

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ

НАЦІОНАЛЬНИЙ ТЕХНІЧНИЙ УНІВЕРСИТЕТ  
«ХАРКІВСЬКИЙ ПОЛІТЕХНІЧНИЙ ІНСТИТУТ»

## **ФУНКЦІОНАЛЬНІ СТРУКТУРИ АКАДЕМІЧНОЇ АНГЛІЙСЬКОЇ МОВИ**

Методичні вказівки  
до практичних занять з курсу  
«Англійська мова за професійним спрямуванням»  
для студентів всіх спеціальностей

## **FUNCTIONAL STRUCTURES OF ACADEMIC ENGLISH**

Methodological instructions to practical classes of the course  
“English for specific purposes”  
for students of all departments

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## LIST OF MOST COMMON LINKING WORDS

Adding information	Cause	Effect
<ul style="list-style-type: none"> <li>• ... and ...</li> <li>• as well as ...</li> <li>• also + Verb</li> <li>• not only..., but also ...</li> <li>• too. / as well.</li> <li>• In addition, / Besides that, / Furthermore, / Moreover,</li> <li>• Apart from / Besides + Noun / V-ing</li> <li>• Another point (idea, suggestion) is</li> <li>• One more point (idea, suggestion) is</li> <li>• The following point (idea, suggestion) is</li> </ul>	<ul style="list-style-type: none"> <li>• because + &lt;sentence&gt;</li> <li>• because of + &lt;Noun&gt;</li> <li>• since + &lt;sentence&gt;</li> <li>• as + &lt;sentence&gt;</li> <li>• due to + &lt;Noun&gt;</li> <li>• owing to + &lt;Noun&gt;</li> <li>• as a result of + &lt;Noun&gt;</li> <li>• provide(s)</li> <li>• force(s)</li> <li>• explain(s) the reason why</li> <li>• cause(s)</li> <li>• result(s) in</li> <li>• produce(s)</li> <li>• lead(s) to</li> <li>• make(s)</li> </ul>	<ul style="list-style-type: none"> <li>• so</li> <li>• that (which) is why</li> <li>• therefore</li> <li>• consequently</li> <li>• explains why</li> <li>• is the reason why</li> <li>• is provided by</li> <li>• is explained by</li> <li>• is caused by</li> <li>• result(s) from</li> <li>• is produced by</li> </ul>
Compare	Contrast	Emphasizing
<ul style="list-style-type: none"> <li>• both ... (and)</li> <li>• each</li> <li>• same</li> <li>• also</li> <li>• equal (to)</li> <li>• like</li> <li>• analogous to</li> <li>• similar(ly)</li> <li>• alike</li> <li>• likewise</li> <li>• as ... as</li> <li>• as well as</li> <li>• as well (too)</li> </ul>	<ul style="list-style-type: none"> <li>• different</li> <li>• different from</li> <li>• differ</li> <li>• otherwise</li> <li>• not so (as) ... as</li> <li>• &lt;Comp. Adj.&gt; than</li> <li>• instead of</li> <li>• in comparison to / compared to</li> <li>• in contrast to / with</li> <li>• even though</li> <li>• although</li> <li>• despite / in spite of</li> <li>• but</li> <li>• yet / nevertheless / however</li> <li>• unlike</li> <li>• conversely</li> <li>• on the other hand</li> <li>• whereas</li> </ul>	<ul style="list-style-type: none"> <li>• whole</li> <li>• entire(ly)</li> <li>• exact(ly)</li> <li>• indeed</li> <li>• real(ly)</li> <li>• extreme(ly)</li> <li>• high(ly)</li> <li>• specific(ly)</li> <li>• special(ly)</li> <li>• absolute(ly)</li> <li>• only</li> <li>• even</li> <li>• the best etc.</li> </ul>

Giving Examples	Sequencing	Structure
<ul style="list-style-type: none"> <li>• for example (e.g.)</li> <li>• for instance</li> <li>• that is (i.e.)</li> <li>• such as</li> <li>• including</li> <li>• namely (viz.)</li> </ul>	<ul style="list-style-type: none"> <li>• first / at first / initially</li> <li>• then / afterward(s) / next / later / subsequently</li> <li>• after + V-ing</li> <li>• previously</li> <li>• before</li> <li>• when / as soon as</li> <li>• at this time (point)</li> <li>• meanwhile / in the meantime</li> <li>• during + Noun</li> <li>• while + V-ing</li> <li>• finally / lastly / in the end / at last / eventually / at length / ultimately</li> </ul>	<ul style="list-style-type: none"> <li>• consists of</li> <li>• includes</li> <li>• contains</li> <li>• comprises</li> <li>• incorporates</li> <li>• is composed of</li> <li>• is made up of</li> <li>• are (integral) parts of</li> <li>• are components of</li> <li>• are constituents of</li> <li>• There are ... in / on / inside ...</li> </ul>

## 1. GIVING DEFINITIONS (EXPLANATIONS)

### Explicit ways

Term	Verb	Class	Details / Features
A disease	is is known as may be defined as means	an abnormal condition of the body	that has a specific cause and characteristic outward 'signs' and symptoms.

Class	Details / Features	Verb	Term
A process in a chemical reaction	which causes solid particles to become separated from a liquid	is called is known as can be defined as	precipitation

### Implicit ways

- Most metals are **malleable**; **they can be hammered into flat sheets**; non-metals lack this quality. Some metals are also **ductile**; **they can be drawn out into thin wires**; non-metals are not usually ductile.
- Lava is the name applied to the **liquid rock material**, **or magma**, when it reaches the surface
- Ninety two of chemical elements are **naturally occurring (i.e.** they are found on the earth), and the remainder have been made artificially in nuclear reactors.

### 1.1. Identify the language used to give definitions.

1. Communication is the process of transferring meanings from sender to receiver.
2. Exports are goods and services produced by a firm in one country and then sent to another country.
3. Proxemics is a form of non-verbal communication which deals with how people use physical space to convey messages.
4. Voluntary actions or activities are done because someone chooses to do them and not because they have been forced to do them.
5. Things which are simultaneous happen or exist at the same time.
6. The degree to which the result of a measurement, calculation, or specification conforms to the correct value or a standard is usually called accuracy.
7. Electrolysis refers to the decomposition of a substance by an electric current.
8. Ionic motion throughout the bulk of the solution occurs mostly by diffusion, which is the transport of molecules in response to a concentration gradient.
9. Metalworking machine tools definition includes a wide variety of machines having as common denominator that they are powered to manufacture products or parts (usually metallic but not only). We call machine tools the mother

machines since they are the machines enabling the production of all the other machines including themselves. 10. Planetary geology is the study of the solid matter that makes up celestial bodies, such as planets, moons, asteroids, and comets. This branch of geology focuses on the materials that make up these celestial bodies and how the bodies are formed. 11. The Atomic Number of an element is the number of protons or positive charges which are present in the nucleus of the atoms of that element. 12. Atomic particles are themselves composed of sub-atomic particles (i.e. the quarks and leptons). These sub-atomic particles are also called the fundamental particles or elementary particles.

### **1.2. Choose the correct description.**

1. Apple      a) a type of fruit b) a type of vegetable c) a type of meat
2. Book      a) something you cook b) something you watch c) something you read
3. Knife      a) a tool used to eat b) a tool used to write c) a tool used to cut
4. Red      a) an animal b) a color c) a food
5. Wet      a) not strong b) not long c) not dry
6. Dog      a) a type of food b) a type of pet c) a type of plant
7. Big      a) something small b) something round c) something large
8. Fast      a) moving straight b) moving slow c) moving quick
9. Lunch      a) a morning meal b) a midday meal c) an evening meal
10. Five      a) a shape b) a color c) a number

### **1.3. a) Read the explanations of some words and the examples of their use in sentences.**

1. An apple is a rounded edible fruit, usually red, yellow, or green, that grows from a tree. Mary likes to eat apples because they are crunchy and delicious.
2. A book is a set of written or printed sheets of paper bound together for the purpose of reading. Matthew likes to read books more than he likes to watch movies.
3. A cup is an open vessel used for drinking. Rob drinks water from a cup.
4. Red is a color. Maria's favorite color in the rainbow is red.
5. Wet means consisting of, containing, or covered with a liquid such as water. Chang came inside to dry off after getting wet in the rain.
6. A dog is a four-legged domesticated mammal, a common household pet. Tom went to the animal shelter to adopt a dog for his son.
7. Big means large or great in dimension, bulk, or size. Mario needs a big space to store a large number of paintings he owns.
8. Fast means characterized by quick or swift movement. You have to be a fast runner to win the race.

9. Lunch is a meal taken at the middle of the day. Mummy always eats a sandwich for lunch at noon.

10. Five is a number that is more than four and less than six, something that has five units. Lucille comes from work at five.

**b) Give your own definitions of the following objects.**

A pencil; a thermometer; a telephone; a web-camera; electric current; a language; sound.

**1.4. Try to guess the objects defined as follows:**

1) a pleased, kind, or amused facial expression, typically with the corners of the mouth turned up and the front teeth exposed; 2) a celestial body moving in an elliptical orbit round a star; 3) a natural oily substance occurring in animal bodies, especially when deposited as a layer under the skin or around certain organs; 4) the study of the relationships between plants, animals, people, and their environment, and the balances between these relationships; 5) a solid material which is typically hard, shiny, malleable, fusible, and ductile, with good electrical and thermal conductivity; 6) a series of connected railway carriages or wagons moved by a locomotive; 7) a structure carrying a road, path, railway, etc. across a river, road, or other obstacle; 8) a clear thin liquid that has no colour or taste when it is pure. It falls from clouds as rain and enters rivers and seas. All animals and people need it in order to live; 9) a warship with a streamlined hull designed to operate completely submerged in the sea for long periods, equipped with a periscope and typically armed with torpedoes or missiles; 10) a small piece of paper, fabric, plastic, or similar material attached to an object and giving information about it.

**1.5. Insert suitable category words in the following definitions.**

1. A barometer is a scientific \_\_\_\_ designed to measure atmospheric pressure.
2. Kidneys are \_\_\_\_ that separate waste fluid from the blood.
3. A multi-national company is a business \_\_\_\_ that operates in many countries.
4. Reinforced concrete is a building \_\_\_\_ consisting of cement, sand and steel rods.
5. Bullying is a pattern of anti-social \_\_\_\_ found in many schools.
6. Recycling is a \_\_\_\_ in which materials are used again.
7. A recession is a \_\_\_\_ of reduced economic activity.
8. Post codes are a \_\_\_\_ for making mail delivery more efficient.

**1.6. Complete and extend the following definitions.**

1. Distillation is a \_\_\_\_ used to \_\_\_\_ .
2. A psychiatrist is a \_\_\_\_ who specializes in \_\_\_\_ .



3. An MSc is a \_\_\_\_ awarded on completion of \_\_\_\_ .
4. A trade union is a(n) \_\_\_\_ which exists to protect \_\_\_\_ .
5. Malaria is a \_\_\_\_ caused by \_\_\_\_ .
6. Wheat is a \_\_\_\_ used for \_\_\_\_ .

## 2. GIVING EXAMPLES

### Patterns

For example (e.g.),
For instance,
... such as
... as follows
... the following examples
... namely

### Verbs

to give	an / the example
to produce	
to supply	
to provide	
to present	
to make	
to draw	

### Followers

- ... are among other examples.
- ... and other things of that nature.
- ... and so forth.
- ... and so on.
- I'm sure there are more.
- Those are just a few examples.

### Comparing with the previous example

- A better example is ...
- A different example is ...
- A less well-known example is ...
- A similar example is ...

### Mentioning how often the example is used

- A common example is ...
- A well-known example is ...
- The most famous example is ...
- A typical example is ...

### **Evaluating the example**

- Perhaps the best example is ...
- One of the best examples is ...
- A great example is ...
- My favourite example of this is ...
- The most obvious example is ...

### **Numbering the examples**

- An additional example is ...
- Another example is ...
- There are many examples, such as ...
- Just one of many examples is ...

### **Giving additional information about the example**

- A recent example is ...
- An example (that) you might be familiar with is ...
- An example which I often use is ...

### **Examples**

Personal electronic devices (e.g., cell phones, laptop computers) may not be used during the flight.

A number of weather variables were recorded, e.g. precipitation, temperature, and relative humidity

**2.1. Give as many examples of the following categories as possible. Use followers to add examples. E.g.: *There are many professions such as engineers, teachers, doctors. Other examples include drivers, shop assistants, waiters and many more.***

1. Professions, writing tools, metals, communication devices, insects, colours. (orally)
2. The most popular actors, the most useful tools at home, the most successful businesses, the latest technological achievements. (orally)
3. Chemical vessels students use in the lab, machine parts that can be used in different machines, physical laws we encounter every day, important discoveries of the last decade. (in writing)

### 3. STRUCTURE AND LOCATION

X	consists of	Y and Z
	is composed of	
	is made up of	
	contains	
	includes	
	comprises	
	incorporates	

There are	Y and Z	in / on / inside	X
-----------	---------	------------------	---

Y and Z	are parts of	X
	are components of	
	are constituents of	

A is	above	B
	below	
	in front of	
	facing	
	behind	
	opposite	
	in the middle of	
	on the right of	
	on the left of	
	near	
	close to	
	over	
	under	
	beyond	
	between	B and C

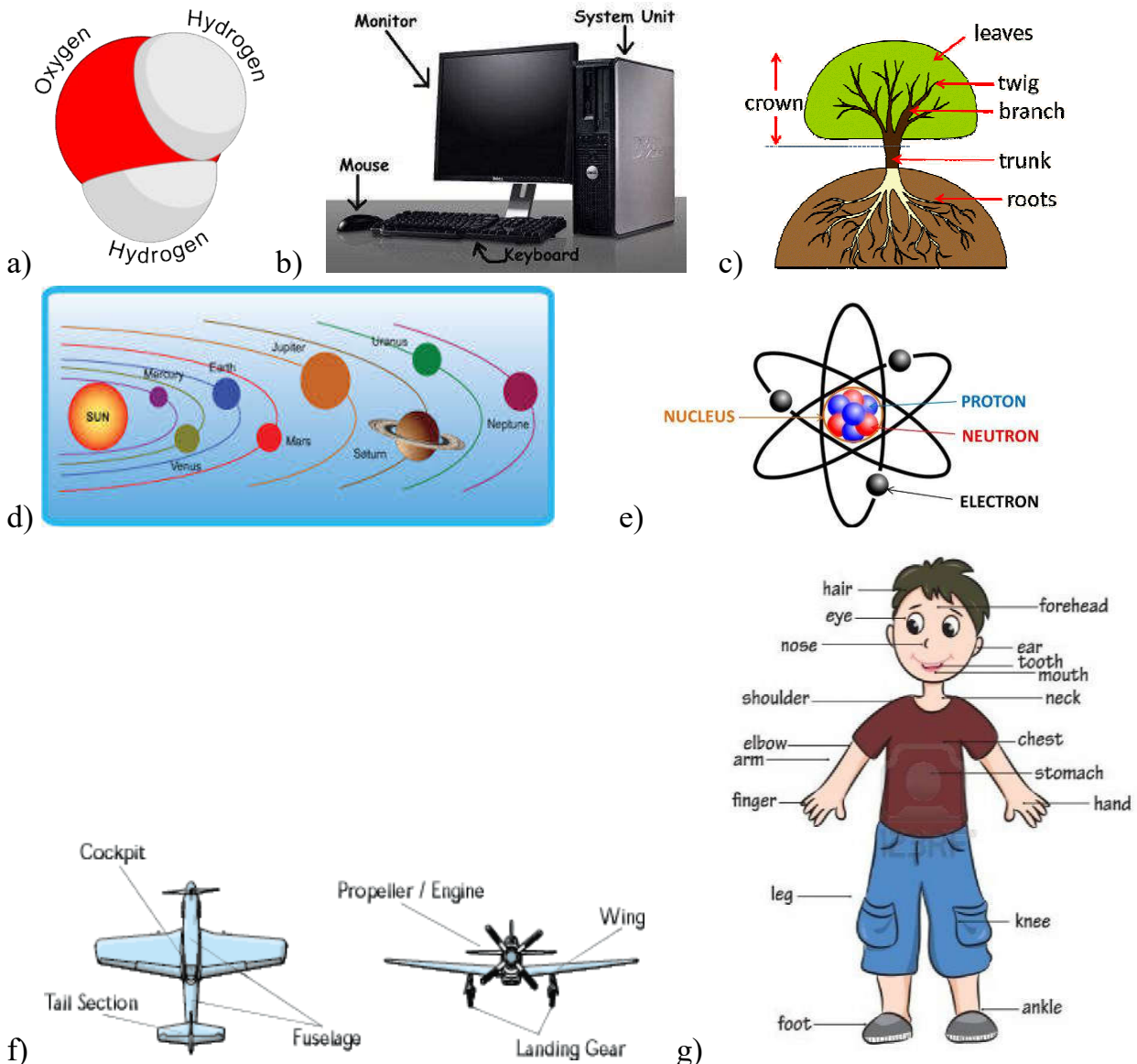
#### 3.1. Find words and expressions describing structure.

1. The primary components of a car are the power plant, the power transmission, the running gear, and the control system. These constitute the chassis, on which the body is mounted. 2. The power plant includes the engine and its fuel, the carburetor, ignition, lubrication, and cooling systems, and the starter motor. 3. Animals are made up of specialized cells, such as blood cells, cartilage cells, fat cells, muscle cells, nerve cells; humans have about 350 different cell types while lower animals, like hydra, only 10 to 20. 4. The life of the cell is dependent on the chemical reactions among the many million constituent molecules. 5. One component unit of a computer is a Memory Unit or store. 6. There are three elements required by any computer system: the hardware units; the operating system software; the application programs. 7. DNA is made up of four different parts called nucleotides. 8. The U.S. Senate consists of two elected officials from each state. 9. The list includes the names of many famous writers. 10. The largest component of soil is the mineral portion, which makes up approximately 45% to 49% of the volume. 11. The diet incorporates many different fruits and vegetables. 12. The remainder of the unit comprises warehouse accommodation and includes a roller shutter door.

### 3.2. Choose one of the options.

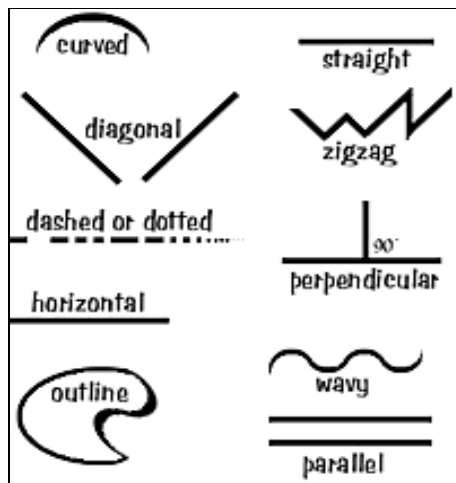
1. Every chemical element *is composed of / includes* atoms. 2. Women *constitute / consist of* a significant part of the workforce. 3. Earth's atmosphere *contains / is made up of* traces of dust particles, pollen, plant grains and other solid particles. 4. A layer of snow *includes / is made up of* many tiny ice grains surrounded by air. 5. This aircraft *consists of / incorporates* several new safety features. 6. Most research and development projects *involve / fall into* some element of risk. 7. His diet *contains mainly / is mainly divided into* fruit, vegetables and some milk products. 8. The list of candidates did not *include / contain* his name. 9. The Dev Team typically *falls into / includes* software developers and testers, engineers, and other dedicated specialists. 10. The crowd *consisted mostly of / mostly contained* college students and office workers.

### 3.3. Describe the structure of the following objects using all possible expressions.

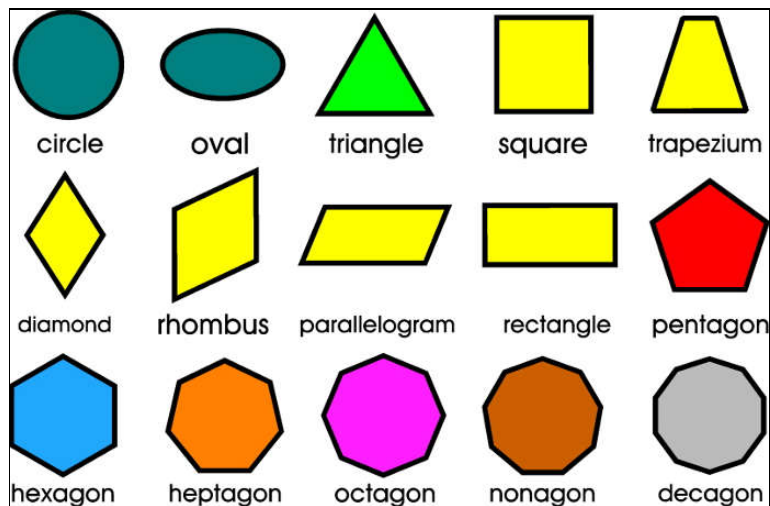


## 4. SHAPES AND SIZES

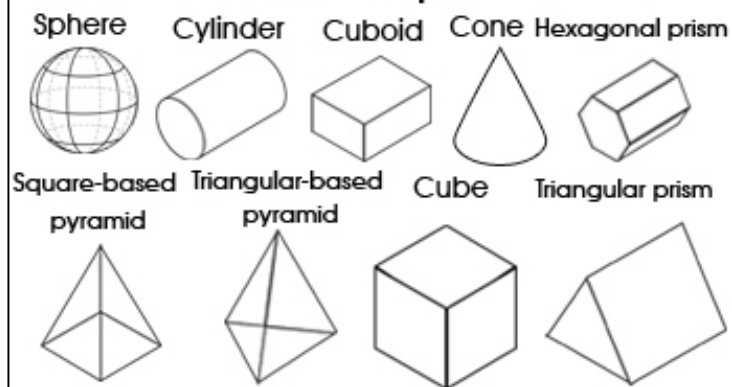
### Lines



### 2D shapes (Flat shapes)



### 3D Shapes



### Describing the shape

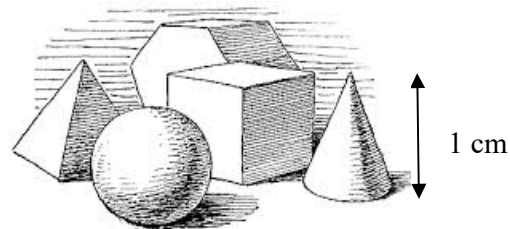
Object	Verb	Noun
X	is shaped like a has a form of a has a shape of a	round oval square triangle circle rectangle hexagon cylinder cone

Object	Verb	Adjective	
X	is	round oval square triangular circular rectangular hexagonal cylinder cone	in shape
			-shaped

### Describing linear sizes and weight

The length of the <object> is 5 m.	The <object> is 5 m long.
The thickness of the <object> is 5 m.	The <object> is 5 m thick.
<b>Dimensions (HWD)</b>	
The height of the <object> is 5 m.	The <object> is 5 m high.
The width of the <object> is 5 m.	The <object> is 5 m wide.
The depth of the <object> is 5 m.	The <object> is 5 m deep.
<b>Weight</b>	
The weight of the <object> is 5 kg.	The <object> weighs 5 kg.

**4.1. Describe the figures you see on the picture. Calculate the volume of the figures and explain the process of calculation.**



**4.2. Describe the shapes of the following buildings. Try to guess their dimensions. Learn more about them (in the Internet) and give a short report including a) the purpose of the building; b) the size (dimensions); c) the place; d) the date of construction; e) materials used; f) the designer (if any) etc.**



a)



b)



c)



d)



e)



f)



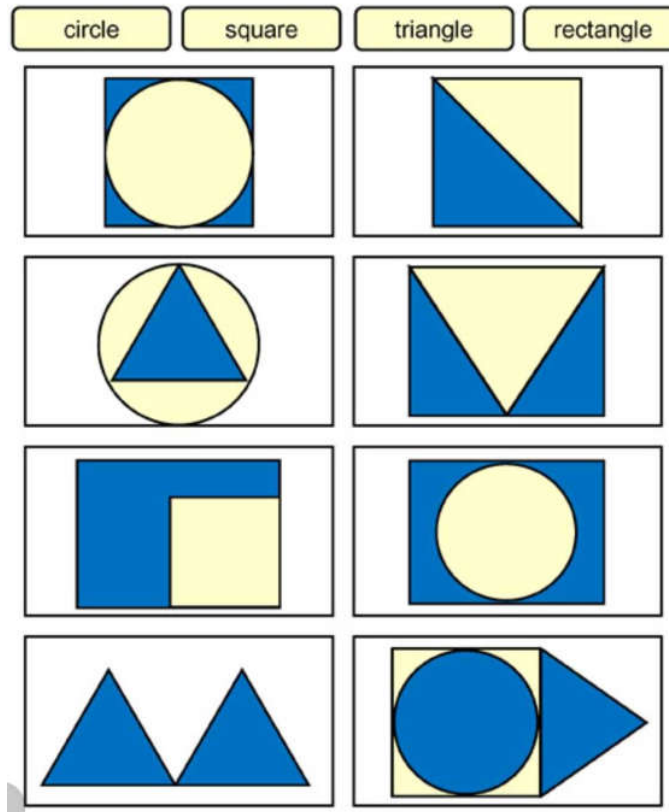
g)



h)



4.3. Describe these shapes to someone else so they can draw them without seeing them. Can you describe the shape without using these words?



4.4. a) Complete the table.

Name of dimension	Large dimension	Small dimension
1. What's the ____?	Is it ____?	Is it short?
2. What's the width?	Is it ____?	Is it ____?
3. What's the ____?	Is it ____?	Is it low?
4. What's the thickness?	Is it ____?	Is it ____?
5. What's the ____?	Is it deep?	Is it ____?

b) Mary has done a revised drawing for the floor slab. Read the extract from her email about the new design and complete the message using the correct form of the words in (a)

To Lewis Rosas  
Subject Revised floor slab drawing

Please find attached a revised drawing for the floor slab, now reconfigured for defined movement. In order to accommodate guided vehicles 1080 mm (1) wide (as specified by



the client), we propose a standard (2) \_\_\_\_\_ of 1280 mm for each superflat lane. At 14,5m, the (3) \_\_\_\_\_ of the longest lane on the network is within the maximum slab run that can be cast in a single concrete pour, thus avoiding construction joints on straight runs. On curved sections, a standard 8.5 m turning radius is used, as per the guided vehicle manufacturer's recommendations. In order to allow for the eventuality of future grinding, we have located the top layer of reinforcement 10 mm deeper below the slab surface. This additional (4) \_\_\_\_\_ has not, however, been added to the overall slab (5) \_\_\_\_\_, which remains 275 mm. The reinforcing bars also remain in 12 mm diameter. As a result, the levels of wall-mounted process installations – many of which need to be fixed at a precise (6) \_\_\_\_\_ above finished floor level – are unaffected.

## 5. ADDING INFORMATION

Vocabulary	Examples
and	We discussed training, education <b>and</b> the budget.
In addition, / Besides that,	We discussed training, education and the budget. <b>In addition</b> , we talked about staff.
as well as ...	<b>As well as</b> the costs, we are concerned by the competition. We are interested in costs <b>as well as</b> the competition.
also + Verb	We <b>also</b> spoke about marketing
not only..., but also ...	We are concerned <b>not only</b> by the costs, <b>but also</b> by the competition.
too. / as well.	They were concerned <b>too (as well)</b> . I, <b>too</b> , was concerned.
Furthermore, / Moreover,	Marketing plans give us an idea of the potential market. <b>Moreover</b> , they tell us about the competition.
Apart from / Besides + Noun / V-ing	<b>Apart from</b> Rover, we are the largest sports car manufacturer. <b>Besides</b> being the best student in the group, he finds time to play football and sing in a choir.
Another / One more (e.g. fact, example)	We use Internet for many different things like searching for information for college projects, downloading music etc. <b>One more</b> advantage of the Internet is eLearning.

### 5.1. Find the words and expressions that signal adding information.

Solar energy is a resource that is not only sustainable for energy consumption, but also is indefinitely renewable (at least until the sun runs out in billions of years). Solar power can

be utilized to generate electricity, besides it is used in relatively simple technology to heat water (solar water heaters). The use of skylights in home construction can also greatly reduce energy expenditure required to light rooms in a homes interior during the day. Furthermore, solar power helps to slow or even stop global warming mainly caused by burning fossil fuels and emitting greenhouse gases.

**5.2. Rewrite the sentences below using the connectors and words from the box as in the following examples.**

*The library on 5<sup>th</sup> Avenue in New York City is one of the best places to do research. It has hundreds of the most respected magazines and journals in the world.*

**- Additionally, Besides that, Moreover, In addition, Furthermore**

*The library on 5<sup>th</sup> Avenue in New York City is one of the best places to do research. **Additionally / Besides that / Moreover / In addition / Furthermore**, it has hundreds of the most respected magazines and journals in the world.*

**- And**

*The library on 5<sup>th</sup> Avenue in New York City is one of the best places to do research, **and**, it has hundreds of the most respected magazines and journals in the world.*

**- Not only ... but also**

*The library on 5<sup>th</sup> Avenue in New York City is **not only** one of the best places to do research **but also** it has hundreds of the most respected magazines and journals in the world.*

**- Also**

*The library on 5<sup>th</sup> Avenue in New York City is one of the best places to do research. It **also** has hundreds of the most respected magazines and journals in the world.*

**- As well, too**

*The library on 5<sup>th</sup> Avenue in New York City is one of the best places to do research. It has hundreds of the most respected magazines and journals in the world **as well / too**.*

Additionally	In addition	Too	Also	Furthermore	Besides that	And
Moreover	As well	Not only...but also				

1. John is a successful businessman. He is a good sportsman.
2. My professor is an extremely fascinating person. She tells the most interesting stories I have ever heard.

**5.3. Choose the correct option.**

1. He works a lot. \_\_\_\_ to running his company, he works as a consultant for others.  
a) And b) In addition c) Furthermore d) Also

2. He is a workaholic. His wife works a lot \_\_\_\_.
- a) as well as b) moreover c) too d) besides
3. Exercise is good for your physical health. \_\_\_\_, it is good for your mental health.
- a) Moreover b) Also c) And d) As well as
4. \_\_\_\_ exercise, you must follow a diet if you want to lose weight.
- a) And b) Besides c) Furthermore d) Moreover
5. My daughter is allergic to peanuts, eggs \_\_\_\_ fish.
- a) in addition b) also c) furthermore d) and

#### 5.4. Make a short report based of the following information.

##### Properties of acids

Acids taste sour. Acids react with metals. Acids react with carbonates. Acids turn blue litmus red.

##### The use of acids

Many of the foods we eat contain acids. Acids are often used in cleaning supplies. Acids in your stomach allow you to digest food. Lactic acid in your muscles causes fatigue. Acids are used in lawn care products.

#### 6. GENERALIZATION

Percentage	Quantity	Frequency	Certainty	Verbs
100%	all / every / each most a majority (of) many/much  some a number (of) several  a minority (of) a few/a little	always usual(ly) normal(ly) general(ly) as a rule on the whole  often frequent(ly) sometimes occasional(ly)	certain(ly) definite(ly) undoubtedly clearly presumably probably/probable likely possibly/possible perhaps maybe	will is/are must have to should ought to would can could may might
0%	few / little    no/none/not any	rare(ly) seldom hardly ever scarcely ever never	uncertain unlikely	could not will not cannot  is/are not

### 6.1. In the text, find the words that signal generalization.

Up until the early 90's, nearly every household relied on a landline to make calls. Mobile phones were a relatively expensive luxury, and even those lucky enough to own one would still use a landline at home because it was cheaper. Mobiles were mainly attractive for people on the move, but have now become indispensable – the first thing you reach for to make and receive calls, send a text or browse the Internet.

Even though the landline phone is not quite dead yet, it's been in decline for a few years. However, there is a generational divide between the young and old: 80% of people aged under 30 don't have a home phone or hardly ever use one, according to Money Saving Expert. On the other hand, half of people over 60 still use their home phone for most calls. There seems to be something of an emotional attachment to landlines, or perhaps a resistance to new technology that may be perceived as expensive and difficult to use for the older generation.

### 6.2. Decrease the level of generalization in the following sentences.

1. There are lots of advantages of using landline phones – voice quality on a landline is always better than on a mobile, and there are few issues with dropped calls or cell capacity. 2. Many people know their own family's mobile numbers. 3. Only a decade ago, all students were making notes in their notebooks during the lectures, while today's lecture must be simply recorded on a smartphone. 4. All people use their mobiles for the longest periods of time at home. 5. As a rule, people speak over the telephone while watching TV. 6. For anyone that lives in an area with decent network coverage and uses a smartphone every day, doing away with a landline is a viable option that shouldn't cause too much inconvenience. 7. Cell phone plans always have a limited number of allocated minutes for calls, while all landline telephone plans include unlimited minutes at the lowest rate.

### 6.3. Generalize (write in one word or phrase).

1. Football, tennis, basketball, baseball \_\_\_\_
2. speed, density, pressure, voltage \_\_\_\_
3. Height, depth, width, length \_\_\_\_
4. Train, tramway, airplane, bus, bicycle \_\_\_\_
5. Iron, mercury, copper, silver \_\_\_\_
6. London, Ankara, Paris, Washington, Tokyo \_\_\_\_
7. Sweeping the floor, cooking breakfast, washing the dishes, making the bed \_\_\_\_
8. Attending lectures, doing homework, sitting for exams, studying textbooks \_\_\_\_
9. Computer, laser, accelerator, transformer \_\_\_\_
10. Infancy, childhood, adolescence, adulthood \_\_\_\_

#### 6.4. Complete the sentences with your own ideas.

1. All students understand \_\_\_\_\_. 2. The majority of students remember \_\_\_\_\_. 3. Some students attend \_\_\_\_\_. 4. Few students know \_\_\_\_\_. 5. None of the students want \_\_\_\_\_. 6. Students always \_\_\_\_\_. 7. Students normally \_\_\_\_\_. 8. Students often \_\_\_\_\_. 9. Students sometimes \_\_\_\_\_. 10. Students seldom \_\_\_\_\_. 11. Students never \_\_\_\_\_.

#### 7. COMPARING AND CONTRASTING

Compare	both ... (and)	Tom and Ann <b>both</b> have dogs. <b>Both</b> Tom <b>and</b> Ann are students.
	same	The results of these tests are <b>the same</b> .
	also	A mouse is <b>also</b> an input device.
	equal (to)	Ukraine is almost <b>equal</b> in size <b>to</b> France.
	similar(ly)	They behave <b>similarly</b> . These triangles are <b>similar</b> .
	as ... as	This problem is <b>as</b> difficult <b>as</b> the previous one.
	as well as	The coach, <b>as well as</b> the team, is ready.
	as well (too)	He has bought a car. She has bought one <b>as well (too)</b> .

Contrast	different	I have a <b>different</b> idea. The ability to reason makes man <b>different from</b> animals.
	not so (as) ... as	The devil is <b>not so</b> black <b>as</b> he is painted.
	<Comp. Adj.> than	The temperature today is <b>higher than</b> yesterday.
	in comparison to / compared to	Computers-based communication is extremely fast <b>in comparison to / compared to</b> telephone services.
	in contrast to / with	The white roses looked lovely <b>in contrast with</b> the red ones.
	even though	<b>Even though</b> we fail, the very mistakes we make will be invaluable.
	although	<b>Although</b> this machine is very old, it is still usable.
	despite / in spite of	<b>Despite / in spite of</b> being a millionaire, he lives in a very small flat.
	but / while / yet	Everybody wanted to go to the cinema, <b>but</b> he insisted on staying home.
	unlike	<b>Unlike</b> the others, he was very calm.

**7.1. In the sentences, find the functional words and expressions and determine their function – compare or contrast.**

1. It is estimated that the world's oil reserves will last for about 50-60 years, whereas sunlight is available forever and can be utilized till the end of this planet. 2. Unlike fossil fuels, which will expire in another few decades, wind energy is never going to end. 3. Learning to ride a bike is as easy as, say, learning to skate. 4. All manufactured goods have environmental impact, but bicycles can be produced for a fraction of the materials, energy and shipping costs of a car. 5. A 20-pound bicycle is a lot less rough on the pavement than a two-ton sedan. 6. Cars need much more parking space than bicycles. 7. There is evidence that riding a bike can act like natural painkiller if you are relatively fit. 8. Energy we receive from the sun can be used to generate electricity. Similarly, energy from wind, geothermal sources or tides can be used to fulfill our daily energy demands.

**7.2. Complete the sentence with linking words of Compare and Contract.**

1. \_\_\_\_ getting up early, John was still late for classes. 2. My father speaks many languages. He speaks English, French, Spanish and German. He \_\_\_\_ speaks some Japanese. 3. This year the company has produced 500 machine tools \_\_\_\_ 300 units last year. 4. Tom received the \_\_\_\_ results as Jerry. 5. \_\_\_\_ Earth, Venus has no moons. 6. The radii of Venus and Earth are 6052 km and 6378 km respectively. They are quite \_\_\_\_\_. 7. I know it's too cold to go outside, \_\_\_\_\_ there are lots of things we can do here at home. 8. \_\_\_\_\_ all his effort, he still lost. 9. If Bill and Steve are going, I want to go \_\_\_\_\_. 10. \_\_\_\_\_ he is a good student, he finds it hard to take exams.

**7.3. Describe 3 similarities and 3 differences of the given objects using active vocabulary.**



## 8. CAUSE & EFFECT

Why are they happy?



### Conjunctions

Cause
because / since / as + <clause>
because of + <Noun>
due to + <Noun>
owing to + <Noun>
as a result of + <Noun>

Effect
so
that (which) is why
therefore
consequently
This is the reason why <clause>

### Examples

Lots of electrical lines were damaged **because of** terrible wind.

He is really hard-working. **That's why** he has easily passed all the exams.

### Verbs

<Cause>	cause(s)	<Effect>
	result(s) in	
	provide(s)	
	explain(s) why	
	lead(s) to	
	make(s)	
	bring(s) about	

<Effect>	is caused by	<Cause>
	result(s) from	
	is provided by	
	is explained by	

### Examples

Telephoning while driving may **result in** accidents.

Blue screens **are caused by** hardware problems.

### Other devices

Cause	Examples
If + <clause>	If you smoke much, it may damage your health.
When + <clause>	When you press this button, the program stops.
<Imperative>	Don't leave your car here – you will be fined.
The <comp.Adj.>..., the <comp.Adj.>	The higher the resistance, the lower the current.

### 8.1. In the text, find ideas that serve as a Cause or an Effect.

In nature there are indicator species that characterize the condition of the environment. Bees are an indicator species. Honeybees pollinate 70% of the species of crops that we regularly use. The honeybee population is dying due to pesticides and environmental changes. If bees go extinct, over 80% of our fruits and vegetables will be gone. Researchers claim that cereal would more than likely be our main source for nutrition if such disaster happens.

Bees are dying off very fast. Environmental changes such as pollution are one of the main causes for the plummeting population, along with pesticides and other unhealthy chemicals put in farming. Though only a small amount of action is being taken to help save bees, it is crucial that more attention should be given to such situation before bees become extinct.

### 8.2. Insert the following words and expressions to complete the following paragraph.

as a result of	caused by	owing to	result in	because of	due to
----------------	-----------	----------	-----------	------------	--------

The process of corrosion is a complex electro-chemical reaction and it takes many forms. Corrosion may produce general attack over a large metal surface or it may \_\_\_ pinpoint penetration of metal. Corrosion is a relevant problem \_\_\_ water in boilers. Corrosion can be of widely varying origin and nature \_\_\_ the action of dissolved oxygen, to corrosion currents set up \_\_\_ heterogeneities on metal surfaces, or to the iron being directly attacked by the water. While basic corrosion in boilers may be primarily \_\_\_ reaction of the metal with oxygen, other factors such as stresses, acid conditions, and specific chemical corrodents may have an important influence and produce different forms of attack. It is necessary to consider the quantity of the various harmful substances that can be allowed in the boiler water without risk of damage to the boiler. Corrosion may occur in the feed-water system \_\_\_ low pH water and the presence of dissolved oxygen and carbon dioxide.

### 8.3. Complete the sentences using the words and phrases in the box.

because of (2)	caused	consequently	due to	owing to	result in	result of
----------------	--------	--------------	--------	----------	-----------	-----------

1. Bird strikes can \_\_\_ damage to aircraft.
2. Bird strikes were a potential problem for the train, \_\_\_ / \_\_\_ / \_\_\_ its speed.
3. During the test, the train was severely damaged as a \_\_\_ the impact.
4. The damage occurred \_\_\_ a problem relating to temperature.
5. The impact of the chicken \_\_\_ it to enter the train.
6. The engineers thought the gun was faulty, so \_\_\_ they called their colleagues.



**8.4. Read the following engineering legends and complete the descriptions of causes and effects using the correct form of the words and phrases in Exercise 8.3. Sometimes more than one word or phrase is possible.**

1. Apparently, the biggest challenge in space exploration was developing a pen for astronauts to use in orbit as ordinary ballpoint doesn't work in space, \_\_\_\_ the fact that there's no gravity. So \_\_\_\_ this problem, there were teams of researchers working for years, trying to find a solution. Eventually, someone came up with the idea of using a pencil.
2. When they designed the foundations of the library on the university campus, they forgot to allow for the weight of books on the shelves, which \_\_\_\_ the building to start sinking. \_\_\_\_, half of the floors had to be left empty, without books, to keep the weight down.
3. Did you hear about that Olympic-sized swimming pool that was built? They got the length wrong, \_\_\_\_\_ the tiles. They forgot to take into account the thickness, which \_\_\_\_\_ the pool measuring a few millimeters too short. So \_\_\_\_, it can't be used for swimming competitions.

**8.5. Choose the correct option.**

1. They couldn't go to the beach \_\_\_\_ of the rain.  
a) since b) as c) due to d) because
2. They couldn't go to the beach \_\_\_\_ it was raining.  
a) due to the fact that b) due to c) owing to d) because of
3. \_\_\_\_ it was raining, they couldn't go to the beach.  
a) Because b) Because of c) Due to d) Owing to
4. \_\_\_\_ the rain, they couldn't go to the beach.  
a) Owing it the fact that b) Due to the fact that c) Since d) Due to
5. \_\_\_\_ it was a rainy day, they couldn't go to the beach.  
a) Due to b) Since c) Because of d) Owing to

**8.6. Look at the pictures. Compose sentences using the pictures as either a cause or an effect or both.**



## 9. DESCRIBING SEQUENCES OF ACTIONS

Function	Words	Examples
Start	first at first initially to begin with	To start a computer we first plug it into the mains.
Next step	then after that afterward(s) next later subsequently In the next stage, Following this, after + Noun / V-ing	Then we push the start button on the system unit.
Temporary stop or return	previously before + Noun / V-ing	Before going on, make sure your keyboard is connected to the computer.
Action made at the same stage	when + <Clause> as soon as at this time (point) meanwhile in the meantime during + Noun while + V-ing	When an invitation box appears on the screen, we enter the password. While typing the password we should be careful because the letters we type are replaced with dots.
Conditions	if... (then ...) otherwise either ... or	If the password is correct, we can start working, otherwise the computer will ask us to repeat entering the password.
End	finally lastly in the end at last eventually ultimately	So, in the end we find ourselves working on our favourite desktop.

### **9.1. In the text, find sequence words.**

First of all, letters and packets are collected in bags from pillar boxes, post offices and firms, in post office vans. They are then taken to the sorting office, where the bags are emptied and the letters separated from the packets. Following this step, the letters are put through machines so that the stamps can be cancelled. In this process the date and place of sorting are put over the stamps on each envelope. In the next stage, the sorting of the letters takes place, according to the county they are addressed to. This is done by placing them in the appropriate pigeon hole. Subsequently, the letters are taken from the pigeon holes and placed in baskets, which are then put onto a conveyor belt. While on this conveyor belt, the baskets are directed to the appropriate secondary sorting section by means of coding pegs. At the secondary sorting frames, the letters are put into towns in the county. Later, the letters are tied in bundles and a label is put on showing the towns they are addressed to. Finally, the letter bundles are placed in bags, which have the Post Office seal, Post Office Railway number and Destination Code number on them, and then these are sent to the railway station.

### **9.2. Add sequence words in the gaps.**

Icicles form in cold weather when the sun is shining. \_\_\_\_ the sun melts ice and snow into water, \_\_\_\_ the water drips, \_\_\_\_ the cold air freezes the water again. As more water drips and refreezes, the icicle gets longer. It \_\_\_\_ narrows into a point. \_\_\_\_ that produces the long, cone-like icicle shape.

### **9.3. Put the actions in the correct order. Describe the process adding sequence words where necessary.**

- a) Take the bulb out of the socket. To do this, keep gently twisting the bulb anticlockwise until it comes loose from the socket.
- b) Use the packaging from the new bulb to wrap the old one for safe disposal. The old bulb needs to be disposed of safely as the glass is fragile and very sharp.
- c) Use a stepladder to safely reach the bulb.
- d) Make sure the power is turned off. The safest way to do this is to switch the large red power button to “off” on the fuse box.
- e) Insert a replacement bulb lightly but firmly into the socket. Depending on the type, turn it clockwise until it won’t go any further.
- f) Turn the power back on again and switch on the light.
- g) Allow the bulb to cool before touching it.

#### 9.4. Choose the correct option.

1. An hour passed but there was no sign of Mike. \_\_\_\_, we decided to go home. (Until, Before, Finally) 2. We bumped into Sam during our trip to Lang Island. A few weeks \_\_\_\_, we met him again (after, then, later) 3. The teacher had trouble telling the twins apart. \_\_\_\_ she realized one had a mole above her lips. (Subsequently, Finally, Meanwhile) 4. The men went to a nearby restaurant for breakfast. \_\_\_\_, they drove off towards the mountains (After, Afterwards, Meanwhile) 5. The football coach announced, "Today, we will begin practicing for the coming match." \_\_\_\_ he added, "Let's warm up first." (Then, After, Eventually) 6. \_\_\_\_, heat the oil in the frying pan. Then put in all the marinated chicken pieces. (Before, After, First) 7. Many customers bought the delicious chicken pies. \_\_\_\_ all the pies were sold out. (Eventually, Afterwards, Next) 8. Many people wanted to buy the tickets. \_\_\_\_ a while, the queue was quite long. (Before, After, Finally) 9. Julia will be back in fifteen minutes. \_\_\_\_, make yourself at home. (Later, Subsequently, Meanwhile)

#### 10. EMPHASIZING

- Strong words

whole, entire(ly), exact(ly), genuine(ly), indeed, real(ly), ultimate(ly), extreme(ly), high(ly), specific(ly), special(ly), absolute(ly), only, the best etc.

- Inversion

Little **did I understand** what was happening.

Hardly **had I arrived when** he started complaining.

Seldom **have I felt** so alone.

- Continuous

Ann **is always getting** into trouble.

- It is (was) ... that (who)

**It is I who** received the promotion.

**It is the awful weather that** drives him crazy.

**It was not until last year that** he finally found his dream job.

- What ...

**What we need is** a good long shower.

**What he thinks** isn't necessarily true.

- Do (does, did) in affirmative sentences

**I do believe** that you should think twice about this situation.

- Adverbs *such*+Noun, *so*+Adjective (Adverb), *too*+Adjective (Adverb)

That was **such a difficult problem that** nobody could solve it.

She was **so absent-minded**.

The shoes were **too** tight for me.

### 10.1. Underline the words and expressions signaling emphasizing.

1. No nuclear technology can be completely safe, and many of the more efficient nuclear cycles require isolating plutonium, an extremely toxic material that can also be used in weapons. 2. Solar PV and offshore wind may be the only renewable sources abundant enough to displace fossil fuels. 3. In analyzing costs, we should consider both the market costs of supply and the environmental costs of various energy sources. It is to this analysis that we now turn. 4. In Europe, offshore wind is significantly further developed, with 64 operating offshore wind farms as of 2014. 5. Few homeowners would purchase a gas furnace and at the same time purchase all the gas the furnace would use over its life. Yet by their nature, this is what is expected for most renewable energy sources. 6. Not only does the use of renewable energy sources help reduce global carbon dioxide emissions, but they also add some much-needed flexibility by decreasing our dependence on limited reserves of fossil fuels. 7. Though there is a large quantity of solar radiation falling on the earth every day, it is dissipated over the whole earth's surface, and collecting such dispersed energy is costly indeed. 8. But many of these new technologies do involve higher costs, so an upward trend in fossil fuel prices over time is likely.

### 10.2. Make the underlined parts of the sentences more emphatic using the words in the box.

much	dramatically	does	absolutely	any	so ... that	ever	only
------	--------------	------	------------	-----	-------------	------	------

1. Gadgets are created to help reduce our efforts and \_\_\_ save the time in doing chores. 2. Human dependence on technological devices is \_\_\_ immense \_\_\_ people stop being able to function without them. 3. In 2009, 29.4 million computers were disposed of, but \_\_\_ 18 million computers were recycled properly. 4. Not only \_\_\_ our demand for electronics harm the environment, but it can also harm our relationships. 5. The "graphics" outside are \_\_\_ more realistic than \_\_\_ video game \_\_\_ will be. 6. It is \_\_\_ impossible to imagine modern communication without Internet.

### 10.3. Choose the correct phrase.

Onto the stage walked	I do like	is why she	Not only did she
Never have we	who	The truth is	it's

1. What I don't understand \_\_\_ suddenly decided to leave.  
2. Do you think \_\_\_ the children who are the problem, or their parents?

3. The band was terrible. \_\_\_\_ heard such a dreadful noise!
4. \_\_\_\_ that Jamie's really lazy and he makes no effort.
5. \_\_\_\_ win the race, but she also broke the world record.
6. It was John \_\_\_\_ forgot to bring the map.
7. I don't like Alice but \_\_\_\_ her sister.
8. \_\_\_\_ two men holding guitars.

#### 10.4. Put the words in the correct order.

1. so why did looked worried. she was I All her ask
2. All do run to is business. she own her wants
3. happens they ask is of lots questions. that you What difficult
4. was What that the some missed us happened of bus.
5. was we o'clock back finally It when home. got six
6. looked The bought it reason it was interesting. because why I
7. It who Javier what happened. realized was had
8. angry. me It made attitude was that his

### 11. DESCRIBING A FLOW CHART

Use sequence words to highlight the order of stages or steps.

#### Grammar structures to describe processes

- 1) The simple present tense.

The wind turns the blades of a turbine.

- 2) The present simple passive

The signal is transmitted via the cables.

- 3) The present perfect passive

After the material has been washed it is sent to the machine.

#### Other structures

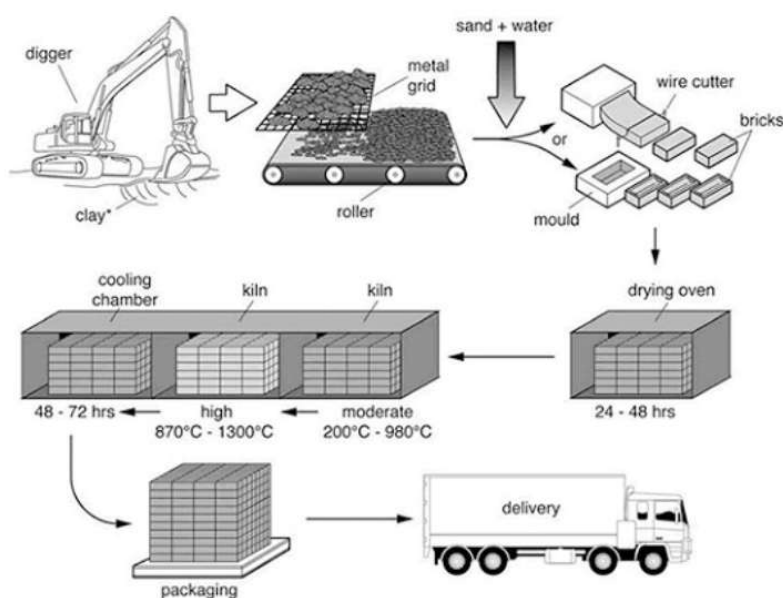
Object	Verb	Action (Noun or V-ing)	Modifiers
X	undergoes	heating	in the oven
	goes through		
	is subject to	treatment	with acids
	is exposed to		

### 11.1. Find and underline sequence words.

The process of sorting letters

First of all, letters and packets are collected in bags from pillar boxes, post offices and firms, in post office vans. They are then taken to the sorting office, where the bags are emptied and the letters separated from the packets. Following this step, the letters are put through machines so that the stamps can be cancelled. In this process the date and place of sorting are put over the stamps on each envelope. In the next stage, the sorting of the letters takes place, according to the county they are addressed to. This is done by placing them in the appropriate pigeon hole. Subsequently, the letters are taken from the pigeon holes and placed in baskets, which are then put onto a conveyor belt. While on this conveyor belt, the baskets are directed to the appropriate secondary sorting section by means of coding pegs. At the secondary sorting frames, the letters are put into towns in the county. Later, the letters are tied in bundles and a label is put on showing the towns they are addressed to. Finally, the letter bundles are placed in bags, which have the Post Office seal, Post Office Railway number and Destination Code number on them, and then these are sent to the railway station.

**11.2. Fill in the gaps with the sequence words:** a) *then*; b) *next*; c) *following this*; d) *followed by*; e) *finally*; f) *to begin*; g) *then*; h) *in the subsequent stage*.



(1)\_\_\_, the clay used to make the bricks is dug up from the ground by a large digger. This clay is (2)\_\_\_ placed onto a metal grid, which is used to break up the clay into smaller pieces. A roller assists in this process.

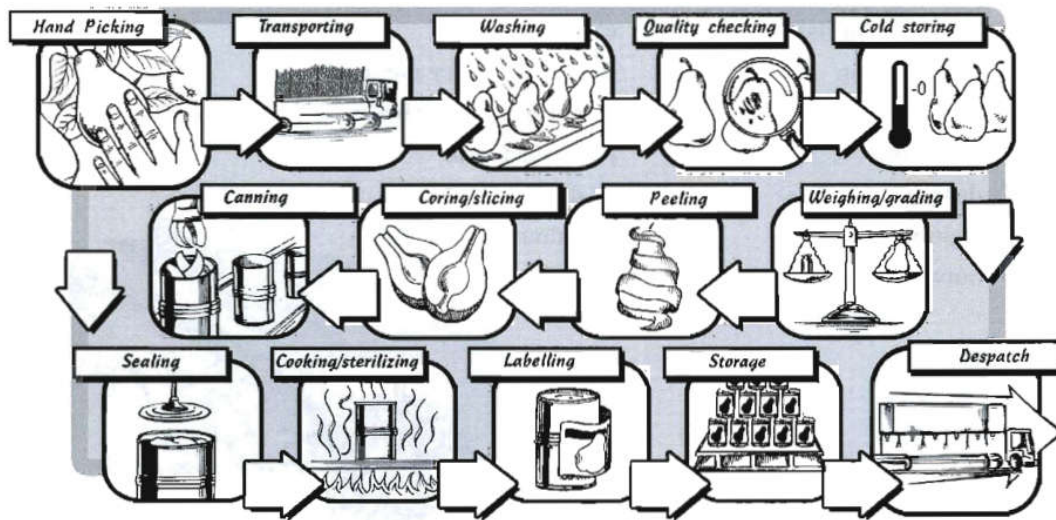
(3)\_\_\_, sand and water are added to the clay, and this mixture is turned into bricks by either placing it into a mould or using a wire

cutter. (4) \_\_\_, these bricks are placed in an oven to dry for 24 – 48 hours.

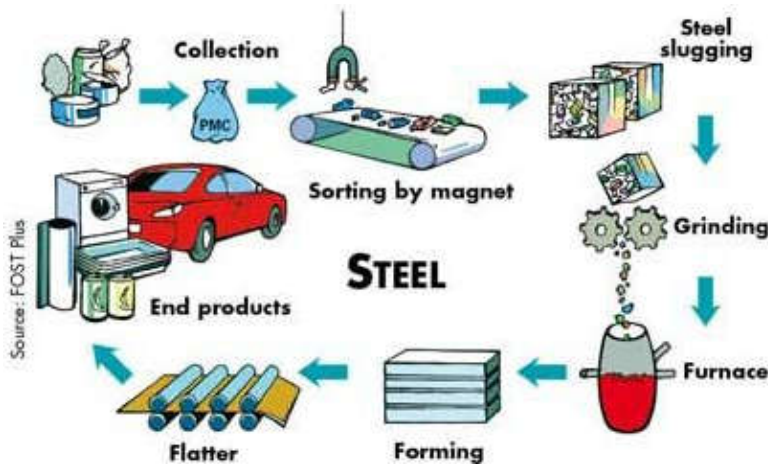
(5)\_\_\_, the bricks go through a heating and cooling process. They are heated in a kiln at a moderate and (6)\_\_\_ a high temperature (ranging from 200 C to 1300 C), (7)\_\_\_ a cooling process in a chamber for 2 – 3 days. (8)\_\_\_, the bricks are packed and delivered to their destinations.

### 11.3. Describe one of the processes below.

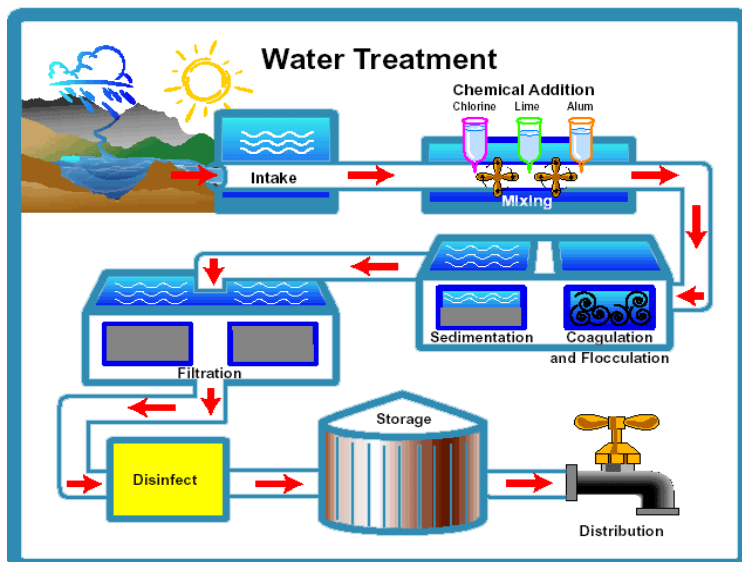
a) How fruit is canned



b) Steel production

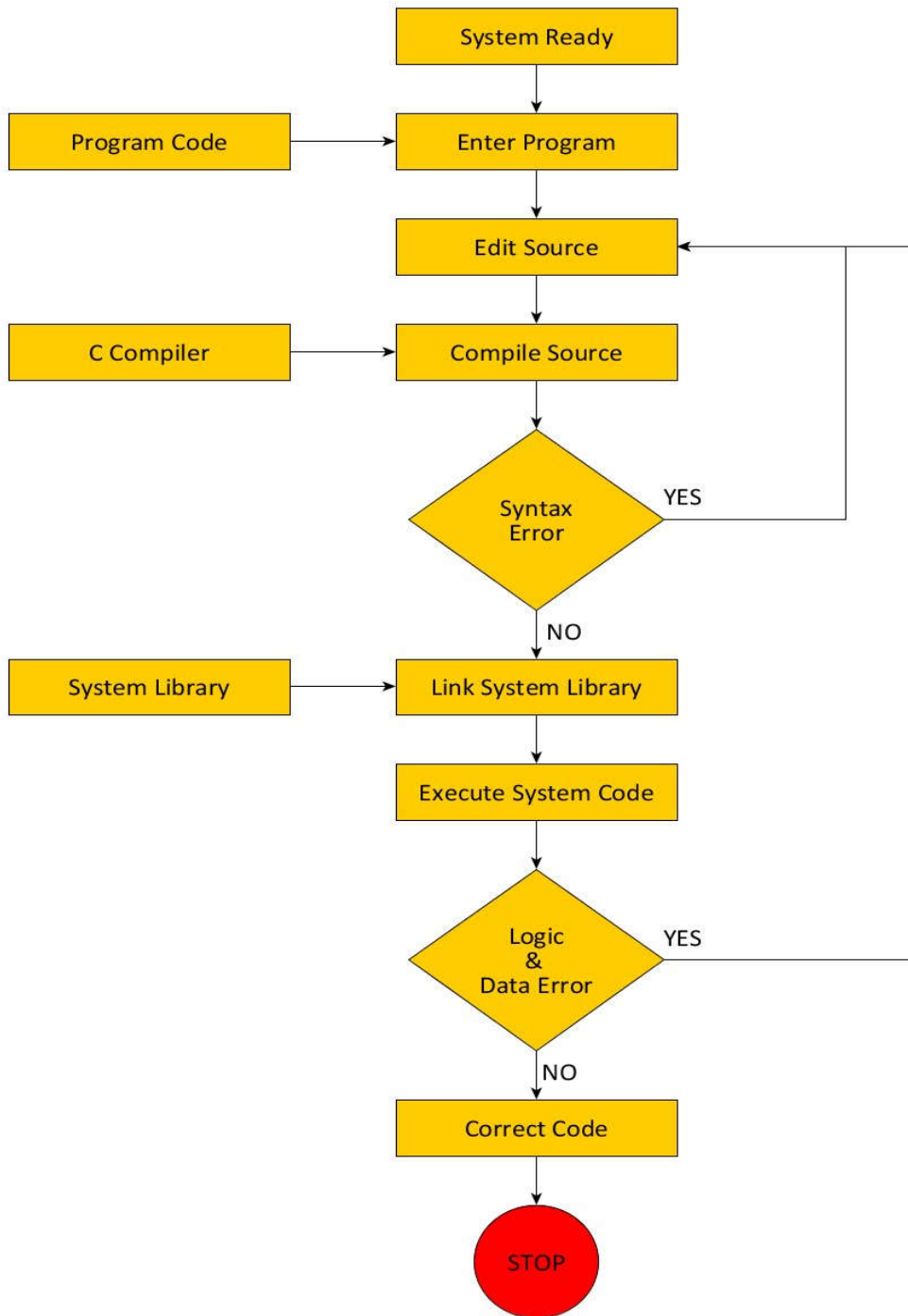


c)





d) The process of compiling and running a C program



## 12. PRESENTING A GRAPH

Do not forget to paraphrase the title of the diagram in the introductory sentence.

Introduction	Topic	Circumstances
This graph <b>shows</b> ...	the results of our products ...	over 10 years.
The diagram <b>outlines</b> ...	rates of economic growth ...	between 1990 and 1996.
This table <b>lists</b> ...	the top ten agencies ...	in the industrial world.
This pie chart <b>represents</b>	the company's turnover ...	for this year in our sector.
This line chart <b>depicts</b> ...	the changes in sales ...	over the past year.
This chart <b>breaks down</b> ...	the sales of each salesman ...	during the past ten weeks.

### Other examples

- The graph shows the dependence of Y on X
- The graph shows Y as a function of X.
- Y versus (vs) X is shown in Fig. 1.
- Fig. 1 shows Y over X. (*period of time*)

### Describing Changes

Indicating upward movement: ↗

Verbs		Nouns
Transitive	Intransitive	
(to) increase	(to) increase	(an) increase
(to) raise	(to) rise (rose, risen)	(a) raise (US), a rise (UK)
	(to) go up	(an) upswing
	(to) grow	(a) growth
(to) extend, (to) expand	(to) extend, (to) expand	(an) extension, expansion
	(to) jump, (to) skyrocket	(a) jump
	(to) reach a peak, (to) peak	(a) peak

Indicating downward movement : ↘

Verbs		Nouns
Transitive	Intransitive	
(to) decrease	(to) decrease	(a) decrease
(to) cut, (to) reduce		(a) cut, (a) reduction
	(to) fall (off) (fall, fell, fallen)	(a) fall
	(to) drop (off)	(a) drop
	(to) go down	(a) downswing
	(to) decline	(a) decline

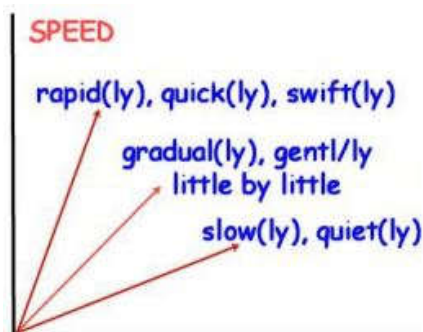
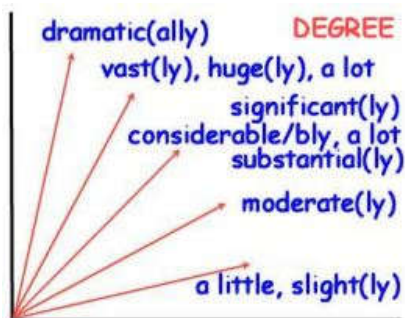
Indicating no movement : →

Verbs		Nouns
Transitive	Intransitive	
(to) keep ... stable	(to) remain stable	
(to) hold ... constant	(to) stay constant	
(to) stabilize	(to) stabilize	stability

Indicating a change of direction: ↗ or ↖ ...

Verbs		Nouns
Transitive	Intransitive	
(to) level off	(to) level off/out, to flatten out	(a) levelling-off
	(to) stop falling/rising	(a) change
(to) stand at	(to) remain steady	
	(to) stop falling and start rising	
	(to) stop rising and start falling	

Indicating the degree or the speed of change



## Example

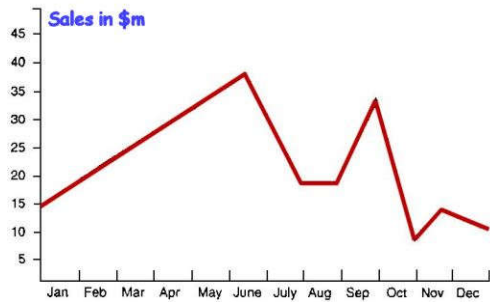
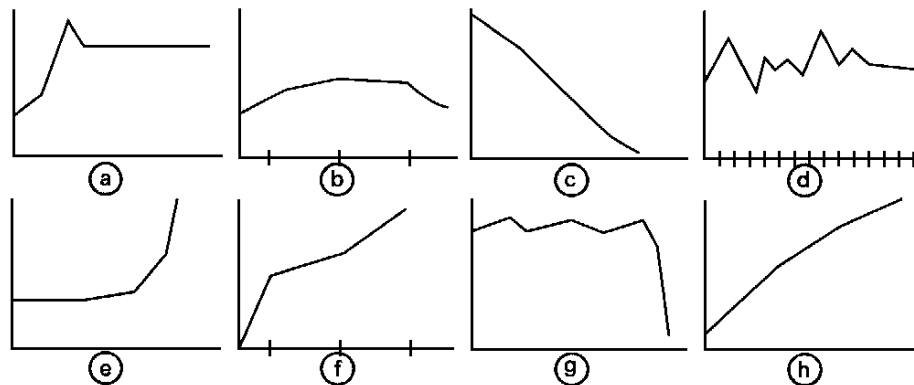


Fig.1. Company's sales rate over the period of 12 months of 20?? year

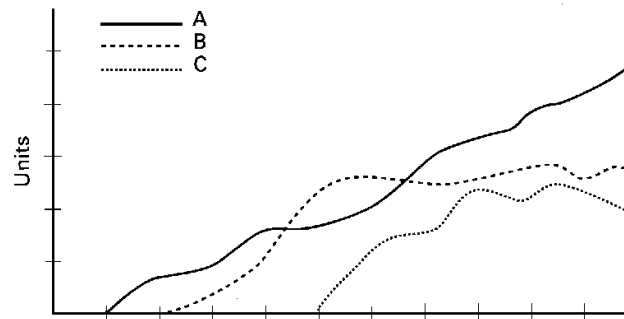
Figure 1 shows the changes in sales of the Company within the year 20??. The x axis of this graph shows the twelve months of the past year while our sales in millions of dollars appear on the y axis. It may be seen clearly that sales rose steadily in the first half of the year (from January to May) and reached their peak in June. Then they dropped off in July and levelled out in August. After rising sharply during September, they suffered a **dramatic** fall in October but then made a **significant recovery** in November. However, the year ended with a slight downturn.

**12.1. Match each sentence below with one of the following graphs. Paraphrase the sentences (verb – noun or noun - verb) if possible.**



1. The investment level rose suddenly.
2. The sales of our products fell slightly in the final quarter.
3. The Research and Development budget has stabilized over the past few years.
4. At the end of the first year, sales stood at 50 per cent of the present level.
5. The price reached a peak before falling a little and then maintaining the same level.
6. There has been a steady increase in costs over several years.
7. The sudden collapse in share prices has surprised everyone.
8. The value of the shares has shown a steady decline.

**12.2. Look at the graph below and then complete the sentences with the following expressions:** a) *compared to B and C*; b) *dotted line*; c) *has slightly decreased*; d) *solid line*; e) *chart*; f) *A*; g) *steady growth*; h) *axis Y*; i) *has levelled*; j) *axis X*; k) *dashed line*.

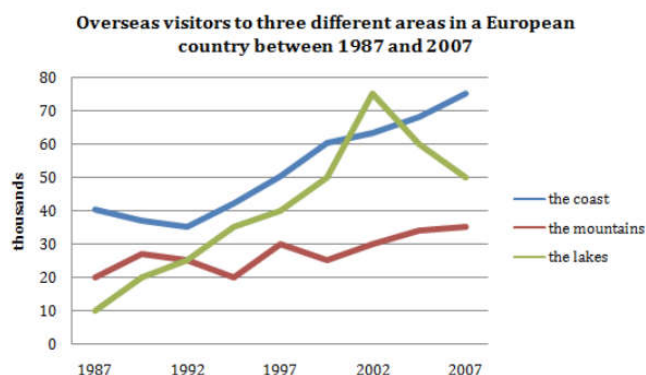


1. The \_\_\_ compares three products: A, B and C.
2. The \_\_\_ shows time over ten years while the \_\_\_ shows sales in number of units.
3. As you can see, product A is represented by the \_\_\_.
4. The performance of Product B is shown by the \_\_\_.
5. And a \_\_\_ has been used to show the results of Product C.
6. Clearly, \_\_\_ is the most successful product \_\_\_.
7. Sales of Product B \_\_\_ in recent years while sales of Product C \_\_\_.
8. On the contrary, product A has shown a \_\_\_.

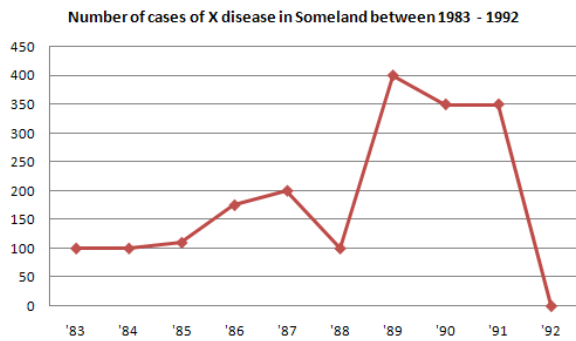
### 12.3. Read the following text and draw the graph. Give the title.

The graph covers the years 1976 to 1995. It shows that the number of television viewing hours rose steadily and steeply during that period in the US, starting at just under 5 hours a day to reach more than 7 hours in 1995. There was a slight increase in 1982 and sharper falls in 1986 and 1991. The next decrease, in 1994, is hardly significant. Though we do not have the latest figures, it is unlikely that the trend will have reversed.

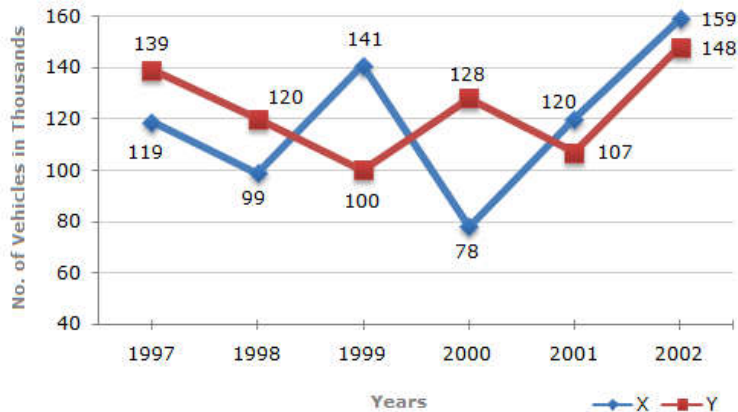
### 12.4. Describe the following graphs



a)



b)



c)

### 12.5. Complete the description of the graph with the words from the box.

steadily	hovering	fluctuated	period	peak
trend	meanwhile	rocketed		plummeted

The chart shows the average daily viewing figures for Channel One News over a 12-month (1)\_\_\_\_. The figure for the 1 pm News remained fairly stable, (2)\_\_\_\_ at around 1.3 million throughout the year. The figure for the 6 pm News began the year at 4.8 million. It (3)\_\_\_\_, but the general (4)\_\_\_\_ was downwards, and at ended the year at 3.4 million.

The figure for the 9:30 News gradually increased from 3.2 million viewers per day in January to a (5)\_\_\_\_ of 3.8 million in May. However, this month saw the introduction of the 11 pm News, and the figure for the 9:30 News (6)\_\_\_\_, hitting a low-point of 1.1 million in August. In the same period, the figure for the 11 pm news (7)\_\_\_\_ from 0.2 million to 4.1 million. At this point, the trend reversed. From August onwards, the figure for the 9:30 news grew (8)\_\_\_\_, reaching 3 million by the end of the year. (9)\_\_\_\_, the figure for the 11pm News declined sharply, and in December fell below the 1 million mark.

### 13. DESCRIBING A PIE CHART

The colours and inscriptions used for explaining the fractions are called **Key** or **Legend**.

The pie chart	describes illustrates shows presents	<paraphrase the title of the chart>
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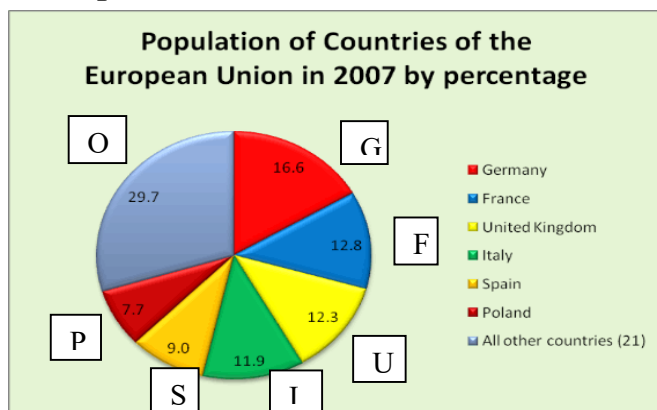
The pie chart	is split into is divided into falls into consists of	N parts N fractions
---------------	---	------------------------

Each The biggest The smallest The green	segment proportion part sector	shows illustrates corresponds to presents	the amount of <uncountable> the number of <countable>
--	---	--	--

It can be clearly seen that We can see that It is clear that It is evident that	<the name of the slice>	is represent(s) occupy(s) constitute(s) account(s) for make(s) up	N % the largest proportion the biggest part a significant majority a small number an insignificant amount a small minority about a half of ...
--	----------------------------------	--	---

Read the examples paying attention to the expressions in bold.

Example 1.



This chart shows the relative size of populations of countries of the European Union in 2007. So we can only make comparisons; we cannot say anything about change.

We can see that the **country with the largest population was Germany with 16.6%** of the European Union's population. It is also evident that the

**second largest population was that of France with 12.8%** of the population.

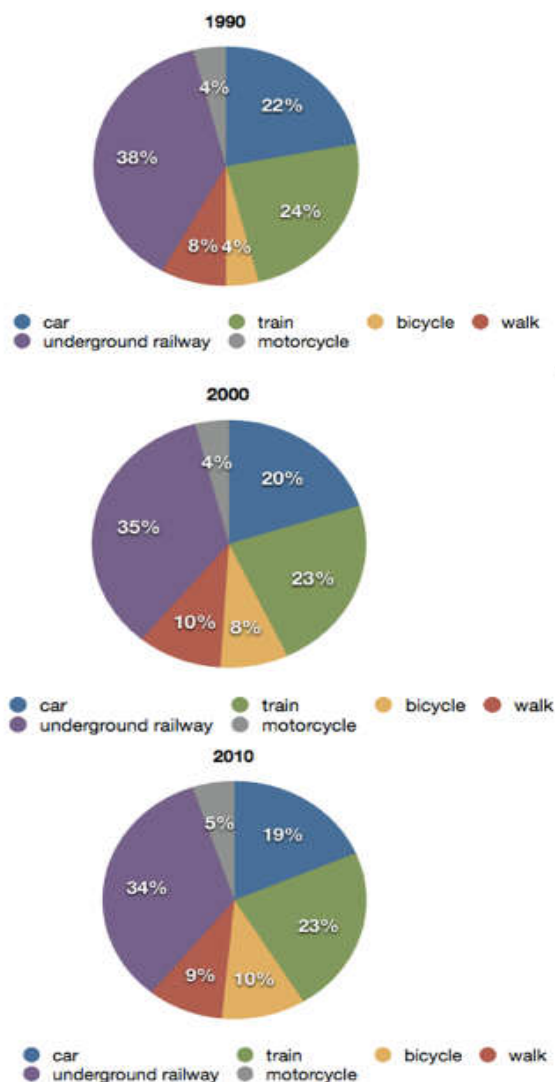
We do not know from this chart which **country has the smallest population** because the 21 smallest countries are included in one group. (If you're interested, it is Malta with less than 0.1 %.)

It is clearly seen that the four largest countries (Germany, France, the United Kingdom and Italy) together **make up more than a half** of the European Union's population.

One cannot say that Poland has the smallest population: **21 other countries have populations** smaller than Poland's.

The twenty-one smallest countries of the European Union **account for** nearly 30% of the population.

### Example 2



**We can see from these charts** how commuters travelled to work in London in 1990, 2000 and 2010.

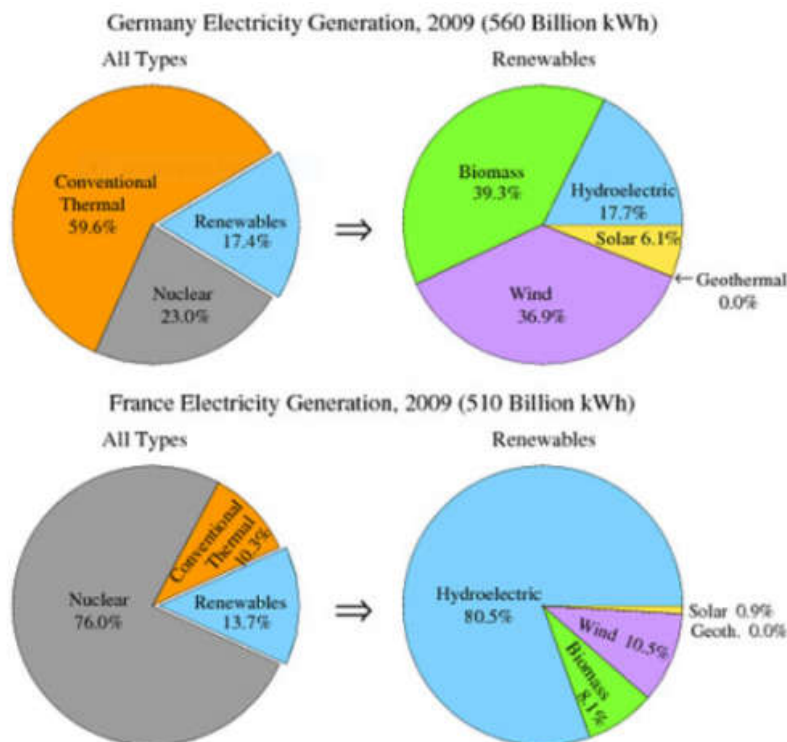
In all three years, **a majority of** commuters used rail transport to get to work. However, **there was a steady decline in** the proportion of commuters using the underground system, this **fell from a high of 38 per cent in 1990 to 34 per cent in 2010**. **In contrast**, use of the train network **remained almost unchanged at around 23 per cent** in this period.

The means of transport that increased most in popularity was the bicycle. In 1990, **only 4 per cent of commuters chose** to cycle to work. By 2010, **this figure had more than doubled, with one in ten people commuting** to work by bicycle. **By way of contrast**, the **percentage of car drivers fell from 22 per cent in 1990 to 19 per cent** twenty years later. The figures for motorcyclists and pedestrians **remained fairly constant** at around 5 per cent and 9 per cent respectively.



In general, it is possible to say that there were only minor changes in commuting patterns during this period and that was a move away from commuters using the underground system in London towards cycling.

### 13.1. Complete the description of the pie charts with the words from the box:



was lower	was very different	at approximately	the remaining	compare
the proportion of	was far higher	accounted for	one fifth	whereas

The four pie charts (1)\_\_\_\_\_ the electricity generated in Germany and France during 2009, and it is measured in billions kWh. Overall, it can be seen that conventional thermal was the main source of electricity in Germany, (2)\_\_\_\_\_ nuclear was the main source in France.

The bulk of electricity in Germany, whose total output was 560 billion kWh, came from conventional thermal, at 59.6%. In France, the total output (3)\_\_\_\_\_, at 510 billion kWh, and in contrast to Germany, conventional thermal (4)\_\_\_\_\_ just 10.3%, with most electricity coming from nuclear power (76%).

In Germany, (5)\_\_\_\_\_ nuclear power generated electricity was only (6)\_\_\_\_\_ of the total.

Moving on to renewables, this accounted for quite similar proportions for both countries, (7)\_\_\_\_\_ 15% of the total electricity generated. In detail, in Germany, most of the renewables consisted of wind and biomass, totaling around 75%, which (8)\_\_\_\_\_ than for

hydroelectric (17.7%) and solar (6.1%). The situation (9)\_\_\_\_\_ in France, where hydroelectric made up 80.5% of renewable electricity, with biomass, wind and solar making up (10)\_\_\_\_\_ 20%.

### 13.2. Match the percentage (left column 1-10) and its description (right column a-g)

a)

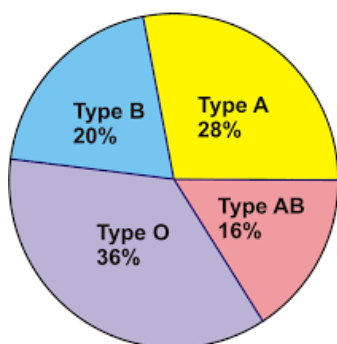
1	77%	a	around two thirds
2	68%	b	just over three quarters
3	58%	c	approximately 60%
4	85%	d	just under / nearly a fifth
5	97%	e	almost / nearly a third
6	49%	f	just over a quarter
7	27%	g	almost all
8	5%	h	a very large majority
9	18%	i	a very small number
10	32%	g	just under / nearly a half

b)

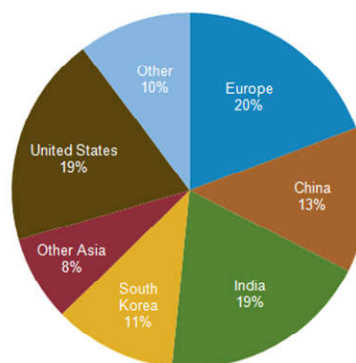
1	25%	a	one in twenty
2	80%	b	one in ten
3	66%	c	a quarter
4	50%	d	a fifth
5	5%	e	four-fifths
6	40%	f	half
7	60%	g	three-fifths
8	75%	h	three-quarters
9	20%	i	three-thirds
10	10%	g	two-fifths

### 13.3. Describe the following pie charts using active vocabulary.

1. Blood Types of 25 Donors

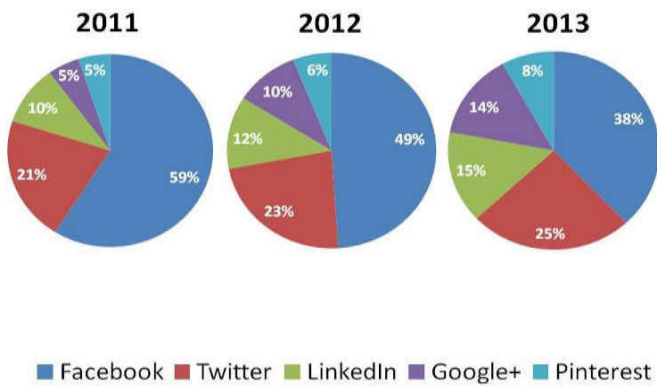


2. Iraq crude oil exports, 2012



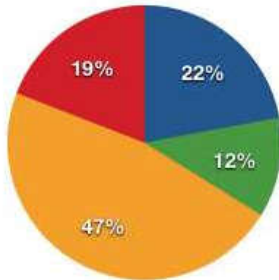
3.

### Favourite social media channel

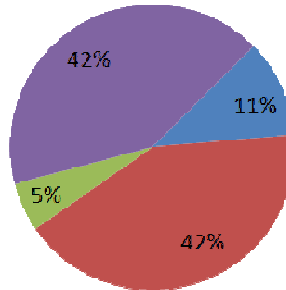


13.4. Describe the pie charts adding your own information where necessary.

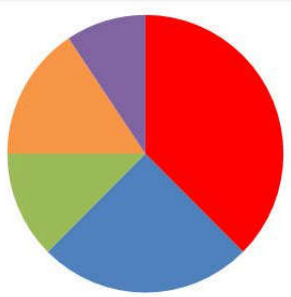
a) How the British accessed the internet in 2010



b)



c)



Навчальне видання

## FUNCTIONAL STRUCTURES OF ACADEMIC ENGLISH

Methodological instructions to practical classes of the course  
“English for specific purposes”  
for the students of all departments

## ФУНКЦІОНАЛЬНІ СТРУКТУРИ АКАДЕМІЧНОЇ АНГЛІЙСЬКОЇ МОВИ

Методичні вказівки до практичних занять з англійської мови  
для студентів всіх спеціальностей

Англійською мовою

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