ENGLISH FOR ELECTRONICS ENGINEERING 1

SITI KUSTINI

ENGLISH FOR ELECTRONICS ENGINEERING 1

Undang-Undang No. 28 Tahun 2014 Tentang Hak Cipta

Fungsi dan sifat hak cipta Pasal 4
Hak Cipta sebagaimana dimaksud dalam Pasal 3 huruf a merupakan hak eksklusif yang terdiri atas hak moral dan hak ekonomi.

Pembatasan Perlindungan Pasal 26
Ketentuan sebagaimana dimaksud dalam Pasal 23, Pasal 24, dan Pasal 25 tidak berlaku terhadap :

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POLIBAN PRESS

ENGLISH FOR ELECTRONICS ENGINEERING 1

Penulis :
Siti Kustini

ISBN :
978-623-5259-20-8 (no.jil.lengkap)
978-623-5259-21-5 (jil.1 PDF)

Editor dan Penyunting :
Isna Wardiah

Desain Sampul dan Tata letak :
Rahma Indera; Eko Sabar Prihatin

Penerbit :
POLIBAN PRESS
Anggota APPTI (Asosiasi Penerbit Perguruan Tinggi Indonesia)
no.004.098.1.06.2019
Cetakan Pertama, 2024

Redaksi :
Politeknik Negeri Banjarmasin, Jl. Brigjen H. Hasan Basry,
Pangeran, Komp. Kampus ULM, Banjarmasin Utara
Telp : (0511)3305052
Email : press@poliban.ac.id

Diterbitkan pertama kali oleh :
Poliban Press, Banjarmasin, Februari 2024

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Foreword

It is with great pleasure that we present to you the book titled "English for Electronics 1." In this comprehensive guide, readers will embark on a journey to explore the fundamental aspects of the English language within the context of electronics.

This book is meticulously crafted to provide learners with a solid foundation in English communication skills, specifically tailored to the field of electronics. Through carefully structured chapters, readers will delve into various topics ranging from personal introductions in "All About Me" to technical terms in "Technical Terms." Each chapter is designed to enhance language proficiency while simultaneously expanding knowledge of electronic concepts.

With chapters covering essential subjects such as "Numbers," "Describing Objects," "Electronics in the Home," and "Safety at Work," readers will gain a deep understanding of both language and practical applications within the electronics industry. Furthermore, topics like "Reading: Lasers" and "Describing Flowcharts, Graphs and Charts" offer valuable insights into specialized areas of electronics and technical documentation.

As publishers, we recognize the importance of providing learners with high-quality educational resources that empower them to excel in their chosen fields. We believe that "English for Electronics 1" serves as an invaluable tool for students, professionals, and enthusiasts alike, seeking to master English language skills within the realm of electronics.

We extend our heartfelt gratitude to all those who contributed to the creation of this book, from the authors who meticulously curated its contents to the editors and designers who brought it to life. It is our sincere hope that "English for Electronics 1" will serve as a guiding light on your journey to linguistic and professional excellence.

Preface

English for Electronics Engineering 1 serves as a course book tailored for false beginner students enrolled in the Electronics Engineering Study Program's ESP course. The book aims to provide easily understandable learning materials organized in a way that aids students in enhancing their English language competence, creativity, and innovative skills.

Comprising ten units, the book covers a diverse array of contemporary Electronica topics, utilizing genuine texts and visual resources sourced from textbooks, webpages, and manuals. Each unit contains interactive tasks, encouraging active student participation in the learning process. The language skills are taught in an integrated manner, allowing students to engage in activities like reading and note-taking or responding orally to written content.

The book's topics follow a sequential arrangement designed to achieve the outlined objectives. Incorporating authentic materials exposes students to language in practical use, fostering comprehensive learning by stimulating both the analytical and creative aspects of their minds.

The hope is that this book will empower students with enriching knowledge, enhance their English proficiency, and refine their creativity and critical thinking abilities. The author welcomes constructive feedback and valuable contributions to tailoring this learning resource further for ESP diploma students specializing in electronics engineering.

Contents		
Page	Chapter	Title
v		Disclaimer
vi		Foreword
vii		Preface
viii		Content
1-15	1	All About Me
16-33	2	Numbers
34-47	3	Describing Objects
48-53	4	Electronics in the Home
54-76	5	Describing Flowcharts, Graphs and Charts
77-93	6	Safety at Work
94-100	7	Reading: Lasers
101-108	8	Technical Terms
109-131	9	Introduction to Presentation
132		References
133-135		Glossarium

CHAPTER 1
ALL ABOUT ME

Learning Outcomes:

1. Students are able to use the expressions of self-introduction
2. Students are able to use the expressions to introduce other people.
3. Students are able to demonstrate conversations related to the introduction
4. Students are able to apply language patterns to introduce oneself and others.

General Overview

An introduction serves as a polite way to start a conversation and create a connection between yourself and others, particularly when introducing individuals who are not acquainted with each other. It entails providing information about the person being introduced and offering relevant details to those being introduced to them.

Mastering the art of introducing oneself is crucial to developing conversational skills in English. Moreover, introductions play a significant role in engaging in casual discussions during social gatherings. While introductory phrases differ from those used to greet friends, they seamlessly integrate into the broader conversation.

1. Self-Introduction

"First impressions are everything," as the old saying goes. It's critical that people make a strong case for their introduction. In the case of students' lives, a self-introduction is a way to introduce yourself to classmates and teachers. Self-introductions for students are important because they help you get to know your classmates and build relationships with them. They also allow you to share your strengths and interests with others and give others a sense of who you are and what you are interested in. Overall, a self-introduction for students is a great way to make a positive first impression and build connections with your peers.

1.1. Expressions Used in Making Self-Introduction

Let's take a closer look at some of the expressions for introducing yourself.

Mentioning your name	*I am John Smith* *My name is Lucy Perry* *My friends call me John* *Call me Lucy*
Referring to your occupations	*I am a student from ABC High School* *I'm a bank engineer* *I work as a consultant for the Department of Finance*
Talking about your place of origin	*I'm from New York.* *I come from New York.*
Mentioning your address	*I live in New York.* *I live at 23 Main Street,*

My address is West 121st. Street, Apt.#303, New York, N.Y. 10034, USA

Now, look at examples of how people make self-introduction.

Example 1:

Hello everyone,

My name is Allysa Shayne Achivida. But I prefer Lysa or Ly for short because I'm comfortable with it. I was born on September 1, 2000, and I'm 19 years old. I live in Cagayan de Oro, a city of golden friendship. I like to eat pizza, burgers, chocolate, French fries, and much more. I like to draw or sketch beautiful dresses and read fictional stories. I am a second-year college taking up a Bachelor of Medical Laboratory Science. We are six in the family, and I love them very much. I love to explore new things and venture into new ideas. And I try my best in everything that I do to make it happen. I have three values in life, which is respect, faith, and time. Respect yourself before others can respect you. Faith is seeing light within your heart when all your eyes see is darkness. Lastly time. Treasure every moment of it because we only live once. And I believe in the saying that studying and crying, at least I'm trying. I am Alyysa Shayne Achivida. And I am a dreamer.

Example 2:

Hi everyone,

My name is William Smith, and I am a fresher engineering student. I am from New York and have always been passionate about science and technology. I chose to pursue a career in engineering because I believe that it is a field that has the potential to make a real difference in the world.

I am particularly interested in computer science and hope to one day work on cutting-edge technology that can help solve some of the world's most pressing problems. In my free time, I enjoy playing chess and reading books on science and mathematics. I am excited to be a part of this university and am looking forward to learning from my lecturers and fellow students. I hope to contribute positively to the field of engineering and make a meaningful impact on the world.

Example 3:

Hi everyone,

My name is Bryan, and I am a fresher in college. I am originally from California and have always been passionate about education and learning new things. I chose to pursue a degree in commerce because I believe that it is a field that is constantly evolving and provides a wealth of opportunities for growth and advancement. In my free time, I enjoy reading books, listening to music, and spending time with my friends and family. I am excited to be a part of this college and am looking forward to meeting new people and learning from my professors. I hope to make the most of this opportunity and achieve my academic and professional goals.

Let's Get Practice

Task 1: **Complete the script below based on your personal information.**

Practice 1

Hello everyone,
My name is ____[1]_____. But I prefer ____[2]____for short because I'm comfortable with it. I was born on _____[3]_____and I'm ___[4]_____ years old. I live in ___[5]____, it is a city of ____[6]_____. I like to eat ____[7]_____ and a lot more. I like to _____[8]_____. I am a

____[9]___-year college taking up Diploma of ____[10]_____. We are ____[11]____in the family, and I love them very much. I love to explore new things and venture into new ideas. And I try my best in everything that I do to make it happen. I have __[12]____values in life which is _____[13]_____. And I believe in the saying that ____[14]_____. I am ____[15]____. And I am a _____[16]_____.

Practice 2

Hello, everyone!
My name is __[1]__and I'm a college student at __[2]___. I'm originally from __[3]__ and I'm majoring in ___[4]__. I'm really passionate about ___[5]___and I hope to pursue a career in that field after graduation. In my free time, I enjoy __[6]___, __[7]__, and __[8]___. I'm really looking forward to getting to know everyone in this class, and I hope we can all become friends!. Thanks for letting me introduce myself!

Practice 3

Hello, everyone!
My name is __[1]__ and I am a college student at __[2]__. I am originally from __[3]_, but I have been living in the United States for the past _[4]__ years. I am majoring in __[4]__, and I hope to someday work in the _[5]__ field. I am a very outgoing person, and I love meeting new people. I am also very involved on campus, and I am a member of _[6]__. In my free time, I enjoy _[7]__. I am a very friendly person, and I am always willing to help others. I am really looking forward to meeting all of you and getting to know you better!

1.2. Expressions used in asking for personal information

Go over the question below and see how people usually ask for personal information.

Name	*What's your name?* *May I know your name?* *Could you tell me your name?* *Are you Mrs. Smith?*
Address	*Where do you live?* *What's your address?* *Do you live in London?* *Whereabouts in New York do you live?*
Occupation	*What's your job?* *What do you do?* *What's your present occupation?* *What kind of work are you in?* *Are you a teacher?*
Hobbies	*What are your hobbies?* *How do you spend your leisure time?* *Are you interested in sports?* *What do you do for fun?*
Place of origin	*Where are you from?* *Where do you come from?* *Where were you born?* *Do you come from United State*

When you meet people for the first time, you usually introduce yourself. Opening a conversation with people you haven't met before is an important part of socializing.

Look at how the people in the following dialogues introduce themselves.

1. A: Hi, I'm Jennifer.
   B: Nice to meet you. I'm Purwati.

2. A: Hello, my name's Rossi. What's yours?
   B: Indah.

3. A: May I introduce myself? I'm Ben.
   B: Pleased to meet you. My name's Erika.

4. A: How do you do? I'm George Brown.
   B: My name's Rudi. How do you do, Mr.Brown?
   A: Please call me George.

Now, let's look at the dialogue below. Working with a friend or classmate, take turns practising this role-play.

Situation: *Peter and Jane are meeting for the first time at a social event. After greeting each other, they begin by asking simple personal questions.*

Peter: Hello.
Jane: Hi!
Peter: My name is Peter. What's your name?
Jane: My name is Jane. Nice to meet you.
Peter: It's a pleasure. This is a great party!
Jane: Yes, it is. Where are you from?
Peter: I'm from Amsterdam.
Jane: Amsterdam? Are you German?
Peter: No, I'm not German. I'm Dutch.
Jane: Oh, you're Dutch. Sorry about that.
Peter: That's OK. Where are you from?
Jane: I'm from London, but I'm not British.
Peter: No, what are you?
Jane: Well, my parents were Spanish, so I'm Spanish, too.

Peter: That's very interesting. Spain is a beautiful country.
Jane: Thank you. It is a wonderful place.
(*Source: https://www.thoughtco.com/beginner-dialogues-introducing-yourself-1210037)*

2. Introducing Other People

Introductions in Formal Situations: Introductions can occur between more than two people, for example, at a party or at a business meeting. When you meet someone for the first time, it is common to greet them by saying, "It's a pleasure to meet you" or "Pleased to meet you." It is polite to respond by repeating the statement back at them, as Mary does in this example:

Ken: Peter, I'd like you to meet Mary.
Peter: It's a pleasure to meet you.
Mary: It's a pleasure to meet you, too!
Ken: Mary works for...

Introductions in Informal Situations: In informal situations, introductions are made simply by saying, "This is (*name*)." It is also common to just say "Hi" or "Hello" as a response in this informal setting.
Ken: Peter, this is Mary.
Peter: Hi. How are you?
Mary: Hello! Pleased to meet you.
Ken: Mary works for...

Example: Introducing people in a meeting

Read the following conversation where Andrew is being introduced by Sally to the other people attending a meeting.

Sally : 'Hi Andrew, how are you?'
Andrew : 'Fine, thanks. And yourself?'

Sally : 'I'm very well, thanks. I appreciate you coming to the meeting today. Andrew, let me introduce you to Claire. She's our sales representative in Dublin.'
Andrew : 'Pleased to meet you.'

(Handshake)

Claire : 'Pleased to meet you too.'
Sally : 'You already know Jeff.'
Andrew : 'Yes, we have met before. Hi Jeff.'

(*Handshake)*

Jeff : 'Hi, Andrew. Good to see you again.'
Andrew : 'And you too.'
Sally : 'And I don't believe you know Mr Samuels?'
Andrew : 'No, I don't believe so. Hello Mr Samuels.'

(*Handshake)*

Mr Peter Samuels: 'Hello Andrew. Call me Peter.'
Sally : ' And you've already met John.'
Andrew : 'Yes, we met when I arrived here today.'
Sally : ' And lastly, this is Kate.'
Andrew : 'How do you do?'

(Handshake)

Kate : 'How do you do?'
Sally : 'Anyway, now that the introductions are over, let's start the meeting.'

Source:http://www.blairenglish.com/exercises/social/exercises/how_to_introduce_people_phrases/how_to_introduce_people_phrases.html

Common Introductory Phrases in Introducing Other People

As you can see in the previous examples, there are a number of different phrases that are commonly used to introduce strangers:

- (*name*), I don't think you've met (*name*).
- I don't think you know (*name*)
- May I introduce you to (*name*)
- (*name*), do you know (*name*)?
- (*name*), I'd like you to meet (*name*)

3. Saying Hello and Goodbye

Many people begin and end conversations by saying hello and goodbye to each other. Doing so is considered good manners in many parts of the English-speaking world, and it's also a simple way to express friendly interest in whoever you're chatting with.

A simple greeting followed by asking about the other person is all that is needed to begin an introduction. In this brief scenario, two people have just met:

Jane: Hello, Peter. How are you?
Peter: Fine, thanks. How are you?
Jane: I'm fine, thank you.

Once you're finished speaking with someone, it's customary to say goodbye as you both part, as in this example:

Peter: Goodbye, Jane. See you tomorrow!
Jane: Bye bye, Peter. Have a nice evening.
Peter: Thanks, you too!

Key phrases to remember include:

- Hello... How are you?
- I'm fine, thank you.
- Goodbye
- See you... (tomorrow, this weekend, next week, etc.)
- Have a nice... (day, evening, week, etc.)

Grammar Focus: Verbs

When we give personal information in English, we usually complete sentences. A complete sentence has a verb. Look at the examples below.

- My name is Endah. My friends call me Een.
- Adi is an accountant. He works for Commonwealth Bank.
- I live in Cirebon. My address is Jalan Ciung.
- Duta and Eros are students. They go to ISI.
- I am an architect. I have my own consulting company.

Asking and answering Yes/No questions using the verb *be*.

When you want to ask Yes/No questions with be, you should put the forms of the verb be (e.g., am, is, are) in front of the subject. Short answers can be used to answer the questions; sometimes, other information is added. Examples:

- Are Ridha and Joe friends?
  Yes, they are.

- Is Tyas an engineer?
  No, she's an actress.

- Is cooking your hobby?
  Yes, it is. But I like sewing, too.

- Is your address Jalan Melati No.10?
  No, It isn't. I live at Jalan Kamboja No. 10.

- Are you an architect?
  No, I'm not. I'm an artist.

- Is Adi an accountant?
  He is, and a very good one.
  He is. A very good one.

Task 2: Matching questions with answers

See how good you are with short answers. Match each question with its appropriate answer by drawing a line. An example is given.

1. Is your fax number 880-3044?	a) Yes, It is. I am crazy about it.
2. Are Yohan dan Martinus Ambonese?	b) No, I wasn't. My brother was born there.
3. Is your hobby hang-gliding, too?	c) Yes, they are. They perform at the Hyatt Regency.
4. Were you born in L.A.?	d) Yes, that's the right number.
5. Is your office on Jalan Thamrin?	e) No, I'm not. But I often go there.
6. Are they musicians?	f) Yes, but we call her Kiki.
7. Is Tuti a Karate expert?	g) Oh, yes. She's a black belt.
8. Are you all English teachers?	h) No, they aren't. They come from East Timor.
9. Is her name Kartika?	i) No, it isn't. It is on Jalan Brigjend. Hasan Basry.
Are you from Medan?	No. Some of us teach Arabic.

Appropriate questions about personal information

What items of personal information do people exchange with one another when they meet for the first time? Usually, what we want to tell others about ourselves is up to us. At the same time, we cannot ask our new acquaintance just any question that we want to.

Task 3: Identifying appropriate questions

The questions below all ask for personal information. Some questions are common in general situations, such as when people meet for the first time; others are considered not so appropriate. A question that is considered appropriate to Indonesians may sound strange to a foreigner.

Go over the questions, then put a checkmark (√) in front of each question that you find appropriate for the first meeting.

..... 1 What's your name?
..... 2 Are you here with your family?
..... 3 Are you married?
..... 4 How old are you?
..... 5 What do you do?
..... 6 Can I drop by sometime?
..... 7 What kind of shampoo do you usually use?
..... 8 Would you tell me about your work experience?
..... 9 What do you like to do in your leisure time?
...…….. 10 Where do you come from?
……..11 Do you exercise enough?
.....12 Do you get along with your boss?

Some questions may be considered inappropriate for general situations; however, the same questions may be appropriate in a specific situation. For instance, the question "*How old are you?*" is not commonly asked for the first meeting, but it is all right when a doctor asks his patient this question.

Summary

This chapter focuses on the art of delivering self-introductions and introduces others. When making an introduction in any language, we need to know the formulas and rules for doing it. A formal introduction consists of two parts: giving the names and, if not provided by the context, some information about the people being introduced so they will have some common ground to begin a conversation. People must sometimes introduce themselves: for example, at a party, in a new class, or in a new neighbourhood.

Practice Exercise

Directions: For each situation that follows, read the cues given, then complete the dialogue with any appropriate response.

Situation 1

A : _____

B : Nice to meet you, Miss Douglas.

C : _____

B : I'm a mechanical Engineering

C : _____

B :_____

Situation 2

Greg : Susan, I'd like you to meet Alice Carter, a good friend of mine.

Susan : _____

Alice : _____

Susan : Greg's told me a lot of good things about you, Alice.

Alice : _____

Situation 3

A : Hi, I guess I don't know you. My name's _____

B : _____

A : _____

B : _____

CHAPTER 2
NUMBERS

Learning Outcomes:

1. Students are able to identify the kinds and functions of numbers
2. Students are able to express numbers in English
3. Students are able to use mathematical expressions

General Overview

Look around you, and you will find numbers wherever you are: at school, on campus, at the office, at home, or at the supermarket (just name any place you know). At campus or at the office, you go into a room that probably has a number on the door. Two or three times during the day, the teacher will ask you to turn to a certain page number in the textbook. And I'm sure every now and then, in class or at the office, you glance at your watch and look at the numbers to see if it's time to go home yet.

Look at the list below, which shows different things that use numbers. Think of other things that have numbers, then ad them to the list.

- Passport numbers
- License plate number
- Date
- Score
- ……..
- ……..
- Price
- Barometer
- Mileage
- Telephone number
- ……
- ……

1. The Kinds and The Functions of Numbers

1.1. Cardinal Number

The following table shows the names of numbers. These numbers are sometimes called **cardinal numbers**. You can see from the numbers in this table how to form all other numbers.

Cardinal Numbers	
0 zero, oh, naught, nil, love, nothing	26 twenty-six
1 one	27 twenty-seven
2 two	28 twenty-eight
3 three	29 twenty-nine
4 four	30 thirty
5 five	40 forty (no **"u"**)
6 six	50 fifty
7 seven	60 sixty
8 eight	70 seventy
9 nine	80 eighty
10 ten	90 ninety
11 eleven	100 a/one hundred
12 twelve	101 a hundred and one
13 thir**teen**	110 a hundred and ten
14 four**teen**	120 a hundred and twenty
15 fif**teen**	200 two hundred
16 six**teen**	1,000 a/one thousand
17 seven**teen**	1,001 a thousand and one
	1,010 a thousand and ten

18 eigh**teen**	2,000 two thousand
19 nine**teen**	10,000 ten thousand
20 twenty	11,000 eleven thousand
21 twenty-one	100,000 a/one hundred thousand
22 twenty-two	1,000,000 a/one million
23 twenty-three	2,000,000 two million
24 twenty-four	1,000,000,000 a/one billion
25 twenty-five	

Note: In the past, British speakers used "billion" to mean a million million. However, nowadays, they usually use it to mean a thousand million (a milliard), like American speakers.

Expressing Numbers in English

- If a number is in the range of 21 to 99, and the second digit is not zero, we should write the number as two words separated by a hyphen.

  25 twenty-five
  57 fifty-seven
  89 eighty-nine

- Numbers over 100 are generally written in figures. However, if you want to say them aloud or want to write them in words rather than figures, you put **'and'** in front of the number expressed by **the last two figures**. For example:

  203 two hundred **and** three (**AmE:** two hundred three)
  622 six hundred **and** twenty-two (**AmE:** six hundred twenty-two)

- Numbers between 1000 and 1,000,000 are usually said or written in words as:

  1,803 one thousand, eight hundred **and** three

(**AmE:** one thousand, eight hundred three)

1,963 one thousand, nine hundred **and** sixty-three
(**AmE:** one thousand, nine hundred sixty-three)

2,840 two thousand, eight hundred **and** forty
(**AmE:** two thousand, eight hundred forty)

Four-figure numbers ending in 00 can also be said or written as a number of hundreds. For example, 1800 can be said or written as **"eighteen hundred."**

- If the number 1963 is being used **to identify** something, it is said as **"one nine six three."** We always say each figure separately like this with telephone numbers. If a telephone number contains a double number, we use the word "double":

  561 6603 **five six one** [*pause*] **double six 'oh' three**
  (AmE: five six one [*pause*] **six six 'oh' three)**

- **Saying years.** We normally say a year in two parts. In the case of years ending in "00", we say the second part in **"hundred"**:

  1058 ten fifty-eight
  1706 seventeen hundred and six (or **'seventeen oh six'**)
  1865 eighteen sixty-five
  1900 nineteen hundred

There are two ways of saying years ending in "01" to "09" before 2000. For example: "1901" can be said as **"nineteen oh one"** or **"nineteen hundred and one."** The year 2000 is read **"two thousand"**, 2006 **"two thousand and six"** (**AmE**: two thousand six). Post-2010 dates are often said as normal (2010 would be **"twenty-ten"**).

❖ **Flight numbers.** We pronounce a flight number in two parts or digit-by-digit. For example:

110	one ten (or **'one one oh'**)
1248	twelve forty-eight
2503	twenty-five oh three
3050	three oh five oh (or **'three zero five zero', 'thirty fifty'**)

Expressing millions

1,412,605 one million four hundred **(and)** twelve thousand six hundred **(and)** five

2,760,300 two million seven hundred **(and)** sixty thousand three hundred

Remember: The British use **'and'** before tens and ones, but the Americans usually leave the **'and'** out.

Ways of expressing the number 0

 0 = nil in football and other sports, for scores of 0 (**AmE**: zero or nothing)	 0 = love in tennis	 0 = zero in temperatures to refer to freezing point (0° Celsius, 0° Fahrenheit)	 0 = nought in mathematics (**AmE:** zero)	 0 = oh for telephone numbers

Notes:

1. We use zero to express some numerical values such as temperatures, taxes, and interest rates.
2. We can pronounce **"0"** like the letter **"o"** when we are reading out numbers figure by figure (e. g., telephone number, flight number, credit card number, etc.)

Writing full stops and commas in numbers

Use a full stop (**.**) to separate the main part of a number from the decimal part. **3.062** means **'three-point nought six two'**.

Say **point** to refer to the full stop. You can use a comma (**,**) in large numbers to separate the hundreds, thousands, and millions. **3,062** means **'three thousand and sixty-two'**. In British English, spaces are sometimes used instead of commas (3 062).

Remember: Speakers of some other languages use (,) and (.) in the opposite way - the commas for the decimals and the points for thousands, millions, etc.

1.2. Ordinal Number

Besides cardinal numbers, we also use ordinal numbers quite often, such as first, second, third, fourth, etc. Ordinals show order or position in a series; for instance,

1. The Siregars have three children. The oldest is Rina, the *second* is Rico, and the *third* is Lisa.
2. My classroom is on the *second* floor of the Theory building.
3. In the 1994 World Cup, Brazil got the *first* prize.

Study the following ordinal numbers and try to pronounce them correctly, and also pay attention to the spelling of each.

1st	first	11th	eleventh	21st	twenty-first
2nd	second	12th	twelfth	22nd	twenty-second
3rd	third	13th	thirteenth	23rd	twenty third
4th	forth	14th	fourteenth	24th	twenty fourth
5th	fifth	15th	fifteenth	25th	twenty fifth
6th	sixth	16th	sixteenth	26th	twenty sixth
7th	seventh	17th	seventeenth	27th	twenty seventh
8th	eighth	18th	eighteenth	28th	twenty eighth
9th	ninth	19th	nineteenth	29th	twenty ninth
10th	tenth	20th	twentieth	30 th	thirtieth

Read the following passage.

Mount Everest is the highest mountain in the world. People have been trying to climb it since 1920, but the *first* to second were Tenzing Norgay and Edmund Hillary. Their expedition was the eleventh attempt to climb Everest. They succeeded on the *29th* of May, 1953. The *fifteenth* expedition, a Japanese one in 1970, was the first to include a woman.

Notes :

Dates can be written :

1. (In Britain) in numbers only; day/month/year. So 5/1/2023 = 5th January 2023, not May 1st 2023. (American usage is opposites)
2. In numbers and words : day/month/year = 9th November 2023 or Month/day/year = November 9th 2023

Task 1*:* Say the following dates.

1)	6/27/2021	6)	9/8/2001
2)	11/12/1989	7)	14/4/2020
3)	28/2/1987	8)	December 3rd, 1998
4)	1/1/1999	9)	23/3/2018
5)	17/8/1945	10)	April 3rd, 2004

Task 2: Can you say these numbers?

John Lennon was born in 1940. He formed a rock group called 'The Quarrymen' in 1956. After some changes, this became 'The Beatles' in 1961. In 1962, the Beatles had their first record (Love Me Do) and began their career as world-famous pop stars. The group split up in 1970. John had his last concert appearance in 1974. He died in 1980.

Fractional Number

We use fractions when the numbers are not even. To say fraction numbers, we use the cardinals as the **numerators** and ordinals as the **denominator.** Look at the fractions numbers and try to say them correctly.

½	a half/one half	2/3	two-thirds
1/3	a third/one third	¾	three-quarters
1/5	a fifth	4/5	four-fifth
1/6	a sixth	5/6	five-sixth
1/10	a tenth	3 ¾	three–and–three–quarters
1/100	a hundredth	6 ½	six-and- a-half

Task 3: Can you say these numbers?

$ 4,800 When Jane Hootten died, her money ($ 4,800) was divided among her four sons and daughters. Peter received 1/8 of the money, Jon had ¼, Mary received 1/3, and Joan got 7/24. Who received the most money?

Notes:

1. Another way of saying fractions is to say A over B. For example, ¼ can be 1 over 4, 2/5 can be two over five. This is useful for the large digits; for example 349/682 is usually said 249 over 682. When the top digit is larger than the bottom digit,(e.g 5/2, 12/7), we always say A over B. So 5/2 is five over two.
2. 2 ½ hours is two-and-a-half hours, not "two hours and a half".
3. We express fractions in the smallest digits possible: we generally don't say4/16, we say ¼; we don't say 8/16, we say ½. Etc.

Decimal Fractions

If we don't use fractions in vulgar ways, we can make it to be decimals. In decimal fractions, an "0" has two names. Suppose it comes before the decimal point. It's called **"NOUGHT**". After the point, it is pronounced **"OH".**

Look at the numbers below and try to read them correctly:

0,1	nought-point-one
0,01	nought-point-oh-one
0,001	nought-point-oh-oh-one
1,1	one-point-one
1,123	one-point-one-two-three
2,6	two-point-six-recurring(2,666666 – infinity)
4,2 million	four-point-two-million (4,200,000)
2,8 thousand	two-point-eight thousand (2,800)

We use decimal fractions for large numbers when we want to give the approximate figure(number). So we call 4,218,937 = 4,2 million; 4,200,000 is less than 4,218,937, but here, the difference is not very important. If the number is more than 4,250,000, we call it 4,3 million.

This process is called "rounding down" (making the figure smaller to the nearest convenient unit) or "rounding up" (making the figure larger to the nearest convenient unit).

Fractional and Decimal Numbers

½	a half	0.5	*British English* nought point five *American English* zero point five
2½	two and a half	2.5	two point five
¼	a quarter	0.25	*British English* nought point two five *American English* zero point two five
¾	three quarters *American English also* three fourths	0.75	*British English* nought point seven five *American English* zero point seven five

Task 4*:* Can you say these numbers?

It is estimated that 53 % of the American voters voted in the 1980 Presidential election. About 155,000,000 people could have voted. As a percentage of this figure, 27.03 % voted for Mr Reagan, 21.77 % voted for Mr Carter, 3.5 % voted for Mr Anderson, and 0,64 % of the voting population voted for the other two candidates (Ed. Clark and Barry Commoner).

Notes:

1. We use a point (.) for decimal fractions, not a comma (,)
2. Numbers before the decimal point are normally said (one, ten, twenty-three, six hundred, etc.). After the point, we say each number by itself (digit by digit): we don't say hundred, thousand, million, etc. so 22.22 is twenty-point-two-two.
3. Sometimes, the "0" is called zero before and after the point; for example 0,06 can be zero-point-zero-six. This zero is often used in scientific English.

2. Mathematical Expressions

2.1. Addition

How do you say " 2 + 2 = 4" or "721 + 145 = 857"
In small additions, we usually say "**and"** for =, and "**is or are** "for =

Two and two are four.
Six and five is eleven.
What's eight and six?

In larger addition (and in more formal style) we use **"plus"** for +, and "**equals or is"** for =

Seven hundred and twelve plus a hundred and forty-five is/equals eight hundred and fifty-seven.

2.2. Subtractions

How do you say "7 - 4 = 3" or "619 – 428"?
In a conversational style, dealing with small numbers, people say:

Four **from** seven **leaves/is** three
Seven **take away** four **leaves/is** three

In more formal style, dealing with larger numbers, **minus and equals** are used.

Six hundred and nineteen minus four hundred and twenty-eight equals a hundred and ninety-one.

2.3. Multiplication

How do you say "3 X 4 =12, or "17 X 381 =6,477"?
In small calculations, the most common approach is to say three fours, six sevens, etc, and to use "**are"** for =

Three fours are twelve.
Six-seven are forty-two

In larger calculations, there are several possibilities. One way is to say "**times"** for **X** and "**is or makes"** for =

> Seventeen times three hundred and eighty-one is/makes six thousand, four hundred and seventy–seven.

In more formal style, we say "**multiplied by and equals."**
17 multiplied by 381 equals 6,477

2.4. Division

How do you say "9 3 = 3" or "261 9 = 29"
The simplest way to use "**divided by and equals**."

> Two hundred and sixty-one divided by nine equals twenty – nine.

But in smaller calculations, people might say, for example, *three into nine goes three (times).*

Table of Non-technical Numeric Prefixes

Number	Derived from number words in		
	Greek	Latin	English
¼			quarter-
½	hemi-	semi-/demi-	half-
1	mono-/haplo	- uni	one-
1¼		quasqui-	one and a quarter-
1½		sesqui-	one and a half-
2	di-	duo-/bi-	two-
3	tri-	tre-/ter-	three-
4	tetra-/tetr-	quadri-/quadr-	

5	penta-/pent-	quinque- /quinqu-	
6	hexa-/hex-	sexa-/sex-	
7	hepta-/hept-	septua-	
8	octa-/octo-/oct-		
9	ennea-	nona-/non-	
10	deka-/deca-	deci-	
11	hendeca-	undec-	
12	dodeca-	duodec-	

2.5. Math symbols

Math symbol	Name	Pronunciation
=	equal sign	equals
≠	not equal sign	is not equal to does not equal
+	plus sign	plus
–	minus sign	minus
x	times sign	times
÷	division sign	divided by
>	strict inequality	greater than
<	strict inequality	less than
≥	inequality	greater than or equal to
≤	inequality	less than or equal to

How would you read 2 + 2 = 4? I'm sure you know the numbers, but what about the math symbols (+ and = in this case)?

Here is a chart for you to learn how to read the most used math symbols aloud:

Summary

It's important to study numbers because no matter where you are, they're a necessary and unavoidable part of life. This is especially true when it comes to buying things/shopping, telling time, reading calendars, and knowing how to communicate with others.

Practice Exercise

Exercise 1: Say the following numbers.

Written	Spoken
3.04+2.02=5.06	
There is a 0% chance of rain.	
The temperature is -20^{0}C.	

You can reach me at 0171 390 1062.	
I live at 4604 Smith Street.	
He became king in 1409.	
I waited until 4:05.	
The score was 4-0.	

Exercise 2: More about pronouncing years.

Written	Spoken
2014	
2008	

Written	Spoken
2000	
1944	
1908	
1900	
1600	
1256	
1006	

Written	Spoken
866	
25	
3000 BC	
3250 BC	

CHAPTER 3
DESCRIBING OBJECTS

Learning Outcomes:
1. Students are able to describe shapes and angles in English
2. Students are able to describe objects in English

General Overview

In our daily lives, we come across all types of shapes and angles almost everywhere. For example, the angle formed by a clock's hands, the angle formed by two intersecting roads, the angle formed by a slice of pizza, the angle made by the corner of the doors and windows, the angles made by blades of a fan, and so on. The shape of the sun is different from that of a book. The notebooks are of the same shape but different sizes.

Learning Materials

1. Describing Angles And Shapes (Lines, Figures, and Solids)

Task 1: Do you know the shapes of the following objects?

1. Handkerchief
2. coin
3. disk
4. parking sign
5. chess-board
6. ball
7. dice
8. marble
9. bowl
10. wheel

1.1. One Dimensional and two-dimensional shapes

All of the shapes are made from a point (.). Does the point have a dimension? Of course not. It has only a position. By connecting many points, we will make shapes. The shapes may be one dimension, two dimensions, or even three dimensions.

If we make only one-dimensional shapes, we call them lines. There are two kinds of shapes if we view from the shapes. There are Straight Lines and Curved Lines. There are three kinds of lines if we view from the position: Vertical Lines, Horizontal lines, and Diagonal Lines.
Look at these:

A point line a vertical line a horizontal line

two diagonal lines a curved line a parallel line

When two lines meet at one end, they make an angle. There are three kinds of angles: obtuse angles, Right angle and Acute angle.

Obtuse angle Right angle Acute Angle

Task 2: **Read this and answer the questions.**

The letter "E" has one vertical line and three horizontal lines. It also has four angles.

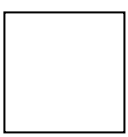
Which of these letters are described below?

D, M, C, H, F, L, Z, B

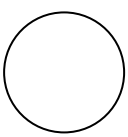
1. A letter with 2 horizontal lines and 1 vertical line.
2. A letter with 1 curved line and no straight line.
3. A letter with 2 curved lines and 1 vertical line.
4. A letter with 2 parallel vertical lines, 1 horizontal line and 4 angles.
5. A letter with 2 vertical lines and two diagonal lines.

There are some regular shapes in the geometry field. The two-dimensional shapes are mentioned in the figure. It is usually used to describe a plan of a house, the structure of a machine, or a site plan of a city.

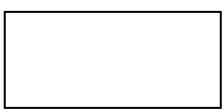
Task 3: **Look at these figures and answer the questions.**



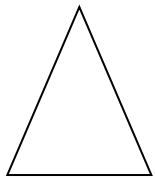
A square



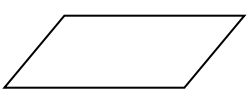
a circle



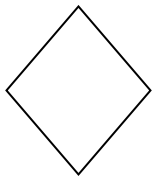
a rectangle



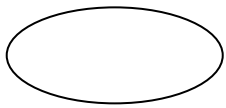
a triangle



A parallelogram



a rhombus



an ellipse

1. Which figure is curved?
2. Which figures have parallel sides?
3. Which figure always has equal sides?

4. Which figure may have equal sides?
5. Which figure has 3 angles?
6. Which figure has a curved side and a straight side?

If sides are more than 4 sides, they are said in Greek numbers with "gon" ending, such as pentagon for five sides shape, hexagon, saptagon, octagon, nonagon, and decagon. If there are a lot of sides, we can say it is "Polygon". A triangle is only a figure. It is not an object. If something is like a triangle, we can say: it is triangular in shapes. For example: "A parking sign is triangular in shape", or " A parking sign is shaped like a triangle".

Task 4: Make sentences from the table below.

A coin A ruler A set Square A protractor A chess-board	is shaped like a	Square Rectangle Semi-circle Triangle Circle	It is	Rectangular Circular Square Semi-circular triangular	In shape.

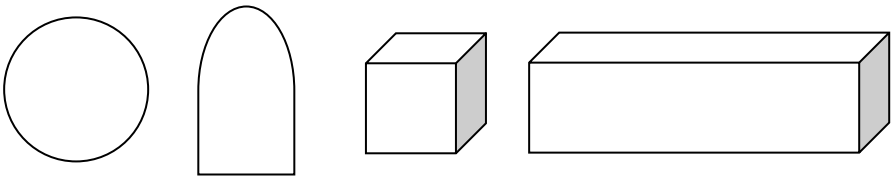
The two dimensional shapes have length and a width or even a height (all of them can be said as sides). From those two dimensions, we can find an area.

Task 5: **Complete the following table with the correct word.**

Nouns	Adjectives	Verbs
Length	…….	…….
Width	…….	…….
Height	…….	…….

1.2. Three-dimensional shapes

The three-dimensional shapes are usually called Solids. The three dimensions are length, width, height, or thickness. From those, we'll know the volume of an object. One field of a solid is called a surface or a field, and the sides of the figure are named the edges. The joined angles among the surfaces are said corners. Look at these solids:



A sphere a hemisphere a cube a rectangular prism

Task 6: Draw the shapes of the following descriptions.

Shapes	Illustrations
Bell-shaped	
Bulbous	
Circular	
Concave	
Conical	
Convex	
Crescent-shaped	
Cubical	
Cylindrical	
Diamond-shaped	
Dome-shaped	
Egg-shaped	
Hemispherical	
Hexagonal	
Irregular	
Kidney-shaped	

Mushroom-shaped	
Octagonal	
Oval	
Pear-shaped	
Pyramidal	
Rectangular	
Round	
Semi-circular	
Spherical	
Spiral	
Square	
Star-shaped	
Tapering	
Triangular	
Tubular	
U-shaped	
X-shaped	
Y-shaped	

2. Describing Objects/Things

Describing object is a kind of text which describe or figure out something based on their definition, function/use, component/part, characteristics such as; material, shape, dimensions, property, colour, and also describe their position and connection between parts.

6 parts of describing object:

1. Definition
2. Function/Use
3. Component/Parts
4. Characteristics
    A. material
    B. shape/figure

C. dimensions
D. property
E. color

5. Position
6. Connection between parts

1. Definition

Mouse is a handheld hardware input device.
Monitor is an output device that displays information in pictorial or text form.

2. Functions of an item

We can describe the function of an item in a number of ways. Study these examples:

Using the Present Simple i. ROM ***holds*** the instructions which are needed to start up the computer. ***Is/are + used to + infinitive (Verb 1)*** ii. ROM is ***used to hold*** instructions which are needed to start up the computer.	***Is/are + used for + -ing form.*** iii. ROM is ***used for holding*** instructions which are needed to start up the computer. ***Emphasizing the function*** iv. ***The function of ROM is*** to hold instructions which are needed to start up the computer.
Using the Present Simple *i. USB Flash-drive **stores** data and transfers files between devices.*	***Is/are + used for + -ing form.*** *iii. USB flash drive is **used for storing** and transferring files between devices.*

Is/are + used to + infinitive (Verb 1)	***Emphasizing the function***
*ii. USB flash-drive is **used to store** data and transfer files between devices.*	*iv. **The function of USB flash drive** is to store data and transfer files between devices.*

Task 7: Match each item in Column A with its function in Column B. Then describe its function in four ways.

A Item	B Function
RAM	controls the cursor
processor	inputs data through keys like a typewriter
mouse	displays the output from a computer on a screen
clock	reads DVD-ROMs
flash memory key	reads and writes to electronic chips on a card
monitor	holds instructions which are needed to start up the computer
keyboard	holds data read or written to by the processor
DVD-ROM drive	provide extremely fast access for sections of a program and its data
cache	controls the timing of signals in the computer
ROM	controls all the operations in a computer

3. Components/Parts

A hammer { consists of / is made up of / is composed of } a handle and a head.

A hammer includes a handle and a head.

A hammer has two { parts / sections / components } { a handle and a head / one is a handle, the other is a head. / one is a handle, the other is a head. }

4. Characteristics

A) Materials

- A chair is made of wood.
- Bread is made from wheat.

B) Shape/Figure

Sentence Structures:

a) _____ is shaped like + noun
b) _____ is + adj. + in shape.
c) _____ is + adj.

Examples:

- A coin is shaped like a circle.
- A coin is circular in shape.
- A coin is circular.

KEYWORDS	Noun	Adjective
	Square	Square
	Rectangle	Rectangular
	Triangle	Triangular
	Ellipse	Elliptical
	Semicircle	Semicircular
	Circle	Circular
	Cube	Cubical
	Pyramid	Pyramidal
	Cone	Conical
	Hemisphere	Hemispherical

C) Dimensions

Keywords: Length, Width, Height, Depth, Thickness

a) _____ is 250 metres + adj.
b) _____ has a + noun of 250 meters.
c) The noun of _____ is 250 metres.

Examples:

- This road is 250 meters long.
- This road has a length of 250 metres
- This length of the road is 250 metres.

- This LED TV is 52 inches long.
- This LED TV has a length of 52 inches.
- This length of LED TV is 52 inches.

- This building is 25 metres high.
- This building has a height of 25 metres.
- The height of this building is 25 metres.

KEYWORDS	Adjective	Noun
	Long	Length
	High	Height
	Wide	Width
	Broad	Breadth
	Deep	Depth

D) Property

It is a special quality that belongs to the object.

Examples:

- The edge of the table is straight.
- The middle of a bottle is curved.
- The book is thick.

E) Color

Black, white, green, purple, yellow, etc.

Examples:

- My mobile is yellow in color.
- The color of my mobile is yellow.

5. Position

If the objects to be described are complicated, consisting of many parts, or appearing in a set, positions must be given.

Example: inside, outside, at the top, on the left/ right, in the middle, to the right/ left (of), at the bottom, above, over, between, below, beside, at the end of, behind, in front of, near, by, etc.

Example:

- A car has four headlights at the front. At the top of the engine is the radiator, and at the top is an oil cap

6. Connection between parts

Connection is a relationship between two things or more. If the object has more than one part, we have to describe them part by part with a connection among them. Verbs that signal the connection are attached, detach, join, connect, support, fix, fit, lead, link, etc.
Examples:

- The head of a hammer is fixed to the handle.
- The rubber tube is fitted over the glass tube.
- The glass tube is fitted into the rubber tube.
- The wire leads from the switch to the bulb.
- The wire links between the switch and the bulb.
- The wheels of a car are detached from the body of a car.
- The wheels of a car are connected by the axles.

Below is an example of how we describe an object.

A smartphone is a handheld electronic device that combines the functionality of a mobile phone with features commonly found in computers, such as internet connectivity, touch-screen interface, and a wide range of applications. The primary function of a smartphone is to facilitate communication through calls, messaging, and emails. Additionally, it allows users to access the internet, browse websites, use social media platforms, play games, capture photos and videos, and run various productivity and entertainment apps. A typical smartphone consists of several key components, including:

- *Display screen (usually LCD or OLED)*
- *Processor (CPU)*
- *Random Access Memory (RAM)*
- *Storage (Flash memory)*
- *Battery*
- *Front and rear cameras*
- *Speakers*

- *Microphone*
- *SIM card slot*
- *Various sensors (gyroscope, accelerometer, proximity sensor, fingerprint sensor, etc.)*
- *Connectivity modules (Wi-Fi, Bluetooth, GPS, NFC)*
- *Operating system (e.g., Android, iOS*

Smartphones are commonly made of a combination of materials, with the front usually covered by the scratch-resistant glass (e.g., Gorilla Glass) and the back and sides composed of high-quality plastic, metal (e.g., aluminium), or glass. The shape of a smartphone is typically rectangular with rounded corners. The edges are usually smooth and curvy for a comfortable grip. Smartphones vary in size, but a typical model may have dimensions around 6.2 inches in height, 3 inches in width, and about 0.3 inches in thickness. One of the key properties of a smartphone is its portability, enabling users to carry it conveniently in their pockets or bags. It is also designed for ease of use, with touch-screen controls and intuitive interfaces. Smartphones come in a wide range of colours, including black, white, silver, gold, blue, and other vibrant hues, offering users various options to match their preferences. The position of the components on a smartphone is usually standardized for ease of use. The front features the display screen and front-facing camera, while the back houses the main rear camera(s) and other sensors. The sides typically contain buttons for volume control and power. The various components of a smartphone are integrated and connected through a complex circuitry system. The processor manages data flow between the different parts, ensuring seamless functionality and interaction among the camera, display, memory, and other components.

Summary

Describing is defined as giving details about a person, thing, or event. Describing an object is a kind of text that describes or figures out something based on the appearance or the nature of an object. Describing objects has a function to describe a particular thing. It deals with the appearance or the nature of an object. It means that describing their colours, shapes, sizes, weight, height, width, density, contents, and so on.

Practice Exercise

Please describe these objects.

1. Smartphone (Your Smartphone)
2. Laptop
3. Smartwatch
4. Tablet
5. Wi-Fi Router

CHAPTER 4

READING: ELECTRONICS IN THE HOME

Learning Outcomes:

1. Students are able to demonstrate an understanding of the main ideas and key details presented in the reading texts.
2. Students are able to use new technical vocabulary related to home electronics in their discussions and writing.
3. Students are able to identify and name various electronic devices commonly found in households.

Learning Materials

Pre-Reading Activity

Task 1: Make a list of things in your house that use electronics. Compare your list with that of another group.

Reading Zone

Task 2: Reading for a Purpose

In your study and work, it is important to have a clear purpose when you read. Read quickly through the text below. Tick (√) any items mentioned in the list you made in Task 1.

Text 1: Electronics in the home

Electronics began at the start of the twentieth century with the invention of the vacuum tube. The first devices for everyday use were radios, followed by televisions, record players, and tape recorders. These devices were large and used a lot of power.

The invention of the transistor in 1947 meant that much smaller, low-powered devices could be developed. A wide variety of electronic devices, such as hi-fi units and portable radios, became common in the home.

It was not until 1958 that microelectronics began with the development of ICs (integrated circuits) on silicon chips. This led to a great increase in the use of electronics in everyday items. The introduction of the microprocessor allowed electronics to be used for the control of many common processes.

Microprocessors are now used to control many household items, such as automatic washing machines, dishwashers, central heating systems, sewing machines, and food processors. Electronic timers are found in digital alarm clocks, water heaters, electronic cookers, and microwave ovens. Telephone use electronics to provide automatic dialing and answerphone facilities. New entertainment devices have been developed, such as video recorders and CD (compact disc) players.

In the future, electronics are likely to become even more common in the home as multimedia entertainment systems and computer-controlled robots are developed.

Check Your Comprehension

Task 3: **Fill in the gaps in this table with the help of the text.**

Date	Invention	Application in the home
Early 20th century	……	……..
……	Transistor	……..
1958	……	Automatic washing machines
Future	…….	……..

Text 2: Understanding diagram

In electronics, you have to read not only texts but also diagrams. You have to be able to combine information from both diagrams and text. This text introduces two kinds of diagrams often used in electronics.

Task 4: Read the text below to find the answers to these questions.

1. What do we call the two types of diagrams shown in the text?
2. What do we call the approach to electronics, which focuses on the function of units?

Understanding electronic diagrams

Although electronic devices may look complicated, they are made up of common basic units (building blocks) connected together. The function of each of these units and the path of the signals between them can be shown in a block diagram. For example, the block diagram of a simple radio is shown in Fig. 1.

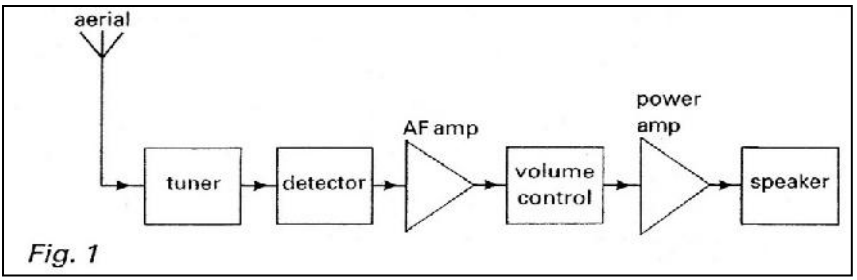


Fig. 1

To understand how the radio works, it is more important to understand the function of each until than to know what components are used. This is known as a systems approach to electronics. For example, in Fig.1, the tuner selects the required signal, the detector then separates off the audio part of the signal, and the AF amplifier (amp) amplifies it.

The connections and values of the components inside these basic units can be shown in a circuit diagram using standard electronic symbols. Fig. 2 shows the circuit diagram for the simple radio.

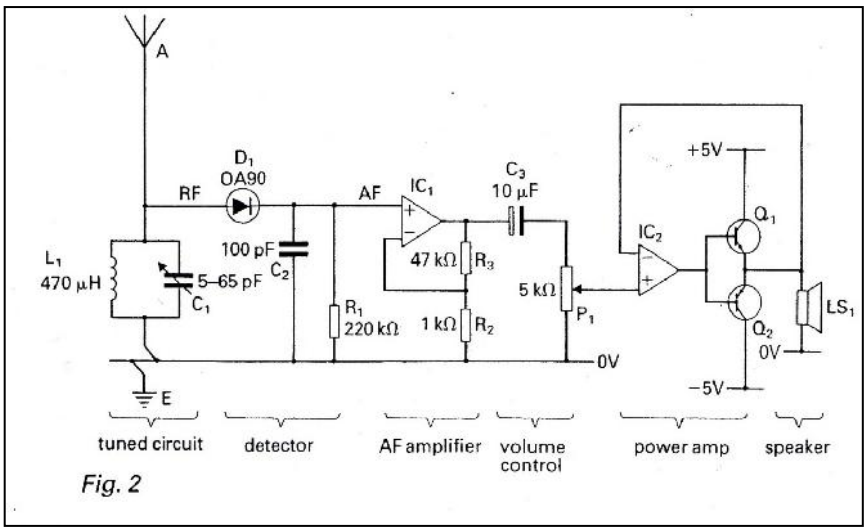


Fig. 2

How many of the circuit symbols in Fig. 2 can you identify?

Language Study

Describing block diagrams and circuits

Look again at Fig. 1 above. We can describe it like this:

The radio ***consists of*** / ***is composed of*** a tuner, a detector, and an AF amplifier.

Using ***comprise***, we can start our description with the blocks:

A tuner, a detector, and an AF amplifier ***comprise*** the radio.

We can describe the links between each building block using expressions:

The tuner ***is connected*** / ***is linked*** to the detector.

Practice Exercise

Look at Fig. 2. We can describe the values of the components like this:

R1 a two-hundred-and-twenty-kilohm resistor

C2 a hundred-picofarad (puff) capacitor

Task 5: Describe the value of these components.

1. R2
2. C1
3. R3
4. C3
5. P1
6. L1

This table provides the terms you need.

Prefix	Symbol	Multiple	Example
Giga	G	109	GHz gigahertz
Mega	M	106	MΩ megaohm
kilo	k	103	kV kilovolt
deci	d	10-1	dB decibels
Mili	m	10-3	mW milliwatts
Micro	μ	10-6	μH microhenries
nano	n	10-9	nF nanofarads
pico	p	10-12	Pf picoarads

Looking now at the basic units of the circuits, we can describe the volume control like this:

The volume control consists of a ten-microfarad electrolytic capacitor connected in series with a five-kiloohm potentiometer (pot). The positive terminal of the capacitor is connected to the output of the AF amplifier, and the wiper of the post is connected to the power amp. The third terminal of the post is connected to the zero voltage supply rail, which is earthed.

Task 6. Fill in the gaps in this description of the tuned circuits shown in Fig. 2. Each gap represents one word.

The circuit 1_____ of a four hundred and seventy 2_____ inductor which is connected in parallel with a 3_____. The 4_____ can be varied between five and sixty-five 5_____. The aerial is 6_____ to the top end of the tuner. It is also connected to the positive terminal of the 7_____ in the detector. The bottom end of the tuner is connected to the earth via the zero voltage 8_____ rail.

CHAPTER 5
DESCRIBING FLOWCHARTS, GRAPHS, AND CHARTS

Learning Outcomes:

1. Students are able to use relevant English vocabulary related to flowchart elements.
2. Students are able to use flowcharts as a tool to describe various processes and workflows in English.
3. Students are able to use relevant English vocabulary related to graphs.
4. Students are able to use appropriate language structures and expressions to describe trends and changes in graphed data.

General Overview

Visual representations, such as flowcharts and graphs, serve as invaluable aids in conveying complex information and ideas. They enable learners to illustrate processes, analyze data, and present findings in a clear and engaging manner.

Learning to describe flowcharts and graphs in English language learning offers numerous benefits, from improving language proficiency and communication skills to promoting critical thinking. These essential skills equip learners with the tools they need to succeed academically, professionally, and in various real-life scenarios.

1. Describing Flowchart

Do you know what a flowchart is? What do you use it for? Do you know how to explain it in sentences? Having the ability to describe an action or process from a flowchart into sentences is very important. If you make a project paper containing flowcharts, you have to remember that not all of the readers understand how to read them. Hence, you have to describe in complete sentences what process or action takes place in the flowchart. In this chapter, we are going to explore how to explain a flowchart in sentences.

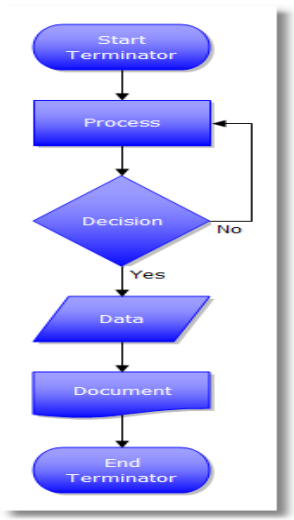
1.1. Flowchart Symbol

A flowchart describes a flow of action and process before a decision is made. A flowchart has meaningful symbols to describe each of the processes. Therefore, before practicing how to explain a flowchart in sentences, we have to remember the meaning of each symbol in a flowchart. Here are several common symbols that can be used in a flowchart:

Symbol	Symbol Name	Symbol Description
	Terminator (Terminal Point, Oval)	The terminator shows the start and stop points in a process.
	Action or Process	Shows a Process or action step. This can represent a single step (turn on the laptop) or the entire process (make a paper) within a larger process.

	Decision	Indicates a question or branch in the process flow. Typically, a Decision flowchart shape is used when there are two options (Yes/No, No/Go, etc.). A decision has to be made.
	Data (I/O)	The Data flowchart shape indicates inputs to and outputs from a process. Therefore, it is also called an I/O shape.
	Document	This symbol represents a printed document or report.
	Off-page connector	Off-Page Connector shows the continuation of a process flowchart onto another page.
	Flow Line	The lines indicate the sequence of steps and the direction of the flow.

1.2. Example of a Simple Flowchart



Here is one example of a simple flowchart. The process is initiated by the start symbol, which is continued to the first process, symbolized by the rectangular shape. If there is a decision that should be made, put it in the diamond-shaped symbol. If the answer to the question is a 'no',, then go back to the previous step, but if the answer is a 'yes' go on to the next step. If the output of the process is in the form of data, then put it in the parallelogram shape, and if the data is printed, put it in the document symbol. The process may continue as long as you need it to, but if the process stops, put the terminator shape again to indicate that the process has ended.

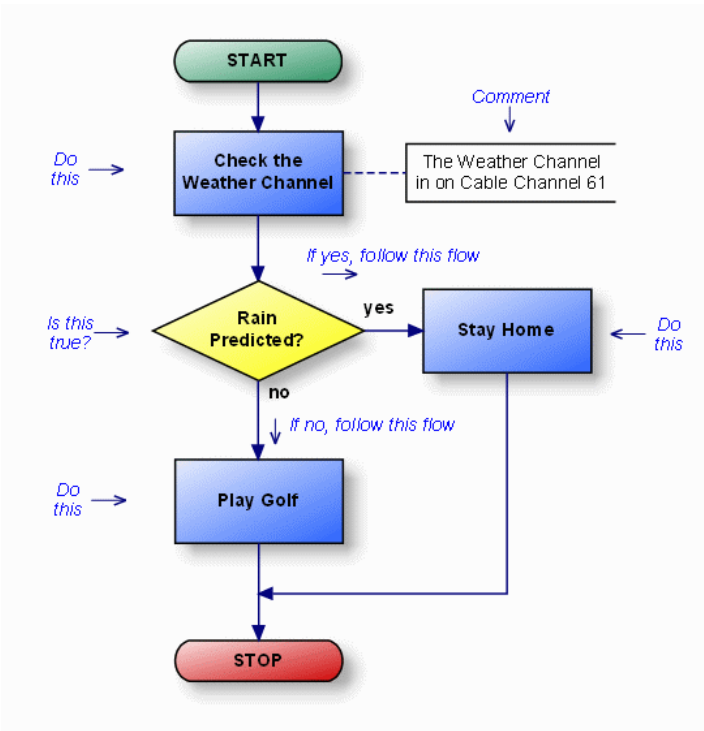
Explaining Flowchart

As we learned earlier, we have to transform the information from the flowchart into sentences, which will form a paragraph. The paragraph can be a combination of various kinds of sentences and tenses. One thing that we have to remember is that a flowchart describes how things happen. Therefore, the paragraph should be in the form of procedural text.

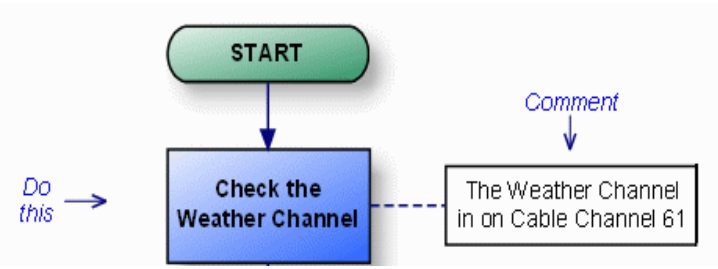
In every paragraph and text, there should be transitional signals in order to make the combinations of the sentences go smoothly and to avoid abrupt jumps in between ideas. As such, in a procedural text, we also have several common transitional signals for chronological order that can be used to compose a paragraph explaining flowcharts.

Initial Steps	Whilst Steps	Final steps
First	After that	At last
Firstly	And then	Finally
First of all	Before/after that	Lastly
Initially	Next	The last
	Previously	
	Second, third, etc.	

To get a deeper understanding of how to use the transitional signals and the kinds of sentences, study the flowchart that shows us the decision whether we play golf or just stay home below.



From the first step, we get the information as stated below:



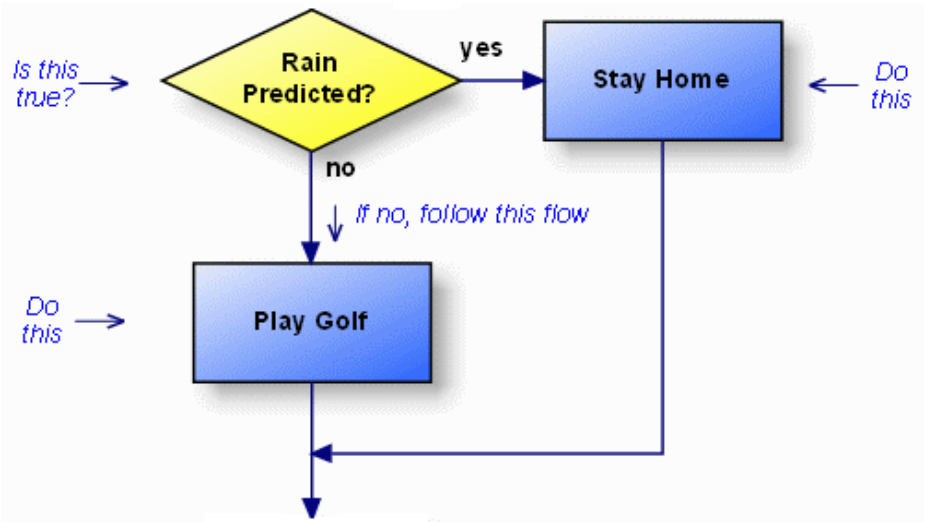
The possible sentences that we can make are:

- First of all, check the weather on the Weather Channel on Cable Channel 61
- The first step is checking the weather on the Weather Channel on Cable Channel 61

From the examples we can conclude that to explain the first step we can use this language pattern:

Transitional Signal + Imperative Sentence
Or
Subject (the first step, etc.) + to be + V-ing

Next is finding out how to compose sentences from the information in the diamond box. Pay attention to the flowchart below.



In paraphrasing the information in the diamond box, we can use the form noun clause with 'whether' or 'if' as a connector. For example:

- From the channel, we can find out whether there is rain predicted (or not)
- From the channel, we can find out if there is rain predicted

After explaining the information from the diamond box, we have to pay attention to the possible outputs, whether they are yes or no.
If the answer is yes, then follow the 'yes' arrow. The possible sentences from the answer are:

- If the predicted rain happens, you can just stay at home
- If the predicted rain happens, stay at home

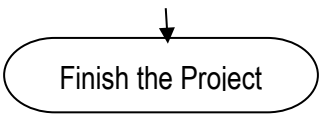
If the answer is no, we have to follow the 'no' arrow. Here are some possible sentences that we can make:

- If the predicted rain doesn't happen, you can play golf
- If the predicted rain doesn't happen, go outside and play golf

Here is the language pattern that we can use to explain the information in the diamond shape:

If Conditional
Conditional + Simple Sentence with Modal
Conditional + Imperative Sentence

In explaining the last step, you can use any transitional signal for the final steps followed by a simple present sentence. For example:



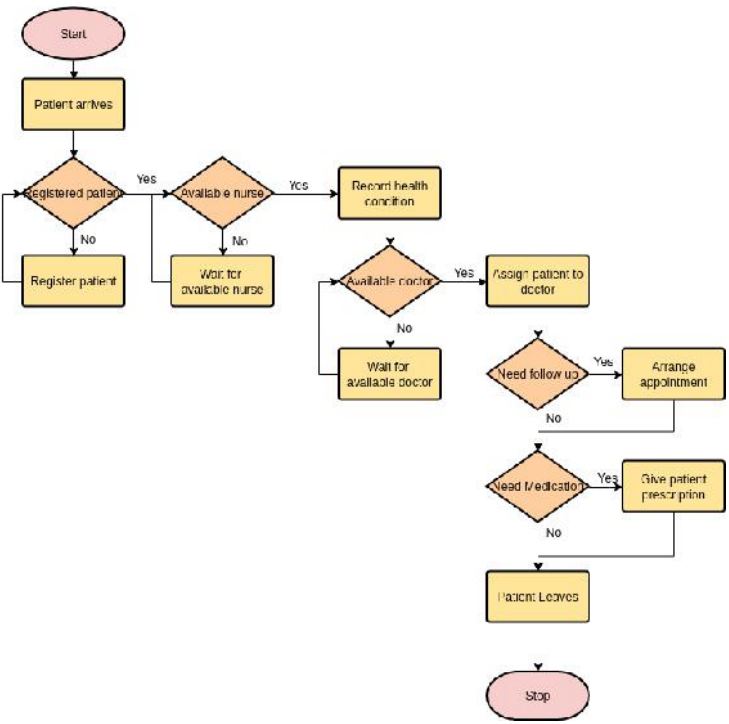
Possible sentences:

- Finally, you finish your project (active form)
- At last, the project is finished (passive form)

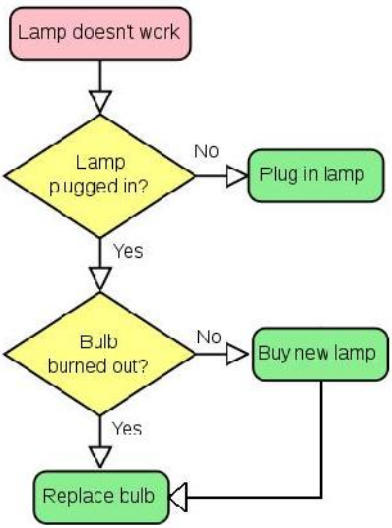
The language pattern used in explaining the last step is:

> Transitional signal + Simple Present sentence

Here is another example flowchart within the field of medical services.



Task 1: True False Statement
Look at the picture below and study the following sentences. After that, decide whether they are true or false!



1. (___) The flowchart is about how to change a lamp
2. (___) If the lamp is not plugged in, we have to turn off the lamp
3. (___) The possible reason why the lamp doesn't work while it is plugged in is because the bulb is burned out
4. (___) If the bulb is burned out, buy another lamp to replace the bulb
5. (___) You have to replace the bulb if it is burned out

Task 2: **Flowchart-Making**

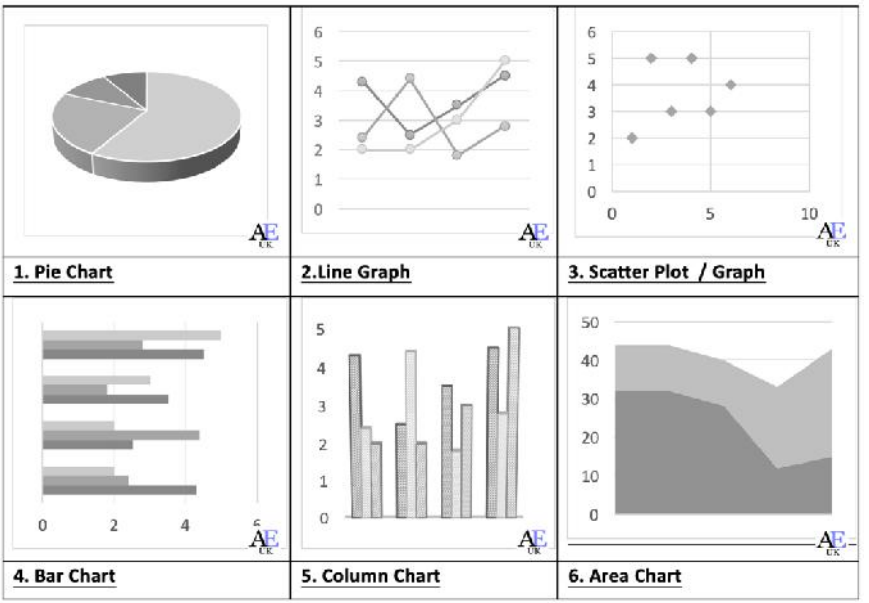
On a separate sheet of paper, make a flowchart organizing the "flow" of getting ready to go to school in the morning.
Be sure to include the following steps in your chart, but don't be afraid to add other things if you need them!

Select something to wear *Take a shower* *Eat breakfast* *Leave the house for school* *Get out of bed*	*Look for your shoes.* *Brush your teeth* *Put toast in the toaster* *Check your alarm clock* *Turn on shower*	*Put your shoes on* *Hit snooze button* *Get dressed* *Comb your hair* *Check the time*

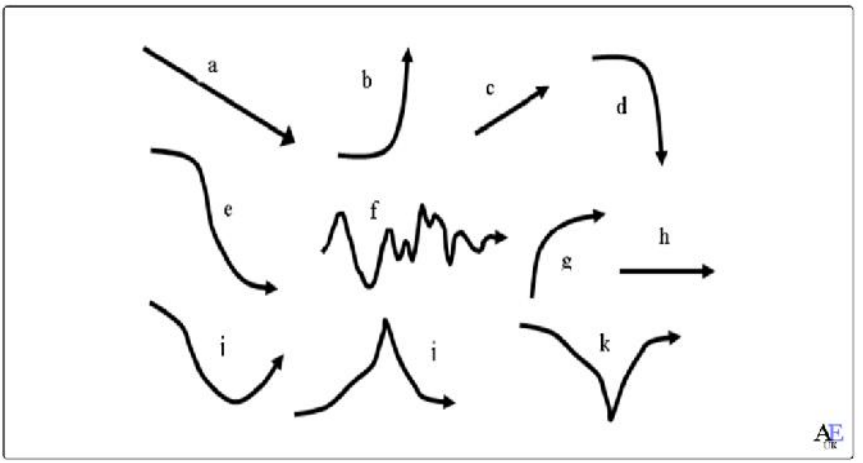
2. Describing Graphs and Charts

Data visualization has become a crucial aspect of how we communicate information. Whether it's sales figures, population data, or scientific findings – charts and graphs help to quickly convey meaningful insights that can inform decisions across various fields. Describing charts can be challenging for language learners, as it requires both knowledge of the terminology and understanding how to effectively identify trends and patterns.

2.1. Different graph/chart types



2.2. Describing the language of a graph



Useful Graph Vocabulary

UP: *increase / rise / grow / went up / soar / double / multiply / climb / exceed /*

DOWN: *decrease / drop / fall / decline / plummet / halve / depreciate / plunge*

UP & DOWN: *fluctuate / undulated / dip /*

SAME: *stable (stabilised) / levelled off / remained constant or steady / consistent*

CHANGES: *gently / gradually / slightly / steadily / a little /*

CHANGES: *suddenly / sharply / dramatically / steeply / sudden*

TOP: *reached a peak / peaked / reached its highest level /*

BOTTOM: *bottomed out / sank to a trough / the lowest level*

2.3. Vocabulary to describe graphs

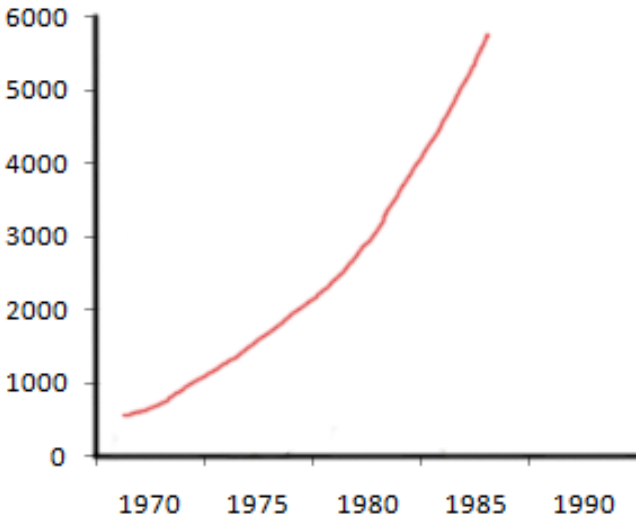
Introducing the graph

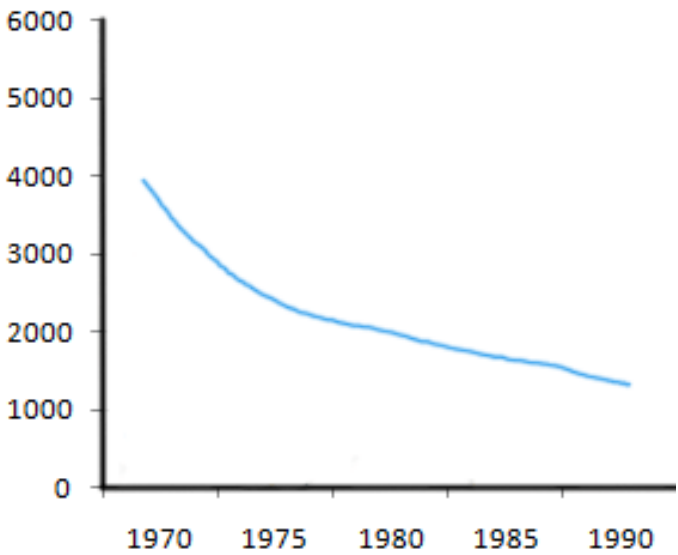
The graph/table/pie chart/bar chart/diagram ...

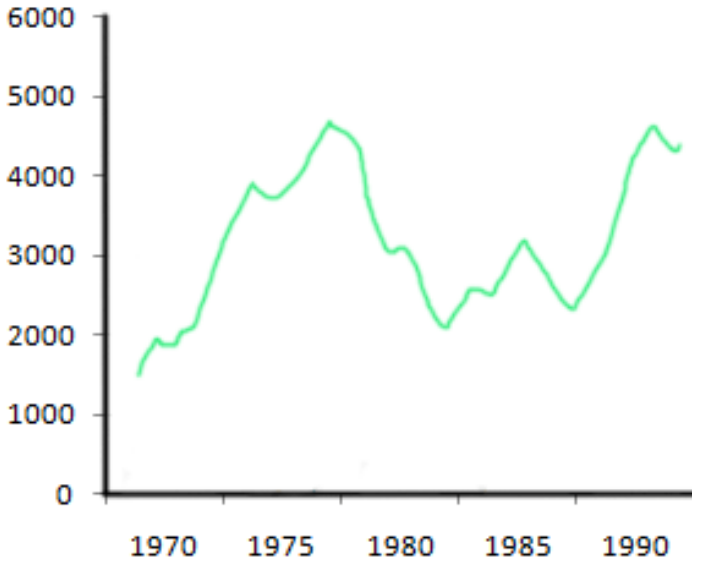
- gives information about/on ...
- provides information about/on ...
- shows ...
- illustrates ...
- compares ...
- explains why ...
- describes ...
- draws the conclusion of (a survey) ...

Example: The pie charts provide information on the proportion of males and females working in the agricultural sector.

Types of changes







Nouns

a rise (of)
an increase (of)
a growth (of)
a peak (of)
a surge (of)
Example: a rise in prices

a fall (in)
a decrease (in)
a decline (in)
a dip (in)
Example: a fall in prices

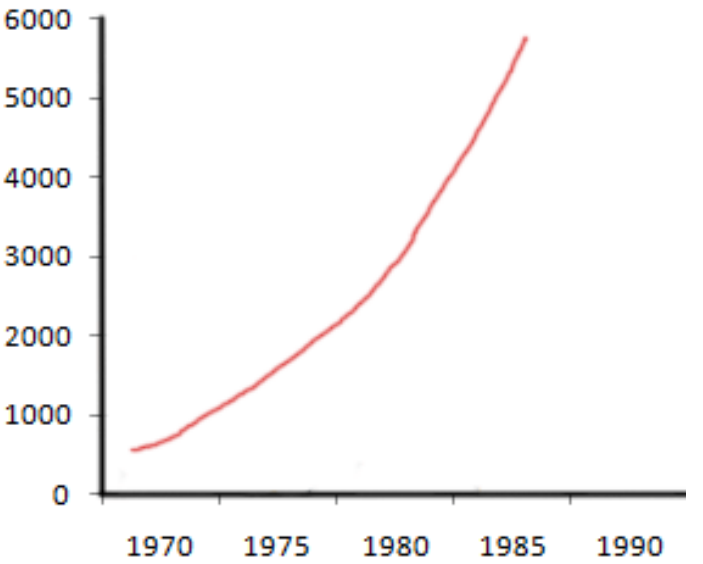
a fluctuation (of)
a variation (in)
Example: a fluctuation of prices

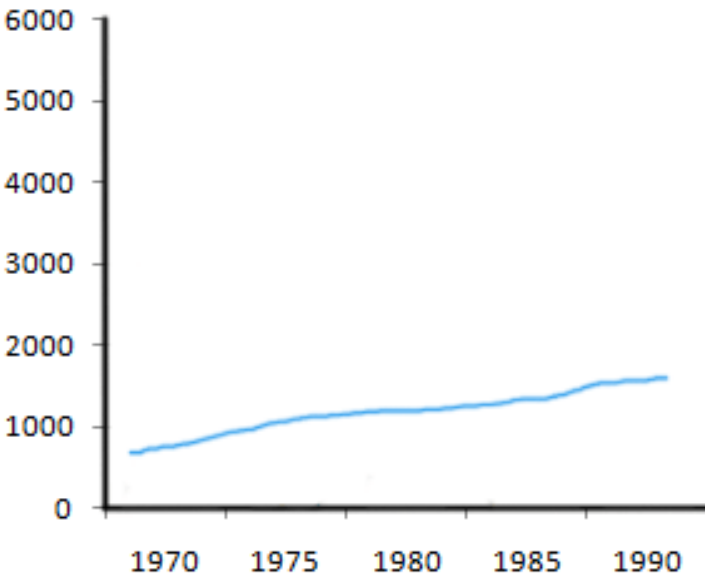
Verbs

to rise
to increase
to surge
to grow
to peak
Large rises:
to rocket
to soar
to leap (->leapt)

to fall
to decrease
to decline
to dip
to dive
to plunge
Large falls:
to plummet
to fluctuate
to vary

Description of changes





Adverbs

sharply
suddenly
rapidly
abruptly
dramatically
significantly
considerably
markedly
wildly
Example: the prices rose sharply

slightly
gently
gradually
steadily
modestly
marginally
Example: the prices increased modestly

Adjectives

sharp
sudden
rapid
abrupt
dramatic
steep
significant
considerable
marked
substantial
spectacular
Example: there was a considerable growth

slight
gentle
gradual
steady
consistent
modest
marginal
Example: there was a gradual decline

Summary

Learning flowcharts and diagrams in English is a valuable investment for professionals and students in specialized fields. It equips them with essential communication and analytical skills and collaboration within their specific industries. By incorporating these visual tools into their language proficiency, professionals can achieve success and make meaningful contributions to their chosen careers.

Exercise 1

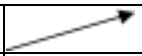
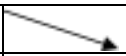
Place the words in the right column, then add a few more words of your own

be constant *expansion* *growth* *reduction* *stability*

climb *extension* *improvement* *rise* *stagnation*

collapse *fall* *level off* *shoot up* *stand at*

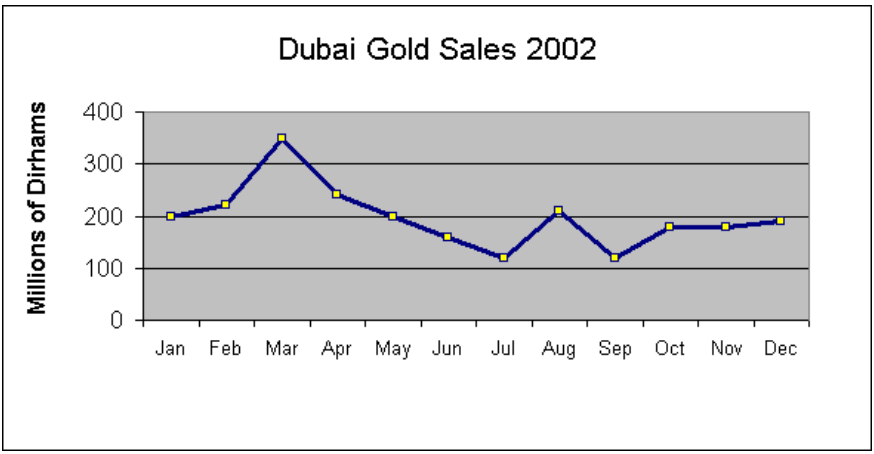
cut *go down* *push down* *soar* *stay at*

			
Verbs			
Verbs			
Verbs			
Verbs			
Verbs			
Verbs			
Nouns			
Nouns			
Nouns			
Nouns			
Nouns			
Nouns			

Exercise 2

Fill in the correct word

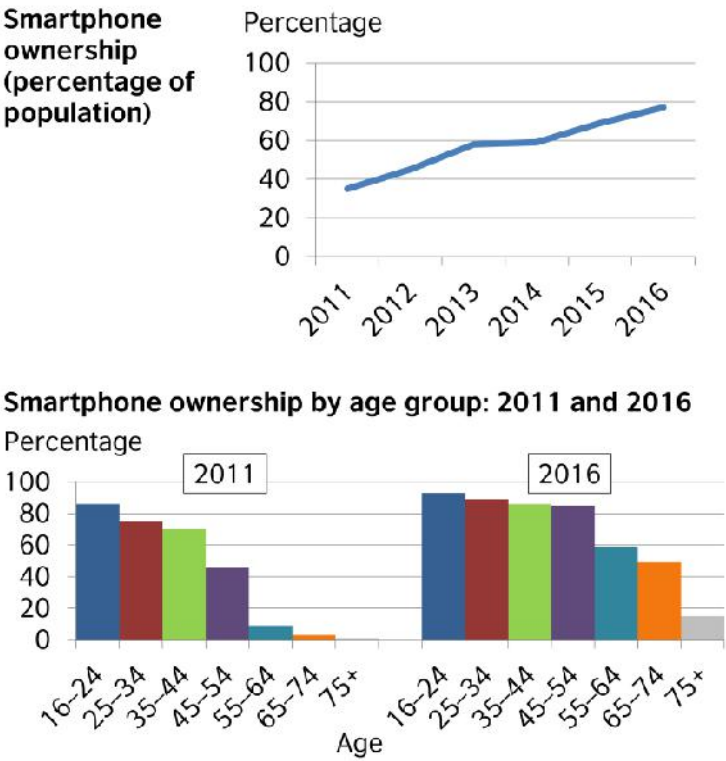
a low point	sudden	doubled	drop
recovered	remained	to	were
from	rising	sharply	declined
increased slightly			



In January, gold sales _____ about 200 million dirhams per month. In February, they _____ to Dhs 220 million, _____ to a peak of 350 million dirhams in March. Over the next four months, sales _____ steadily, reaching _____ of 120 million dirhams in July.
In August, there was a _____ increase. Sales almost _____, rising _____ Dhs 120 million in July to Dhs 210 million in August. This was followed by a [?] in September to Dhs 120 million.
From September to October, sales _____ from Dhs 120 million to Dhs 180 million. In October and November, sales _____steady, and there was a small increase in December _____ 190 million dirhams.

Exercise 3

Reading Text



The first chart illustrates the percentage of the population who owned a smartphone from 2011 to 2016, and the second breaks the percentages down by age for 2011 and 2016.

Overall, smartphone ownership increased during the six-year period. In general, the younger people were, the more likely they were to own a smartphone. However, the most significant increases in smartphone ownership between 2011 and 2016 came from people aged 45 to 54, from

46% to 84%; from those in the 55 to 64 category, from 9% to 59%; and from those aged 65 to 74, from 5% to 50%.

The percentage of people who owned a smartphone rose steadily, starting at around 35% in 2011 and reaching about 77% by 2016. People aged 16 to 24 represented the greatest percentage of smartphone ownership in both 2011 and 2016. 75% of people aged 25 to 34 and 72% of those aged 35 to 44 owned a smartphone in 2011, rising to 88% and 86% respectively by 2016.

Although almost nobody in the 75+ age category owned a smartphone in 2011, 15% of this group owned smartphones in 2016.

Please note: This page was designed for writing practice only. Information and statistics in the charts may not be accurate.

Source:
https://learnenglish.britishcouncil.org/skills/writing/b1-writing/describing-charts

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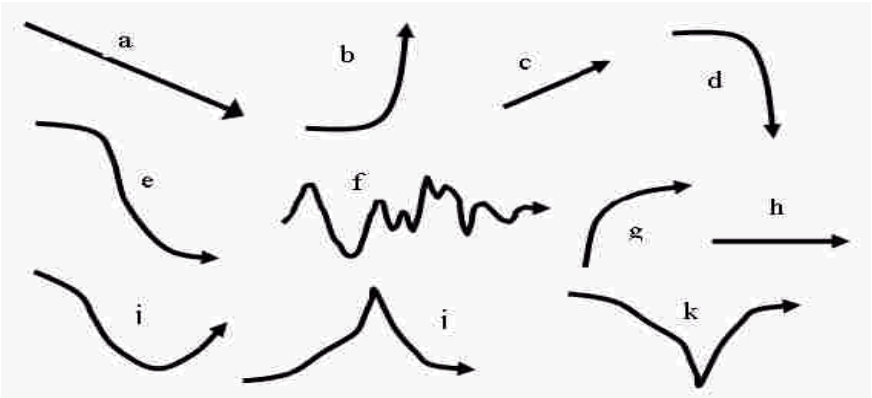
Match the sentences or phrases with the same meaning.

The charts illustrate the changes in….	Sales rose steadily.
Sales increased in most in 2002.	Sales grew in 2002
2002 had the highest sales.	Overall, ….

1. The graphs show the trends in …
2. In general, …
3. The biggest increase in sales was in 2002.
4. There was a steady rise in sales.
5. Sales saw growth in 2002.
6. The highest sales came from 2002.

Expressing the Movement of a Line



1. The market is showing some signs of growth. _____
2. The market is extremely volatile. _____
3. The pound slipped back against the dollar. _____
4. The Swiss franc is staging a recovery. _____
5. The yen lost ground slightly. _____
6. There's been a dramatic downturn in the market. _____
7. There's been an upsurge of interest in gold. _____
8. The share price bottomed out at 11 cents. _____
9. Gold peaked at €300 an ounce. _____
10. Profits will level off at around €10,000. _____
11. Sales hit an all-time low. _____
12. There hasn't been much movement in the price of tin. _____

CHAPTER 6
SAFETY AT WORK

Learning Outcomes:

1. Students are able to demonstrate an understanding of safety-related vocabulary and terminology commonly used in the workplace.
2. Students are able to describe various workplace hazards and safety precautions in English.
3. Students are able to identify safely signs and symbols found in workplaces, interpreting their meanings accurately.

General Overview

A work environment free from injuries and accidents attracts employees. Employees are more satisfied and productive in such an environment. A safe work environment is essential for both employees and employers alike. It is the right of all employees to have safety in the workplace. Workplace safety is essential regardless of the size of a company. All companies, big or small, need to incorporate safety in their workplaces. Well-implemented safety measures keep employees safe and also protect industrial equipment. It is the responsibility and duty of employers to protect their employees and keep them safe.

Task 1: Safety Equipment

1. Look at the pictures and match the safety equipment with its definition.
2. Make a sentence.

SAFETY EQUIPMENT	DEFINITION
1. A protective mask 	___ handles heavy materials and protects the back
2. Safety shoes 	___ avoids the worker falling
3. Ear protectors 	___ protects the body against welding work
4. A protective apron 	___ protect ears against noise
5. A safety harness 	___ protects from inhaling harmful air particles as dusts, vapours, fumes and gases
6. Safety gloves 	___ provide protection to the eyes
7. A safety helmet 	___ protects the head from accidental injury

8. Knee pads 	___ handles heavy materials such as breeze-blocks, beams and avoids injuries ___ protect the feet from accidental injury
9. A dorsal belt 	___ protect knees on the ground while working
10. Safety goggles 	

Task 2: _In case of fire!

Fire kills, often very quickly. It is important to know exactly what to do if a fire breaks out. Lives may depend on it. Read the fire notice below then answer the questions.

Fire Action

1. If you find a fire, do not try to put it out yourself.
2. Break the cover on the nearest alarm button and press it hard. All staff
3. should know where these are.
4. Dial 999 to call the fire brigade.
5. Leave by the nearest exit.
6. Close all the doors.
7. Assist any service users near you.
8. Go to the assembly point.
9. Do not stop to collect belongings.
10. Do not go back into the building until you have been told it is safe to do so.

According to this fire notice, are the statements below **True** or **False**?

a. If you discover a fire, first try to extinguish it. _____T F
b. Shut all the doors. _____T F
c. Press the alarm gently – so as not to damage it. _____T F
d. Do not leave the building until all the service users are safe. _____T F
e. You can get out through a window if you want. _____T F
f. Take anything important with you. _____T F
g. Once out, find somewhere safe to wait. _____T F
h. Return to the building when you think it is safe. _____T F

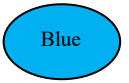
Study and Learn: <u>Safety Signs and Warnings</u>

There are different kinds of **safety signs**. Each kind is coded by **colour** and **shape**.

Must **not** do

Warning

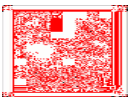
General Safety



Must do

Fire safety

Look at the examples below.

Prohibition signs	Hazard signs	General safety signs
  	  	 
Mandatory signs	**Fire safety signs**	
  	  	

Here are common warning signs that you can see in the workplace

Let's Get Practice

Task 3: Which Sign?

Check the best warning sign for each situation.

1. Only hospital workers wearing special equipment can go into an X-ray room safely.
   a. Keep Area Clean b. Restricted Area

2. Workers have to move large boxes through a warehouse when they stock the shelves.
   a. Keep Aisles Clear b. Authorized Personnel Only

3. A broken factory sewing machine can hurt a worker who tries to use it before it is repaired.
   a. Do Not Operate Machine b. Watch Your Step

4. A Janitor has just mopped the floor of an office building.
   a. Keep Area Clean b. Caution: Wet Floor

5. A worker must repair loose wires on a telephone pole
   a. Do not Operate Machine b. High Voltage

6. The grill in a restaurant kitchen is turned on all day, so the surface is very hot.
   a. Watch Your Step b. Do Not Touch

7. At an auto body shop, the doorway to the office is higher than the floor in the work area.
   a. Watch Your Step b. Do Not Enter

8. The cleaning workers have a lot of chemicals that can catch fire easily.
   a. Do Not Enter b. No Smoking

9. Some laboratory equipment requires special training for safe use.
   a. Watch Your Step b. Authorized Personnel Only

10. A computer assembly worker has to keep the tools very clean.
    a. No Food or Drink b. Do Not Touch

Study and Learn: <u>Workshop Safety Devices</u>

Here are common safety devices that you can find in many workplaces

First Aid

Helmet

Nose mask

Lab coat

Fire extinguisher

Sand bucket

Water hose

Safety boot

Hand gloves

Safety goggles

Let's Get Practice

Task 4: What Should Be There?

Complete each sentence with the name of the safety item that is needed

Fire extinguisher	**Guardrail**	**Eyewash station**
Security system	**Sprinkles**	**Fire escape**
Emergency lighting	**Fire alarm**	**First aid kit**

1. Outside a large factory, a _____ leads down to the ground from all floors.

2. There is always a _____ in a fast-food kitchen, where cooks work all day with hot oil, grills, and ovens.
3. May factories have an _____ in case workers splash chemicals in their eyes.
4. During a power failure, _____ shows workers in an office building how to reach the exits.
5. At night, a _____ sounds an alarm if a thief breaks into a workplace.
6. At a construction site, a _____ keeps workers from falling into the excavation.
7. If a fire begins in a clothing store, _____ on the ceiling, put out the fire right away.
8. Every workplace needs a _____ in case a worker gets injured or sick on the job.
9. If a fire starts in a workplace, the sound of the _____ will tell workers to leave the building.

Task 5: Study the safety instructions from a workshop below, and then answer these questions.

a. Who are the instructions for?
b. Who wrote them?
c. What was the writer's purpose?

1. Wear protective clothing at all times.
2. Always wear eye protection when operating lathes, cutters, and grinders and ensure the guard is in place.
3. Keep your workplace tidy.
4. The areas between benches and around machines must be kept clear.
5. Tools should be put away when not in use and any breakages and losses reported
6. Machines should be cleaned after use.

Reading Time

Reading ***Understanding the writer's purpose***

Knowing what the writer's purpose is, who the writer is, and who the intended readers are can help us to understand a text. The safety instructions in Task 5 are clearly intended to encourage employees to be safety conscious and reduce the risk of accidents. The writer is perhaps a supervisor or the company safety officer, and the intended readers are machine operatives. Knowing these things can help us to work out the meaning of any part of the text we may not understand.

Task 6: Study the company document on safety on the next page, and then answer the questions.

Accident Investigation

Whenever an accident occurs that results in an injury (medical case), damage of equipment and material, or both, prompt accident investigation by the immediate manager is required. A written preliminary investigation will be completed by the end of the particular shift or business day on which the accident occurred.

In no event should there be a delay of more than 24 hours. Failure to comply with this requirement may subject the immediate manager to disciplinary action up to and including discharge.

Without adequate accident investigation data, the Company may be subjected to costs, claims, and legal action for which it has no defense.

As a minimum, the preliminary accident investigation report will include the following:

1. Name, occupation, and sex of injured worker.
2. Place and date/ time of accident.
3. Description of how the accident happened.
4. Immediate causes of the accident -unsafe acts and unsafe conditions.
5. Contributing causes - manager safety performance, level of worker baking, inadequate job procedure, poor protective maintenance, etc.
6. Witness(es) - name and department.
7. Corrective action is taken- when.

The employee who was injured and any employee(s) who witnessed the incident should be separately interviewed as soon as possible. A copy of the report must be submitted to the Manager of Human Resources for review. Another copy of the report is to be retained for a period of not less than the injured employee's length of employment plus five (5) years.

1. Who is this document for?
   a. machine operatives
   b. managers
   c. all employees
   d. injured employees
2. Who wrote this document?
   a. trade union representative
   b. technician
   c. manager
   d. medical staff
3. What is the writer's intention?
   a. to prevent accidents
   b. to ensure speedy help for injured employees
   c. to protect the company
   d. to warn about dangers

Task *7*: Study this brief report of an accident. At which points does it not meet company policy on reporting accidents?

To:	Name	Department & Location	Date
	Manager	Human Resources	17 May
From:	Name D. Taylor	Department & Location Mech. Eng. Workshop	Tel. 6200
Subject	Preliminary Report, Accident, 12 May		
	While turning a brass component on Tuesday last week, Kenneth Oliver, a Mechanist, received an injury to his eye. He was taken to the Eye Hospital, where I understand he was operated on. I believe the accident was due to carelessness.		

Language study: Making safety rules

What are the differences in meaning, if any, between these statements?

1. Wear protective clothing.
2. Always wear protective clothing.
3. Protective clothing must be worn.

We can make safety rules in these ways:

1. Using an imperative.
   Wear *protective clothing.*
   Do not **wear** *loose-fitting clothing.*

2. *Always/never* are used to emphasize that the rule holds in all cases.
   Always w*ear protective clothing.*
   Never *wear loose-fitting clothing.*

3. We can use a modal verb-
   Protective clothing ***must*** *be worn.*
   Protective clothing ***should*** *be worn.*

Task 8: ***Study this list of unsafe environmental conditions (hazards). Write safety rules to limit these hazards using the methods given above.***

For example:

inadequate lighting
Lighting must be adequate. or
Lighting should be adequate.

1. uneven floors
2. unguarded machinery
3. untidy workbenches
4. untidy workplaces
5. badly maintained machinery

6. carelessly stored dangerous materials
7. inadequate ventilation
8. damaged tools and equipment
9. machinery in poor condition
10. equipment used improperly
11. equipment operated by untrained personnel
12. apprentices working without supervision

Writing: ***Ways of linking ideas***

When we write, we may have to describe, explain, argue, persuade, complain, etc. In all these forms of writing, we use ideas. To make our writing effective, we have to make sure our readers can follow our ideas. One way of helping our readers is to make the links between the ideas in our writing.

1. The accident happened.
2. The operator's carelessness.
3. The supervisor was not present.

Sentence 2 is a reason for sentence 1. Sentence **3** is an additional reason. We can mark the links between them like this:

> The accident happened ***because of*** the operator's carelessness. ***In addition/moreover,*** the supervisor was not present.

We use *because* to introduce a reason, which is a noun or noun phrase. We use it *in addition* and *moreover* to introduce an additional reason.

What are the links between these ideas? What words can we use to mark the links?

4. Suitable protection should be worn.
5. Safety helmets should be used where there is a danger of falling objects.

Sentence ***5*** is an example to illustrate sentence 4. We can mark this in this way:

> *Suitable protection should be worn.* ***For example/For instance,*** *safety helmets should be used where there is a danger of falling objects.*

Task *9:* *Show the links between these sets of ideas using appropriate linking words.*

1. Many accidents happen.
   Workers' carelessness.
2. Education can reduce accidents.
   It is important that all workers receive training in basic safety.
3. Eye injuries can be serious.
   Goggles must be worn for grinding and cutting.
4. Safety gloves provide protection for the hands.
   They prevent burns.
   They reduce the danger of cuts.
5. Safety shoes protect the feet against falling objects.
   They prevent the feet from getting caught in machinery.
6. Respirators should be worn in dusty conditions.
   Dust can damage the lungs.
7. Safety gear exists for every danger.
   Each year, people are injured.
   They refuse or forget to wear the right gear.

CHAPTER 7
READING: LASERS

Learning Outcomes:

1. Students are able to demonstrate an understanding of the main ideas and key details presented in the reading texts.
2. Students are able to use new technical vocabulary related to laser in their discussions and writing.
3. Students are able to effectively describe a process, step-by-step, using clear and concise language.

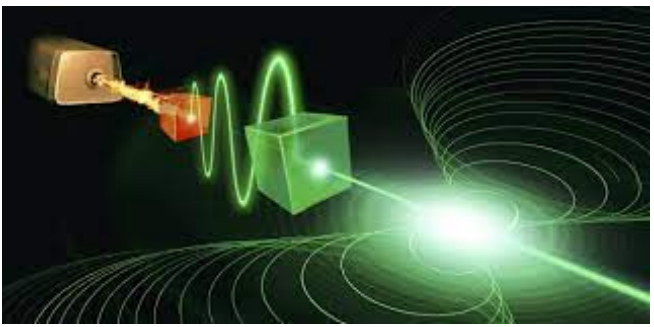
Learning Materials

Pre-Reading Activity

Task 1: What are lasers? List any applications you know for lasers.

Reading Zone

Task 2: Read this text to check your answers to Task 1



Lasers (Light Amplification by Stimulated Emission of Radiation) are devices which amplify light and produce beams of light which are very intense, directional, and pure in colour. They can be solid state, gas, semiconductor, or liquid.

When lasers were invented in 1960, some people thought they could be used as 'death rays'. In the **1980s.** the United States experimented with lasers as a defence against nuclear missiles. Nowadays, they are used to identify targets. But apart from military uses, they have many applications in engineering communications, medicine, and the arts.

In engineering, powerful laser beams can be focused on a small area. These beams can heat, melt, or vaporize material in a very precise way. They can be used for drilling diamonds, cutting complex shapes in materials from plastics to steel, for spot welding and for surfacing techniques, such as hardening aircraft engine turbine blades. Laser beams can also be used to measure and align structures.

Lasers are ideal for communications in space. Laser light can carry many more information channels than microwaves because of its high frequency. In addition, it can travel long distances without signal strength. Lasers can also be used for information recording and reading. Compact discs are read by lasers.

In medicine, laser beams can treat damaged tissue in a fraction of a second without harming healthy tissue. They can be used in very precise eye operations.

In the arts, lasers can provide fantastic displays of light. Pop concerts are often accompanied by laser displays.

Task 3: Complete this table of laser applications using information from the text opposite. You may also add any applications you know of which are not included in the text.

Military	Engineering	Communication	Medicine	Arts
	drilling diamonds		treating damaged tissue	
	cutting complex shapes	information recording and reading		

Grammar Zone

Language study *used to/for*

Study these examples of laser applications:

1. Laser beams can be *used to measure* and align structures.
2. They can be *used for drilling* diamonds.
3. They can be *used for* light displays.

We can describe applications with *used to* + infinitive or *used for* + *-ing* or noun.

Task 4: Describe the applications of lasers using the information in your table in Task 3 and the structures given above.

Word study Noun + noun compounds

We can use adjectives to describe an object in greater detail. For example:

light	*electric light*
a motor	*an electric motor*
steel	*stainless steel*
gears	*helical gears*

We can also use nouns. For example:

Light	*laser light*
a motor	*an air motor*
steel	*carbon steel*
gears	*titanium gears*

Many relationships are possible in noun compounds. For example:

an air motor	a motor which uses air
carbon steel	steel which contains carbon
titanium gears	gears made of titanium

Task 5: Put each of these examples in the correct column.

carbon blocks	a power tool
aluminium alloy	a ball bearing
carbon fibre	a concrete beam
a gas burner	a diesel boat
roller bearings	a spring balance
a circuit board	a plastic tube
a plastic pipe	steel sheets
magnesium alloy	

uses	is made of	Contains

Task 6: ***What new relationships can you find in the examples below? Rewrite each compound to show the relationship***.

For example:

a foot pump	***a pump which is operated by foot***
a ribbon cable	***a cable which is like a ribbon***
a gear lever	***a lever for operating gears***

1. Chain wheel
2. disc wheel
3. foot brake
4. a hand throttle
5. strain gauge
6. College lecturer
7. toe-clip
8. boiler thermostat
9. safety helmet
10. aircraft engineer

Writing: ***Describing a process***: ***sequence***

When we write about a process, we have to:

1. Sequence the stages
2. Locate the stages
3. Describe what happens at each stage
4. Explain what happens at each stage

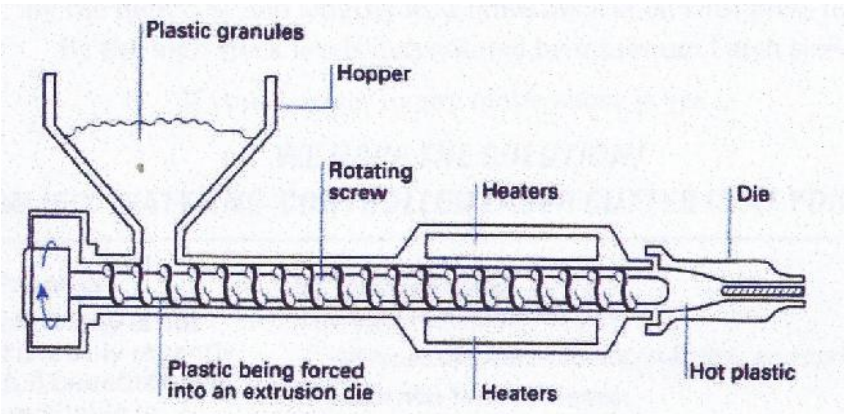
In this unit, we will study how to sequence the stages.
Consider these stages in the operation of a washing machine.

The drum is filled with water.
The water is heated to the right temperature.
Soap is added.
The drum is rotated slowly.
The dirty water is pumped out.
Clean water is added.
The drum is rotated much faster, and the water is pumped out.
The clean clothes are removed.

Instead of numbers, we can show the correct order using sequence words.

First, the drum is filled with water.
Then, the water is heated to the right temperature.
Next, soap is added.
After that, the drum is rotated slowly.
Next, the dirty water is pumped out.
Then clean water is added.
After that, the drum is rotated much faster, and the water is pumped out.
Finally, the clean clothes are removed.

Study this diagram. It shows an extruder for forming plastic pipes. Describe the extruder.



Now, put these stages in the process in the correct sequence.

a. The hot plastic is forced through the die to form a continuous length of pipe.
b. The rotating screw forces the plastic past heaters.
c. The plastic granules are mixed and placed in the hopper.
d. The pipe is cooled and cut to suitable lengths.
e. The plastic melts.

CHAPTER 8
ELECTRONICS RELATED TERMS

Learning Outcomes:

1. Students are able to acquire a broader range of technical and specialized vocabulary related to electronics.
2. Students are able to use electronics-related terms accurately and to communicate effectively in the field of electronics.

Learning Materials

ELECTRON AND ELECTRICITY

Charge	:	The property of matter which causes it to attract or repel. Electricity charges are either *positive* (+) or *negative* (-). Like charges repel each other, unlike charges attract each other.
Static Electricity	:	Electric charges accumulate on a material when rubbed against another material.
Friction	:	The resistance offered by two different substances when rubbed together. Static electricity is produced by friction when electric charges are removed from one substance and transferred to another.
Electron	:	A subatomic particle with a negative electric charge. *Planetary electrons* are in orbit around the positively charged nucleus of their atom; free electrons have been pulled out of their orbit and are no longer bound to the nucleus.

Proton	:	A subatomic particle in the nucleus of an atom. It has a positive electric charge.
Neutron	:	A subatomic particle in the nucleus of an atom. It has no net electric charge.
Atomic number	:	The number assigned to the atom of each of the chemical elements. It equals the number of electrons or the number of protons in an atom. Silver, for example, has an atomic number 47, so it contains 47 electrons and 47 protons.
Conductor	:	A material that readily permits the flow of free electrons. Copper is a good conductor.
Insulator	:	A material that permits a very limited flow of free electrons. Glass is a good insulator.
Energy	:	The ability to perform work. Energy is required to produce the flow of free electrons.
Current	:	The flow of free electrons through a conductor.
Cell/Battery	:	Devices capable of producing a flow of free electrons by means of a chemical reaction. Technically, a battery is made of two or more cells, but the terms are often interchangeable in popular usage.
Circuit	:	The path followed by an electric current.
Terminal	:	The point at which a current enters or leaves a circuit.

Electrodes	:	Plates, usually made of metal, in a cell. They become electrically charged by losing or gaining electrons, thereby enabling the flow of an electric current when the battery is connected to a circuit.
Electrolyte	:	The chemical solution in which the electrodes in a cell are placed. It is a solution of a salt, an acid, or an alkali.
Cathode	:	The cell electrode from which electrons enter the electrolyte: the positive terminal of the cell.
Anode	:	The cell electrode receives electrons from the electrolyte, the cell's negative terminal.
Recharging	:	Renewing the electrical state of cell electrodes by reversing the electric current passing through them. Recharging lengthens the life of the cell.
Electrolytic process	:	A process for refining plating metals that utilizes an electric current passing through an electrolyte. It is also called *electrolysis*.
Ion	:	An atom that has lost or gained electrons becomes electrically charged.

Task 1: Answer the following questions.

1. What are two kinds of *electricity charges* called? Which charges attract each other, and which repel each other?
2. What is *statistic electricity*? Have you ever observed static electricity? Give an example!
3. What is *friction*? What does it produce?
4. What kind of electric charge does an electron have? What are electrons in orbit called? What are they called when they are not in orbit?
5. Where are *protons and neutrons* found? What is the difference between them?

Task 2: ***Fill in the spaces in the following sentences with the appropriate word or phrase!***

1. There are two kinds of electric charges: a ……charge which is indicated by a……sign, and a……charge which is indicated by a…….sign.

2. An electron is a subatomic particle that has a……electric charge.

3. A proton is a subatomic particle that has a……electric charge.

4. A neutron is a subatomic particle that has……electric charge.

5. ……electricity can be produced by……., that is by rubbing two different materials together.

6. The atomic number of an element indicates the number of ……or ……that the atom contains.

7. …….are materials that allow free electrons to move through them easily.

8. ……..are materials that restrict the movement of free electrons.

9. Electricity can perform work because the movement of free electrons transmits…….

10. When free electrons are flowing through a conductor, an electric……has been established.

Technical Reading

Text 1: What is electricity?

Electricity is the phenomenon associated with positively and negatively charged particles of matter at rest and in motion, individually or in great numbers. Since every atom contains both positively and negatively charged particles, electricity is connected with the physical properties and

structure of matter and is an important factor in physics, chemistry and biology.

Task 3: ***Use the words underlined in the previous passage, either in their singular or plural form, to fill the gaps in the following sentences:***

1. Lightning is a naturally occurring electrical _____.
2. Electrical conductivity is an important _____ of metals.
3. Atoms, which were once thought to be the smallest _____, are known to consist of even smaller ones.
4. _____, atoms have only a weak charge, but a very large number together can make a powerful charge.
5. Albert Einstein discovered the relationship between _____ and energy.

Text 2: Electrical Conductor

An electrical conductor is any material that offers little resistance to the flow of an electric current. The difference between a conductor and an insulator, which is a poor conductor of electricity or heat, is one of degree rather than kind because all substances conduct electricity to some extent. A good conductor of electricity, such as silver or copper, may have conductivity a billion or more times as great as the conductivity of a good insulator, such as glass or mica. A phenomenon known as superconductivity is observed when certain substances are cooled to a point near absolute zero, at which point their conductivity becomes almost infinite. In solid conductors, the electric current is carried by the movement of electrons; in solutions and gases, the electric current is carried by ions.
"Electrical Conductor," Microsoft® Encarta® Online Encyclopedia 2009

http://encarta.msn.com © 1997-2009 Microsoft Corporation. All Rights Reserved.)

Task 4: ***Fill the gaps with words from the text above.***

1. The property of any object or substance to resist or oppose the flow of an electrical current is called _____1.
2. A phenomenon displayed by certain substances that conduct electricity but demonstrate no resistance to the flow of an electric current is called _____2.
3. _____3 is the lowest temperature theoretically possible, characterized by a complete absence of heat (thermal energy).
4. _____4, in chemistry, are homogeneous (uniform) mixtures of two or more substances.

Text 3: Electric Insulation

The perfect insulator for electrical applications would be a material that is absolutely nonconducting; such a material does not exist. The materials used as insulators, although they do conduct some electricity, have a resistance to the flow of electric current as much as 2.5 × 1024 greater than that of good electrical conductors such as silver and copper. Materials that are good conductors have a large number of free electrons (electrons not tightly bound to atoms) available to carry the current; good insulators have few such electrons. Some materials, such as silicon and germanium, which have a limited number of free electrons, are semiconductors and form the basic material of transistors. In ordinary electric wiring, plastics are commonly used as insulating sheathing for the wire itself. Very fine wire, such as that used for the winding of coils and transformers, may be insulated with a thin coat of enamel. The internal insulation of electric equipment may be made of mica or glass fibers with a plastic binder. Electronic equipment and transformers may also use a special electrical grade of paper. High-voltage power lines are insulated with units made of

porcelain or other ceramic or of glass. The specific choice of an insulation material is usually determined by its application. Polyethylene and polystyrene are used in high-frequency applications, and mylar is used for electrical capacitors. Insulators must also be selected according to the maximum temperature they will encounter. Teflon is used in the high-temperature range of 175° to 230° C (350° to 450° F). Adverse mechanical or chemical conditions may call for other materials. Nylon has excellent abrasion resistance, and neoprene, silicone rubber, epoxy polyesters, and polyurethanes can provide protection against chemicals and moisture.
"Insulation," Microsoft® Encarta® Online Encyclopedia 2009
http://encarta.msn.com © 1997-2009 Microsoft Corporation. All Rights Reserved.

Task 5: ***Answer the following questions***

1. What would a perfect insulator be like?
2. What characterizes good insulators?
3. What materials are used as insulating sheathing for wire?
4. What materials are used for the insulation of electronic equipment?
5. What determines the choice of an insulation material?

CHAPTER 9
INTRODUCTION TO PRESENTATION

Learning Outcomes:

1. Students are able to create engaging and impactful introductions that capture the attention of the audience and set the tone for the presentation.
2. Students are able to use the expressions of vocabulary-related presentations accurately.
3. Students are able to structure their introduction to provide a clear roadmap of the presentation's content.

General Overview

English is widely used as a global language for communication in various fields, such as business, science, technology, and academia. Learning to present in English enables students to communicate effectively with people from different linguistic backgrounds.

In addition, in today's interconnected world, English language proficiency is often a key requirement for many job opportunities, especially in multinational companies and industries with a global reach. The ability to present effectively in English can give students a competitive edge in the job market.

Furthermore, preparing and delivering presentations in English improves students' language skills, including vocabulary, grammar, pronunciation, and fluency, leading to overall language development.

Introduction to Presentation

Task 1: Look at the picture below and answer the questions that follow.

1. What is the man doing?
2. What is needed to give a good presentation?
3. Have you ever given a presentation?

Task 2: Suzi Capra wants to make a good start to her presentation, so she has made a list of the things she wants to say. Unfortunately, she dropped all her language cards (a-j) on the floor. Help her to put them in the right order by matching them with the cues (1-10)

Cues

1. THANK audience for coming _____
2. INTRODUCE myself _____
3. Give JOB title _____
4. Give TITLE of presentation _____
5. Give REASON _____
6. Give STRUCTURE _____
7. Give LENGTH _____
8. VISUAL AIDS I plan to use _____
9. No QUESTION until the end _____
10. START first part _____

Language *cards*

a. I plan to show you some slides and a short video during my presentation.
b. So, first of all, let's take a look at ….
c. I'm very grateful that you could all come today.
d. I'm going to talk for ….
e. If there is anything you would like to ask me, please would you wait until the end of the presentation.
f. My name is ….
g. My talk will be in four main parts.
h. The subject of my presentation today is ….
i. I'm the ….
j. I'm going to talk about this because….

Making A Presentation.

Making a presentation in English involves effectively conveying information, ideas, or research to an audience using the English language. The key is preparation. So the first step is to find out who you are going to be presenting to and how much the audience knows about the subject. If possible, visit the room where you will be giving the presentation beforehand and organize it precisely to your own requirements.

Here are the stages in the presentation:

- Stage one is the opening- the all-important first few moments that can make or break the presentation
- Stage two is a brief introduction about the subject of your talk.
- Stage three is the main body of your presentation.
- Stage four is the conclusion, which should include a summary of your talk and your final opinion.
- Stage five is the question and answer session.

The most important stage is the **opening minute** or so, and when preparing for it, you should write the whole presentation out just like an essay, then select the **key points**, but read and memorize the text word by word. Write down the opening with all the pauses and the stress clearly marked, and practice it again and again.

The following phrases are standard phrases for introducing the speaker and the topic, describing the key points, using phrases for effective summaries, and inviting questions covering the structure of the presentation:

Expressions for Introduction

• Greeting	Good morning/afternoon/evening Hello everyone/friends
• Stating information	I'd like to Introduce myself. Let me introduce myself.
• Stating the purpose	I will focus on…… The purpose of this presentation is to…. I'm here today to……..
• Stating planned duration	The presentation will last about…. It will take about……..

Expressions When Delivering the Content

- Signpost expressions
  Listing items

  First….second…

  First...next…then..

  After that…..

  Making transitions

  First, I'd like to talk about…

  Now, I'd like to move on

  Now, let me describe…

  Giving example

  Let me give you an example.

  Such as……

- Connecting words
  Contrast

  ….but….

  Although……

  However,

  Reason/result

  Because/Because of/Since

  …..so…..

  Therefore,/Consequently,

Expressions for Ending

- Summing up — So, to sum up / To summarize
- Concluding — Let me end by saying…. / In conclusion……
- Questions — If you have any questions, I'll be happy to answer / Are there any (more) questions?
- Closing — Thank you for listening. / Thank you for your attention.

Presentation Tips

- Use postcards-size cards for the keywords.
- Don't read your presentations.
- Rehearse to overcome your stage fright.
- Make checklists for things you think necessary
  - Things to take for the presentation (e.g., handouts, markers, cards, etc.)
  - Things to check before giving the presentation (e.g.: OHP projector.
    Laptop, etc)
- Make your voice interesting
  - Go faster to excite
  - Go slower to emphasize
  - Say some words louder
  - Repeat important words
- Use appropriate body language
  - Posture: stand upright
  - Gestures, such as the use of hands, body movements, and facial expressions, hold the audience's attention.

Task 3: Choose a topic for your presentation and find some materials related to your topic.

Task 4: Make a presentation outline and prepare the outline for your presentation

Presentation Outline Purpose: Title: Time:
Introduction Attention getter: Purpose: Summary of main points:
Body First main point: Second main point: Third main point:
Ending Summary of main point: Conclusion: Adequate ending:

USEFUL PHRASES AND STRATEGIES FOR PRESENTATIONS

INTRODUCTION

Welcoming and greeting the audience

- Hello, everyone. I'd like, first of all, to thank the organizers of this meeting for inviting me here today.
- Good morning everyone and welcome to my presentation. First of all, let me thank you all for coming here today.
- Good morning, ladies and gentlemen. It's an honour to have the opportunity to address such a distinguished audience.
- Hello/Hi everyone. Thanks for coming.

Introducing yourself (name, position, responsibilities)

- Let me introduce myself. I'm Auliya Rahman from Banjarmasin State Polytechnic in South Kalimantan, Indonesia...
- Let me start by saying just a few words about my own background. I'm a diploma student of Electronics at Banjarmasin State Polytechnic in South Kalimantan, Indonesia.
- For those of you who don't know me already, my name's ... and I'm responsible for...

Saying what your topic/title/subject is

- What I'd like to present to you today is...
- As you can see on the screen, our topic today is...
- The subject/focus/topic/title of my presentation/talk/speech is…
- In this talk, I/we would like to concentrate on...
- In my presentation, I would like to report on...
- I'm here today to present...

Explaining why your topic is relevant for your audience

- Today's topic is of particular interest to those of you who... My talk is particularly relevant to those of you who...
- By the end of this talk, you will be familiar with...

Stating your purpose/objective

- The purpose/objective/aim of this presentation is to...
- Today, I'd like to give you an overview of...
- I'd like to update you on/inform you about/put you in the picture about/give you the background to/present the results of my research...
- During the next 20 minutes, we'll be...
- This talk is designed to act as a springboard for discussion.
- This morning I'm going to be talking to you about/ telling you about/ showing you how to deal with/ taking a look at the recent development in/ reporting on the results of the study we carried out...
- What I'm going to do/What I intend to do is describe to you/show you/tell you about...

Presenting the outline/organization/structure of your presentation

- I've divided my presentation into three main parts.
- In my presentation, I'll focus on three major issues.
- We thought it would be useful to divide our talk into three main sections. We can break this area down into the following fields:...
- The subject can be looked at under the following headings:...
- We have organized this talk in the following way:...
- This presentation is structured as follows:...
- This talk will cover two current theories on the topic of...

Sequencing

- My first point concerns...
- I'll begin/start off by... Then I'll move on to... Then/Next/After that, I'll be looking at...
- First/First of all, I'd like to give you an overview of...
  Secondly/Then/Next, I'll focus on...
  Thirdly/And then, we'll consider... Finally/Lastly/Last of all, I'll deal with...
- So, I'll begin by filling you in on the background to/ bringing you up-to-date on/ giving you an overview of the history of/ making a few observations about/ outlining...
- And then, I'll go on to highlight what I see as the main points of/ put the situation into some kind of perspective/discuss in more depth the implications of/ take you through/make detailed recommendations regarding...
- One thing I'll be dealing with is the issue of...
- I'll end with...
- And finally, I'd like to address the problem of/to raise briefly the issue of...

Timing

- This should only last 20 minutes.
- My presentation will take about 20 minutes
- It will take about 20 minutes to cover these issues.

Handouts

- Does everybody have a handout/brochure/copy of the report?
- Please take one and pass them on. I'll be handing out copies of the slides at the end of my talk.
- I can email the PowerPoint presentation to anybody who wants it.

- Don’t worry about taking notes. I’ve put all the important statistics on a handout for you.

Questions

- If you have any questions, feel free to interrupt me at any time.
- Please interrupt me, if there is something which needs clarifying.
- Otherwise, there’ll be time for discussion at the end.
- If you have any questions you’d like to ask, I’ll be happy to answer them.
- If you don’t mind, we’ll leave questions till the end.
  There will be time for questions after my presentation.

EFFECTIVE OPENINGS

To make an effective presentation, it is important to get your audience interested in the first three minutes of your presentation. You need to hook your audience and cause them to pay attention to you. There are three ways to make an effective opening:

1. Give your listeners a problem to think about.
2. Give them some amazing facts.
3. Give them a story or some personal experience.

A problem

Suppose your company lost 30% of its customer base over a three-month period because a competitor introduced a new product with some new exciting features. How would you respond to this situation?

How many of you have ever had trouble remembering words? Just about everyone, right? Well, imagine a small machine that can read your mind. When you think of a Chinese word or phrase, the machine will wirelessly transfer the correct English word or phrase to your mind. Do you think that’s possible?

Amazing facts

According to a new study, the virus causing the bird flu to sweep Asia actually started in China over one year ago. An ineffective vaccine was given to chickens. Thinking the chickens were healthy, chicken farmers exported their chickens throughout Asia for a year without knowing that many of them carried the bird flu virus.

Statistics show that 1 in every 4 Americans have appeared on television, and 85% of couples who lose a child (through an accident or a health problem) get divorced.

A story

You may have heard about the 16-year-old girl from Russia who has the ability to "see" broken bones or other medical problems inside people's bodies without the help of any instrument.

Have you ever been in a situation where you wanted to change some personal habit or some physical characteristic? I remember when I was 40 years old and still weighed 50 kg and wanted to gain weight. A psychic (fortune-teller) told me to talk to the cells in my body before every meal and ask them to hold on to my food longer after I ate. I did it for six months and it turned out that at the end of six months, I had gained 6 kg - the first weight I had gained since high school. (This is a true story.)

Problem technique

- Suppose . . . . How would you . . . ?
- Have you ever wondered why it is that . . . ? You have? Well, if I could show you . . . would you be interested?
- How many of you have ever . . . ? Do you think that's possible?

Amazing facts technique

- Did you know that . . . ?
- According to a new study . . . .
- Statistics show that . . . .
- I read somewhere the other day that . . . .

Story/anecdote technique

- You may have heard about . . . .
- Have you ever been in a situation where . . . ? I remember when . . . . It turned out that . . . .

THE MIDDLE/MAIN PART OF THE PRESENTATION (SIGNPOSTING)

Saying what is coming

- In this part of my presentation, I'd like to talk about...
- So, let me first give you a brief overview...

Indicating the end of a section

- This brings me to the end of my first point, so much for point two.
- So, that's the background on...
- That's all I wanted to say about...

Summarizing a point

- Before I move on, I'd like to recap the main points.
- Let me briefly summarize the main issues.
- I'd like to summarize what I've said so far...

Moving to the next point

- This leads directly to my next point.
- This brings us to the next question. Let's now move on to/turn to...
- Let's now take a look at...
- Okay, let me now turn to the issue of...

Going back

- As I said/mentioned earlier, ...
- Let me come back to what I said before...
- Let's go back to what we were discussing earlier.
- As I've already explained,...
- As I pointed out in the first section,...
- Can I now go back to the question I posed at the beginning?

Adding ideas

- In addition to this, I'd like to say that....
- Moreover/Furthermore, there are other interesting facts we should take a look at.

Elaborating a point

- I'd like to look at this in a bit more detail.
- Can I develop this point a bit further?
- Let me elaborate on this point.
- Let's look at this problem in a bit more detail...

Explaining terminology

- ...occupational hazards, that is to say dangers which apply to certain job.

- ...occupational hazards, in other words dangers which apply to certain jobs.
- What I mean by occupational hazards is dangers which apply to certain jobs ...occupational hazards.
- To put that another way, dangers which apply to certain job.

Rhetorical questions

- What conclusion can we draw from this?
- So, what does this mean?
- So, where do we go from here?

Indicators – they prepare the audience for introducing a new point or just provide pauses before continuing

- Okay/Right/Right then/Good/Now/Now then/Well now/Well then...

Interacting with the audience

- Is everyone still with me?
- Are you all following me so far?

DESCRIBING VISUALS

Introducing a visual

- Let's now look at the next slide, which shows...
- Now, let's look at/let's have a look at/take a look at/I'd like you to look at...
- To illustrate this, let's have a closer look at...
- The chart on the following slide shows...
- The problem is illustrated in the next bar chart...
- As you can see here, ...

Explaining a visual

- First, let me quickly explain the graph.
- As the graph/table shows/indicates....
- I'd like us to focus our attention on the significance of this figure here.
- From Table 1 we can see/conclude/show/estimate/calculate/infer that... The chart compares...
- You can see here the development over the past five years.

Highlighting information

- I'd like to stress/highlight/emphasize the following points.
- I'd also like to draw your attention to the upper half of the chart.
- If you look at it more closely, you'll notice there are several surprising developments.
- I'd like to point out one or two interesting details.
- I'd like you to think about the significance of this figure here.
- I'd like to focus your attention on the underlying trend here.
- Whichever the reasons for this/Whichever way you look at it/However you try to explain it, the underlying trend is obvious.
- The interesting/significant/important thing about.... is....

Describing trends

- Sales increased/shot up/grew/rose by...
- Sales declined/reduced/decreased/dropped/fell by...
- Sales increased/decreased slightly/slowly/gradually/steadily/markedly/dramatically/steeply/sharply/ rapidly/suddenly...
- There was a sudden increase/decrease in ...
- In 2010, we saw a moderate fall.
- This was followed by a gradual decline.
- The increase reached a peak/levelled off...

Saying numbers

- 500 five hundred
- 1,500 one thousand five hundred
- 350,421 three hundred and fifty thousand, four hundred and twenty-one
- 211,050,780 two hundred and eleven million, fifty thousand, seven hundred and eighty
- 10.6 ten point six
- 8.735 eight point seven three five
- 0.009 zero point oh oh nine
- -5oC five degrees below zero Celsius
- 1⁄2 one-half; a half
- 2/3 two-thirds
- 7/8 seven-eighths
- km/h kilometres per hour

CONCLUSION

Indicating the end of your presentation

- I'm now approaching/nearing the end of my presentation.
- Well, this brings me to the end of my presentation/talk.
- That covers just about everything I wanted to say about...
- As a final point, I'd like to...
- Finally, I'd like to highlight one key issue.
- That completes my presentation.

Summarizing points

- Let me just run over/through the key points again.
- To conclude/In conclusion, I'd like to...
- In short/In a word/In a nutshell/In brief/To sum up/To summarize, it is generally/widely accepted/argued/ held/believed that...

- First we looked at... and we saw that... . Then we considered... and we argued... .
- I'll briefly summarize the main issues.
- Therefore/Thus/On this basis/Given this, it can be concluded/deduced/inferred that...
- From the table/figures/data/results/information, it can be seen/concluded/shown/estimated/calculated that...

Making recommendations

- We'd suggest...
- We therefore strongly recommend that...
- In my opinion, we should...
- Based on the figures we have, I'm quite certain that...

Close

- Thank you for your attention.
- Before I stop/finish, let me just say...
- Thank you for listening.
- I hope you will have gained an insight into...
- Unless anyone has anything else to add, I think that's it. Thanks for coming.

Inviting questions

- Are there any questions?
- If you have any questions, I'd be pleased to answer them.
- We just have time for a few questions.
- And now I'll be happy to answer any questions you may have.

EFFECTIVE CONCLUSIONS

Using questions

- After all, isn't that why we're here?
- Let me just finish with a question: If we don't do it, won't somebody else?
- So, do we really want to miss this opportunity to get ahead of our competitors?

Quoting a well-known person

- To quote a well-known scientist, ...
- As... once said, ...
- To put it in the words of..., ...
- I'd just like to finish with something former US President Bill Clinton once said: 'You can put wings on a pig, but you don't make it an eagle'.

Referring back to the beginning

- Remember what I said at the beginning of my talk today? Well, ...
- Let me just go back to the story I told you earlier. Remember, ...
- Let me go back to the story I told at the start of my talk.
- Remember the sales meeting in Vienna with the disappointed Japanese businessmen? So, this just shows you that knowing your entire product range is the key to success.

Calling the audience to action

- So that's the plan. Now, let's go and put it into practice! So now it's your turn. Now, let's make a real effort to achieve this goal!

DEALING WITH QUESTIONS

Clarifying questions

- I'm afraid I didn't quite catch that.
- I'm sorry; could you repeat your question, please?
- I'm sorry, but I missed that. Could you say that again, please?
- I'm sorry, but I don't quite follow/understand/see what you mean.
- Could you just explain that some more, please?
- So, if I understood you correctly, you would like to know whether...
- If I could just rephrase your question. You'd like to know...
- Let me just check that I have understood your question. You're asking...

Checking whether the questioner is satisfied

- Does that answer your question?
- Is that clear/OK/clearer now?
- Can we go on?
- Is that the kind of information you were looking for?

Responses to good questions

- Good point.
- I'm glad you asked that/brought that up.
- That's a very good question.
- That's actually a question I frequently get asked. That's interesting.

Admitting you don't know

- Sorry, I don't know that off the top of my head.
- I'm afraid I'm not in a position to answer that question at the moment.

- I’m afraid I don’t know the answer to your question, but I’ll try to find out for you.
- Interesting question. What do you think?
- Sorry, that’s not my field. But I’m sure Peter Bolt from the Sales Department could answer your question.
- I’m afraid I don’t have that information with me.

Responses to irrelevant questions

- Well, I think that goes beyond the scope of my expertise/presentation.
- To be honest, I think that raises a different issue.
- That’s not really my field.
- I’m afraid I don’t see the connection.

Negative responses to questions

- Not quite.
- Not necessarily.
- Not as a rule.
- Hopefully not.
- I don’t think/believe so.

Hedging – not saying yes or no.

- It depends.
- On the whole, yes. Not if we can help it. To some extent.

Postponing questions

- If you don’t mind, I’ll deal with/come back to this point later in my presentation.
- Can we get back to this point a bit later?

- Would you mind waiting until the question and answer session at the end? Perhaps we could go over this after the presentation.
- I'd prefer to answer your question in the course of my presentation.

Closing discussion time

- I think we have time for one more question...
- If there are no other questions, I'll finish there. Thank you very much.
- So, if there are no further questions, I guess...

Adapted from:
Grussendorf, M. (2007) English for Presentations. Oxford: Oxford University Press.
Wallwork, A. (2010) English for Presentations at International Conferences. New York, Dordrecht, Heidelberg and London: Springer. http://sam-ritchie.com/engpresentation.html

Summary

In conclusion, learning to make presentations in English is an valuable skill that opens doors to global opportunities, enhances language proficiency, and prepares students for success in both academic and professional realms. It broadens their horizons and equips them with the tools to excel in an increasingly interconnected world.

Practice Exercise

Match these less formal phrases with the more formal phrases in the table.

What I want today is….	*I know you are all very busy….*	*As you know, I'm…..*

Ok, shall we get started? *It's good to see you all here.* *Hi everyone.*

Today I'm going to talk about…. *In my talk I'll tell you about….*

More formal	Less formal
Good afternoon, ladies and gentlemen.	1.
Today, I would like to…	2.
Let me just start by introducing myself. My name is….	3.
It's a pleasure to welcome you today.	4.
In my presentation I would like to report on…	5.
The topic of today's presentation is…	6.
I suggest that we begin now.	7.
I'm aware that you all have very tight schedules.	8.

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GLOSSARY

The definitions in this glossary refer to words only as they are used in this book. The meanings of certain words will vary according to context.

Angle	:	A fundamental concept used to measure the amount of turn or rotation between two intersecting lines or line segments
Cardinal number	:	A grammatical term used to describe a type of number that is used to count and represent the quantity
Chart	:	A graphical representation of data or information designed to visually illustrate and present complex information in a clear and organized manner.
Describing an object	:	Providing details and characteristics about the object to give a clear and vivid picture to the reader or listener.
Electronics	:	A branch of physics and engineering that deals with the study, design, and application of devices and systems that utilize the flow of electrons to control and process electrical signals.
Electronic diagram	:	A graphical representation of an electronic circuit.
Flowchart	:	A graphical representation of a process, system, or algorithm that uses various shapes and arrows to illustrate the flow of steps and decisions.
Graph	:	A visual representation of data points or values, typically shown as a set of points (nodes) connected by lines (edges).
Home Electronics	:	A wide range of electronic devices and gadgets that are commonly used within households for various purposes, entertainment, and convenience.

Introduction in English	: The opening part of a speech, presentation, or written text that aims to provide essential information about the topic at hand and engage the audience's attention.
Lasers	: Short for "Light Amplification by Stimulated Emission of Radiation," are devices that emit a highly concentrated, coherent, and monochromatic beam of light. Unlike ordinary light sources, which emit light in many directions and wavelengths, lasers produce a focused and intense beam of light with specific properties.
Number	: A noun in English that refers to a numerical value used for counting, measuring, or identifying quantity.
Presentation in English	: A communication activity where a speaker presents information, ideas, or a topic to an audience using spoken words, visual aids, or multimedia tools. It is a way to share knowledge, persuade, inform, or entertain a group of people on a particular subject matter
Safety at work	: The measures and practices implemented to ensure the well-being and protection of employees, visitors, and anyone present in a workplace environment
Safety devices	: Tools, equipment, or systems designed to prevent or reduce the risk of accidents, injuries, and potential harm to individuals in various environments, such as workplaces, homes, vehicles, and public spaces

Safety signs : Visual indicators used to convey important safety information and warnings in various environments

ENGLISH FOR ELECTRONICS ENGINEERING 1

SITI KUSTINI

English for Electronics Engineering 1 serves as a course book tailored for false beginner students enrolled in the Electronics Engineering Study Program's ESP course. The book aims to provide easily understandable learning materials, organized in a way that aids students in enhancing their English language competence, creativity, and innovative skills.

Comprising ten units, the book covers a diverse array of contemporary Electronica topics, utilizing genuine texts and visual resources sourced from textbooks, webpages, and manuals. Each unit contains interactive tasks, encouraging active student participation in the learning process. The language skills are taught in an integrated manner, allowing students to engage in activities like reading and note-taking, or responding orally to written content.

ISBN 978-623-5259-20-8 (no.jil.lengkap)
9 786235 259208

ISBN 978-623-5259-21-5 (jil.1 PDF)
9 786235 259215

Penerbit Poliban Press
Redaksi :
Politeknik Negeri Banjarmasin, Jl. Brigjen H. Hasan Basry, Pangeran, Komp. Kampus ULM, Banjarmasin Utara
Telp : (0511)3305052
Email : press@poliban.ac.id