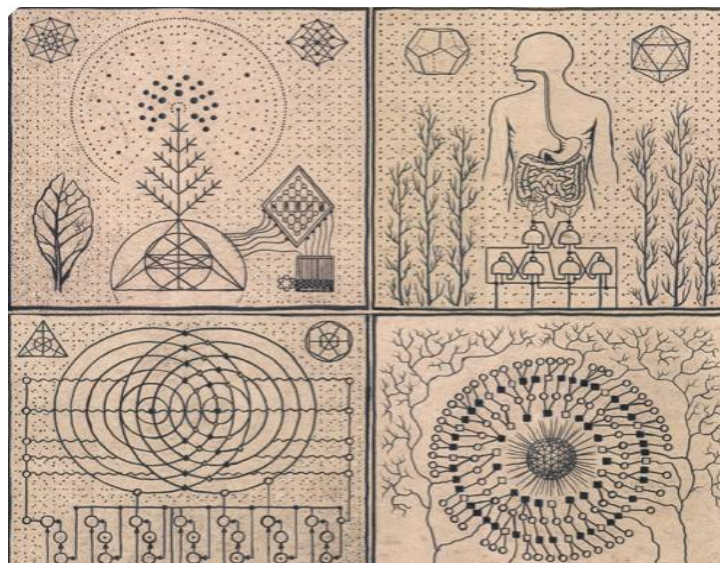
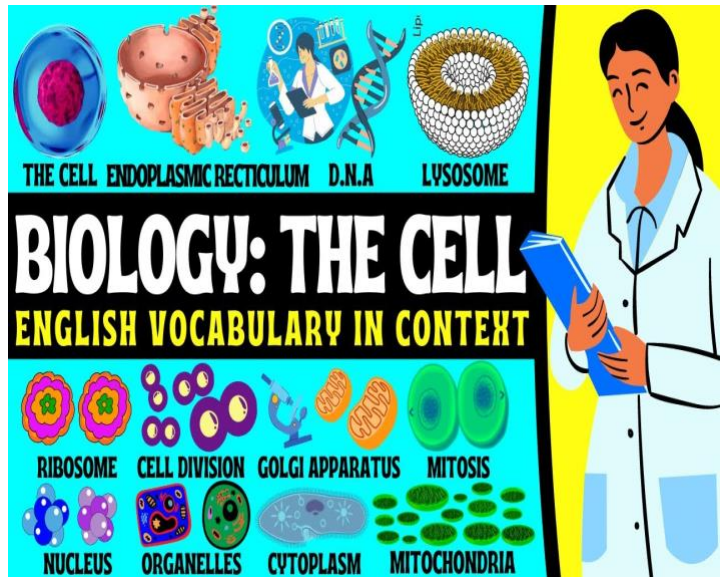
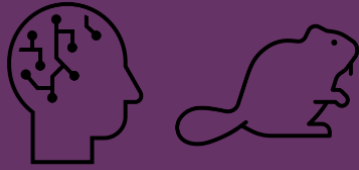


English for Biology



Ziane Achour University
Faculty of Nature and Life Sciences
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Burn the candle at both ends if you wish to touch the sky, or to see the stars

Dr. Ayoub T

UNIT I. WHAT IS BIOLOGY?

Grammar: I am doing/ I do

Sarah is in her car. She is on her way to work.

She's **driving** to work. (= She **is driving** ...)

This means: she is driving *now*, at the time of speaking. The action is not finished.

am/is/are + -ing is the *present continuous*:

I am doing something = I started doing it and I haven't finished; I'm in the middle of doing it.

I am	(=I'm)	driving
he/she/it is	(= he's etc.)	working
we/you/they are	(= we're etc.)	doing etc.

Please don't make so much noise. **I'm trying** to work. (*not* I try)

'Where's Mark?' 'He's **having** a shower.' (*not* He has a shower)

Let's go out now. It **isn't raining** any more. (*not* It doesn't rain)

How's your new job? **Are you enjoying** it?

What's all that noise? What's **going on**? or What's **happening**?



Ana is talking to a friend on the phone. she says:



I'm reading a really good book at the moment. It's about a man who ...

Ana says '**I'm reading** ...' but she is *not* reading the book at the time of speaking. She means that she has started reading the book but has not finished it yet. She is in the middle of reading it.

You can use the present continuous with **today / this week / this year** etc. (periods around now):

a: You're **working** hard **today**. (*not* You work hard today)

b: Yes, I have a lot to do.

The company I work for **isn't doing** so well **this year**.

We use the present continuous when we talk about a change that has started to happen. We often use these verbs in this way:

getting, becoming **changing, improving**
starting, beginning **increasing, rising, falling, growing**

- Is your English **getting** better? (*not* Does your English get better)
- The population of the world **is increasing** very fast. (*not* increases)
- At first I didn't like my job, but **I'm starting** to enjoy it now. (*not* I start)



Alex is a bus driver, but now he is in bed asleep.

He is not driving a bus. (He is asleep.)

but He **drives** a bus. He is a bus driver.

drive(s), work(s), do(es) etc. is the *present simple*:

I/we/you/they	drive/work/do etc.
he/she/it	drives/works/does etc.

We use the present simple to talk about things in general.

We use it to say that something happens all the time or repeatedly, or that something is true in general:

- Nurses **look** after patients in hospitals.
- I usually **go** away at weekends.
- The earth **goes** round the sun.
- The cafe **opens** at 7.30 in the morning.

verbs + -s/-es

The ending is **-es** when the word ends in **-s/-ss/-sh/-ch/-x**:

I **work** but he **works**
 they **teach** but my sister **teaches**
 you **go** but it **goes**
 I **have** but he **has**

We use do/does to make questions <hr/> Do I/we/you/they work? does he/she/it drive? do?	In the following examples, do is also the main verb (do you do / doesn't do etc.): 'What do you do ?' 'I work in a shop.' He's always so lazy. He doesn't do anything to help.
and negative sentences: <hr/> I/we/you/they don't work he/she/it doesn't drive do	I promise / I apologise etc. Sometimes we do things by saying something. For example, when you promise to do something, you can say ' I promise ... '; when you suggest something, you can say ' I suggest ... ': I promise I won't be late. (<i>not I'm promising</i>) 'What do you suggest I do?' ' I suggest that you ...' In the same way we say: I apologise ... / I advise ... / I insist ... / I agree ... / I refuse ... etc.

<p><i>present continuous (I am doing)</i></p>	We use the continuous for things happening at or around the time of speaking. The action is not complete. <ul style="list-style-type: none"> • I'm getting hungry. Let's go and eat. We use the continuous for <i>temporary</i> situations (things that continue for a short time): <ul style="list-style-type: none"> • I'm living with some friends until I find a place of my own.
<p><i>Present simple (I do)</i></p>	We use the simple for things in general or things that happen repeatedly. <ul style="list-style-type: none"> • I always get hungry in the afternoon. We use the simple for <i>permanent</i> situations (things that continue for a long time): <ul style="list-style-type: none"> • My parents live in London. They have lived there all their lives.

I'm always losing them = I lose them too often, or more often than normal.

I always do and **I'm always doing**
I always do something = I do it every time:
I always go to work by car. (*not I'm always going*)
I'm always doing something = I do it too often or more often than normal.
 For example:
 Paul is never satisfied. He's **always complaining**. (= he complains too much)
 You're **always looking** at your phone. Don't you have anything else to do?

Some verbs (for example, **know** and **like**) are not normally used in this way. We don't say 'I am knowing', 'they are liking'. We say 'I **know**', 'they **like**'. The following verbs are not normally used in the present continuous:

<table border="1"> <tr> <td>like</td> <td>want</td> <td>need</td> <td>prefer</td> </tr> <tr> <td>know</td> <td>realise</td> <td>understand</td> <td>recognise</td> </tr> <tr> <td>believe</td> <td>suppose</td> <td>remember</td> <td>mean</td> </tr> <tr> <td>belong</td> <td>fit</td> <td>contain</td> <td>consist</td> </tr> <tr> <td></td> <td></td> <td></td> <td>seem</td> </tr> </table>	like	want	need	prefer	know	realise	understand	recognise	believe	suppose	remember	mean	belong	fit	contain	consist				seem	I'm hungry. I want something to eat. (<i>not I'm wanting</i>) Do you understand what I mean? Anna doesn't seem very happy right now.
like	want	need	prefer																		
know	realise	understand	recognise																		
believe	suppose	remember	mean																		
belong	fit	contain	consist																		
			seem																		

think	<p>When think means 'believe' or 'have an opinion', we do not use the continuous: I think Mary is Canadian, but I'm not sure. (<i>not</i> I'm thinking) What do you think of my idea? (=what is your opinion?)</p> <p>When think means 'consider', the continuous is possible: I'm thinking about what happened. Nicky is thinking of giving up her job. (= she is considering it)</p>
see hear smell taste look feel	<p>We normally use the present simple (not continuous) with see/hear/smell/taste: Do you see that man over there? (<i>not</i> are you seeing) The room smells. Let's open a window. This soup doesn't taste very good.</p> <p>You can use the present simple or continuous to say how somebody looks or feels now: You look well today. <i>or</i> You're looking well today. How do you feel now? <i>or</i> How are you feeling now? I usually feel tired in the morning. (<i>not</i> I'm usually feeling)</p>
am/is/are being	<p>You can say he's being ... , you're being ... etc. to say how somebody is behaving <i>now</i>: I can't understand why he's being so selfish. He isn't usually like that. (being selfish = behaving selfishly now) 'The path is icy. Don't slip.' 'Don't worry. I'm being very careful.'</p> <p>Compare: He never thinks about other people. He's very selfish. (= he is selfish generally, not only now) I don't like to take risks. I'm a very careful person.</p> <p>We use am/is/are being to say how a person is <i>behaving</i> (= doing something they can control) now. It is not usually possible in other situations: Sam is ill. (<i>not</i> is being ill) Are you tired? (<i>not</i> are you being tired)</p>

Assignment

1. The sentences on the right follow those on the left. Which sentence goes with which?

<p>1 Please don't make so much noise.</p> <p>2 We need to leave soon.</p> <p>3 I don't have anywhere to live right now.</p> <p>4 I need to eat something soon.</p> <p>5 They don't need their car any more.</p> <p>6 Things are not so good at work.</p> <p>7 It isn't true what they say.</p> <p>8 We're going to get wet.</p>	<p>a I'm getting hungry.</p> <p>b They're lying.</p> <p>c It's starting to rain.</p> <p>d They're trying to sell it.</p> <p>e It's getting late.</p> <p>f I'm trying to work.</p> <p>g I'm staying with friends.</p> <p>h The company is losing money.</p>
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2. Complete the sentences using the following verbs:

cause(s) close(s) connect(s) go(es) live(s) speak(s) take (s)

<p>A. Tanya <u>speaks</u> German very well.</p> <p>B. Ben and Jack _____ to the same school</p> <p>C. Bad driving _____ many accidents.</p> <p>D. The museum _____ at 4 o'clock on Sundays.</p>	<p>E. My parents _____ in a very small flat.</p> <p>F. The Olympic Games _____ place every four years.</p> <p>G. The Panama Canal _____ the Atlantic and Pacific oceans.</p>
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3. Put the verb into the correct form.

- 1 Julia doesn't drink. (not / drink) tea very often.
- 2 What time _____(the banks / close) here?
- 3 I have a car, but I _____(not / use) it much.
- 4 Where _____(Maria / come) from? Is she Spanish?
- 5 'What _____(you / do)?' 'I'm an electrician.'
- 6 Look at this sentence. What _____(this word / mean)?
- 7 David isn't very fit. He _____(not / do) any sport.
- 8 It _____(take) me an hour to get to work in the morning.
How long _____(it / take) you?

4. Are the underlined verbs OK? Correct them where necessary.

- | | |
|---|-----------------|
| 1 Water <u>boils</u> at 100 degrees Celsius. |Ok..... |
| 2 How often <u>are you going</u> to the cinema? | ...Do you go... |
| 3 Ben <u>tries</u> to find a job, but he hasn't had any luck yet. | ..... |
| 4 Martina <u>is phoning</u> her mother every day. | ..... |
| 5 The moon <u>goes</u> round the earth in about 27 days. | ..... |
| 6 Can you hear those people? What <u>do they talk</u> about? | ..... |
| 7 What <u>do you do</u> in your spare time? | ..... |
| 8 Sarah is a vegetarian. She <u>doesn't eat</u> meat. | ..... |
| 9 I must go now. It <u>gets</u> late. | ..... |
| 10 'Come on! It's time to leave.' 'OK, I <u>come</u>.' | ..... |
| 11 Paul is never late. He's <u>always starting</u> work on time. | ..... |
| 12 They don't get on well. They're <u>always arguing</u>. | ..... |

5. Use the words in brackets to make sentences.

<p>1</p>  <p>(you / not / seem / very happy today) You <u>don't seem</u> very happy today.</p>	<p>2</p>  <p>Are you OK? You look worried. (I / think)</p>
<p>3</p>  <p>(who / this umbrella / belong to?) I've no idea.</p>	<p>4</p>  <p>(this / smell / good)</p>
<p>5</p>  <p>Excuse me. (anybody / sit / there?) No, it's free.</p>	<p>6</p>  <p>(these gloves / not / fit / me) They're too small.</p>

Homework

1. Put the verb into the correct form, positive (I'm doing etc.) or negative (I'm not doing etc.).

- 1 Please don't make so much noise. I'm trying (I / try) to work.
- 2 Let's go out now. It isn't raining (it / rain) any more.
- 3 You can turn off the radio. _____ (I / listen) to it.
- 4 Kate phoned last night. She's on holiday with friends. _____ (She / have) a great time and doesn't want to come back.
- 5 Andrew started evening classes recently. _____ (He / learn) Japanese.
- 6 Paul and Sarah have had an argument and now _____ (they / speak) to one another.
- 7 The situation is already very bad and now _____ (it / get) worse.
- 8 Tim _____ (work) today. He's taken the day off.
- 9 _____ (I / look) for Sophie. Do you know where she is?
- 10 The washing machine has been repaired. _____ (It / work) now.
- 11 _____ (They / build) a new hospital. It will be finished next year.
- 12 Ben is a student, but he's not very happy. _____ (He / enjoy) his course.
- 13 _____ (The weather / change). Look at those clouds. I think it's going to rain.
- 14 Dan has been in the same job for a long time. _____ (He / start) to get bored with it.

2. Complete the sentences using these verbs. Sometimes you need the negative.

believe eat flow go grow make rise tell

1 The earth <u>goes</u> round the sun.	6 An atheist _____ in God.
2 Rice <u>doesn't grow</u> in cold climates.	7 An interpreter _____ from one language into another.
3 The sun _____ in the east.	8 Liars are people who _____ the truth.
4 Bees _____ honey.	9 The River Amazon _____ into the Atlantic Ocean.
5 Vegetarians _____ meat.	

3. You ask Lisa questions about herself and her family. Write the questions.

- 1 You know that Lisa plays tennis. You want to know how often. Ask her. How often do you play tennis ?
- 2 Perhaps Lisa's sister plays tennis too. You want to know. Ask Lisa. _____ your sister _____ ?
- 3 You know that Lisa goes to the cinema a lot. You want to know how often. Ask her. _____ ?
- 4 You know that Lisa's brother works. You want to know what he does. Ask Lisa. _____ ?
- 5 You're not sure whether Lisa speaks Spanish. You want to know. Ask her. _____ ?
- 6 You don't know where Lisa's grandparents live. You want to know. Ask Lisa. _____ ?

4. Put the verb into the correct form, present continuous or present simple.

- 1 Why are all these people here? What's happening (What / happen)?
- 2 Julia is good at languages. _____ (She / speak) four languages very well.
- 3 Are you ready yet? _____ (Everybody / wait) for you.
- 4 I've never heard this word. How _____ (you / pronounce) it?
- 5 Kate _____ (not / work) this week. She's on holiday.
- 6 I think my English _____ (improve) slowly. It's better than it was.
- 7 Nicola _____ (live) in Manchester. She has never lived anywhere else.
- 8 Can we stop walking soon? _____ (I / start) to get tired.
- 9 Sam and Tina are in Madrid right now. _____ (They / visit) a friend of theirs.
- 10 'What _____ (your father / do)?' 'He's an architect.'
- 11 It took me an hour to get to work this morning. Most days _____ (it / not / take) so long.
- 12 I _____ (I / learn) to drive. My driving test is next month. My father (teach) me.

5. Put the verb into the correct form, present continuous or present simple.

- 1 Are you hungry? Do you want (you / want) something to eat?
- 2 Alan says he's 90 years old, but nobody _____ (believe) him.
- 3 She told me her name, but _____ (I / not / remember) it now.
- 4 Don't put the dictionary away. _____ (I / use) it.
- 5 Don't put the dictionary away. _____ (I / need) it.
- 6 Air _____ (consist) mainly of nitrogen and oxygen.
- 7 Who is that man? What _____ (he / want)? (he / look) at us?
- 8 Who is that man? Why _____ (you / recognise) him?
- 9 Who is that man?
- 10 _____ (I / think) of selling my car. Would you be interested in buying it?
- 11 I can't make up my mind. What _____ (you / think) I should do?
- 12 Gary wasn't well earlier, but _____ (he / seem) OK now.

6. Are the underlined verbs OK? Correct them where necessary.

- 1 Nicky is thinking of giving up her job. _____ OK _____.
- 2 It's not true. I'm not believing it. _____ I don't believe it _____.
- 3 I'm feeling hungry. Is there anything to eat? _____.
- 4 I've never eaten that fruit. What is it tasting like? _____.
- 5 I'm not sure what she does. I think she works in a shop. _____.
- 6 Look over there. What are you seeing? _____.
- 7 You're very quiet. What are you thinking about? _____.

I did/I was doing

The True Story of Hayreddin Barbarossa

Hayreddin Barbarossa **was** the most **feared** Ottoman Chief Admiral of the 16th Century who **gave** the Italians and Spaniards a tough time throughout his life.

Have you watched ***The Pirates of the Caribbean?***

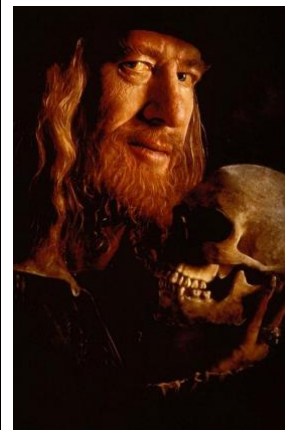
His father **was** a potter who **transported** his goods through ships and boats. After doing business for years, they **decided** to become corsairs to counter the privateering of the Knights Hospitaliers. Working as a corsair, the Christians **heard** the name 'Baba Oruc' (the elder brother of Hayreddin) as Barbarossa, which is **the Italian name for 'Red-Beard'**.

Corsairs: a pirate.

Privateering: an armed private ship licensed to attack enemy shipping.

Knights Hospitaliers: a medieval and early modern Catholic military.

Was/feared/transported/heard are all *past simple*



- Very often the past simple ends in **-ed** (*regular verbs*):
 - They **invited** us to their party, but we **decided** not to go.
 - Laura **passed** her exam because she **studied** very hard.
 -
- The But many verbs are *irregular*. (Does *not* end in **-ed**.)
write → **wrote**, see → **saw**, go → **went**, shut → **shut**
- In questions and negative sentences, we use **did/didn't** + infinitive (**enjoy/see/go** etc.):
 - I enjoyed the party a lot. **Did** you **enjoy** it?
 - How many people **did** they **invite** to the wedding?
 - I **didn't buy** anything because I **didn't have** any money.
 - '**Did** you **go** out?' 'No, I **didn't**.'
- Sometimes **do** is the main verb in the sentence (did you **do**?, I didn't **do**):
What **did** you **do** at the weekend? I **didn't do** anything. (*not* I didn't anything)
- The past of **be** (**am/is/are**) is **was, were**
 - I **was** annoyed because **they were** late.
 - **Was the weather** good when **you were** on holiday?
 - **They weren't** able to come because **they were** so busy.
 - I **wasn't** hungry, so I didn't eat anything.



1 I saw (see) Sue in town yesterday, but she (not/see) me. She (look) the other way.



2 I (cycle) home yesterday when a man (step) out into the road in front of me. I (go) quite fast, but luckily I (manage) to stop in time, and I (not/hit) him.

2) Read what Laura says about a typical working day:



I usually get up at 7 o'clock and have a big breakfast. I walk to work, which takes me about half an hour. I start work at 8.45. I never have lunch. I finish work at 5 o'clock. I'm always tired when I get home. I usually cook a meal in the evening. I don't usually go out. I go to bed at about 11 o'clock, and I always sleep well.

Yesterday was a typical working day for Laura. Write what she did or didn't do yesterday.

- | | |
|---|-----------------------------------|
| 1 <u>She got up</u> at 7 o'clock. | 7 at 5 o'clock. |
| 2 She a big breakfast. | 8 tired when home. |
| 3 She | 9 a meal yesterday evening. |
| 4 It to get to work. | 10 out yesterday evening. |
| 5 at 8.45. | 11 at 11 o'clock. |
| 6 lunch. | 12 well last night. |

3) Put the verb into the correct form, past continuous or past simple.

- 1 Jenny was waiting (wait) for me when I arrived (arrive).
- 2 'What (you / do) at this time yesterday?' 'I was asleep.'
- 3 '..... (you / go) out last night?' 'No, I was too tired.'
- 4 How fast (you / drive) when the accident (happen)?
- 5 Sam (take) a picture of me while I (not / look).
- 6 We were in a very difficult position. We (not / know) what to do, so we
..... (do) nothing.
- 7 I haven't seen Alan for ages. When I last (see) him, he
..... (try) to find a job.
- 8 I (walk) along the street when suddenly I (hear)
something behind me. Somebody (follow) me. I was scared and I
..... (start) to run.
- 9 When I was young, I (want) to be a pilot. Later I
(change) my mind.
- 10 Last night I (drop) a plate when I (do) the washing up.
Fortunately it (not / break).

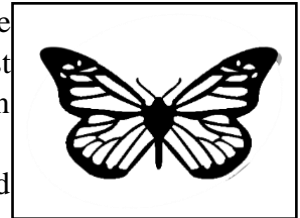
Read the given text:

Biology is the study of life and living organisms. For as long as people have looked at the world around them, people have studied biology. Even in the days before recorded history, people knew and passed on information about plants and animals.

Modern biology really began in the 17th century. At that time, Anton van Leeuwenhoek, in Holland, invented the microscope and William Harvey, in England, described the circulation of blood. The microscope allowed scientists to discover bacteria, leading to an understanding of the causes of disease, while new knowledge about how the human body works allowed others to find more effective ways of treating illnesses. All these new knowledges needed to be put into order and in the 18th century the Swedish scientist Carl Linnaeus classified all living things into the biological families we know and use today.

In the middle of the 19th century, unnoticed by anyone else, the Austrian monk Gregor Mendel, created his Laws of Inheritance, beginning the study of genetics that is such an important part of biology today. At the same time, while traveling around the world, Charles Darwin was formulating the central principle of modern

biology – natural selection as the bases of evolution. It is hard to believe, but the nature of viruses has become apparent only within the last half of the 19th century and the first step on this path of discovery was taken by the Russian botanist Dmitry Ivanovsky in 1892.



In the 20th century biologists began to recognize how plants and animals live and pass on their genetically coded information to the next generation. Since then, partly because of developments in computer technology, there have been great advances in the field of biology; it is an area of ever-growing knowledge.



During the past few hundred years biology has changed from concentrating on the structure of living organisms to looking more at how they work or function. Over this time biologists have discovered much about health and disease, about the genes which control the activities of our bodies and how humans can control the lives of other organisms. We need to understand how our activities affect the environment, how humans can take responsibility for their own health and welfare and how we must be careful to make appropriate rules for the use of our genetic information.



Nowadays biologists are making fantastic discoveries which will affect all our lives. These discoveries have given us the power to shape our own evolution and to determine the type of world we will live in. Recent advances, especially in genetic engineering, have dramatically affected agriculture, medicine, veterinary science, and industry, and our world view has been revolutionized by modern developments in ecology. There has never been a more exciting nor a more important time to study biology.

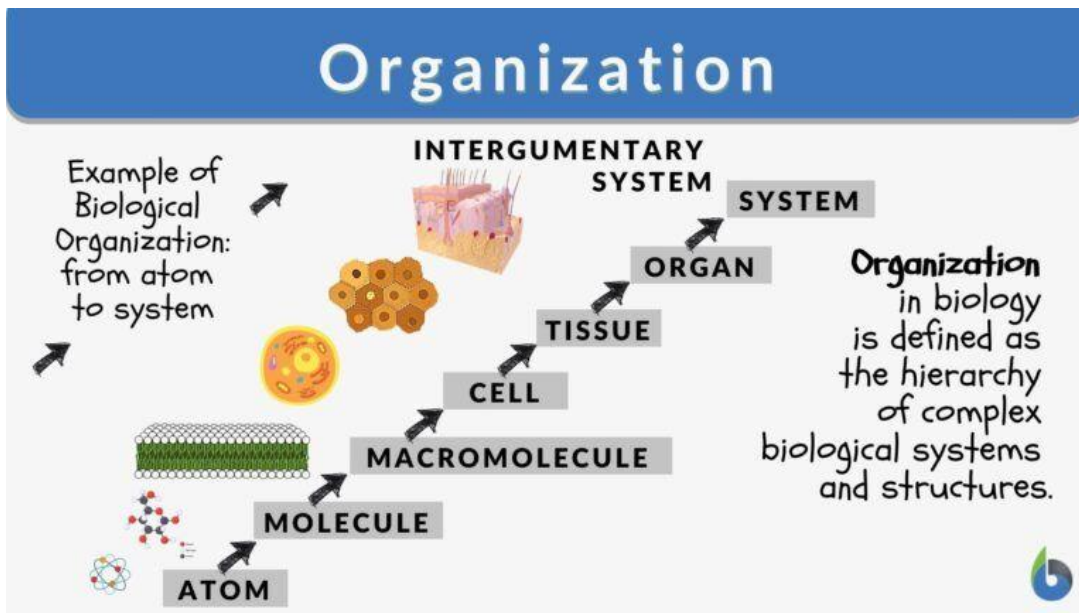
Biology is the scientific study of life. But what is life? When we see a bird on a rock it may seem obvious that the bird is alive and the rock is not, but what precisely makes the bird alive and the rock not? Throughout history, thinkers in many fields tried to define life. Although they have failed to provide a universally accepted definition, most scientists agree that all living things share certain basic characteristics:

- Living things are made of organized structures.
- Living things reproduce.
- Living things grow and develop.
- Living things feed.
- Living things respire.
- Living things excrete and waste.
- Living things respond to their surroundings.
- Living things move.
- Living things control their internal conditions.
- Living things are able to evolve.

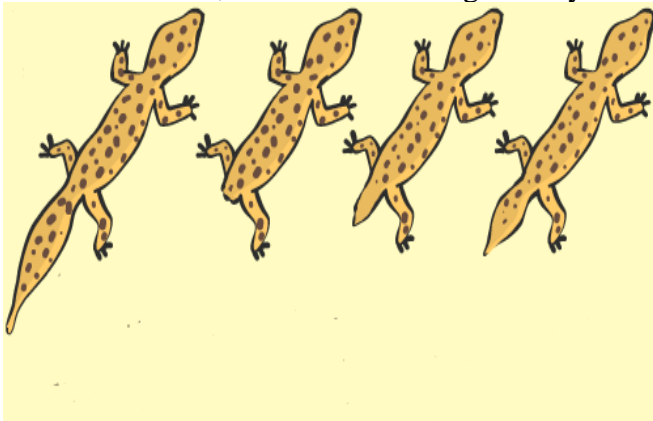
Non-living systems may show some of the characteristics of living things, but life is the combination of all these characteristics.

Organization. All things are made of chemicals, but in living things the chemicals are packaged into highly organized structures. The basic structure of life is the cell. Cells themselves contain small organelles that carry out specific functions. A cell may exist on its own or in association with other cells to form tissues and organs. Because of their highly organized structure, living things are organisms.

Organization



Reproduction. Reproduction is the ability to produce other individuals of the same species. It may be sexual or asexual. Reproduction involves the replication of DNA. This chemical contains genetic information which determines the characteristics of an organism, including how it will grow and develop. The continued existence of life depends on reproduction, and this is perhaps the most characteristic feature of living things. Reproduction allows both continuity and change. Over countless generations this has allowed species to become well suited to their environment, and life to evolve gradually to more complex forms.



Growth and development. All organisms must grow and develop to reach the size and level of complexity required to complete their life cycle. Growth is a relatively permanent increase in size of an organism. It is brought about by taking in substances from the environment and incorporating them into the internal structure of the organism. Growth may be measured by increases in linear dimensions (length, height, etc.), but is best measured in terms of dry weight as this eliminates temporary changes due to intake of water which are not regarded as growth. Development involves a change in a shape and form of an organism as it matures. It is usually accompanied by an increase in complexity.



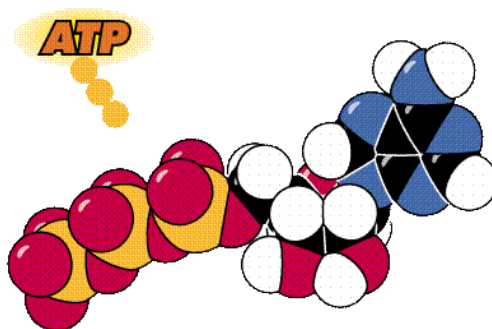
Feeding. Living things are continually transforming one form of energy into another to stay alive. Although energy is not destroyed during these transformations, heat is always formed. Heat is a form of energy which cannot be used to drive biological processes, so it is sometimes regarded as `wasted energy`.

Living things have to renew their energy stores periodically from their environment, to continue transforming energy and to replace the `wasted energy`. They also have to obtain nutrients – chemicals that make up their bodies or help them carry out their biological processes. Living things acquire energy and nutrients by feeding, either by eating other organisms, or by making their own food out of simple inorganic chemicals using energy from sunlight or from chemical reactions.



Respiration. Living things need energy to stay alive and to do work. Although food contains energy, this is not in a directly usable form. It has to be broken down.

The energy released during the breakdown is used to make ATP (adenosine triphosphate) in a process called respiration. ATP is an energy rich molecule and is the only fuel that can be used directly to drive metabolic reactions in living organisms.



Excretion. The energy transformations that take place in an organism involve chemical reactions. Chemical reactions that occur in organisms are called metabolic reactions.

Waste products are formed in these reactions, some of which are poisonous, so they must be disposed of in some way. The disposal of metabolic waste products is called excretion.

the process by which waste
is removed from the body



Responsiveness. All living things are sensitive to certain changes in their environments (stimuli) and respond in ways that tend to improve their chances of survival.

The degree of responsiveness depends on an organism's complexity: a bacterium may be limited to simple responses, such as moving towards favorable stimuli or away from harmful ones; people can make highly sophisticated responses to a wide variety of stimuli which they may perceive either directly or with the aid of technological devices.

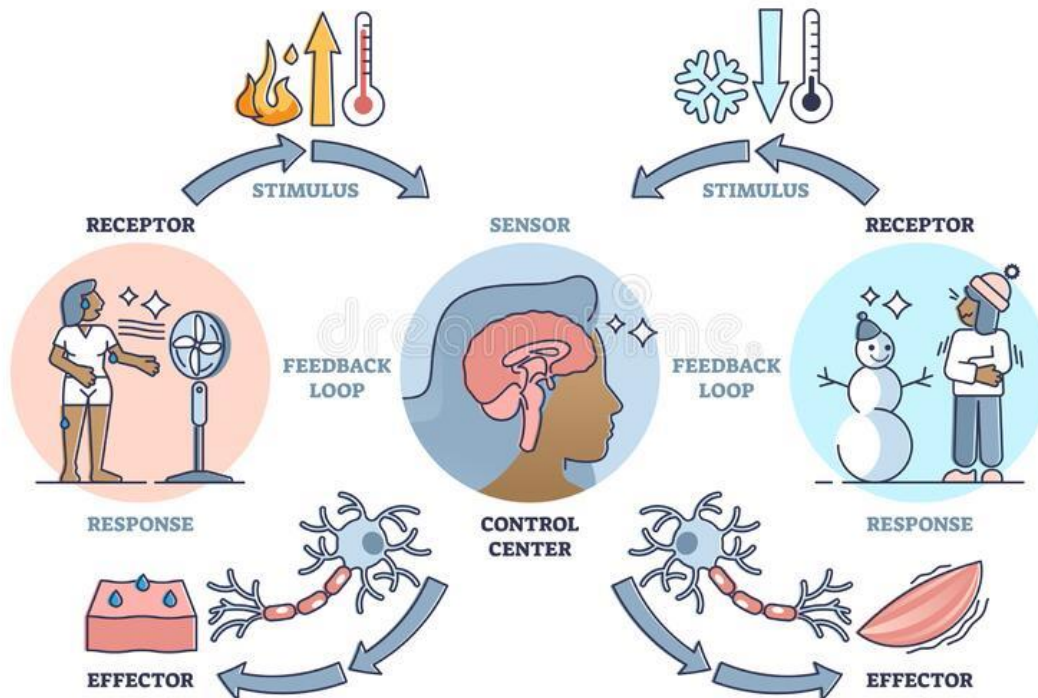
Movement. Responses usually involve some form of movement. Movement of whole organisms from one place to another is called locomotion. Plants and other organisms that are fixed in one place do not display locomotion, but they can move parts of their bodies. Movements of living things differ from those of non-living things by being active, energy-requiring processes arising from within cells.

- A pill bug rolls into a ball when touched.
- Responsiveness

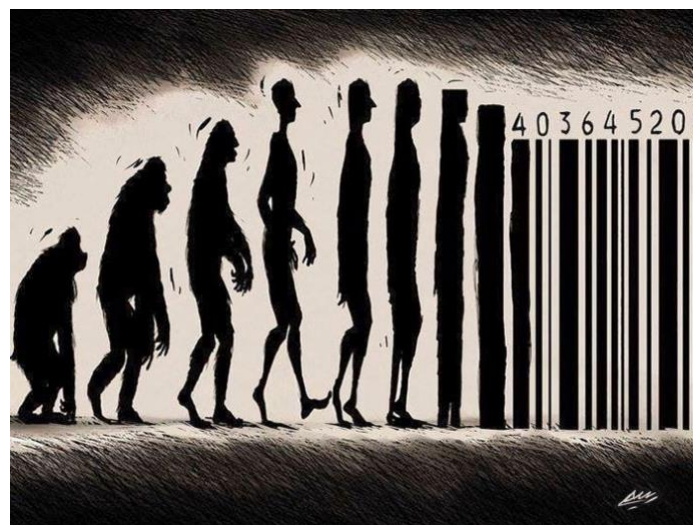


Homeostasis. All living things are, to some extent, able to control their internal conditions so that their cells have a constant chemical and physical environment in which they can function effectively. The regulation and maintenance of a relatively constant set of conditions within an organism is called homeostasis. Homeostasis is a feature of all living systems, from a single cell to a whole biosphere (the part of Earth containing life).

HOMEOSTASIS



Evolution. Living things are able to change into new forms of life. This evolution usually takes place gradually over successive generations in response to changes in the environment.



■ Glossary of essential terms for you to know

№	English term	Arabic or French equivalent and sentence
1.	to accept	
2.	to accompany	
3.	to acquire	
4.	advance	
5.	to allow	
6.	apparent	
7.	to arise	
8.	arrangement	
9.	to arrange	
10.	because of	
11.	blood	
12.	to bring about	
13.	capacity	
14.	to carry out	
15.	cause (n.)	
16.	to cause (v.)	
17.	certain	
18.	circumstance	
19.	coded information	
20.	to complete (v.)	
21.	complete (adj.)	
22.	to contain	
23.	to define	
24.	to determine	
25.	to develop	
26.	to describe	
27.	to destroy	
28.	dimension	
29.	to display	
30.	to dispose	
31.	due to	
32.	either ... or	
33.	to eliminate	
34.	internal	
35.	to evolve	
36.	to fail	
37.	feature	
38.	to govern	
39.	to grow	
40.	gradually	
41.	generation	
42.	height	
43.	harmful	
44.	inheritance	
45.	to involve	
46.	to increase	
47.	in terms of	

48.	input of sth.	
49.	to include	
50.	law	
51.	matter	
52.	to move	
53.	to occur	
54.	to pass	
55.	to put into order	
56.	to perform	
57.	to possess	
58.	starch	
59.	to survive	
60.	way	

■ Your Essential Assignments

I. Quick check

A. Decide if the following statements are true or false.

- 1.) The earliest people must have known about plants, or they would have died.
- 2.) The microscope allowed biologists to treat illnesses.
- 3.) Darwin`s theory was one of the most important in biology.
- 4.) The study of biology has not changed at all over the centuries.

B. What is the difference between:

- 1.) the growth of a crystal and the growth of a plant
- 2.) the movement of a cloud and the movement of an animal?

C. With your partner try to match the definition with the correct word.

1.	feature	A.	a substance in general that everything in the world consists of
2.	matter	B.	a useless material or substance
3.	heat	C.	natural world in which people and animals live
4.	chemical	D.	the smallest unit of living matter
5.	cell	E.	outer form or outline
6.	environment	F.	a form of energy
7.	shape	G.	substance used in chemistry
8.	waste product	H.	something important or typical of a place or thing

II. Fill in the missing words:

Term (verb)	Noun
respond
transform
move
develop
respire
create
define

III. Use monolingual English dictionary and write down the meaning of the words given below:

nutrient; sunlight; poison; breakdown; harmful.

V. Give Arabic equivalents to the following English terms:

No	English term	Arabic equivalent
1.	living things share certain basic characteristics	
2.	energy-requiring processes	
3.	to be known as	
4.	temporary changes	
5.	transform one form of energy into another	
6.	to obtain nutrient chemicals	
7.	to make their own food	
8.	energy-rich molecule	
9.	sensitive to certain changes in their environment	
10.	degree of responsiveness	
11.	wide variety of stimuli	

VI. Find synonyms among the pool of words:

Pool of words	Synonyms
1) 1.determine/2.start/3.change/4.alter/5.define/6.begin	
2) 1.breath/2.initiate/3.happen/4.respiration/5.occur/6.start	
3) 1.investigation /2.dimension /3.research /4.size	
4) 1.due to/2.possess/3.ruin/4.because of/5.have/6.destroy	

VII. Match the sentence halves. Make complete sentences:

1.	Biologists are making discoveries	A.	those of non-living things by being energy-requiring processes arising from within cells.
2.	Growth is accompanied by	B.	one of the main features of living things.
3.	DNA contains genetic information which	C.	are transforming one form of energy into another.
4.	Movements of living things differ from	D.	all living things share certain basic characteristics.
5.	Reproduction is	E.	chemicals are packed into highly organized structures.
6.	To stay alive living thing	F.	an increase in complexity.
7.	Most scientists think that	G.	determines the characteristics of an organism, including how it will grow and develop.
8.	In living things	H.	which will affect all our lives.

VIII. Read and translate the short text without any dictionary:**Fact of life:**

a) The continued existence of life depends on reproduction, and this is perhaps the most characteristic feature of living things. Reproduction allows both continuity and change. Over countless generations this has allowed species to become well suited to their environment, and life to evolve gradually to more complex forms.

Robots:

b) Robots can move and respond and require energy to maintain their organization and a constant internal environment. How would you argue that robots are non-living objects? A robot could be made that has all the characteristic features of living things. Would it still be non-living?



Check your answers

Assignment

<p>1) 2 e. 3 g. 4 a. 5d. 6 h. 7 b. 8 c.</p>	<p>2) 2 go 3 causes 4 closes 5 live 6 take 7 connects</p>	<p>3) 2 do the banks close 3 don't use 4 does Maria come 5 do you do 6 does this word mean 7 doesn't do 8 takes ... does it take</p>	<p>4) 3 is trying 4 phones 5 OK 6 are they talking 7 OK 8 OK 9 It's getting / It is getting 10 I'm coming / I am coming 11 He always starts 12 OK</p>	<p>5) 2 I'm thinking. 3 Who does this umbrella belong to? 4 This smells good. 5 Is anybody sitting there? 6 These gloves don't fit me.</p>
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Homework

<p>1) 3 I am not listening 4 She is having 5 He is learning 6 they are not speaking 7 it is getting 8 is not working 9 I am looking 10 It is working 11 They are building 12 He is not enjoying 13 The weather is changing 14 He is starting</p>	<p>2) 3 rises 4 make 5 don't eat 6 doesn't believe 7 translates 8 don't tell 9 flows</p>	<p>4) 2 Does your sister play tennis? 3 How often do you go to the cinema? 4 What does your brother do? 5 Do you speak Spanish? 6 Where do your grandparents live?</p>	<p>5) 2 She speaks 3 Everybody is waiting 4 do you pronounce 5 is not working 6 is improving 7 lives 8 I'm starting 9 They are visiting 10 does your father do 11 it doesn't take 12 I am learning ... is teaching</p>	<p>6) 2 believes 3 I don't remember, or I can't remember 4 I'm using 5 I need 6 consists 7 does he want 8 is he looking 9 Do you recognize 10 I am thinking 11 do you think 12 he seems</p>
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7) 3 OK (I feel is also correct) 4 does it taste 5 OK 6 do you see 7 OK	1) 1 didn't see ... was looking 2 was cycling ...stepped ... was going ...managed ... didn't hit	2) 2 had 3 She walked to work 4 It took her (about) half an hour 5 She started work 6 She didn't have (any) lunch. / ... eat (any) lunch. 7 She finished work 8 She was tired when she got home. 9 She cooked / She made 10 She didn't go 11 She went to bed 12 She slept	3) 2 were you doing 3 Did you go 4 were you driving ... happened 5 took ... wasn't looking 6 didn't know ... did 7 saw ... was trying 8 was walking ... heard ... was following ... started 9 wanted ... changed 10 dropped ... was doing ... didn't break
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Ex. II: B:

1.) The growth of a plant is dependent on photosynthesis and the nutrients it absorbs from the soil. Crystal growth depends on chemicals solutions and environmental factors such as high temperatures and pressures in order to grow.

2.) There are many differences between the movements of a cloud and an animal, the biggest being that a cloud is not a living organism. Unlike a living animal a cloud cannot choose when and how it will move, it is pushed along by the force of wind. An animal chooses when to move using its brain and motor skills.

C: 1H; 2A; 3F; 4G; 5D; 6C; 7E; 8B.

Ex. II: respond-response; transform-transformation;
move-movement; develop-development;
respire-respiration; create-creation; define-definition.

Ex. VI: 1) 1-5; 2-6; 3-4; 2) 1-4; 2-6; 3-5;
3) 1-3; 2-4; 4) 1-4; 2-5; 3-6.

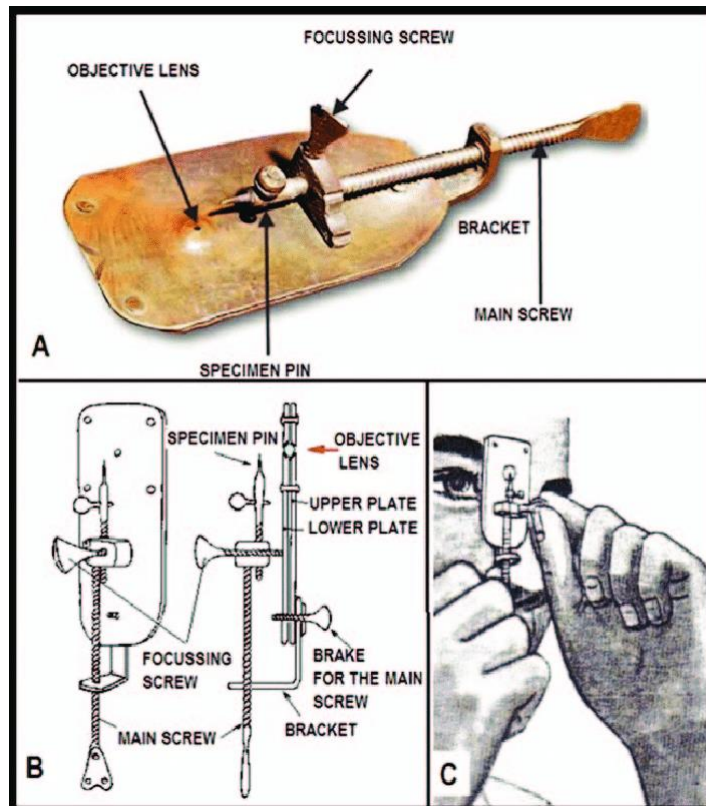
Ex. VII: 1H; 2F; 3G; 4A; 5B; 6C; 7D; 8E.



<https://www.youtube.com/watch?v=kAy-03hIfck>
https://www.youtube.com/watch?v=JLLktbamX_E
<https://englishbiology.wordpress.com/english-1-2016/>



English Grammar in Use, by Raymond Murphy
English Verbs and Tenses, by Kenna Bourke



The Dutch scientist Anton van Leeuwenhoek (**October 24, 1632–August 30, 1723**) invented the first practical microscopes and used them to become the first person to see and describe bacteria, among other microscopic discoveries