperatures etc range from one amount to another, they include both those amounts and anything in between

range from something to something

There were 120 students whose ages ranged from 10 to 18.

range between something and something: The population of these cities ranges between 3 and 5 million.

range in age/size/price etc: The shoes range in price from \$25 to \$100.

2 deal with many subjects [intransitive]: to deal with a wide range of subjects or ideas in a book, speech, conversation etc

range over : The conversation had ranged over a variety of topics, from sport to current affairs.

3 move around [intransitive always + adverb/preposition]: to move around in an area without aiming for a particular place [= wander]

range over/through: Cattle ranged over the pastures in search of food.

SYNONYMS: include, contain

rational (adj)) [≠ irrational]

1 rational thoughts, decisions etc are based on reasons rather than emotions

Parents need to be fully informed so they can make a rational decision.

I'm sure there's a rational explanation for all this.

2 a rational person is able to think calmly and sensibly

Culley was quite rational at the time of her baby's death.

3 formal able to make sensible judgments

Man is a rational animal.

rationally (adv) [≠ irrationally]

We were too shocked to think rationally.

rationality (noun) [uncountable]**rationalize (verb) also rationalise British English [intransitive and transitive]**

1 if you rationalize behaviour that is wrong, you invent an explanation for it so that it does not seem as bad
 When he makes a mistake, Glen always finds a way to rationalize what he's done.

2 (British English) to make a business more effective by removing unnecessary workers, equipment etc

Our systems will be rationalized over the coming months

require (verb) [transitive not in progressive]

1 to need something:

Campbell's broken leg will probably require surgery.

What's required is a complete reorganization of the system.

Most house plants require regular watering.

2 if you are required to do or have something, a law or rule says you must do it or have it

You are required by law to wear a seat belt.

Regulations require that students attend at least 75% of the classes.

SYNONYMS: need, must

requirement (noun) [countable usually plural]

1 something that someone needs or asks for:

The refugees' main requirements are food and shelter.

The new computer system will meet all our requirements.

2 something that must be done because of a law or rule:

If you are installing a new bathroom, it has to meet the requirements of the Building Regulations.

Two measures have been introduced as legal requirements.

3 something, especially good examination results, that a college, employer etc says you must have in order to do something

To find out about entry requirements for students, write to the college admissions board.

The minimum requirement for the post was a degree in engineering.

SYNONYMS: need, necessity, condition, term

respond (verb)

1 [intransitive] to do something as a reaction to something that has been said or done

respond to

Responding to the news, Mr Watt appealed for calm.

respond by doing something

The US responded by sending troops into Laos.

2 [intransitive and transitive] to say or write something as a reply

respond that

He responded that he didn't want to see anyone.

3 [intransitive] to improve as a result of a particular kind of treatment

respond to

She has responded well to treatment. Colds do not respond to antibiotics.

SYNONYM: reaction

response (noun)

1 [uncountable and countable] something that is done as a reaction to something that has happened or been said

response to

the public's response to our appeal for help

The exhibition has received a positive response from visitors

2 [countable] something that is said or written as a reply

response to

'Sure, why not?' was his response to all of Billie's suggestions.

Carl made no response, and carried on with his meal.

responsive (adj) [≠ unresponsive]

1 reacting quickly, in a positive way

a car with highly responsive steering

2 eager to communicate with people, and to react to them in a positive way

I tried to get him talking, but he wasn't very responsive.

responsively (adv)

reveal (verb) [transitive] [≠ conceal, hide, cover]

1 to make known something that was previously secret or unknown

He may be prosecuted for revealing secrets about the security agency. reveal (that)

He revealed that he had been in prison twice before.

2 to show something that was previously hidden

The curtain opened to reveal the grand prize.

review (verb) [transitive]

1 to examine, consider, and judge a situation or process carefully in order to see if changes are necessary

We will review your situation and decide how we can help you.

The team manager's position will be reviewed at the end of the season.

2 to write a short article describing and judging a new book, play, film etc

Bradman will review the best of the new children's books.

3 American English to look again at something you have studied, such as notes, reports etc

British English equivalent: revise

SYNONYMS: analyse, evaluate, scrutinize

review (noun)

1 [uncountable and countable] a careful examination of a situation or process

She sent us her review of the research.

We're keeping this policy under review (=we are continuing to examine it) .

2 [countable] an article in a newspaper or magazine that gives an opinion about a new book, play, film etc
a film review

The paper published a review of her book.

SYNONYMS: analyse, evaluate, scrutinize

S

scrutinize (verb) also **scrutinise** (British English) [transitive]

to examine someone or something very carefully:

He scrutinized the document.

She scrutinized his face.

SYNONYMS: examine, analyse, study

scrutiny (noun) [uncountable]

careful and thorough examination of someone or something

Careful scrutiny of the company's accounts revealed a whole series of errors.

Airlines have increased their scrutiny of the size and amount of carry-on luggage.

SYNONYMS: analysis, inspection, review

significant (adj) [\neq insignificant]

1 having an important effect or influence, especially on what will happen in the future

Please inform us if there are any significant changes in your plans.

2 large enough to be noticeable or have noticeable effects

A significant number of drivers fail to keep to speed limits.

A significant part of Japan's wealth is invested in the West.

The rise in temperature is not statistically significant.

3 a significant look, smile etc has a special meaning that is not known to everyone

He gave me a significant look.

SYNONYMS: important, serious

significantly (adv)

1 in an important way or to an important degree

Health problems can be significantly reduced by careful diet.

Methods used by younger teachers differ significantly from those used by older ones.

2 [sentence adverb] used to say that something is very important

The Democrats, significantly, finished well behind the Green Party.

3 in a way that seems to have a special meaning

George paused, and glanced significantly in my direction.

signify (verb) past tense and past participle **signified** present participle **signifying** third person

singular **signifies** [not in progressive]

1 [transitive] to represent, mean, or be a sign of something

Some tribes use special facial markings to signify status.

The image of the lion signified power and strength.

signify (that)

The symbol used signifies that the frequency is measured in kHz.

2 [transitive] (formal) if you signify a feeling, opinion etc, you do something that acts as a sign so that other people know your feeling or opinion

signify that

Hamilton waved his hand to signify that he didn't mind what they decided.

3 [intransitive] to be important enough to have an effect on something

These figures don't really signify in the overall results.

simulate (noun) [transitive]

1 to make or produce something that is not real but has the appearance or feeling of being real

a machine that simulates conditions in space

Interviews can be simulated in the classroom.

2 (formal) to pretend to have a feeling
He found it impossible to simulate grief.

simulation (noun) [uncountable and countable]

the activity of producing conditions which are similar to real ones, especially in order to test something, or the conditions that are produced

a computer simulation used to train airline pilots

specify (verb) past tense and past participle **specified** present participle **specifying** third person singular **specifies** [transitive]

to state something in an exact and detailed way

Payments will be made for a specified number of months.

It logs into a variety of electronic news sources and looks for articles with keywords specified by the user.

specific (adj)

1 [only before noun] a specific thing, person, or group is one particular thing, person, or group
games suitable for specific age-groups a specific example of alcohol's effect on the body

2 detailed and exact

Mr Howarth gave us very specific instructions.

Research is an active and formally organised search for specific information for a specific purpose.

3 specific to something

formal limited to, or affecting only one particular thing

a disease specific to horses

SYNONYMS: definite, exact, precise

specifically (adv)

1 relating to or intended for one particular type of person or thing only
advertising that specifically targets children

2 in a detailed or exact way

I specifically asked you not to do that!

3 [sentence adverb] used when you are adding more exact information

Specifically, the department wanted answers to the following questions.

specification (noun) [countable]

1 [usually plural] a detailed instruction about how a car, building, piece of equipment etc should be made
The airport building had been constructed to FAA specifications.

The bolts met all the engineering specifications.

2 (especially British English) a clear statement of what is needed or wanted

a specification of what role each member will play

job specification (=a detailed description of what a job involves)

subsequent (adj) (formal) [\neq previous]

happening or coming after something else

These skills were passed on to subsequent generations.

events that happened subsequent to the accident

SYNONYM: following

subsequently (adv) (formal)

after an event in the past

The book was subsequently translated into 15 languages.

Subsequently, the company filed for bankruptcy.

SYNONYM: afterwards

survey (noun) [countable]

1 a set of questions that you ask a large number of people in order to find out about their opinions or behaviour
carry out/conduct a survey (=do a survey) We conducted a survey of parents in the village.

2 an examination of an area of land in order to make a map of it

SYNONYMS: analysis, evaluation, examination

survey (verb) [transitive]

1 [usually passive] to ask a large number of people questions in order to find out their attitudes or opinions
Of the 100 companies surveyed, 10 per cent had a turnover of £50m to £99m.

2 to look at or consider someone or something carefully, especially in order to form an opinion about them

She turned to survey her daughter's pale face. They got out of the car to survey the damage.

3 British English to examine the condition of a house or other building and make a report on it, especially for people who want to buy it

SYNONYMS: evaluate, examine, research

T

transform (verb) [transitive]

to completely change the appearance, form, or character of something or someone, especially in a way that improves it:

Increased population has transformed the landscape.

transform somebody/something (from something) into something: The movie transformed her almost overnight from an unknown schoolgirl into a megastar.

SYNONYMS: turn into, revolutionise

transformation (noun) [uncountable and countable]

a complete change in someone or something

In recent years, the movie industry has undergone a dramatic transformation.

transformation of

What leads to the transformation of one economic system to another?

trend (noun) [countable]

1 a general tendency in the way a situation is changing or developing

The current trend is towards more part-time employment.

The growing trend is for single mothers to bring up children by themselves.

2 set the trend

to start doing something that other people copy

Larger corporations are setting the trend for better maternity benefits.

SYNONYMS: direction, tendency

U

ultimate (adjective) [only before noun]

1 someone's ultimate aim is their main and most important aim, that they hope to achieve in the future
ultimate goal/aim/objective etc: Complete disarmament was the ultimate goal of the conference.

Our ultimate objective is to have as many female members of parliament as there are male.

2 the ultimate result of a long process is what happens at the end of it:

The ultimate outcome of the experiment cannot be predicted.

The ultimate fate of the tribe was even sadder.

the ultimate failure of the project

3 if you have ultimate responsibility for something, you are the person who must make the important final decisions about it: The ultimate responsibility for policy lies with the President.

The ultimate decision rests with the Public Health Service.

SYNONYMS: final, last

ultimately (adv)

finally, after everything else has been done or considered

[sentence adverb]

Ultimately, the decision rests with the child's parents.

a long but ultimately successful campaign

V

W

X

Y

Z

LISTENING TEXTS REFERENCES

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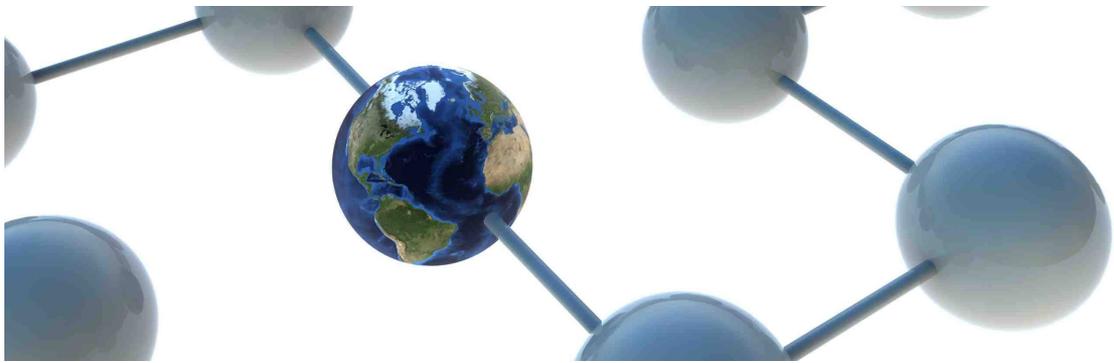
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APPENDIX



Speaking Module

SPEAKING MODULE

UNIT 1: SEARCH ENGINES

Recommended Search Engines

UC Berkeley - Teaching Library Internet Workshops 2010

Google is currently the most used search engine. It has one of the largest databases of Web pages, including many other types of web documents (blog posts, wiki pages, group discussion threads and document formats (e.g., PDFs, Word or Excel documents, PowerPoints). Despite the presence of all these formats, Google's popularity ranking often places worthwhile pages near the top of search results.

Google alone is not always sufficient, however. Not everything on the Web is fully searchable in Google. Overlap studies show that more than 80% of the pages in a major search engine's database exist only in that database. For this reason, getting a "second opinion" can be worth your time. For this purpose, we recommend Yahoo! Search or Exalead. We do not recommend using meta-search engines as your primary search tool.

Table of features

Some common techniques will work in any search engine. However, in this very competitive industry, search engines also strive to offer unique features. When in doubt, look for "help", "FAQ", or "about" links.

Search Engine	<u>Google</u> www.google.com	<u>Yahoo! Search</u> search.yahoo.com	<u>Exalead</u> www.exalead.com/search/
Size, type	IMMENSE. Size not disclosed in any way that allows comparison. Probably the biggest.	HUGE. Claims over 20 billion total "web objects."	LARGE. Claims to have over 8 billion searchable pages.
Noteworthy features	<u>PageRank</u> system includes hundreds of factors, emphasizing pages most heavily linked from other pages. Many additional databases including Book Search, Scholar (journal articles), Blog Search, Patents, Images, etc.	<u>Shortcuts</u> give quick access to dictionary, synonyms, patents, traffic, stocks, encyclopedia, and more.	Truncation lets you search by the first few letters of a word. Proximity search lets you find terms NEAR each other or NEXT to each other. Thumbnail page previews. Extensive options for refining and limiting your search.
Phrase searching <u>what's this?</u>	Enclose phrase in "double quotes".	Enclose phrase in "double quotes".	Enclose phrase in "double quotes".
Boolean logic <u>what's this?</u>	Partial. AND assumed between words. Capitalize OR. () accepted but not	Accepts AND, OR, NOT or AND NOT. <i>Must be capitalized.</i> () accepted but not required.	Partial. AND assumed between words. Capitalize OR. () accepted. See <u>Web Search Syntax</u> for

	required. In <u>Advanced Search</u> , partial Boolean available in boxes.		more options.
Sub-Searching <u>what's this?</u>	The search box at the top of the results page shows your current search. Modify this (e.g., add more terms at the end.)	The search box at the top of the results page shows your current search. Modify this (e.g., add more terms at the end.)	The search box at the top of the results page shows your current search. Modify this (e.g., add more terms at the end.)
Results Ranking <u>what's this?</u>	Based on page popularity measured in links to it from other pages: high rank if a lot of other pages link to it. <u>Fuzzy AND</u> also invoked. Matching and ranking based on "cached" version of pages that may not be the most recent version.	Automatic <u>Fuzzy AND</u> .	Popularity ranking emphasizes pages most heavily linked from other pages.
Language	Yes. Major Romanized and non-Romanized languages in <u>Advanced Search</u> .	Yes. Major Romanized and non-Romanized languages.	Extensive language and geographic options. Use "Advanced Search".
Translation	Yes, in "Translate this page" link following some pages. To and sometimes from English and major European languages and Chinese, Japanese, Korean. Uses its own translation software with user feedback.	Available as a <u>separate service</u> .	Yes, in "Translate this page" link following some pages.

How do Search Engines Work?

Search engines do not really search the World Wide Web directly. Each one searches a database of web pages that it has harvested and cached. When you use a search engine, you are always searching a somewhat stale copy of the real web page. When you click on links provided in a search engine's search results, you retrieve the current version of the page.

Search engine databases are selected and built by computer robot programs called spiders. These "crawl" the web, finding pages for potential inclusion by following the links in the pages they already have in their database. They cannot use imagination or enter terms in search boxes that they find on the web.

If a web page is never linked from any other page, search engine spiders cannot find it. The only way a brand new page can get into a search engine is for other pages to link to it, or for a human to submit its URL for inclusion. All major search engines offer ways to do this.

After spiders find pages, they pass them on to another computer program for "indexing." This program identifies the text, links, and other content in the page and stores it in the search engine database's files so that the database can be searched by keyword and whatever more advanced approaches are offered, and the page will be found if your search matches its content.

Many web pages are excluded from most search engines by policy. The contents of most of the searchable databases mounted on the web, such as library catalogs and article databases, are excluded because search engine spiders cannot access them. All this material is referred to as the "Invisible Web" -- what you don't see in search engine results.

Taken from <http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/SearchEngines.html>

SPEAKING MODULE

UNIT 3: THE GAMING GENERATION

The effects of video games on children: what parents need to know

Pediatrics for Parents, June, 2004 by Douglas A. Gentile

The home video game industry is now over 30 years old. In that time, computer technology has improved at a geometric rate. A high speed elevator now has more computing power than the Apollo spacecraft that landed on the moon. The promise of computers and video games as teachers was clearly recognized in the 1980s when there was a nationwide push to get computers into the classrooms. In the years that have followed, researchers found that educational software and games can indeed have several very positive effects on children's academic skill. Over the same period, video games also moved into children's homes. (I define video games broadly here, as including arcade games, computer games, and home console games such as PlayStation.) Children began playing video games for increasing amounts of time, and the games themselves became more graphically violent over time. Parents, educators, physicians, and researchers began to question what the impact of these changes might be.

Among elementary and middle-school populations, girls play for an average of about 5.5 hours/week and boys average 13 hours/week. Playing games is not limited to adolescent boys. Recently, the Wall Street Journal reported that several companies are now designing video game consoles for preschoolers. Preschoolers aged two to five play an average of 28 minutes/day. The amount of time spent playing video games is increasing, but not at the expense of television viewing which has remained stable at about 24 hours/week.

Similar to earlier studies about television, the data about children's video game habits are correlated with risk factors for health and with poorer academic performance. When video game play is analyzed for violent content, additional risk factors are observed for aggressive behavior and desensitization to violence.

Video games are natural teachers. Children find them highly motivating: by virtue of their interactive nature. children are actively engaged with them: they provide repeated practice: and they include rewards for skillful play. These facts make it likely that video games could have large effects, some of which are intended by game designers, and some of which may not be intended.

Video games have been shown to teach children healthy skills for the self-care of asthma and diabetes, and have been successful at imparting the attitudes, skills, and behaviors that they were designed to teach. In a study with college students, playing a golf video game improved students' actual control of force when putting, even though the video game gave no bodily feedback on actual putting movement or force. There have even been studies with adults showing that experience with video games is related to better surgical skills. Research also suggests that people can learn iconic, spatial, and visual attention skills from video games.

Given the fact that video games are able to have several positive effects, it should come as no surprise that they also can have negative effects. Research has documented negative effects of video games on children's physical health, including obesity, video-induced seizures, and postural, muscular and skeletal disorders, such as tendonitis, nerve compression, and carpal tunnel syndrome. However, these effects are not likely to occur for most children. The research to date suggests that parents should be

most concerned about two things: the amount of time that children play, and the content of the games that they play.

Simply put, the amount of time spent playing video games has a negative correlation with academic performance. Playing violent games has a positive correlation with antisocial and aggressive behavior (most researchers define violence in games as when the player can intentionally harm other characters in the game). Content analyses show that a majority of games contain some violence. A majority of 4th to 8th grade children prefer violent games.

Looking across the dozens of studies that have now been conducted on violent video games, there appear to be five major effects. Playing violent games leads to increased physiological arousal, increased aggressive thoughts, increased aggressive feelings, increased aggressive behaviors, and decreased prosocial helping. These studies include experimental studies (where it can be shown that playing violent games actually causes increases in aggression), correlational studies (where long-term relations between game play and real-world aggression can be shown), and longitudinal studies (where changes in children's aggressive behaviors can be demonstrated). For example, in a study of over 400 3rd--5th graders, those students who played more violent video games early in the school year changed to become more physically aggressive later in the school year, even after statistically controlling for sex, race, total screen time, prior aggression, and other relevant variables. Apparently practice does make perfect.

The research also seems to show that parents have an important role to play. Children whose parents limited the amount of time they could play and also used the video game ratings to limit the content of the games have children who do better in school and also get into fewer fights. Regarding limiting the amount, the American Academy of Pediatrics recommends that children not spend more than one to two hours per day in front of all electronic screens, including TV, DVDs, videos, video games (handheld, console, or computer), and computers (for non-academic use). This means seven to fourteen hours per week total. The average school-age child spends over 37 hours a week in front of a screen. We all like to think our children are above average, but on this dimension it's not a good thing. Regarding content, educational games are likely to have positive effects and violent games are likely to have negative effects. Almost all (98%) of pediatricians believe that violent media have a negative effect on children.

The conclusion I draw from the accumulated research is that the question of whether video games are "good" or "bad" for children is oversimplified. Playing a violent game for hours every day could decrease school performance, increase aggressive behaviors, and improve visual attention skills. Instead, parents should recognize that video games can have powerful effects on children, and should therefore set limits on the amount and content of games their children play. In this way, we can realize the potential benefits while minimizing the potential harms.

Taken from <http://www.pedsforparents.com/articles/2791.shtml>

SPEAKING MODULE

UNIT 4: GRAPHS-THE PERFECT SOLUTION!

Charts and Graphs: Choosing the right format

"A picture is worth a thousand words." This is certainly true when you're presenting and explaining data. You can provide tables setting out the figures, and you can talk about numbers, percentages, and relationships forever. However, the chances are that your point will be lost if you rely on these alone. Put up a graph or a chart, and suddenly everything you're saying makes sense!

Graphs or charts help people understand data quickly. Whether you want to make a comparison, show a relationship, or highlight a trend, they help your audience "see" what you are talking about.

The trouble is there are so many different types of charts and graphs that it's difficult to know which one to choose. Click on the chart option in your spreadsheet program and you're presented with many styles. They all look smart, but which one is appropriate for the data you've collected?

Can you use a bar graph to show a trend? Is a line graph appropriate for sales data? When do you use a pie chart? The spreadsheet will chart anything you tell it to, whether the end result makes sense or not. It just takes its orders and executes them!

To figure out what orders to give, you need to have a good understanding of the mechanics of charts, graphs and diagrams. We'll show you the basics using three very common graph types:

- Line graph
- Bar graph
- Pie chart

Line Graphs

One of the most common graphs you will encounter is a line graph. Line graphs simply use a line to connect the data points that you plot. They are most useful for showing trends, and for identifying whether two variables relate to (or "correlate with") one another.

Trend data:

- How do sales vary from month to month?
- How does engine performance change as its temperature increases?

Correlation:

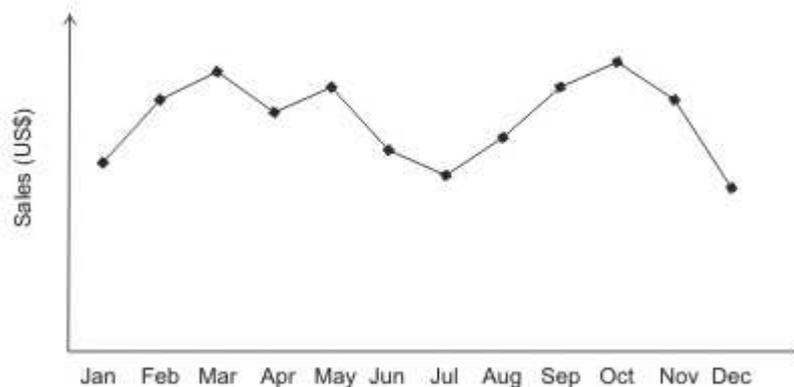
- On average, how much sleep do people get, based on their age?
- Does the distance a child lives from school affect how frequently he or she is late?

You can only use line graphs when the variable plotted along the x-axis is continuous - for example, time, temperature or distance.

Example:

ABC Enterprises' sales vary throughout the year. By plotting sales figures on a line graph, as shown in Figure 3, it's easy to see the main fluctuations during the course of a year. Here, sales drop off during the summer months, and around New Year.

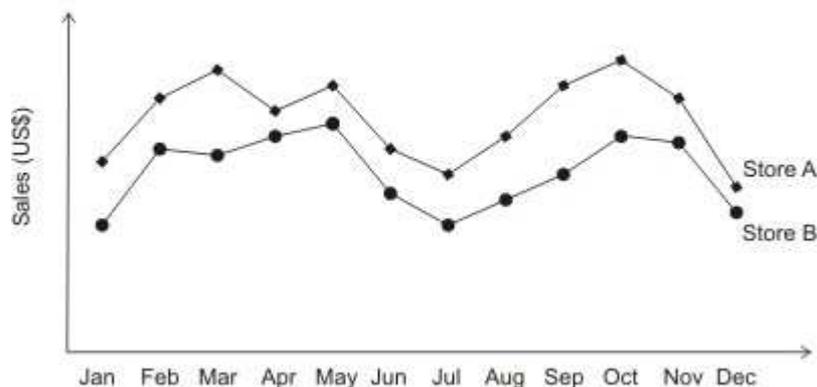
Figure 3: Example of a Line Graph



While some seasonal variation may be unavoidable in the line of business ABC Enterprises is in, it may be possible to boost cash flows during the low periods through marketing activity and special offers.

Line graphs can also depict multiple series. In this example you might have different trend lines for different product categories or store locations, as shown in Figure 4 below. It's easy to compare trends when they're represented on the same graph.

Figure 4: Example of a Line Graph with Multiple Data Series



Bar Graphs

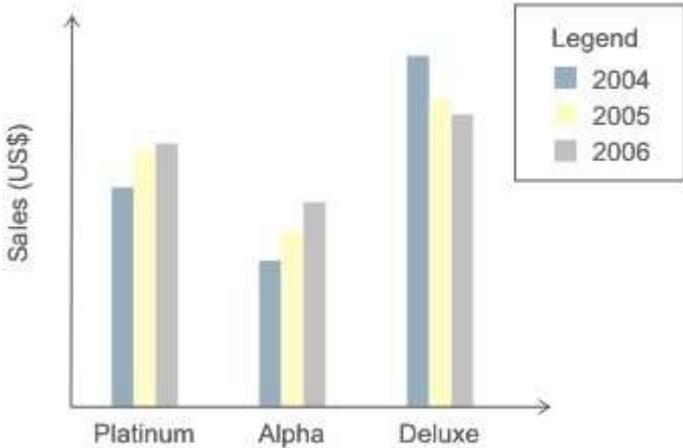
Another type of graph that shows relationships between different data series is the bar graph. Here the height of the bar represents the measured value or frequency: The higher or longer the bar, the greater the value.

Example:

ABC Enterprises sells three different models of its main product, the Alpha, the Platinum, and the Deluxe. By plotting the sales each model over a three year period, it becomes easy to see trends that

might be masked by a simple analysis of the figures themselves. In Figure 5, you can see that, although the Deluxe is the highest-selling of the three, its sales have dropped off over the three year period, while sales of the other two have continued to grow. Perhaps the Deluxe is becoming outdated and needs to be replaced with a new model? Or perhaps it's suffering from stiffer competition than the other two?

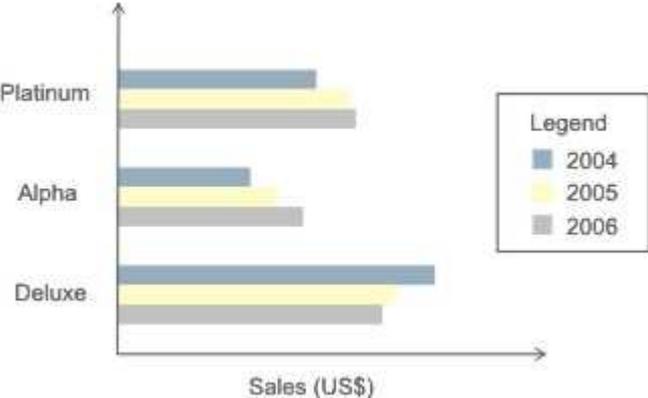
Figure 5: Example of a Bar Chart



In general, line graphs are used to demonstrate data that is related on a continuous scale, whereas bar graphs are used to demonstrate discontinuous data.

Data can also be represented on a horizontal bar graph as shown in Figure 7. This is often the preferred method when you need more room to describe the measured variable. It can be written on the side of the graph rather than squashed underneath the x-axis.

Figure 7: Example of a Horizontal Bar Graph



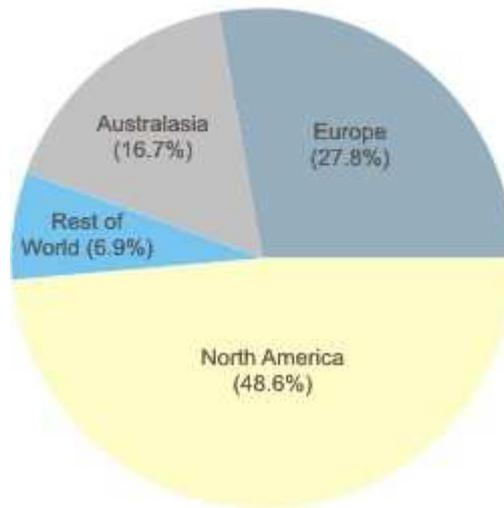
Pie Charts

A pie chart compares parts to a whole. As such it shows a percentage distribution. The entire pie represents the total data set and each segment of the pie is a particular category within the whole.

So, to use a pie chart, the data you are measuring must depict a ratio or percentage relationship. You must always use the same unit of measure within a pie chart. Otherwise your numbers will mean nothing.

The pie chart in Figure 8 shows where ABC Enterprise's sales come from.

Figure 8: Example of a PieChart



Taken from http://mindtools.com/pages/article/Charts_and_Diagrams.htm