

UNIVERSIDAD DEL VALLE

Actividades Complementarias Asistidas por Tecnología

Salud I (Health I)

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UNIVERSIDAD DEL VALLE

Actividades Complementarias Asistidas por Tecnología

Salud I (Health I)



Colección Ingeniería

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Introducción

El proyecto *Actividades Complementarias Asistidas por Tecnología* nace ante la iniciativa de crear un libro de texto digital que pueda apoyar los procesos de enseñanza y aprendizaje de lenguas extranjeras en los cursos de **inglés con fines generales y académicos** de la Universidad del Valle.

Este libro de texto ha sido adaptado para funcionar con la plataforma de licencia libre *Moodle 3,5* y está alojado en el Campus Virtual de la universidad. Las actividades sirven como apoyo a las clases y están a disposición tanto para los docentes de la sección LEFGA como para sus estudiantes.

Actividades

complementarias asistidas por tecnología

Introducción

El presente libro de texto digital ha sido creado como material complementario para los cursos de inglés con fines generales y académicos de las Facultades de Ciencias Naturales y Exactas, Ingenierías, Salud, Humanidades y Artes Integradas de la Universidad del Valle, con proyección a ser utilizado también en las diferentes sedes regionales de la Universidad.

Este libro ha sido diseñado teniendo en cuenta la modalidad de aprendizaje semipresencial (Blended Learning) con un enfoque por tareas (Task-Based Learning) utilizando la plataforma de licencia libre Moodle 3.5, por lo cual, es compatible con diferentes dispositivos tales como tablets, celulares y computadores.

Para su organización, las actividades han sido agrupadas en diferentes módulos divididos, a su vez, en dos niveles, un **primer nivel** pensado para los cursos del **ciclo de fundamentación** y un **segundo nivel** para el **ciclo de profundización**. Estas actividades se encuentran en el área de CURSOS NO REGULARES del Campus Virtual, así:

- | | |
|------------------------------------|---|
| 1. Science & Engineering I | 5. Social Sciences & Art I |
| 2. Science & Engineering II | 6. Social Sciences & Art II
(En desarrollo) |
| 3. Health I | 7. Sciencies Humaines I
(En desarrollo / Módulo para francés) |
| 4. Health II | |

Cabe resaltar que todos los temas de las actividades han sido escogidos de manera que sean transversales a las diferentes áreas de estudio, por lo cual, aunque cada módulo va dirigido a ciertas facultades, esto no los excluye de poder ser usados en programas académicos de otras facultades.

Es importante recordar que este libro NO ha sido pensado como curso virtual y, por lo tanto, es necesario el acompañamiento del docente para su desarrollo.



ACTIVIDADES COMPLEMENTARIAS ASISTIDAS POR TECNOLOGÍA PARA CURSOS LEFGA

Salud I

INTRODUCTION

The activities offer students and teachers appropriate material for exploring different levels of an **EAP-ESP class** in different disciplines of the **Health Sciences**. They can be used for autonomous practice or supporting material for the class. There are **12 activities** to explore, each one divided into 3 sections: **preparation, development**, and **closure**. The first section will explore the students' prior knowledge; the second section provides the opportunity for learning the language by using it in context within a specific topic which is relevant and interesting for the student scope of study. Finally, the closure section aims to expand what the students have learned throughout the previous sections.

Could Stem Cells Patch Up a Broken Heart?



ACTIVITY 1: STEM CELLS

Objectives

- To find the general and specific information of a paragraph.
- To recognize active and passive voice forms.

Preparation



1. Activating Prior Knowledge



1) What do you know about *Stem Cells*?



2) What is the task of a stem cell in the body?

- ☐ To give rise to strong bones.
- ☐ To house different types of cells.
- ☐ To create new proteins in the body.
- ☐ It is not established.

3) Why is it called a stem cell?

- ☐ Because each cell in the body comes from this type of cell.
- ☐ Because stem cells send signals to the other cells.
- ☐ Because each cell in the body splits and makes a stem cell.
- ☐ Because its process of dividing is very slowly.

4) When does a stem cell begin its division?

- ☐ When they begin to do a different job.
- ☐ When they go to a casting call.
- ☐ When it waits patiently to divide.
- ☐ When it receives an indication to do it.

5) What is the first step in the differentiation process?

- ☐ To start performing its special job.
- ☐ To stop the division process of the stem cell.
- ☐ To act like a special cell type.
- ☐ To activate some specific genes to make proteins.

Could Stem Cells Patch Up a Broken Heart?



Development



2. Reading Comprehension

- A) Read and listen to the text: *Could Stem Cells Patch Up a Broken Heart?*
B) Based on the reading, do the next activity.

Could Stem Cells Patch Up a Broken Heart?



(1) Scientists have identified the "master" stem cell that gives rise to the three types of heart cells, possibly opening the door for new methods of pharmaceutical research and heart therapies, such as growing a patch to repair cardiac tissue damaged by heart disease, according to a study published in *Nature*.

(2) The research illuminates a crucial facet of how heart tissue develops and shows why past studies to repair heart tissue with stem cells had poor results: the cells used were not the heart tissue progenitors that lead author Kenneth Chien and his team identified. The researchers then purified the cells, cloned them and tracked their journey from single stem cell to the three major lineages of heart cells — smooth muscle, cardiomyocyte [or striated] muscle and endothelial cells [U.S. News and World Report], which line the inside of the heart. For years, scientists have studied the development of the heart in animals like the zebra fish, but this finding will allow researchers to closely examine the genesis of human cardiac tissue in unprecedented detail.



(3) The location of these "master" stem cells in the human embryonic heart also offers insight into the basis of congenital heart diseases, in which newborns are born with structural defects in their hearts. The stem cells tend to congregate in areas linked with congenital heart disease, including the heart valves and pumping chambers. "Congenital heart disease may be a stem cell disease," Chien said [Reuters]. The researchers caution, however, that the cells the team discovered most likely cannot be used to produce an entire human heart because the organ is so complex. And although stem cell-based heart treatments have been used to repair heart tissue damaged during a heart attack, the cells used weren't these master cardiac cells, and it remains to be seen if such a method is feasible.

(4) Using these recently discovered cells within the human body will require extensive research, so the greatest near-term promise of the work might be in routine drug development. It could now be possible, for example, to create large numbers of heart muscle cells to test drugs.... Drug companies are especially interested in such applications. Using the actual human cells affected by a disease, instead of mice, dogs, or other stand-ins, could potentially speed up drug development by giving companies a more accurate template for screening potential drugs [Boston Globe]. Until now, animal cells have proven crucial to pharmaceutical research. But testing such drugs on actual human cardiac tissue could allow researchers to investigate treatments' effects on the cells that are actually the building blocks of the human heart.

Bond, A. (2009, July 3). *Could Stem Cells Patch Up a Broken Heart*. *Discover Magazine*. Retrieved from <http://blogs.discovermagazine.com/80beats/2009/07/03/could-stem-cells-patch-up-a-broken-heart>



Could Stem Cells Patch Up a Broken Heart?



ACTIVITY

Answer the questions based on the text: ***Could Stem Cells Patch Up a Broken Heart?***

1. Match each piece of information with the corresponding paragraph.

- A) Scientists discovered why previous attempts to repair cardiac tissue with stem cells did not succeed.
- B) The pharmaceutical industry is interested in the possible applications of this finding such as growing up muscle cells to test drugs.
- C) It may not be possible to produce a complete heart by using the cells the researchers found because this organ is very complex.
- D) In the near future it may be possible to grow patches to mend cardiac tissue that has been affected by a heart disease.

PARAGRAPH # ____

PARAGRAPH # ____

PARAGRAPH # ____

PARAGRAPH # ____

2. Are these statements TRUE or FALSE?

- 1) The only thing the researchers had done to get the results was to follow the stem cell course to become the three major lineages of heart cells.
- 2) Scientists may not have to use animals anymore to investigate the development of the heart.
- 3) With these findings, researchers will be able to find out about congenital heart disease.
- 4) Scientists have already conducted an exhaustive research which allows these newly discovered cells to be used within the human body.
- 5) Creating good quantities of heart muscle cells to test drugs could be possible thanks to these findings.

TRUE

FALSE

TRUE

FALSE

TRUE

FALSE

TRUE

FALSE

TRUE

FALSE

3. Analyze the following sentences and identify if they are in active or passive voice.

- ACTIVE

PASSIVE

1) Scientists have identified the “master” stem cell that gives rise to the three types of heart cells.
- ACTIVE

PASSIVE

2) Newborns are born with structural defects in their hearts.
- ACTIVE

PASSIVE

3) Scientists have studied the development of the heart in animals like the zebra fish.
- ACTIVE

PASSIVE

4) Stem cell-based heart treatments have been used to repair heart tissue damaged during a heart attack.

Could Stem Cells Patch Up a Broken Heart?



Closure



3. Listening Comprehension

According to what you have been working on this activity, fill in the blanks to complete the summary of the text.

The “master” stem cell discovered by and his team give rise to the three types of .

This finding opens the possibility to new researches on heart drugs, heart therapies and diseases.





ACTIVITY 2:

THE HARMFUL EFFECTS OF ALCOHOL

Objectives

- To find out the main idea of a passage.
- To identify cause and effect relationships.

Preparation



1. Activating Prior Knowledge

EFFECTS OF ALCOHOL ON THE BODY

Watch and listen to the video *What Alcohol Does to Your Body*.



Scan this QR code to watch the video!



Ashford, T. [Simpleshow Foundation]. (2014). What alcohol does to your body [Video]. Retrieved from <https://www.youtube.com/watch?v=-oN2emCHMlg>

1. After watching the video, organize the following information. Write the numbers 1, 2, 3, 4, 5, 6, 7 to organize the sequence. Follow the example.

- A) Ethanol is the type of alcohol used in the production of alcoholic beverages.
- B) Long-term alcohol effects such as addiction, liver disease, high blood pressure and cancer.
- C) Damage to your central nervous system can lead to an unconscious state and even death.
- D) Hints or indications for sensible, moderate, and responsible alcohol consumption.
- E) Local laws help to minimize damage to health and society.
- F) Effects of lower doses of alcohol in Michael's behavior and in some parts of his body.
- G) The euphoric and relaxed experience of being drunk is caused by ethanol entering the bloodstream.

1

...

...

...

...

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Development



2. Reading Comprehension

- A) Read and listen to the text: *Harmful Effects of Alcohol*.
B) Based on the reading, do the next activity.

How Alcohol Causes Short - and long -Term Harmful Effects.



Nervous-system damage

(1) Chronic consumption of high levels of alcohol can cause irreversible damage to the nervous system. The majority of people with chronic alcoholism have some degree of dementia, which is a general loss of intellectual abilities including memory, judgment and abstract thinking, as well as personality changes. The general effect seems to be a shrinkage of brain tissue, as revealed by brain imaging techniques **(Figure 6)** or post-mortem studies, the extent of which correlates with the amount of alcohol consumed **(National Institute on Alcohol Abuse and Alcoholism, 2000)**. In particular shrinkage is extensive in the prefrontal cortex, PFC, which has responsibility for choice, decision-making and regulation of behavior. It is also present in deeper brain regions associated with memory, and in the cerebellum which is involved in movement and coordination.

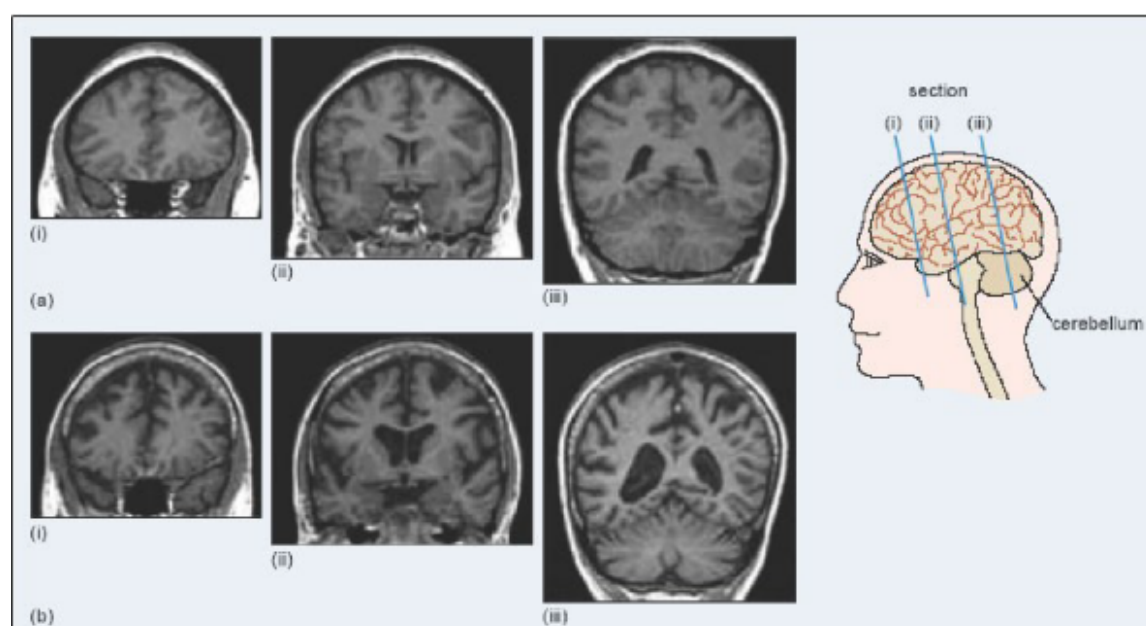


Figure 6: MRI (**magnetic resonance imaging**) image showing how the brain structure is affected in a person with chronic alcoholism. (a) Images taken in three places in a healthy brain – these are 'slices' taken through the front, middle and back of the head (see inset). (b) Shows the shrinkage of the brain in images taken at the same three positions in a person with chronic alcoholism **(Photo: Daniel Hommer/National Institute of Alcohol Abuse and Alcoholism)**.

(2) Alcoholism is also associated with damage to the peripheral nerves **(i.e. those connecting the central nervous system, CNS, with the rest of the body)**. This causes symptoms such as sensory disturbances (numbness or pain), motor disturbances (weakness and muscle wasting) and some problems with speech, swallowing, heart rate, pupil function, erectile function, breathing during sleep, etc. The mechanism of nerve damage is not clear and could be associated with a direct toxic effect of ethanol on nerves, or indirectly via nutritional deficiencies.



ACTIVITY

Answer the questions based on the text: ***Harmful Effects of Alcohol.***

1. Fill in the blanks with the word in the box that matches with the definition given. One example has been done for you.

Speech

Behavior

Chronic

Intellectual

Weakness

Alcoholism

Damage

Movement

Thinking

1) Causing or tending to cause harm.

ADJECTIVE

Harmful

2) Continuing for a long time, constantly recurring.

ADJECTIVE

3) A condition in which dependence on alcohol harms a person's health, social functioning, or family life.

NOUN

4) Appealing to or characteristic of people with a developed intellect.

ADJECTIVE

5) The process of thought.

NOUN

6) The way a person behaves or acts; conduct; manners.

NOUN

7) The act, process, or result of moving.

NOUN

8) Injury, harm or damage impairing the function or condition of a person or thing.

NOUN

9) The state or quality of being weak.

NOUN

10) The act or faculty of speaking

NOUN

2. Match the left column with the right column.

A) Movement and coordination

B) Irreversible damage to the nervous system

C) Dementia and personality changes

D) Reduction of brain tissue

E) Choice, decision-making, regulation of behaviour.

F) Connecting the central nervous system with the rest of the system

1) Consumption of high levels of alcohol

2) PFC

3) Peripheral nerves

4) General effects of alcoholism

5) Cerebellum

6) Chronic alcoholism



3. Match each acronym with its respective meaning.

Acronym
An acronym is a word composed of the first letters of the words in a phrase, especially when this is used as a name. An example of an acronym is NATO which is made up of the first letters of the 'North Atlantic Treaty Organization'.
(Collins Dictionary, 2017)

1) NIAA	☐ A) Central Nervous System
2) MRI	☐ B) Prefrontal Cortex
3) PFC	☐ C) National Institute of Alcohol Abuse and Alcoholism
4) CNS	☐ D) Magnetic Resonance Imaging

4. Figure out the function of the parenthesis in the following excerpts.

Citation

Source

Explanation

Definition

1) (Figure 6)	
2) (National Institute on Alcohol Abuse and Alcoholism, 2000)	
3) (Magnetic Resonance Imaging)	
4) (Photo: Daniel Hommer/National Institute of Alcohol Abuse and Alcoholism)	
5) (i.e. those connecting the Central Nervous System, CNS, with the rest of the body)	

5. Select the rhetorical strategies used by the writer in the text:

☐ Definition
Description
Exemplification
Cause/Effect

☐ Definition
Description
Instruction
Cause/Effect

☐ Definition
Description
Exemplification
Comparison
Contrast

Closure



3. Listening Comprehension

Watch the video *Is Alcohol Good or Bad for You?* and then answer the questions.



Scan this QR code to watch the video!



CardioSmart. (2013). *Is alcohol good or bad for you?* [Video]. Retrieved from: <https://www.youtube.com/watch?v=jlgkCZzUlcQ>

1. Decide whether the following statements are **TRUE** or **FALSE** based on the previous video.

- 1) Alcohol is definitely harmful for your health.
- 2) A modest amount of alcohol for women is one drink and for men two drinks.
- 3) Moderate alcohol consumption may have some substantial health benefits.
- 4) Moderate amounts of alcohol decrease levels of HDL, or 'good' cholesterol.
- 5) Drinking occasionally could reduce a few years to your life expectancy.
- 6) Moderate alcohol consumption tends to prevent the blockage of blood vessel.
- 7) The right way to drink little amounts of alcohol appears to be during meals.
- 8) Moderate drinkers can develop mental diseases and other forms of dementia.
- 9) Alcohol consumption can cause major health problems, affecting your liver and other body parts.

TRUE	FALSE
TRUE	FALSE
TRUE	FALSE
TRUE	FALSE
TRUE	FALSE
TRUE	FALSE
TRUE	FALSE
TRUE	FALSE
TRUE	FALSE

2. Analyze the following statements and select the type of rhetorical element from the list.

- Description
- Contrast
- Cause/Effect
- Instruction
- Argument

- 1) *As a doctor, I'm often asked if alcohol is good or bad for you, and the answer is yes and yes.*
- 2) *Drinking a modest amount of alcohol does have numerous health benefits, but if you don't drink, you shouldn't start drinking to capture those benefits.*
- 3) *If you drink, do drink with meals as this slows the alcohol absorption and never never drink and drive.*

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ACTIVITY 3:

HEARING AND BALANCE

Objectives

- To identify general and specific information in paragraphs.
- To grasp the overall organization of a passage and its main ideas.



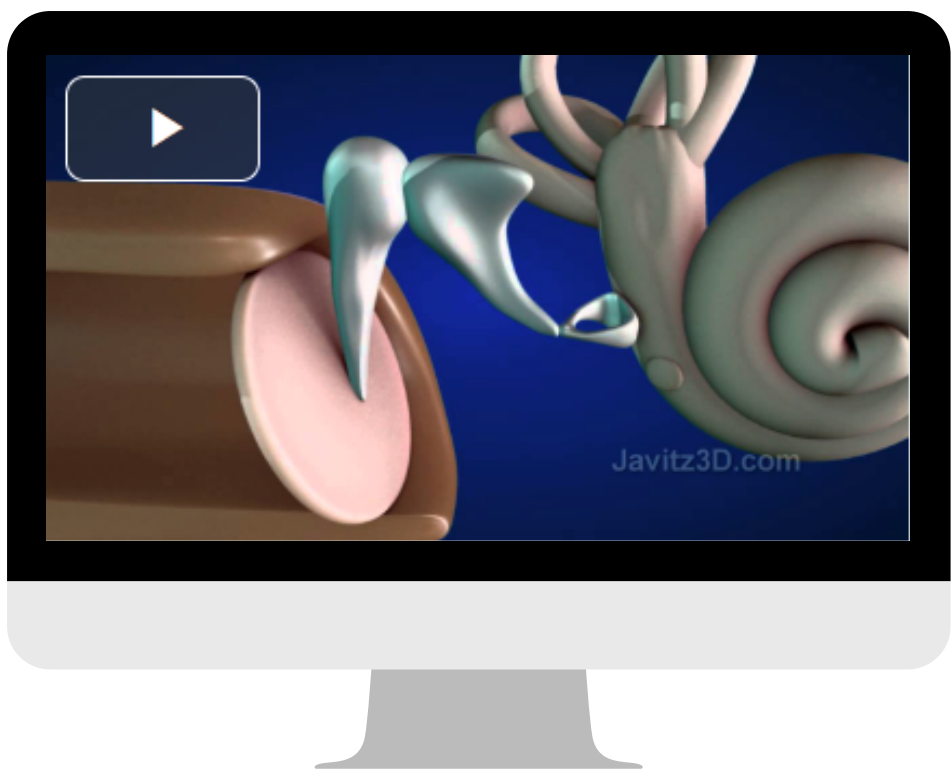
Preparation



1. Activating Prior Knowledge

EFFECTS OF ALCOHOL ON THE BODY

Watch and listen to the video *How The Ear Works*.



Scan this QR code to watch the video!



Javitzproductions. (2012). *How the ear works* [Video]. Retrieved from:
<https://www.youtube.com/watch?v=qgdqp-oPbIQ>

1. After watching the video choose the most appropriate option to complete the sentences.

1) The level of pressure in each wave is related to

- ☐ the waves. ☐ the outer ear. ☐ the volume of the sound.

2) The outer part of the ear has a specially designed structure to

- ☐ determine direction of sound and frequency. ☐ regulate sound. ☐ understand human speech.

3) Sound waves travel through the hearing canal and

- ☐ the eardrum vibrates. ☐ the three small bones move. ☐ the sound waves enter.

4) When fluid waves in the cochlea excite nerve cells in the organ of Corti, this

- ☐ sends electrical impulses to the brain. ☐ sends impulses to the auditory nerve. ☐ creates sound.

Development



2. Reading Comprehension

- A) Read and listen to the text: *Hearing and Balance*.
B) Based on the reading, do the next activity.

Hearing and Balance



(1) The human ear serves two functions: it detects sound and it detects body position, enabling us to maintain balance. The human ear consists of three parts: the outer ear, middle ear, and inner ear.

(2) The outer ear consists of an irregularly shaped piece of cartilage covered by skin, the auricle, and the **earlobe**, a flap of skin that hangs down from the auricle (**FIGURE 10-10**). The outer ear also consists of a short tube, the external auditory canal. It transmits sound waves to the middle ear (**FIGURE 10-10A**).

(3) The middle ear lies entirely within the temporal bone of the skull (**FIGURE 10-10B**). The eardrum separates the middle ear cavity from the external auditory canal. The **eardrum** vibrates when struck by sound waves.

(4) Inside the middle ear are three tiny bones, the hammer, anvil and stirrup, so named because of their shape. The hammer is attached to the eardrum. When the eardrum is struck by sound waves, it vibrates. This causes the hammer to rock back and forth. This, in turn, causes the anvil to vibrate, which causes the stirrup to move in and out. The stirrup attaches to a membrane on the organ of hearing, discussed shortly. When the stirrup vibrates, sound waves are transmitted into this organ.

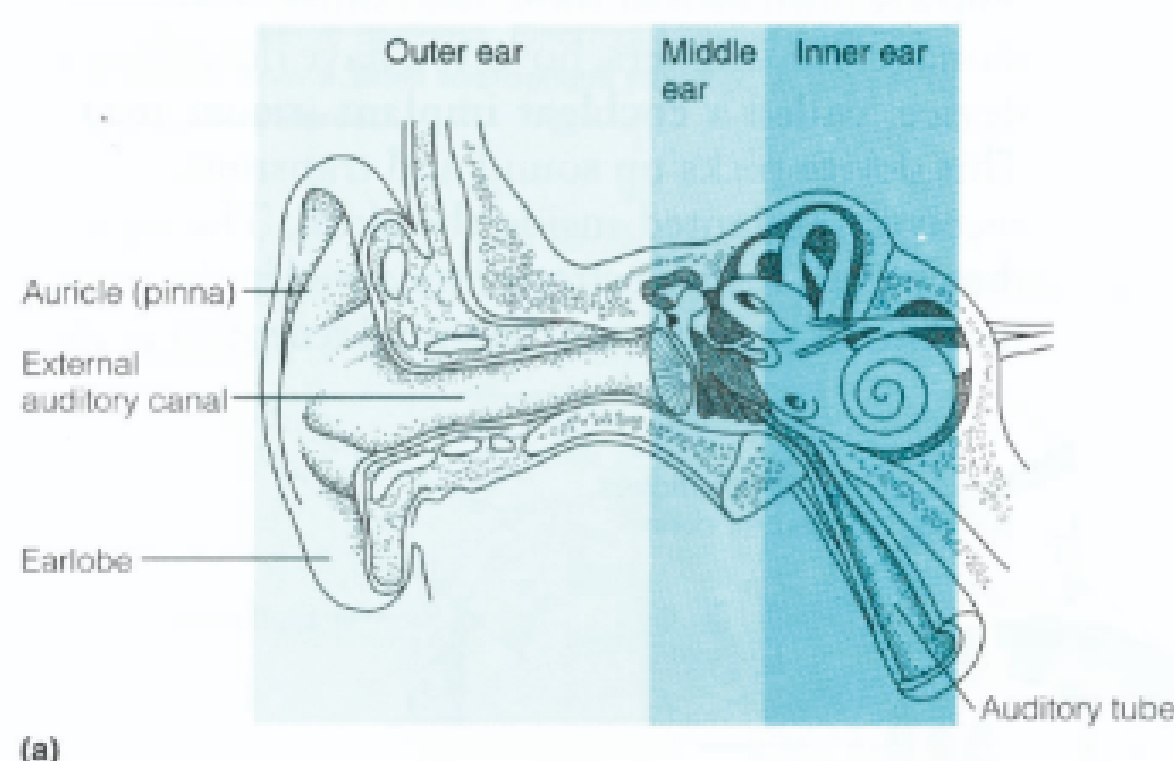
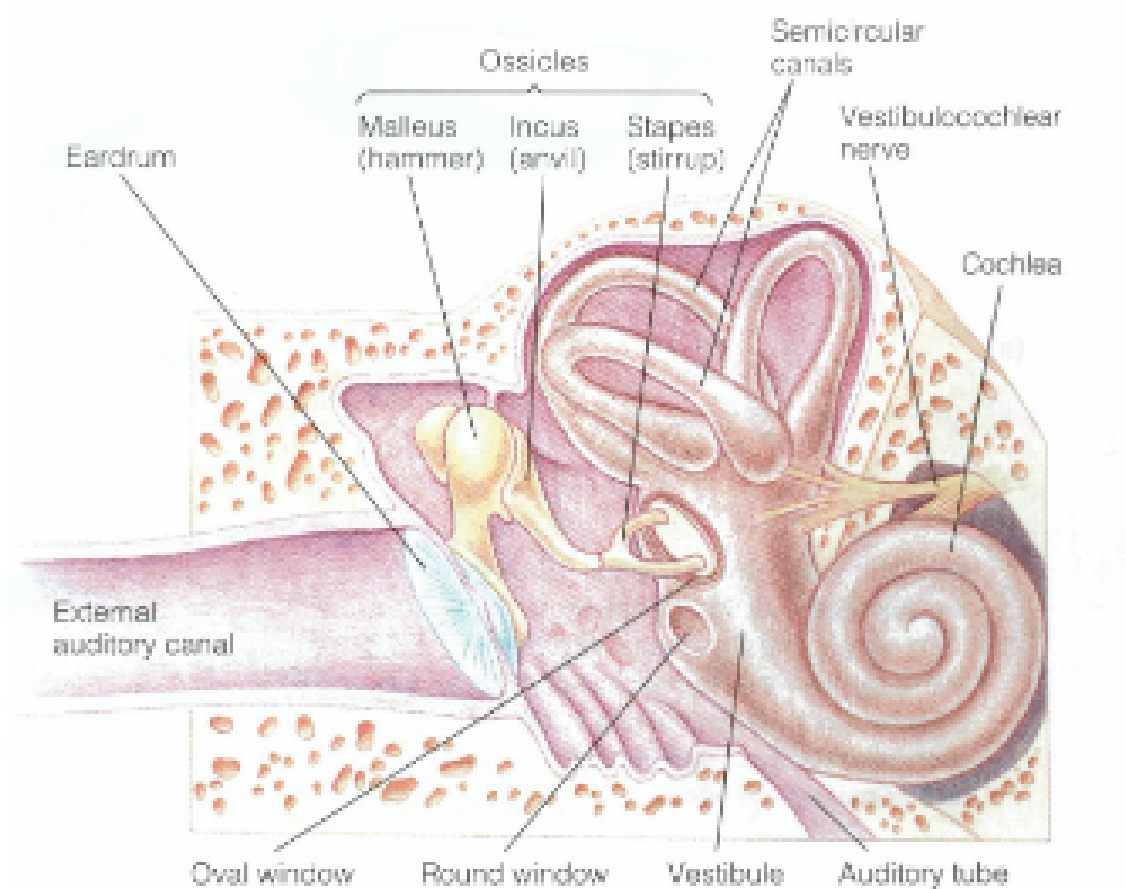
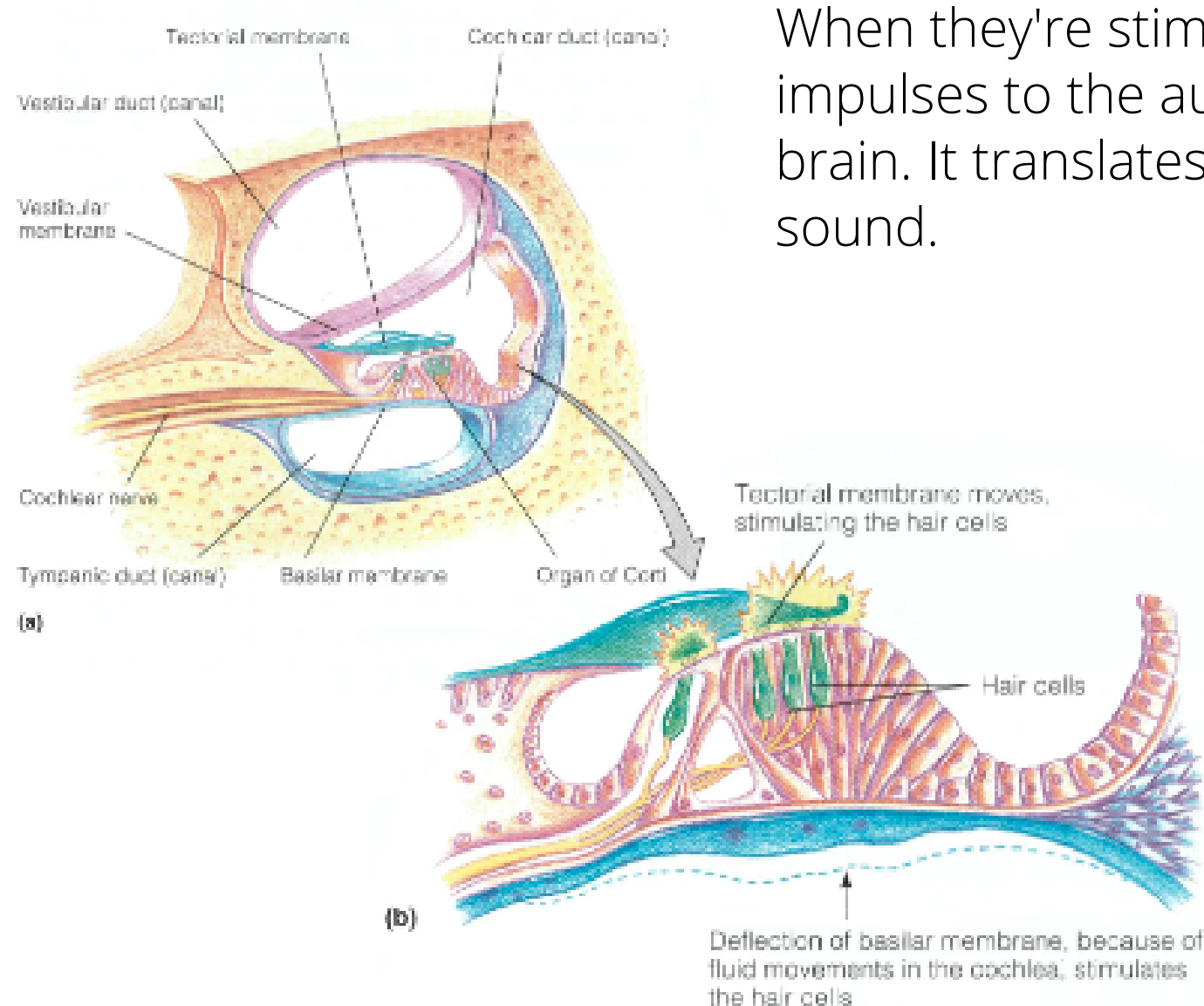


FIGURE 10-10 The Structures of the Ear (a) Cross section showing the structures of the outer, middle, and inner ears. (b) The receptors for balance and sound are located in the inner ear.

(5) As Figure 10-10 illustrates, the middle ear cavities open into the back of the mouth via two small tubes, the auditory tube. These tubes serve as a **pressure-release** valve. Normally, the tubes are collapsed. Pressure can build up in the middle ear cavity, for example, when you're on a plane that is taking off. Yawning and swallowing cause the auditory tubes to open, allowing air to flow out of the middle ear cavity. This equalizes the internal and external pressure on the eardrum. The inner ear occupies a large cavity in the temporal bone and contains a structure that is shaped like a snail's shell, known as the cochlea. It houses the receptors for hearing.



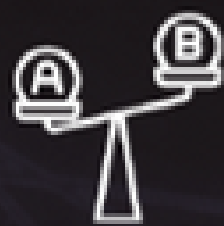
(6) As noted previously, sound waves enter the external auditory canal, where they strike the eardrum. The eardrum vibrates back and forth, causing the bones of the middle ear cavity to vibrate. This transmits sound waves to the cochlea. The cochlea, which houses the receptor for sound, is filled with fluid. Pressure waves inside the cochlea stimulate the sound receptors, called hair cells (**FIGURE 10-11B**).



When they're stimulated, they send nerve impulses to the auditory cortex of the brain. It translates these impulses into sound.

FIGURE 10-11 Cross Section Through the Cochlea (a) Notice the three fluid-filled canals and the central position of the organ of Corti. (b) Hair cells of the organ of Corti are embedded in the overlying tectorial membrane. When the basilar membrane vibrates, the hair cells are stimulated.

Hearing and Balance



ACTIVITY

Answer the questions based on the text: *Hearing and Balance*.

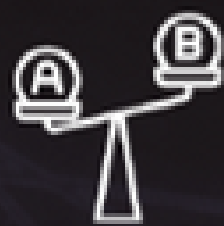
1. Match the main idea with the paragraph where it appears.

A) Location of the middle ear.	PARAGRAPH #
B) How to get an equilibrium between the internal and external ear pressure.	PARAGRAPH #
C) How sound is transmitted within the middle ear.	PARAGRAPH #
D) Sound protection.	PARAGRAPH #
E) What is the outer ear made of.	PARAGRAPH #
F) Functions of the human ear.	PARAGRAPH #

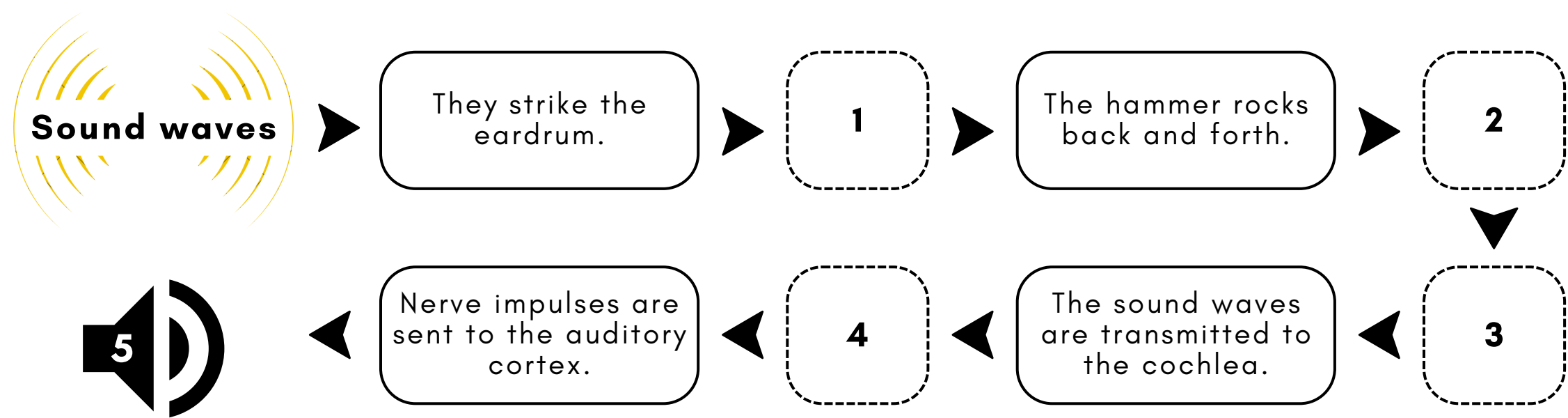
2. Complete the table below by following the example.

Structure	Location	Description/Function
1) Anvil	☐ Outer ear. ☐ Middle ear. ☐ Inner ear.	It vibrates thanks to the hammer's movement.
2) Earlobe	Outer ear.	A flap of skin that hangs down from the auricle.
3) Auricle	☐ Outer ear. ☐ Middle ear. ☐ Inner ear.	Piece of cartilage covered by skin.
4) ☐ Hammer ☐ Choclea ☐ Stirrup	Inner ear.	☐ It contains the receptors for hearing. ☐ It moves in and out. ☐ It transmits the sound waves to the middle ear.
5) Auditory canal	☐ Outer ear. ☐ Middle ear. ☐ Inner ear.	☐ It contains the receptors for hearing. ☐ It moves in and out. ☐ It transmits the sound waves to the middle ear.
6) ☐ Hammer ☐ Anvil ☐ Stirrup	Middle ear.	It rocks back and forth when the eardrum vibrates.
7) ☐ Hammer ☐ Anvil ☐ Stirrup	☐ Outer ear. ☐ Middle ear. ☐ Inner ear.	It moves in and out.

Hearing and Balance



3. Complete the flowchart below by writing 1 to 5 in the blank. Take into account the previous reading.



...

A. The impulses are translated into sounds.

...

B. The anvil vibrates.

...

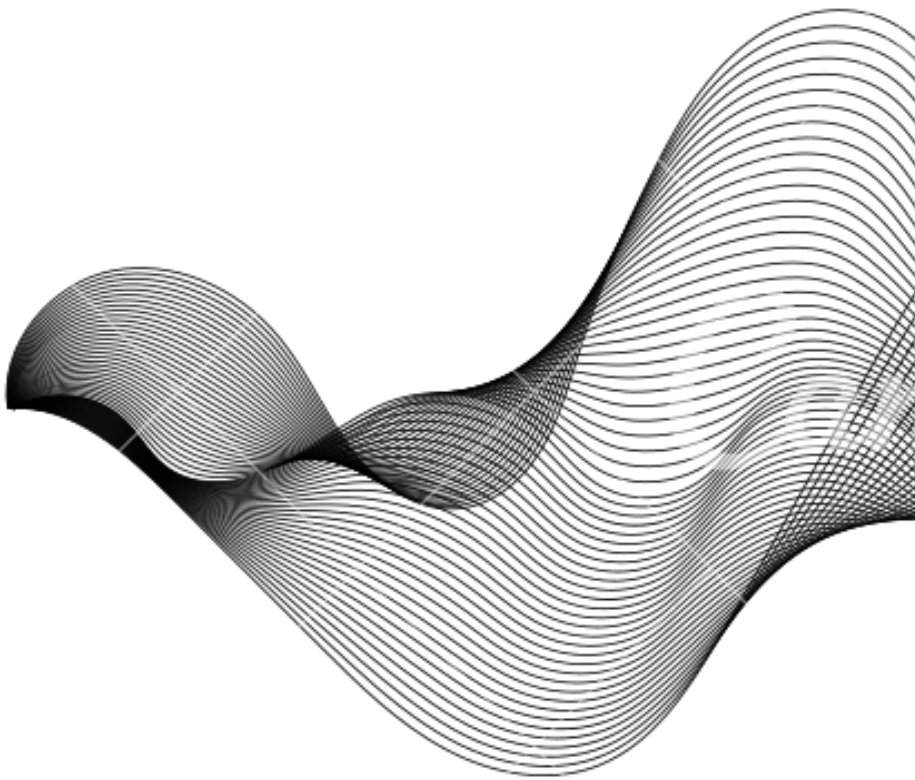
C. The eardrum vibrates.

...

D. The stirrup moves in and out.

...

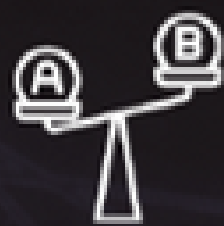
E. Pressure waves inside the cochlea stimulate the hair cells.



4. Complete the table by deciding if the following cognate words are **TRUE** or **FALSE** and write their Spanish equivalent.

Cognate words	TRUE / FALSE		Spanish Equivalent
Serves	TRUE	FALSE	
Detects	TRUE	FALSE	
Balance	TRUE	FALSE	
Piece	TRUE	FALSE	
Auricle	TRUE	FALSE	
Bone	TRUE	FALSE	
Plane	TRUE	FALSE	
Large	TRUE	FALSE	
Previously	TRUE	FALSE	
Cortex	TRUE	FALSE	

Hearing and Balance



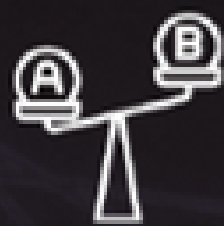
5. Read the following noun phrases and write the nucleus of each one in the blank.

- 1) Irregularly shaped piece of cartilage.
- 2) The external auditory canal.
- 3) The temporal bone of the skull.
- 4) A pressure-release valve.
- 5) A large cavity in the temporal bone.

6. Find 3 compound words in the text. Then, complete the table below. One example has been done for you.

Compound words	Words that compound them	Spanish equivalent
EX: earlobe	EX: ear + lobe	EX: lóbulo



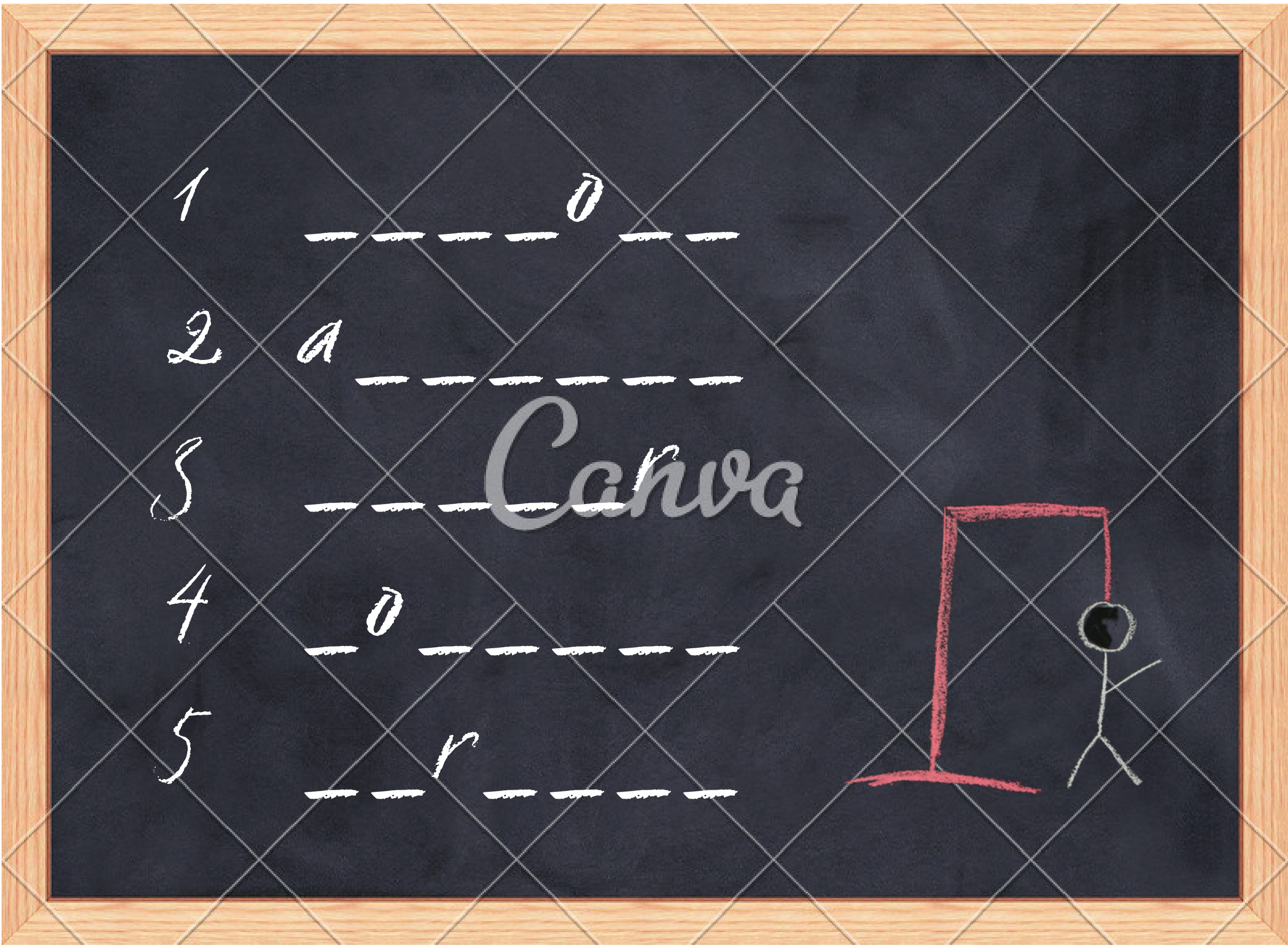


Closure



3. Hangman

According to the definitions provided, fill out the blanks to complete the right word.



Clues



1) Flap of skin.

2) Irregularly shaped piece of cartilage covered by skin.

3) It is attached to the eardrum and rocks back and forth.

4) Structure that is shaped like a snail's shell.

5) It separates the middle ear cavity from the external auditory canal.



ACTIVITY 4:

HEARING LOSS

Objectives

- To identify the main idea of a text by means of some pictures and the keywords.
- To reach a detailed understanding of the text by answering some questions.
- To identify the grammar category of a group of words by paying attention to the context.

Preparation



1. Activating Prior Knowledge

HEARING LOSS

Answer the following questions.

What do you think may cause hearing loss? Do you know any treatments for this disease? Remember there is not right nor wrong answer.



Hearing Loss



Development



2. Reading Comprehension

- A) Read and listen to the text: *Hearing Loss*.
B) Based on the reading, do the next activity.

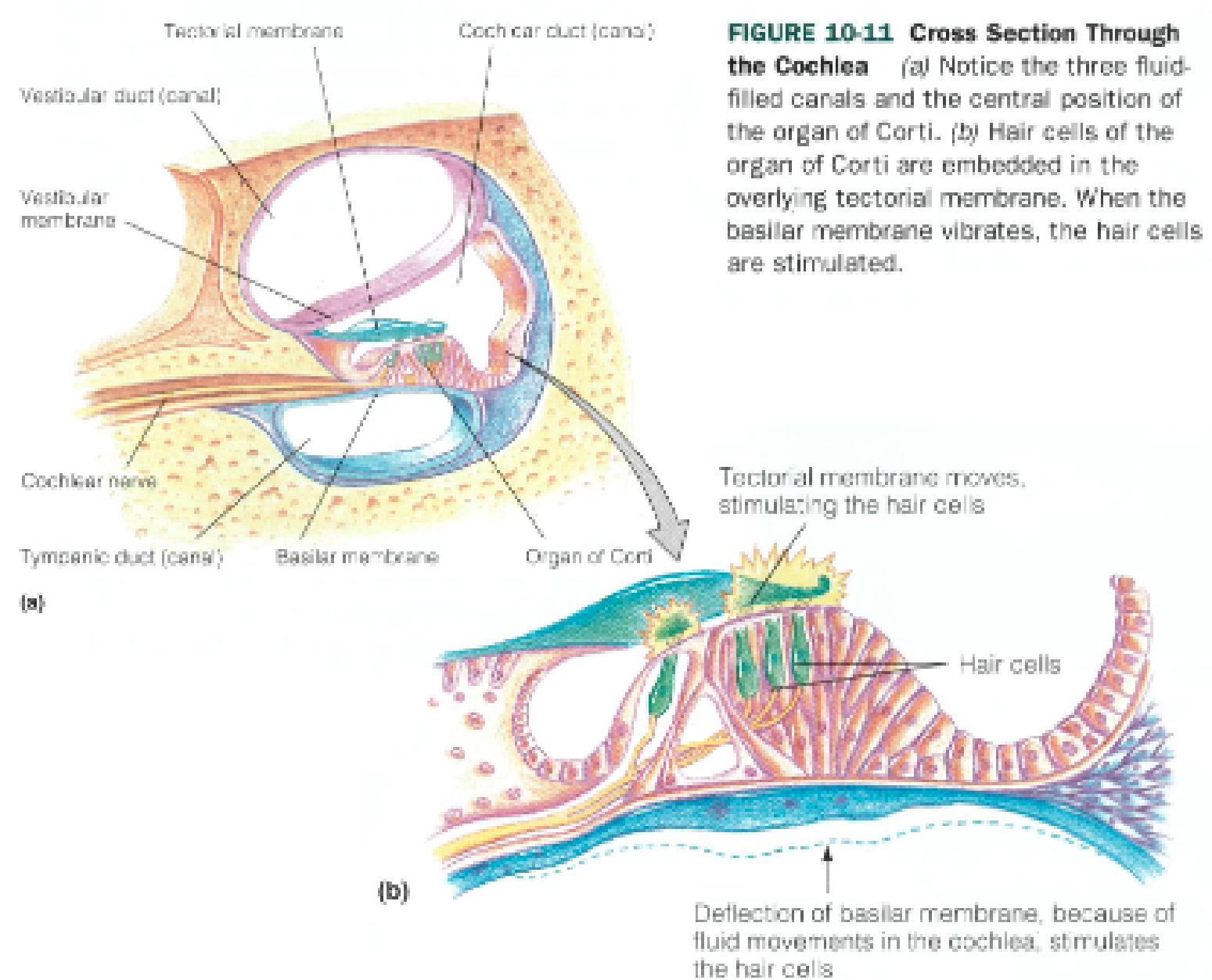
Hearing Loss



(1) As people grow older, many begin to lose their hearing, but hearing loss usually occurs so slowly that most people are unaware of it. In some cases, though, people lose their hearing suddenly. A loud explosion, for example, can damage the hair cells or even break the bones in the middle ear.

(2) Hearing loss falls into one of two categories, depending on the part of the system that is affected. The first is conduction deafness. It occurs when the conduction of sound waves to the inner ear is impaired. Conduction deafness most often results

from infections in the middle ear. Bacterial infections may result in the buildup of scar tissue that causes the bones in the middle ear cavity to fuse together. They therefore are unable to transmit sound. Infections of the middle ear usually enter through the auditory tube. A sore throat caused by bacteria can spread to the ear, where it requires prompt treatment. Conduction deafness may also result from excessive earwax in the external auditory canal or rupture of the eardrum.



Hearing Loss



(3) Conduction deafness is treated by hearing aids. A hearing aid fits in the ear or just Behind it (**figure 10-12**). These devices bypass the defective sound-, conduction system by transmitting sound waves through the bone of the skull to the inner ear. These cause fluid pressure waves to form in the cochlea and stimulate the hair cells.



FIGURE 10-12 Hearing Aids Worn by people with conduction deafness, hearing aids send sound impulses through the bone of the skull to the cochlea.

(4) The second type of hearing loss is neurological and is called nerve deafness. It may result from physical damage to the hair cells in the cochlea. Explosions, extremely loud noises, and some antibiotics can all damage the hair cells, creating partial to complete deafness.

(5) Damage to the nerve leading from the cochlea to the brain can also cause this type of deafness. The auditory nerve may degenerate, thus ending the flow of information to the cortex.

(6) More than 2 million Americans are profoundly deaf. Until recently, this condition was considered virtually untreatable. Children who are born deaf or are deafened before they begin to speak often fail to mature emotionally. Some profoundly deaf children, in fact, never advance beyond third- or fourth-grade reading levels.

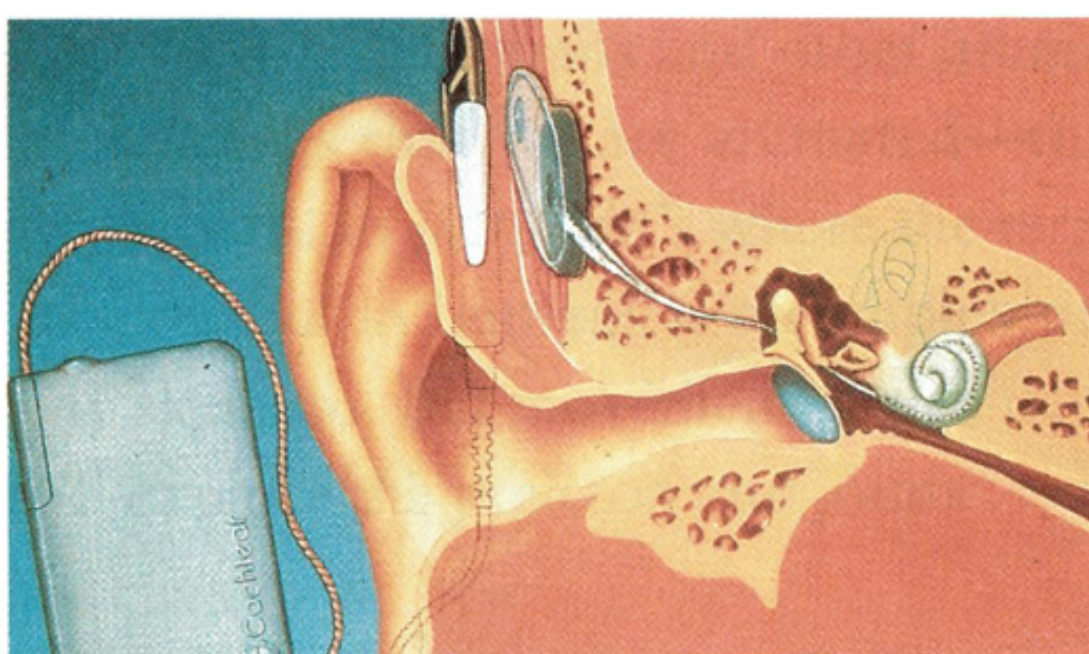


FIGURE 10-13 Cochlear Implant The cochlear implant can correct for nerve deafness. Electrodes convey electrical impulses from a small microphone mounted in the ear to the auditory nerve.

(7) Hearing aids usually cannot help individuals who are born deaf or those who suffer from nerve damage. Researchers, however, have developed a device, called a cochlear implant (**figure 10-13**). This device picks up sound and transmits it to a receiver implanted inside the skull. The signal then travels to an electrode implanted in the

nerve that carries signals from the sound receptors to the brain. Electrical impulses in the electrode stimulate the nerve. Impulses then travel to the auditory cortex.

Hearing Loss



(8) Today, hundreds of adults and children are equipped with cochlear implants that detect and transmit a wider range of sounds. Recipients of the new models can perceive many distinct words. Some individuals equipped with these devices have apparently developed a remarkable ability to perceive sounds. Cochlear implants also help the deaf monitor and regulate their voices and make lip reading easier.

(9) The cochlea lies next to the vestibular apparatus. It consists of the two parts: the semicircular canals and the vestibule. The vestibule is a bony chamber between the cochlea and semicircular canals. These structures house receptors that detect body position and movement (**figure 10-14**).

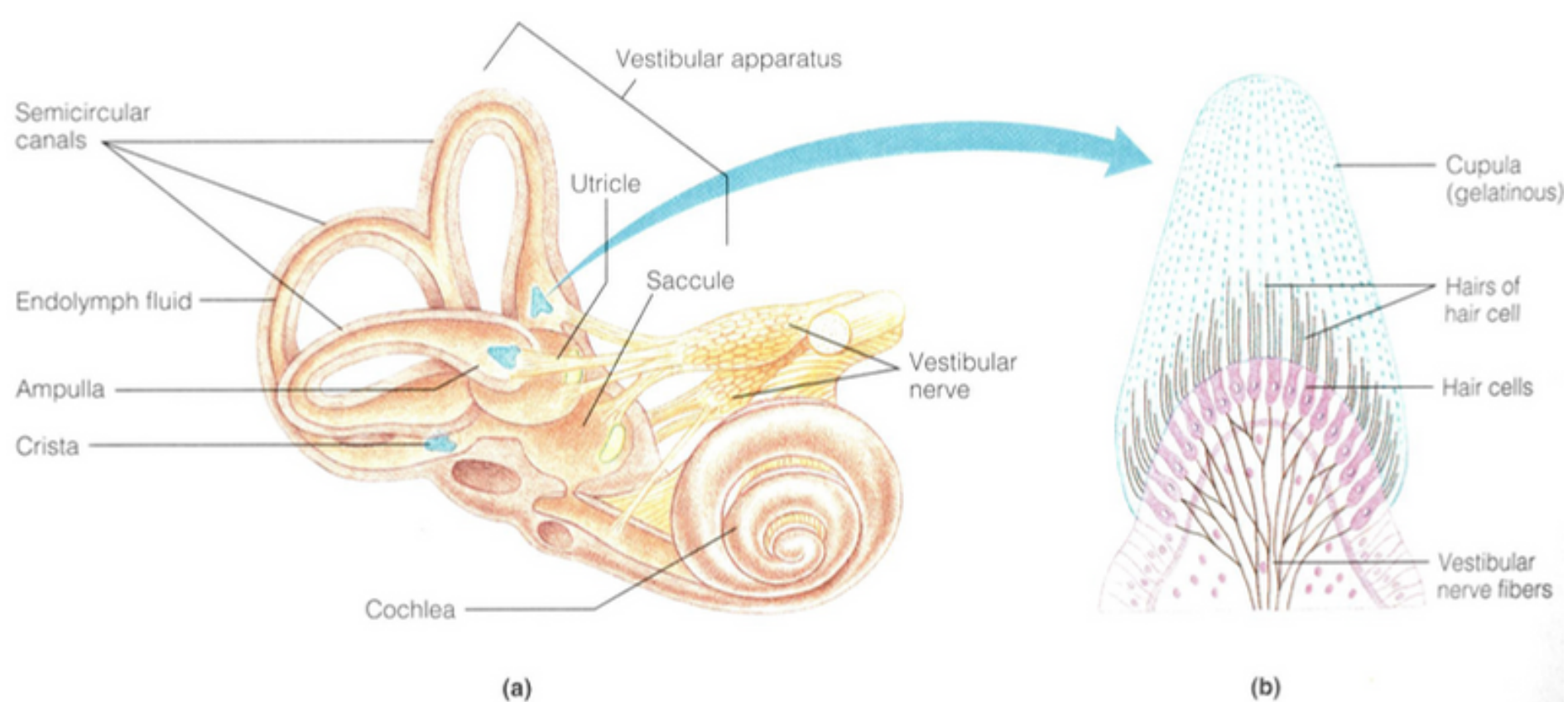


FIGURE 10-14 Vestibular Apparatus and Semicircular Canals (a) This illustration shows the location of the receptors in the semicircular canals. (blue) The semicircular canals are filled with fluid. (b) When the head spins, the fluid is set into motion, deflecting the gelatinous cupula of the crista, thus stimulating the receptor cells.

(10) The semicircular canals are arranged at right angles to one another. Each canal is filled with a fluid. As **figure 10-14A** shows, the base of each semicircular canal expands. On the inside wall of each of these expanded areas is a receptor that detects movement in the fluid.

(11) Rotation of the head causes the fluid in the semicircular canals to move. The movement stimulates hair cells of the receptors. This creates impulses that are sent to the brain, alerting it to the rotation of the head and body.

(12) Two additional receptors play a role in balance and the detection of movement. They are located in the vestibule. They provide input at rest and thus help us stay balanced when not moving. They also provide information when we are moving in a straight line.

(13) In some people, activation of the receptors in the vestibule may cause motion sickness. It is characterized by dizziness and nausea.

(14) It should be pretty clear by now how important the body's many receptors are. They allow us to work and play and move about in our environment without worry. They're vital for our day-to-day success and our long-term survival.

Hearing Loss



ACTIVITY

Answer the questions based on the text: *Hearing Loss*.

1. Give a quick reading to the text and decide if the statements are **TRUE** or **FALSE**.

- A) Human beings don't usually realize when they start losing their hearing.
- B) The main cause of conduction deafness is the excessive earwax in the external auditory tube.
- C) When fluid pressure waves form in the cochlea, the hair cells get damaged.
- D) Deafness was an untreatable condition until a short time ago.
- E) Hearing aids are especially designed for people who lose their hearing due to nerve damage.
- F) With a cochlear implant, lip reading is easier.
- G) The head rotates when the fluid in the semicircular canals moves.

TRUE	FALSE
TRUE	FALSE
TRUE	FALSE
TRUE	FALSE
TRUE	FALSE
TRUE	FALSE
TRUE	FALSE



Hearing Loss



2. Choose the best option to complete the following statements.

1) When a child is born deaf or loses his/her hearing before starting to speak, he/she...

- ☐ gets emotionally hurt.
- ☐ does not mature emotionally.
- ☐ grows up emotionally intelligent.

2) The **semicircular canals**...

- ☐ house receptors that detect body position and movement.
- ☐ are part of the cochlea.
- ☐ produce a fluid that cause body movement.

3) The process by means of which the brain is alerted to the rotation of the head and body is as follows...

- ☐ the semicircular canals produce a fluid which moves and makes the head to rotate, then the hair cells of the receptors are stimulated and create impulses sent to the brain.
- ☐ the movement of the fluid in the semicircular canals makes the head to rotate, this rotation stimulates the hair cells of the receptors which creates impulses that are sent to the brain.
- ☐ the head rotates, so the fluid in the semicircular canals moves causing the stimulation of the hair cells of the receptors. This creates impulses which are sent to the brain.

4) In the vestibule there are two more receptors that are also important for balance and the detection of movement. They...

- ☐ provide input at rest and help us to balance when we are moving.
- ☐ help us to stay balance when not moving by providing us input at rest.
- ☐ provide input at rest and help us to stay balanced when we are not moving and also provide information when we are moving in a straight line.

A) What can make the bones in the middle ear unable to transmit sound?

[illegible]

B) What is the function of hearing aids? How do they carry it out?

[illegible]

C) What happens when the auditory nerve deteriorates?

This image shows a full page of primary-ruled paper. It features multiple horizontal rows, each consisting of two parallel dotted lines with a larger margin at the top. The paper is otherwise blank, with no handwriting or other markings.

4. Create a mind map of the reading that includes the TYPES OF DEAFNESS AND THEIR CHARACTERISTICS, CAUSES AND TREATMENTS.



Hearing Loss



5. Organize the words in the box according to their grammatical category to complete the table.

VERBS	NOUNS	ADJECTIVES	ADVERBS
1.	4.	7.	10.
2.	5.	8.	11.
3.	6.	9.	12.

auditory

electrical

characterize

emotionally

receiver

treatment

unaware

slowly

usually

deafen

degenerate

loss

6. Analyze the following words and write the **ROOT** of each one.

1) Degenerate	de-	
2) Deafened		-en-ed
3) Deafness		-ness
4) Treatment		-ment
5) Researchers	re-	-er-s
6) Activation		-tion
7) Additional		-al
8) Emotionally		-al-ly



Hearing Loss

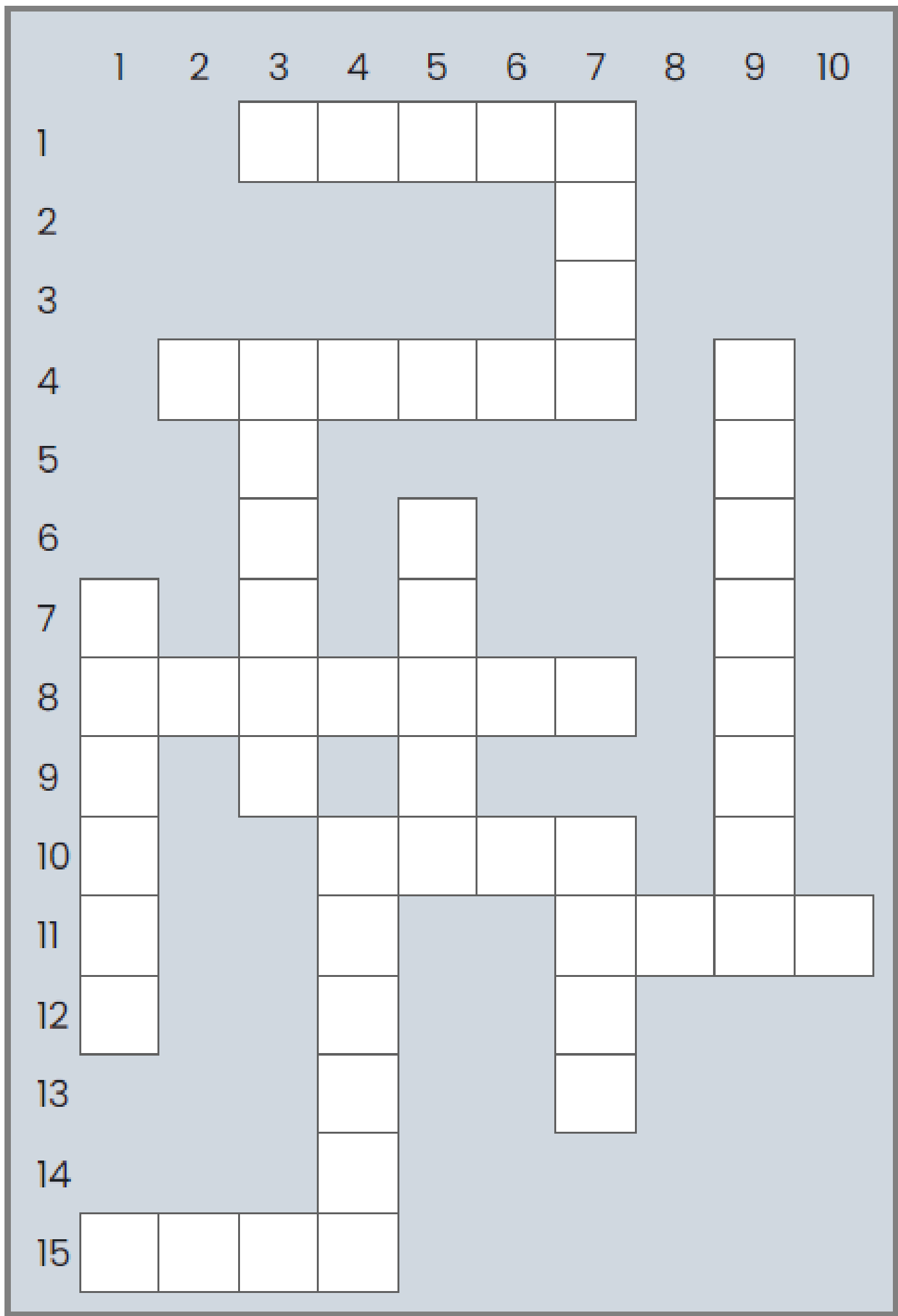


Closure



3. Crossword

Do the *crossword* below.



ACROSS

1: The entire bony or cartilaginous framework of the head of a vertebrate, enclosing and protecting the brain and sense organs, including the bones of the face and jaw.

4: An object that has been invented for a particular purpose.

8: The faculty or sense by which sound is perceived.

10: Partially or totally unable to hear.

11: The act or an instance of losing.

15: To blend or combine together.

DOWN

1: The portion of the digestive tract that lies between the rear of the mouth and the esophagus and includes the fauces and the pharynx.

3: Cerumen.

4: Injury or harm impairing the function or condition of a person or thing.

5: A sound that is loud, unpleasant, unexpected, or undesired.

7A: To fail to keep or maintain.

7B: To move or run smoothly with unbroken continuity, as in the manner characteristic of a fluid.

9: Partially or completely lacking in the sense of hearing.



Introduction to the Skeletal System

ACTIVITY 5: INTRODUCTION TO THE SKELETAL SYSTEM

Objectives

- To grasp specific information from an audio text.
- To make students aware of the different ways for conveying information in a paragraph.
- To find the main information contained in the text by finding the answers to some questions.

Preparation



1. Activating Prior Knowledge

INTRODUCTION TO THE SKELETAL SYSTEM

Watch and listen to the video *Introduction to the Skeletal System In 7 Minutes* and answer the questions.



Scan this QR code to watch the video!



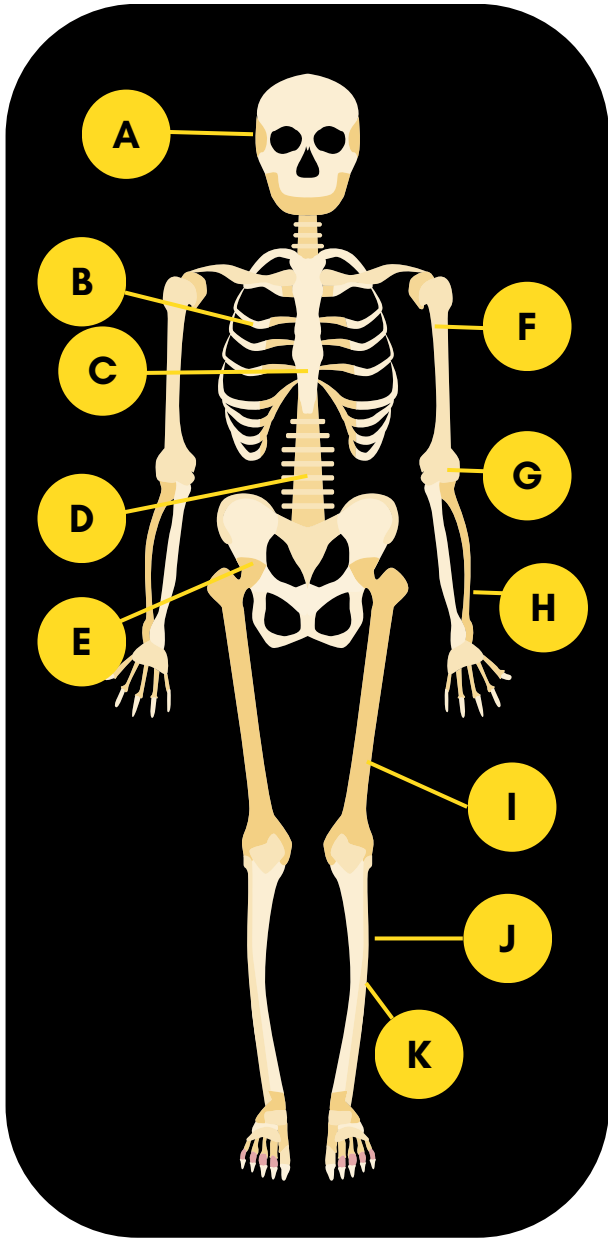
CTESkills. (2021). *Introduction to the Skeletal System In 7 Minutes* [Video]. Retrieved from: <https://www.youtube.com/watch?v=vya4wpS2fgk>

1. How many bones compound the skeletal system?

.....

2. Fill the blanks according to the name of each bone.

A	G
B	H
C	I
D	J
E	K
F	



Introduction to the Skeletal System

Development



2. Reading Comprehension

- A) Read and listen to the text: *Introduction to the Skeletal System*.
B) Based on the reading, do the next activity.

Introduction to the Skeletal System

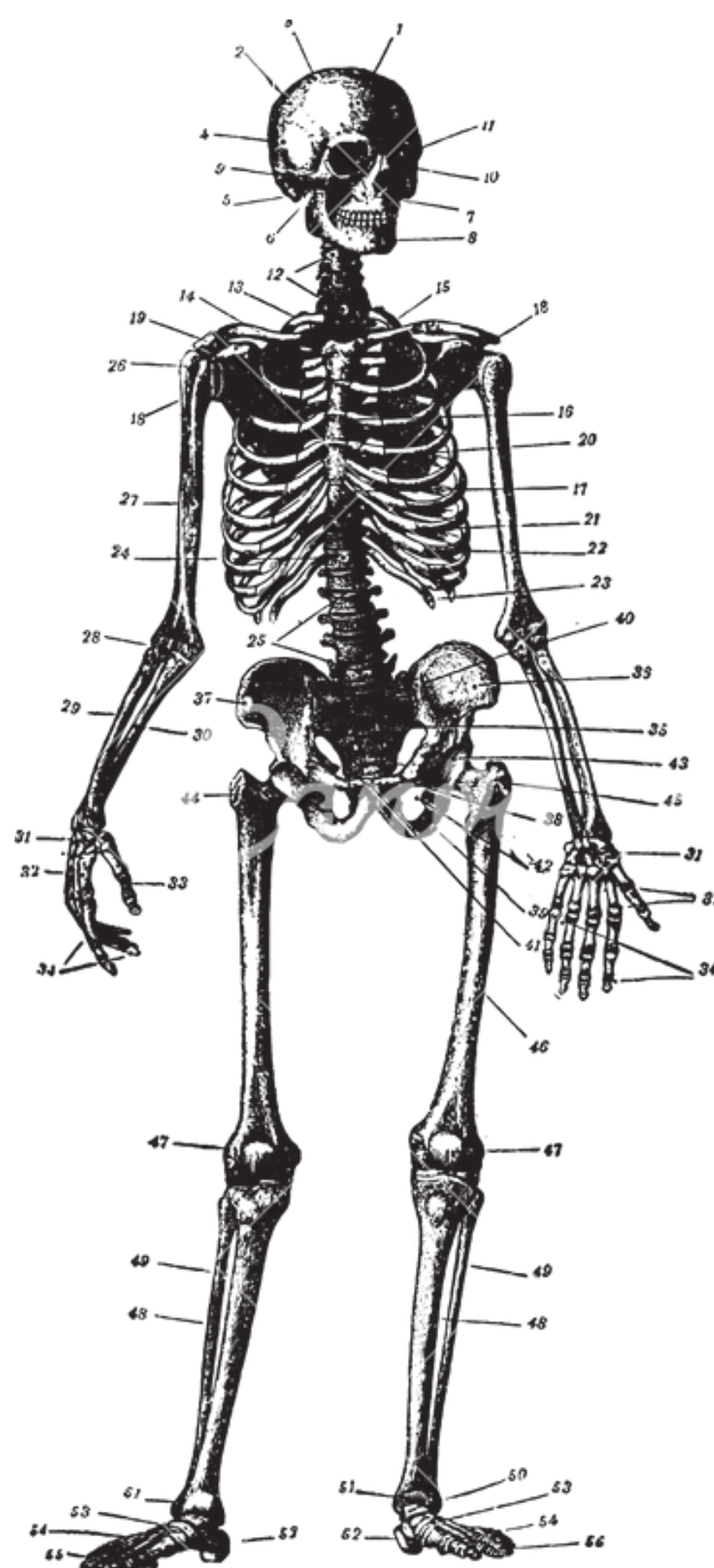


(1) Humans are vertebrates, animals having a vertebral column or backbone. They rely on a sturdy internal frame that is centered on a prominent spine. The human skeletal system consists of bones, cartilage, ligaments and tendons and accounts for about 20 percent of the body weight.

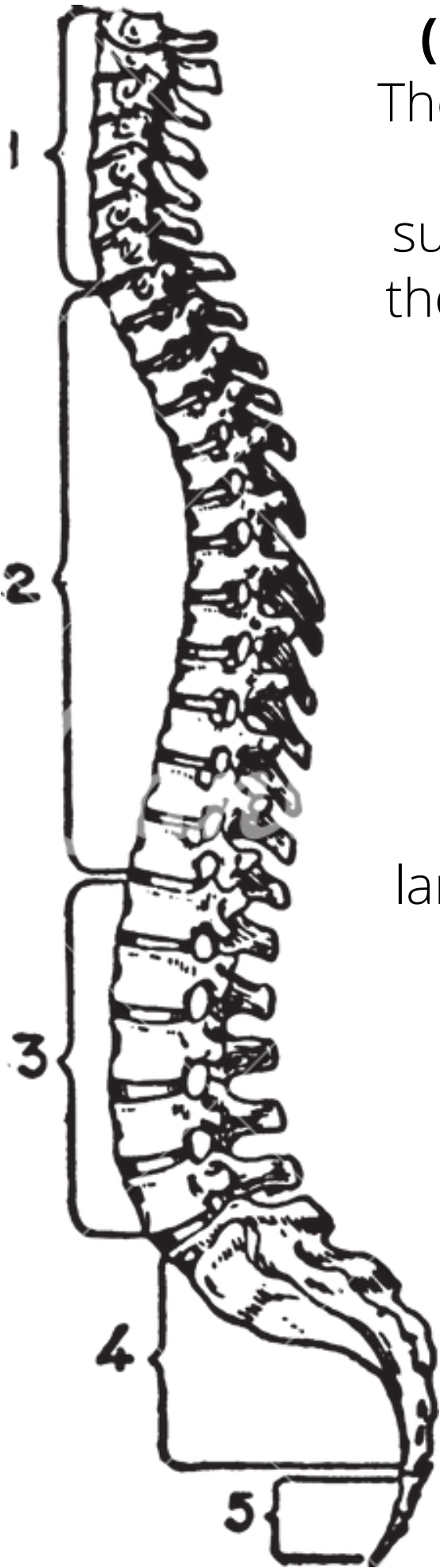
(2) The living bones in our bodies use oxygen and give off waste products in metabolism. They contain active tissues that consume nutrients, require a blood supply and change shape or remodel in response to variations in mechanical stress.

(3) Bones provide a rigid framework, known as the skeleton, that supports and protects the soft organs of the body.

(4) The skeleton supports the body against the pull of gravity. The large bones of the lower limbs support the trunk when standing.



Introduction to the Skeletal System



(5) The skeleton also protects the soft body parts. The fused bones of the cranium surround the brain to make it less vulnerable to injury. Vertebrae surround and protect the spinal cord and bones of the rib cage help protect the heart and lungs of the thorax.

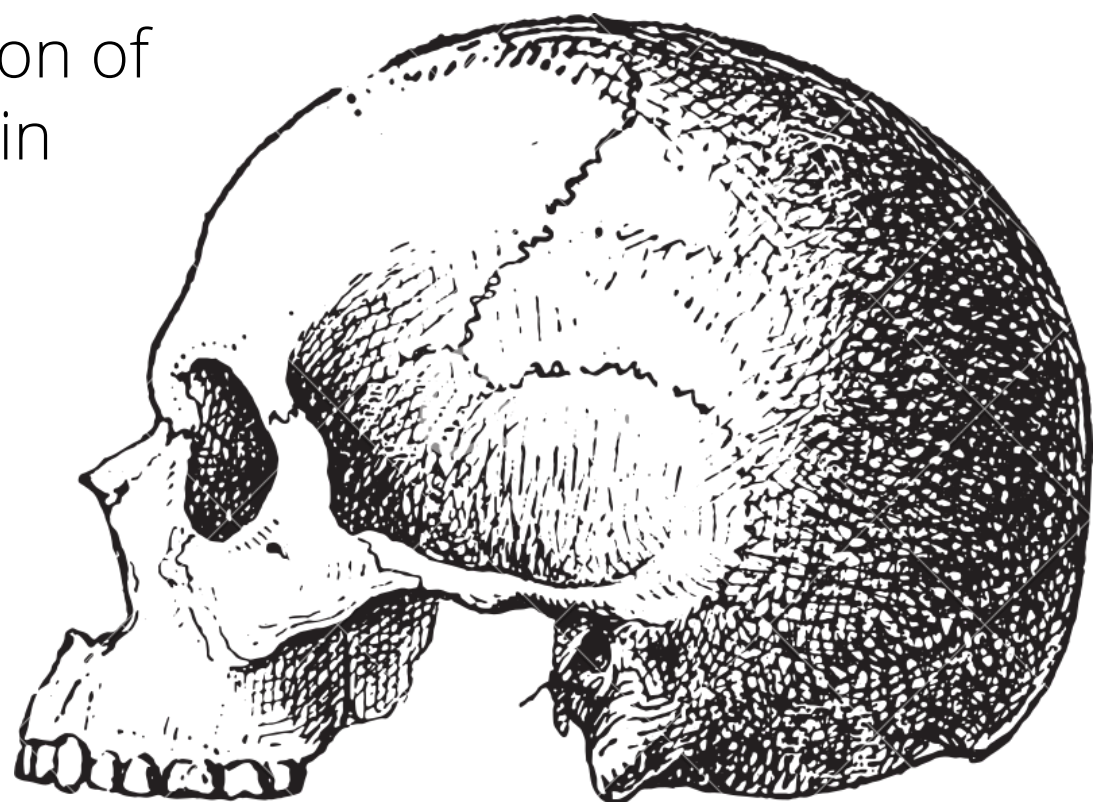
(6) Bones work together with muscles as simple mechanical lever systems to produce body movement.

(7) Bones contain more calcium than any other organ. The intercellular matrix of bone contains large amounts of calcium salts, the most important being calcium phosphate.

(8) When blood calcium levels decrease below normal, calcium is released from the bones so that there will be an adequate supply for metabolic needs. When blood calcium levels are increased, the excess calcium is stored in the bone matrix. The dynamic process of releasing and storing calcium goes on almost continuously.

(9) Hematopoiesis, the formation of blood cells, mostly takes place in the red marrow of the bones.

(10) In infants, red marrow is found in the bone cavities. With age, it is largely replaced by yellow marrow for fat storage. In adults, red marrow is limited to the spongy bone in the skull, ribs, sternum, clavicles, vertebrae and pelvis. Red marrow functions in the formation of red blood cells, white blood cells and blood platelets.



Introduction to the Skeletal System

ACTIVITY

Answer the questions based on the text: ***Introduction to the Skeletal System.***

1. Choose the correct answer according to the information on the text.

1) What is the reaction of active tissues in the living bones when there is a variation in mechanical stress?

- ☐ They change shape or remodel.
- ☐ They stay rigid.
- ☐ They release calcium.

2) What is the main function of the skeleton?

- ☐ To support and protect the soft organs in the body.
- ☐ To shape the body.
- ☐ To allow movement.

3) What makes it possible for humans to stand?

- ☐ The large bones of the lower limbs.
- ☐ The short bones of the lower limbs.
- ☐ The large bones of the arms.

4) What is the role of the bones in these situations?

a) Low-blood calcium levels:

- ☐ They release calcium.
- ☐ They release potassium.
- ☐ They consume calcium.

b) High blood calcium levels:

- ☐ The excess of calcium is stored in the bone matrix.
- ☐ The excess of potassium is stored in the bones.
- ☐ They release calcium.





Introduction to the Skeletal System

2. Match each function with the structure it is referring to.

Skeleton	☐	A) Supports and protects the soft organs of the body.
Bones & muscles	☐	B) Help to protect the heart and lungs.
The large bones of the lower limbs	☐	C) Support the trunk when standing.
Vertebrae	☐	D) Surround and protect the spinal cord.
Bones of the ribcage	☐	E) Produce body movement.

3. Match each definition with the corresponding concept.



1) Damage or harm done to or suffered by a person or thing.

2) One of the jointed appendages of an animal, such as an arm, leg, wing, or flipper used for locomotion or grasping.

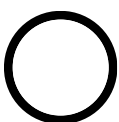
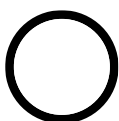
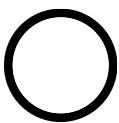
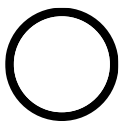
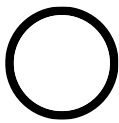
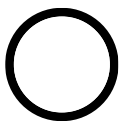
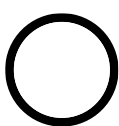
3) Any long, cylindrical, flexible structure.

4) To hold in position so as to keep from falling, sinking, or slipping.

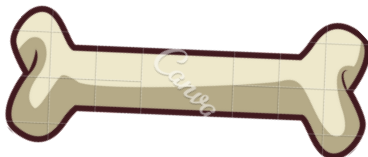
5) To have as a requisite.

6) Hard part inside the body that makes up the skeleton of a vertebrate animal.

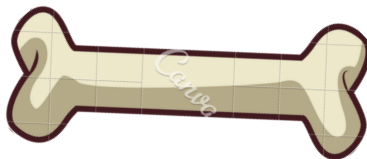
7) To make available for use; to provide.



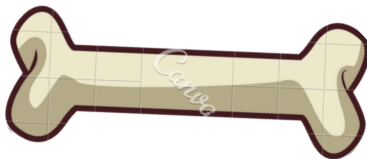
BONE



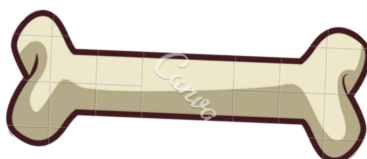
SUPPLY



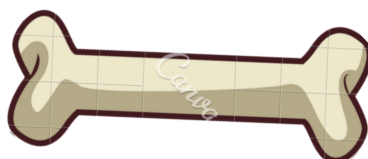
REQUIRE



SUPPORT



CORD



INJURY



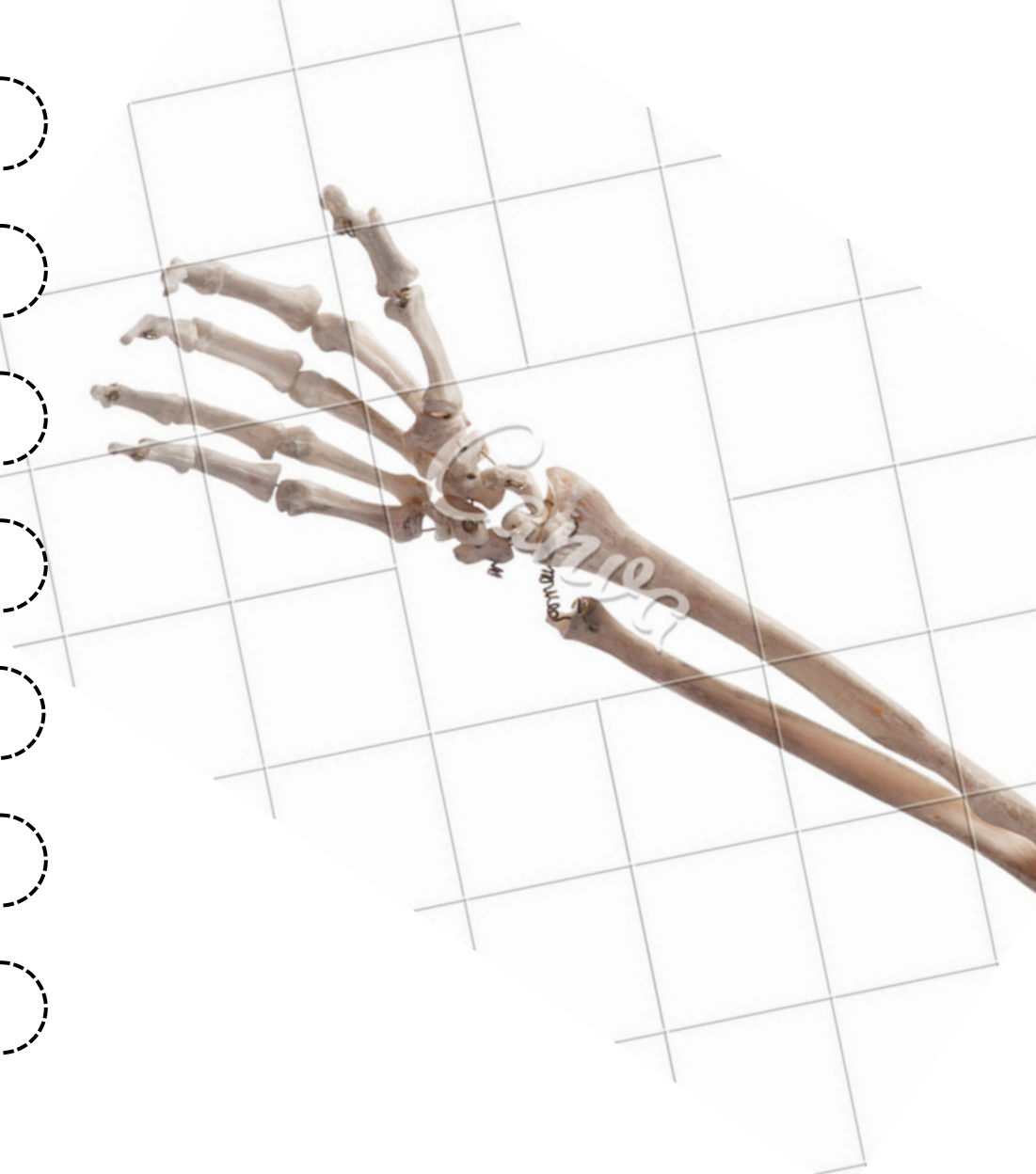
LIMBS



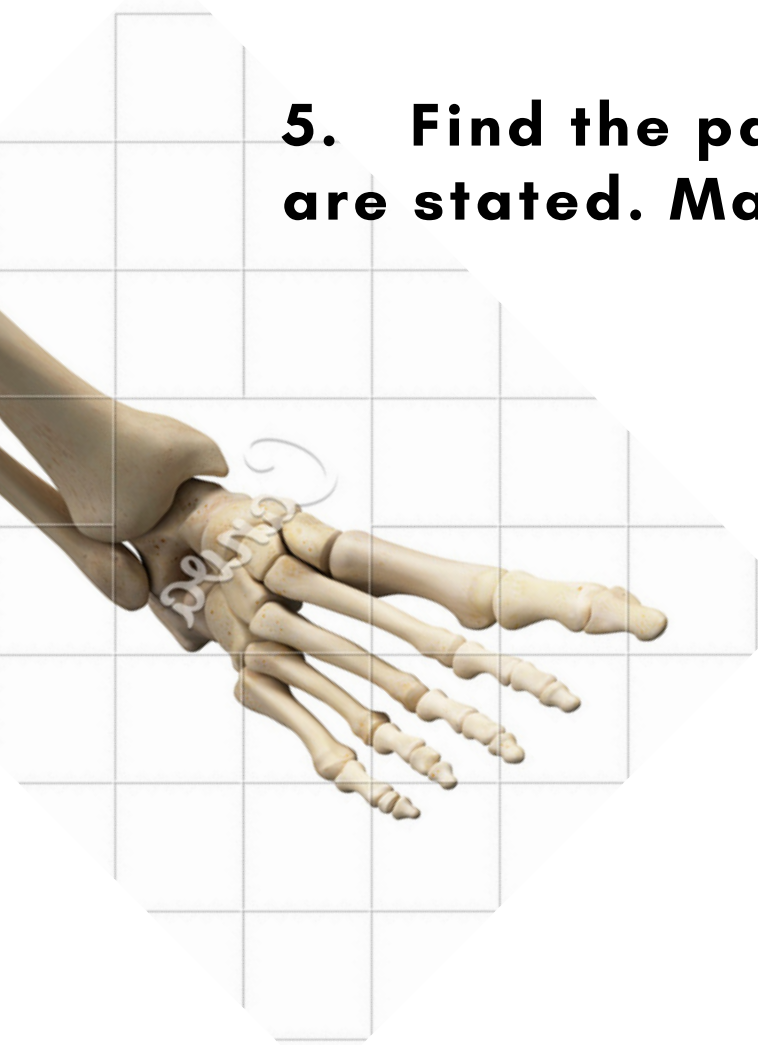
Introduction to the Skeletal System

4. Read the phrases below carefully and identify the **NUCLEUS** or **MAIN WORD** in each phrase. Write your answer in the blank.

- 1) A sturdy internal frame...
- 2) The human skeletal system...
- 3) About 20% of the body weight...
- 4) The large bones of the lower limbs...
- 5) The soft body parts...
- 6) Simple mechanical lever systems...
- 7) The intercellular matrix of bone...



5. Find the paragraphs where the following **RHETORICAL DEVICES** are stated. Match them together.



- PARAGRAPH #8
- PARAGRAPH #1
- PARAGRAPHS #3 & #4

- ☐ 1) Description
- ☐ 2) Definition
- ☐ 3) Cause/Effect

6. Identify if the following statements are in **ACTIVE VOICE** or **PASSIVE VOICE**. Write **ACTIVE** or **PASSIVE** in the blank.

- 1) They rely on a sturdy internal frame that is centered on a prominent spine.
- 2) Bones provide a rigid framework, known as the skeleton.
- 3) Calcium is released from the bones.
- 4) When blood calcium levels are increased, the excess calcium is stored in the bone matrix.

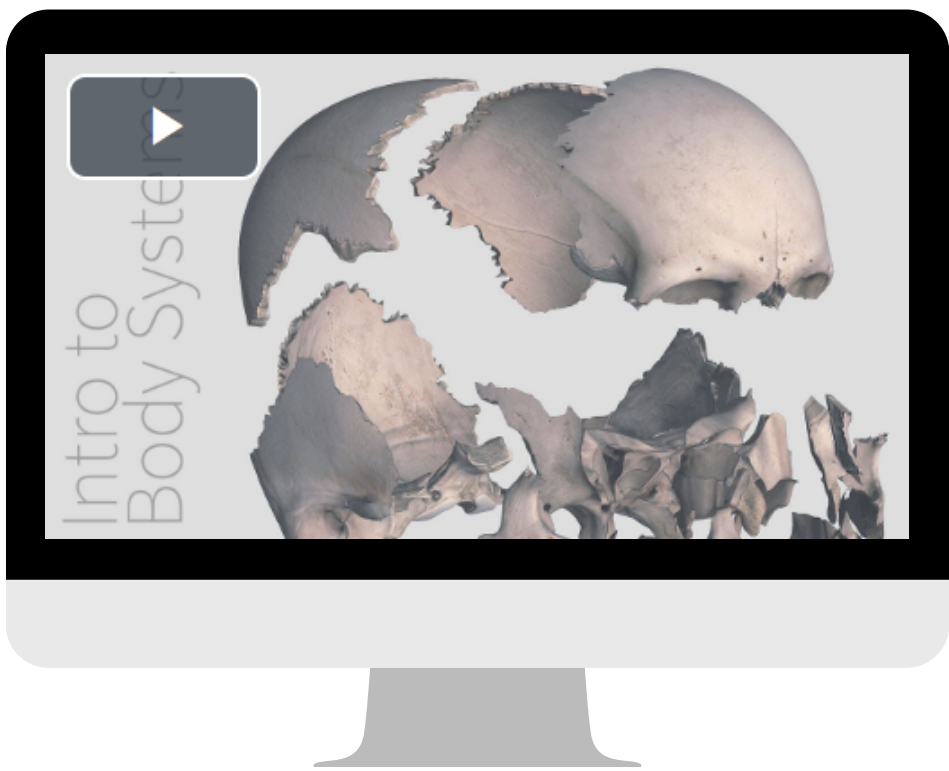
Introduction to the Skeletal System

Closure



3. Listening Comprehension

Watch the video *Introduction to the Skeletal System - Animated Tutorial | Complete Anatomy* and then answer the questions.



Scan this QR code to watch the video!



[3D4Medical]. (2015, November 18). Introduction to the Skeletal System - Animated Tutorial | Complete Anatomy [Video]. YouTube. Retrieved from <https://www.youtube.com/watch?v=ndDkPLNVNN8>

1. Classify the following bony structures whether they belong to the **Axial** or the **Appendicular skeleton**.

1) Skull



2) Vertebral Column



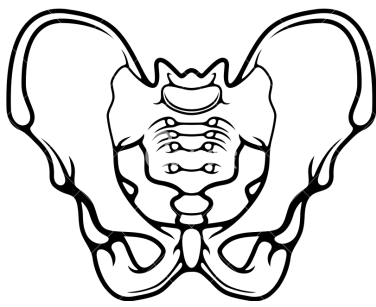
3) Ribcage



4) Upper Limbs



5) Pelvic Girdle



6) Lower Limbs



.....

.....

.....

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2. According to the video, how can the bones be categorized? Give **three** examples of each category.

#1

.....

.....

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.....

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#2

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.....

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#3

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Introduction to the Skeletal System

Watch the video ***The Skeleton | Physiology | Biology | FuseSchool*** and then answer the questions.

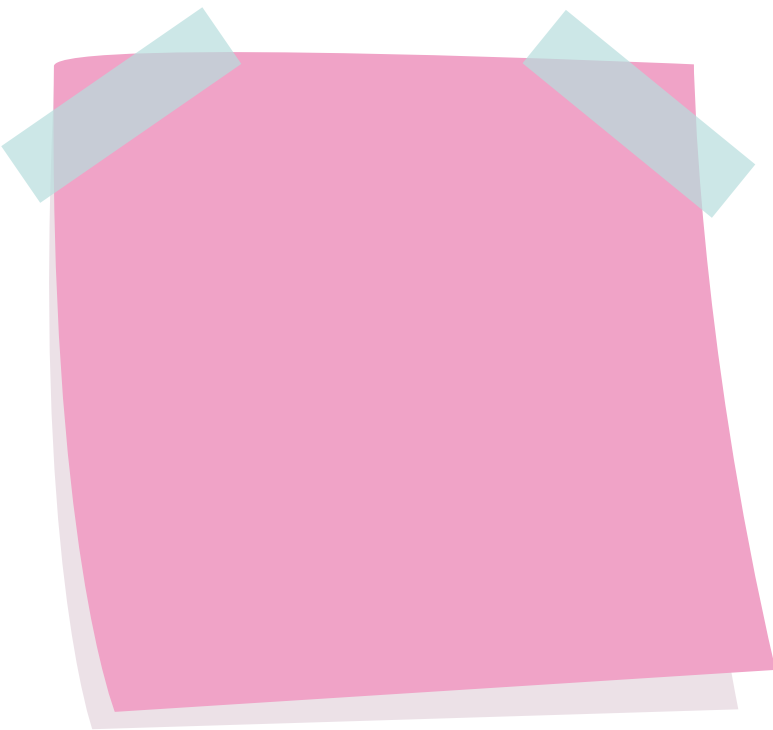
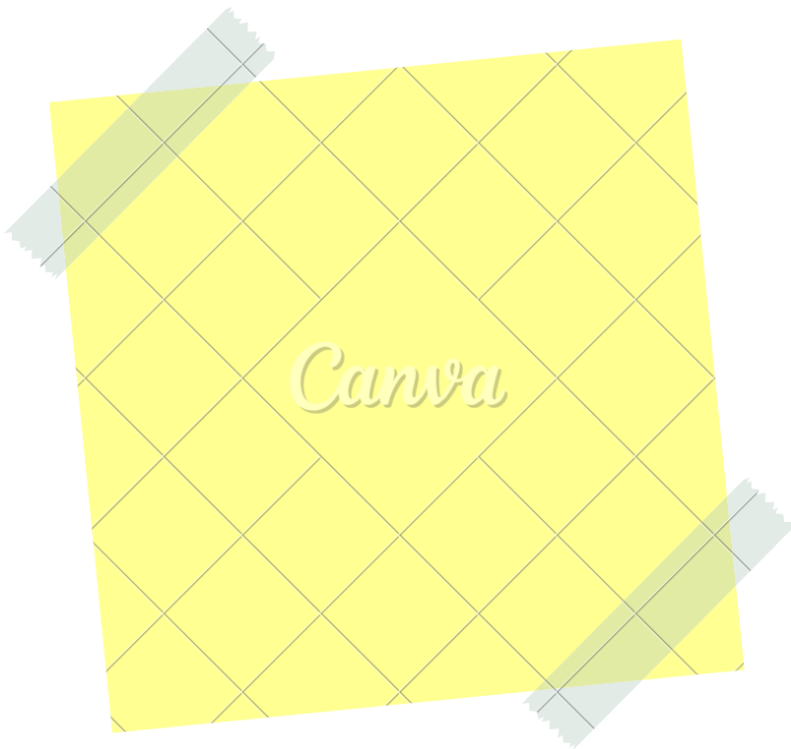
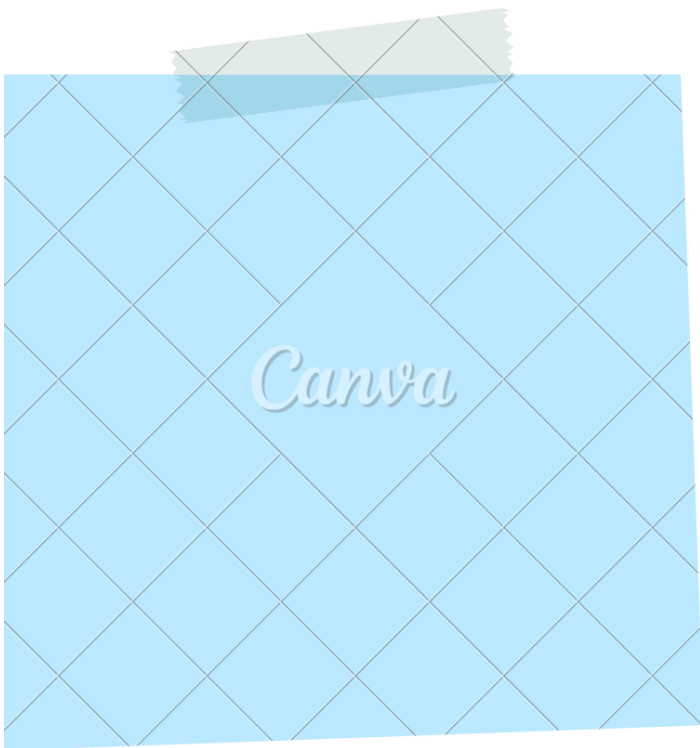


Scan this QR code to watch the video!



[FuseSchool - Global Education], (2020, March 3).
The Skeleton | Physiology | Biology | FuseSchool.
[Video]. YouTube. Retrieved from
<https://www.youtube.com/watch?v=tYqL1ajCu0s>

3. Taking into account the information given in the video and in the reading: ***Introduction to the Skeletal System***, describe three functions of the skeletal system.



4. Read the following statements and decide if they are **TRUE** or **FALSE** based on the information given in the video.

- A) Bones are made of calcium, phosphorus, and sodium, among other substances.
- B) It is important to include a high intake of potassium and vitamin D while growing up in order to have a strong skeleton.
- C) Blood cells are made in the bone marrow.
- D) When you suffer from osteoporosis, you must see an orthopedic surgeon.

TRUE	FALSE
TRUE	FALSE
TRUE	FALSE
TRUE	FALSE

- To recognize synonyms and antonyms by relating specialized words in the text.
- To recognize word formation and derivation through definitions.
- To understand a text by using its information to complete another text.

Write down your answers. Remember there is not right nor wrong answer.



Structure of Bone Tissue

Development



2. Reading Comprehension

- A) Read and listen to the text: *Introduction to the Skeletal System*.
B) Based on the reading, do the next activity.

Structure of Bone Tissue



(1) There are two types of **bone tissue**: **compact** and **spongy**. The names imply that the two types differ in **density**, or how **tightly** the tissue is packed together. There are three types of cells that contribute to **bone homeostasis**. **Osteoblasts** are bone-forming cell, osteoclasts resorb or break down bone, and osteocytes are mature bone cells. An equilibrium between **osteoblasts** and **osteoclasts** maintains bone tissue.

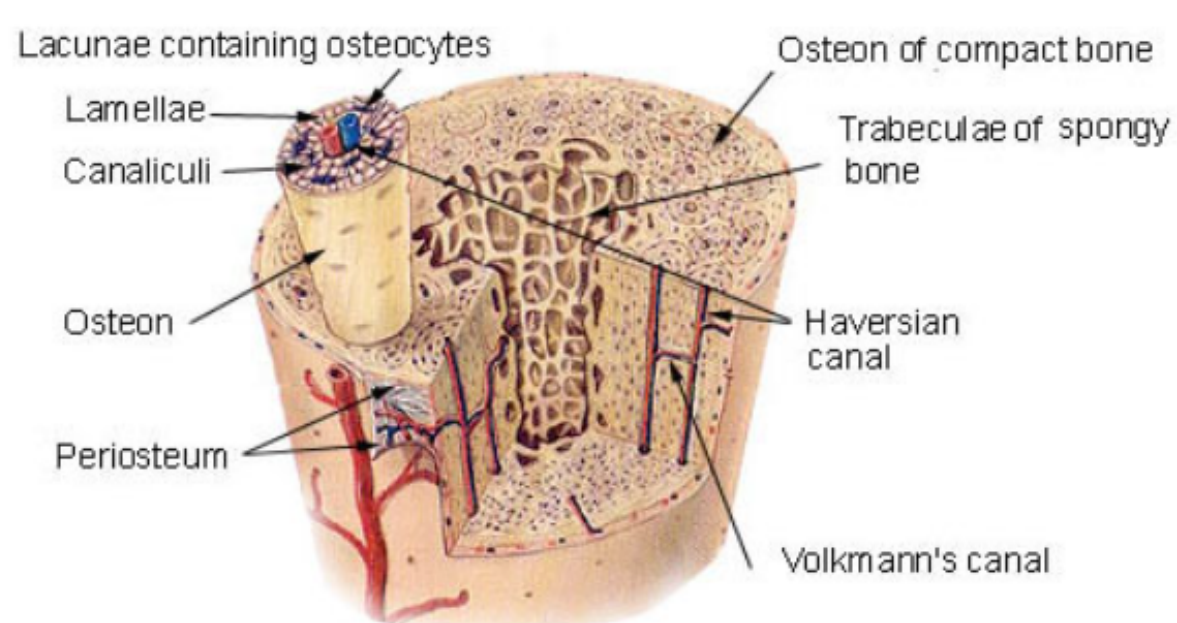
Compact Bone

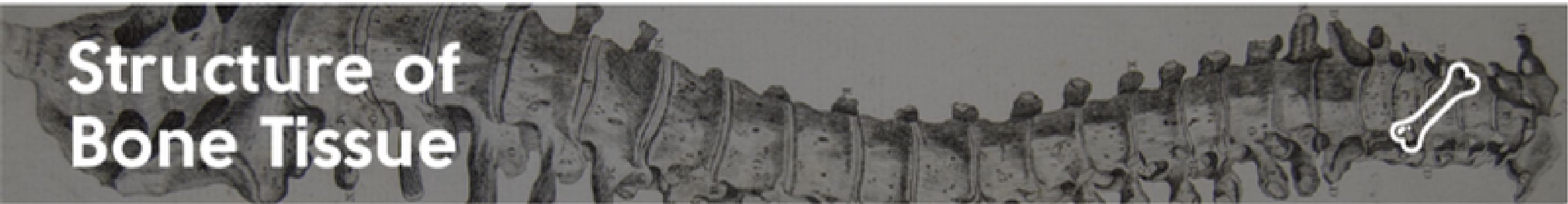
(2) Compact bone consists of closely packed osteons or **haversian systems**. The osteon consists of a central canal called the **osteonic** (haversian) **canal**, which is surrounded by concentric rings (lamellae) of matrix. Between the rings of matrix, the **bone cells** (osteocytes) are located in spaces called **lacunae**. Small channels (canaliculi) radiate from the lacunae to the osteonic (haversian) canal to provide passageways through the hard matrix. In compact bone, the haversian systems are packed tightly together to form what appears to be a **solid mass**. The osteonic canals contain **blood vessels** that are parallel to the long axis of the bone. These blood vessels interconnect, by way of perforating canals, with vessels on the surface of the bone.

Spongy (Cancellous Bone)

(3) Spongy (cancellous) bone is **lighter** and less dense than compact bone. Spongy bone consists of **plates** (trabeculae) and **bars** of bone adjacent to small, irregular **cavities** that contain red bone marrow. The canaliculi connect to the adjacent cavities, instead of a central haversian canal, to receive their blood supply. It may appear that the **trabeculae** are arranged in a haphazard manner, but they are organized to **provide maximum strength** similar to braces that are used to **support** a building. The trabeculae of spongy bone follow the lines of stress and can **realign** if the direction of stress changes.

Compact Bone & Spongy (Cancellous Bone)





Structure of Bone Tissue

ACTIVITY

Answer the questions based on the text: ***Bone Tissue***.

1. What is the main idea of the text?



2. Locate these words in the text: **types, central canal, plates, parallel, maximum**. Then, complete the following sentences using those words.

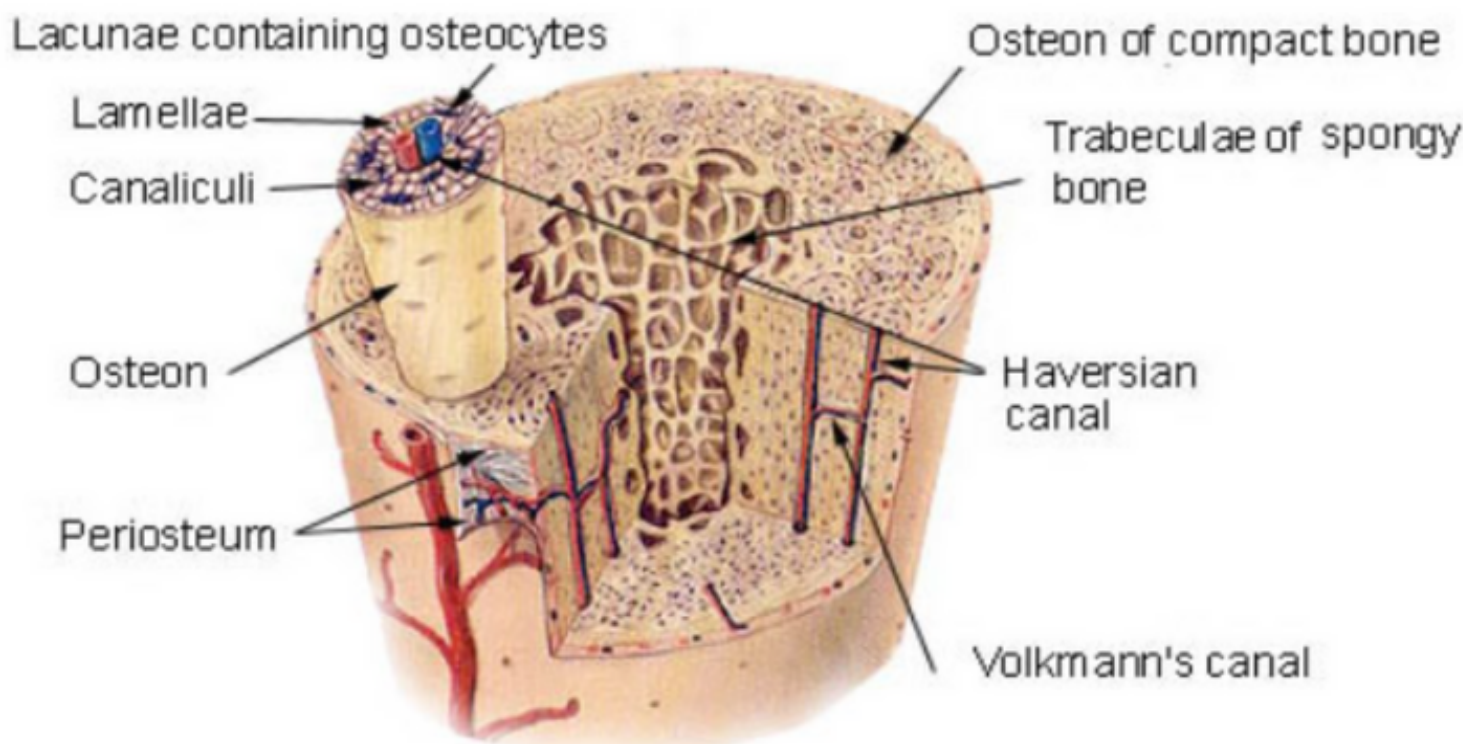
- 1) Bone tissue have different characteristics in density and tightness.
- 2) The is surrounded by lamellae.
- 3) The form the spongy bone along with bars of bone.
- 4) The long axis of the base is located in direction to the blood vessels plates.
- 5) The plates provide strength to the bone.

Maximum Types Central Canal Parallel Plates

Structure of Bone Tissue

3. Taking into account the picture bellow and the text, complete the following statements by using some of the words in the bubbles.

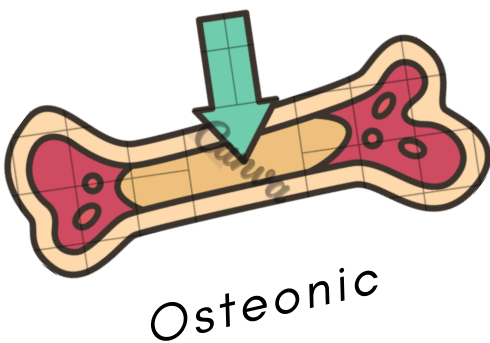
Compact Bone & Spongy (Cancellous Bone)



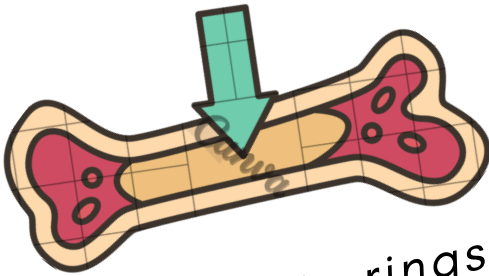
- Above
- Up
- Surrounds
- Perpendicular
- Underneath
- In the middle
- Interconnects

- 1) The osteocytes are located the osteon.
- 2) Volkmann’s canal the Haversian canals.
- 3) The trabeculae is located of the bone.

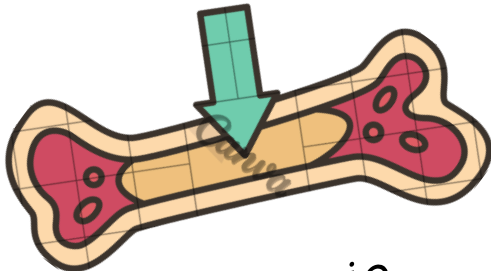
4. Taking into account the specialized vocabulary from the text, match the following words with their synonyms or definitions.



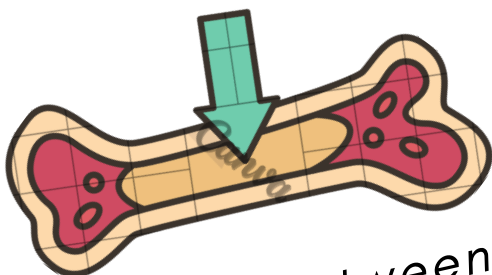
Osteonic



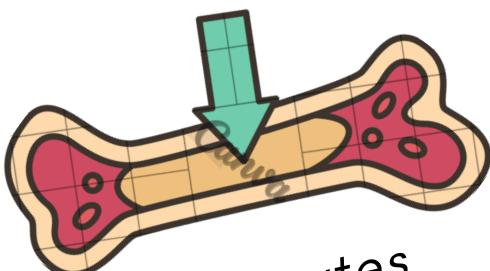
Concentric rings



Osteonic

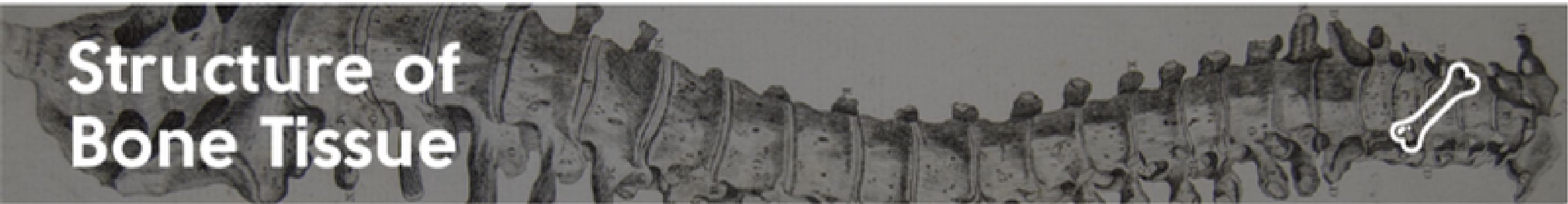


Spaces between bones



Osteocytes

- ☐ 1) Lamellae
- ☐ 2) Canaliculi
- ☐ 3) Harvesian
- ☐ 4) Bone cells
- ☐ 5) Lacunae



Structure of Bone Tissue

5. Choose the appropriate suffix from the *Suffix Box* to match the words with their correct definition.

-tion

-ly

-blast

-ous

-ness

-ance

-ae

-cyte

-nic

-on

-clast

-ing



- 1) Osteo-

.....

 : Central canal of the osteon.
- 2) Osteo-

.....

 : Mature bone cells.
- 3) Osteo-

.....

 : Form the compact bone.
- 4) Osteo-

.....

 : Bone forming cells.
- 5) Osteo-

.....

 : Resorb bone.

6. From the box below, find the equivalent **antonym** and **synonym** to each word in the table.



Softer

Disorganized

Ordered

Stronger

Cohesively

Loosely

Deliberated

Clumsy

Heavier

Brilliant

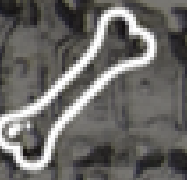
Organized

Separately



WORD	SYNONYM	ANTONYM
Closely	1	4
Less heavy	2	5
Random	3	6

Structure of Bone Tissue

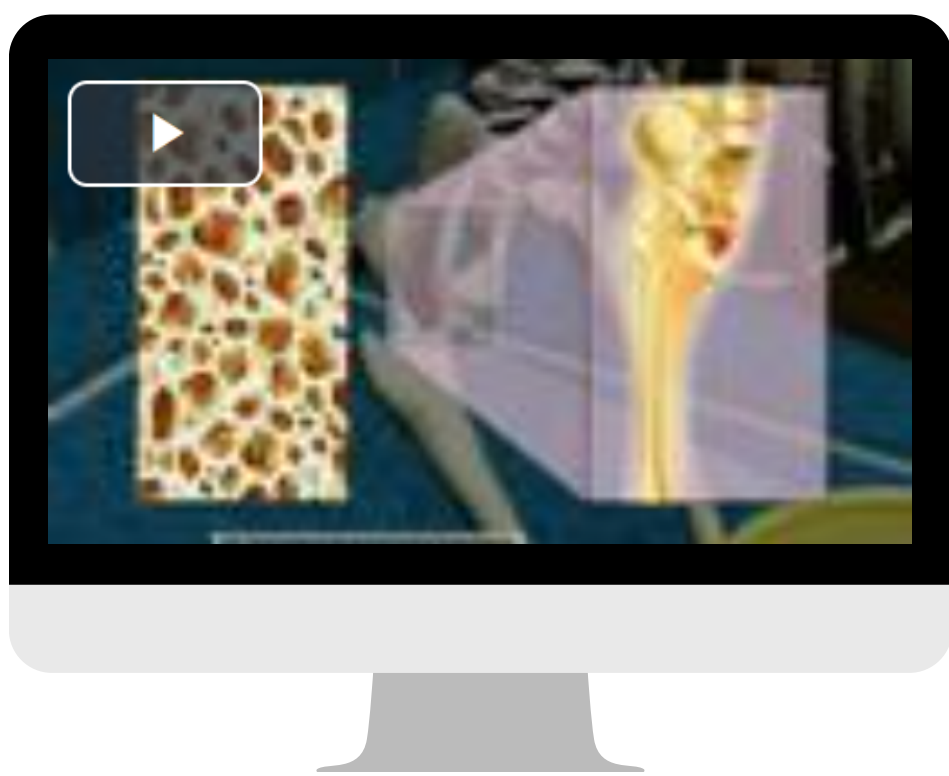


Closure



3. Listening Comprehension

Watch the video ***Osteoporosis*** and then answer the questions.



Scan this QR code to watch the video!



Rajadurai, R. (2008). Osteoporosis-3D Medical Animation [Video]. Retrieved from: <https://www.youtube.com/watch?v=rHyeZhcoZcQ>

1. Choose the best option to answer the questions.

1) The bones are essential elements in the organism because they...

- ☐ maintain the body.
- ☐ support the body.
- ☐ hold the minerals of the body.

2) Bones are composed by...

- ☐ calcium, manganese and phosphates.
- ☐ magnesium, phosphorus and calcidiol.
- ☐ phosphorus, calcium and magnesium.



Structure of Bone Tissue

3) Porous bone is characterized by...

- ☐ solid bone mass and structural disintegration of bone tissue.
- ☐ high bone mass and structural disfiguration of bone tissue.
- ☐ low bone mass and structural deterioration.

4) Which are some consequences of osteoporosis?

- ☐ Fragility and fracture of bones.
- ☐ Rupture of bone tissue and hematomas.
- ☐ Overactivity of bone tissue.



2. Now, complete the following paragraph using the information you obtained from the text and the video.

Osteoporosis could be defined as the thinning of the 1. _____ with reduction in 2. _____ to depletion of 3. _____ and bone protein. Osteoporosis predisposes a person to 4. _____, which are often slow to heal and heal poorly. It is more common in 5. _____, particularly post-menopausal women; in patients on steroids; and in those who take steroidal drugs. Unchecked osteoporosis can lead to changes in 6. _____, physical abnormality and decreased mobility.

Mass

Fractures

Older adults

Posture

Bone

Calcium



The Digestive System



ACTIVITY 7: THE DIGESTIVE SYSTEM

Objectives

- To understand a text through cognates.
- To review antonyms and derived words in a reading.
- To identify specific information by listening to a video.



Preparation



1. Activating Prior Knowledge

THE DIGESTIVE SYSTEM

1) Read the following keywords taken from the text and then write down **what the main topic** of the text is.

- | | | |
|---------------------|--------------------|---------------|
| • Digestive tract. | • Esophagus. | • Liver. |
| • Alimentary canal. | • Stomach. | • Gallblader. |
| • Mouth. | • Large intestine. | • Pancreas. |
| • Pharynx. | • Salivary glands. | • Digestion. |
| • Elimination. | | |
| • Enzymes. | | |
| • Proteins. | | |

The Digestive System



Development



2. Reading Comprehension

- A) Read and listen to the text: *Digestive System*.
B) Based on the reading, do the next activity.

Digestive System



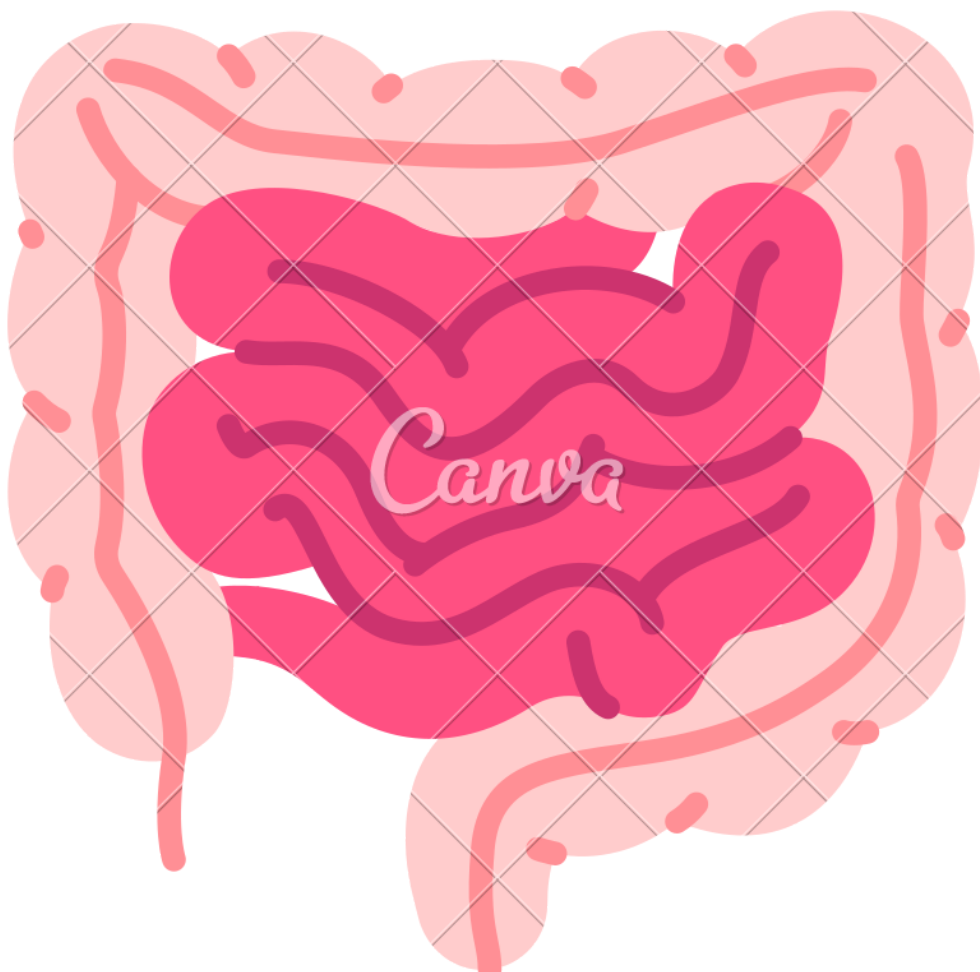
(1) The digestive system includes the digestive tract and its accessory organs, which process food into molecules that can be absorbed and utilized by the cells of the body. Food is broken down, bit by bit, until the molecules are small enough to be absorbed and the waste products are eliminated. The digestive tract, also called the alimentary canal or gastrointestinal (GI) tract, consists of a long continuous tube that extends from the mouth to the anus. It includes the mouth, pharynx, esophagus, stomach, small intestine, and large intestine. The tongue and teeth are accessory structures located in the mouth. The salivary glands, liver, gallbladder, and pancreas are major accessory organs that have a role in digestion. These organs secrete fluids into the digestive tract.

(2) Food undergoes three types of processes in the body: (Digestion, Absorption, and Elimination)

(3) Digestion and absorption occur in the digestive tract. After the nutrients are absorbed, they are available to all cells in the body and are utilized by the body cells in metabolism.

(4) The digestive system prepares nutrients for utilization by body cells through six activities, or functions.

Ingestion



(5) The first activity of the digestive system is to take in food through the mouth. This process, called ingestion, has to take place before anything else can happen.
Mechanical Digestion

(6) The large pieces of food that are ingested have to be broken into smaller particles that can be acted upon by various enzymes. This is mechanical digestion, which begins in the mouth with chewing or mastication and continues with churning and mixing actions in the stomach.

The Digestive System



Chemical Digestion

(7) The complex molecules of carbohydrates, proteins, and fats are transformed by chemical digestion into smaller molecules that can be absorbed and utilized by the cells. Chemical digestion, through a process called hydrolysis, uses water and digestive enzymes to break down the complex molecules. Digestive enzymes speed up the hydrolysis process, which is otherwise very slow.

Movements

(8) After ingestion and mastication, the food particles move from the mouth into the pharynx, then into the esophagus. This movement is deglutition, or swallowing. Mixing movements occur in the stomach as a result of smooth muscle contraction. These repetitive contractions usually occur in small segments of the digestive tract and mix the food particles with enzymes and other fluids. The movements that propel the food particles through the digestive tract are called peristalsis. These are rhythmic waves of contractions that move the food particles through the various regions in which mechanical and chemical digestion takes place.

Absorption

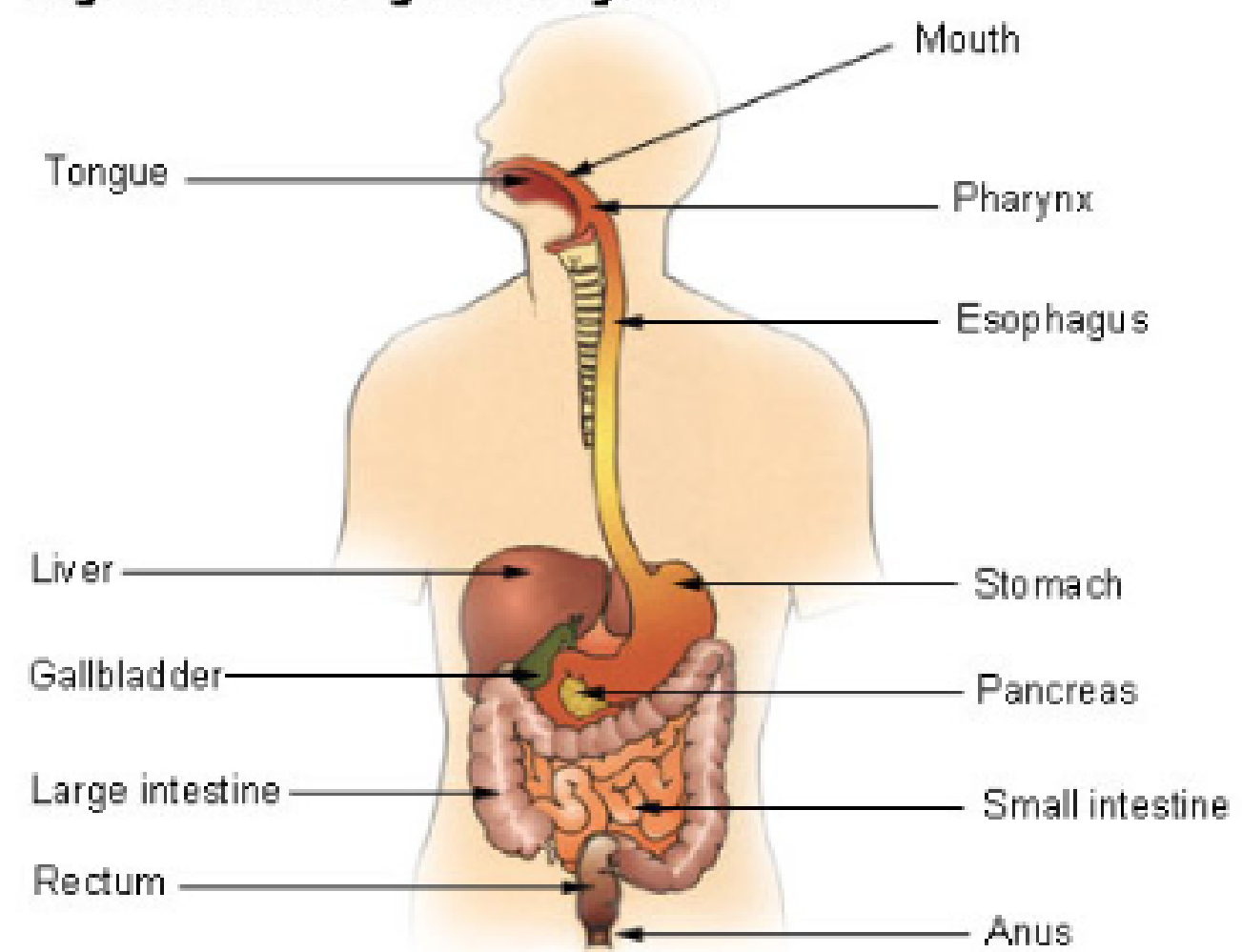
(9) The simple molecules that result from chemical digestion pass through cell membranes of the lining in the small intestine into the blood or lymph capillaries. This process is called absorption.

Elimination

(10) The food molecules that cannot be digested or absorbed need to be eliminated from the body.

The removal of indigestible wastes through the anus, in the form of feces, is defecation or elimination.

Organs of the Digestive System

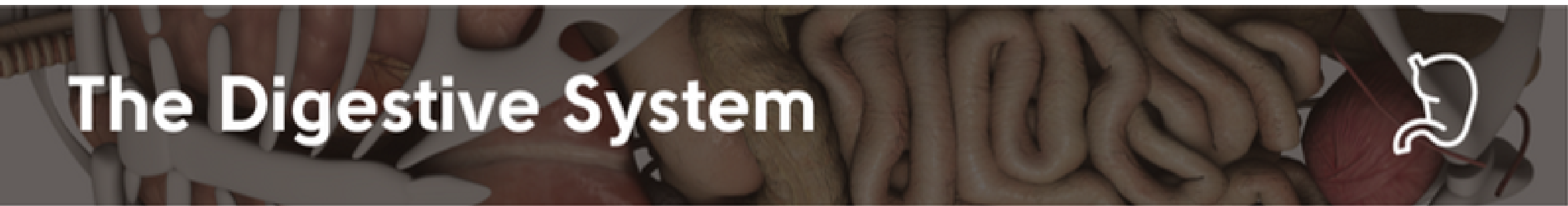


Regions of the Digestive System

(11) At its simplest, the digestive system is a tube running from mouth to anus. Its chief goal is to break down huge macromolecules (proteins, fats and starch), which cannot be absorbed intact, into smaller molecules (amino acids, fatty acids and glucose) that can be absorbed across the wall of the tube, and into the circulatory system for dissemination throughout the body.

(12) Regions of the digestive system can be divided into two main parts: the alimentary tract and accessory organs. The alimentary tract of the digestive system is composed of the mouth, pharynx, esophagus, stomach, small and large intestines, rectum and anus. Associated with the alimentary tract are the following accessory organs: salivary glands, liver, gallbladder, and pancreas.

National Cancer Institute (2009). Digestive system. U.S. National Institutes of Health. SEER Training Modules. Retrieved October 2009



The Digestive System



ACTIVITY

Answer the questions based on the text: ***Digestive System.***

1. Answer the following questions by using your own words.

1) What is the source of the text? What audience is this text intended for?

.....

.....

.....

2) What is the difference between mechanical and chemical digestion?

.....

.....

.....

3) Why are the digestive enzymes important to the hydrolysis process?

.....

.....

.....

4) What is peristalsis?

.....

.....

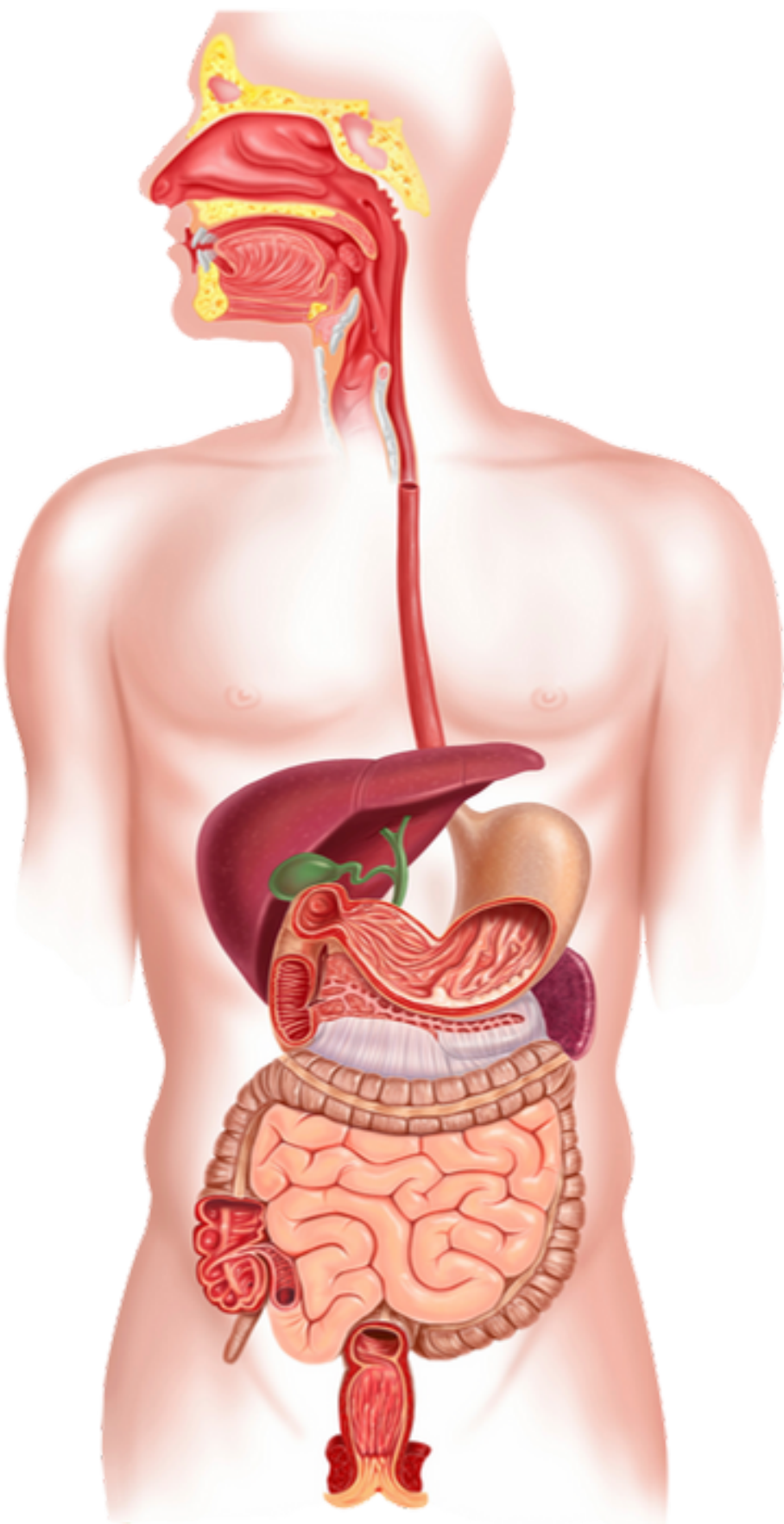
.....

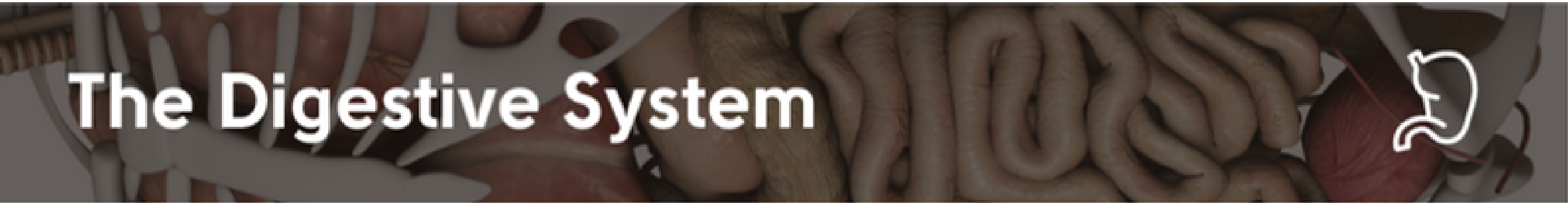
5) Which are the secretory parts of the digestive system?

.....

.....

.....





2. Taking into account the information from the text, match the left option to the right sentence.

- 1) The tongue then mixes the food and rolls it into a soft ball, called the bolus, which...

☐

A) manufactures bile for the gall bladder.
- 2) The intestinal wall releases enzymes which...

☐

B) regulate the blood sugar level.
- 3) Blood and lymph vessels, which...

☐

C) helps to break down fats into minute droplets.
- 4) It also manufactures hormones which...

☐

D) digest proteins, fats and carbohydrates.
- 5) The digested food is received by the liver, which...

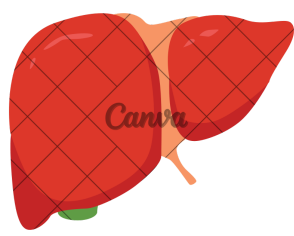
☐

E) is pushed toward the esophagus.
- 6) The gallbladder stores and discharges the bile, which...

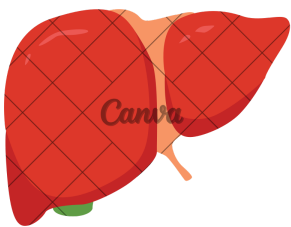
☐

F) supply the small intestine, take away the final products of digestion.

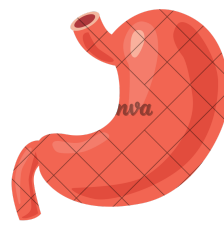
3. Find in the reading the antonym for the following words.



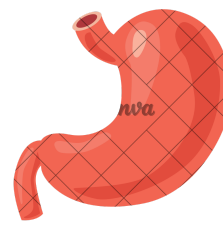
Complex



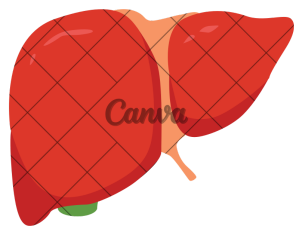
Small



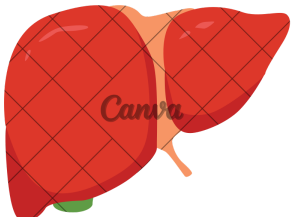
Indigestible



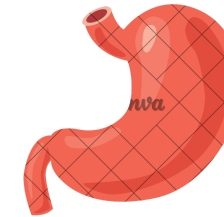
Simple



Digestible



Accessory



Chief



Large



4. Choose the missing word to keep the logical order. Take into account words and concepts from the reading.

Small

2

Huge

Ingestion

3

Elimination

1

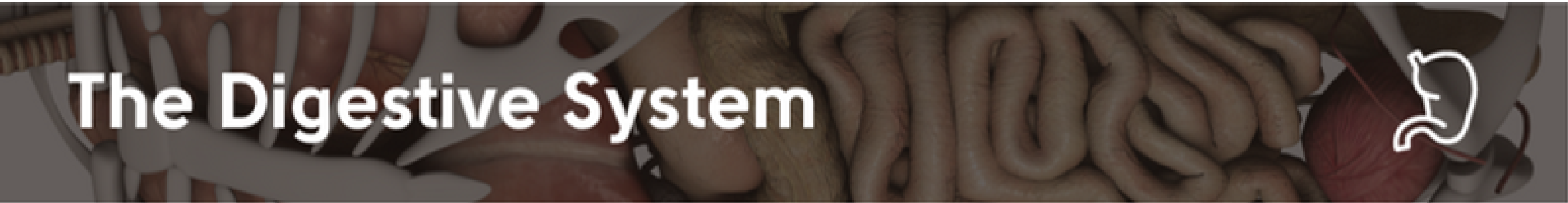
Deglutition

Peristalsis

Digestion

Mastication

Large

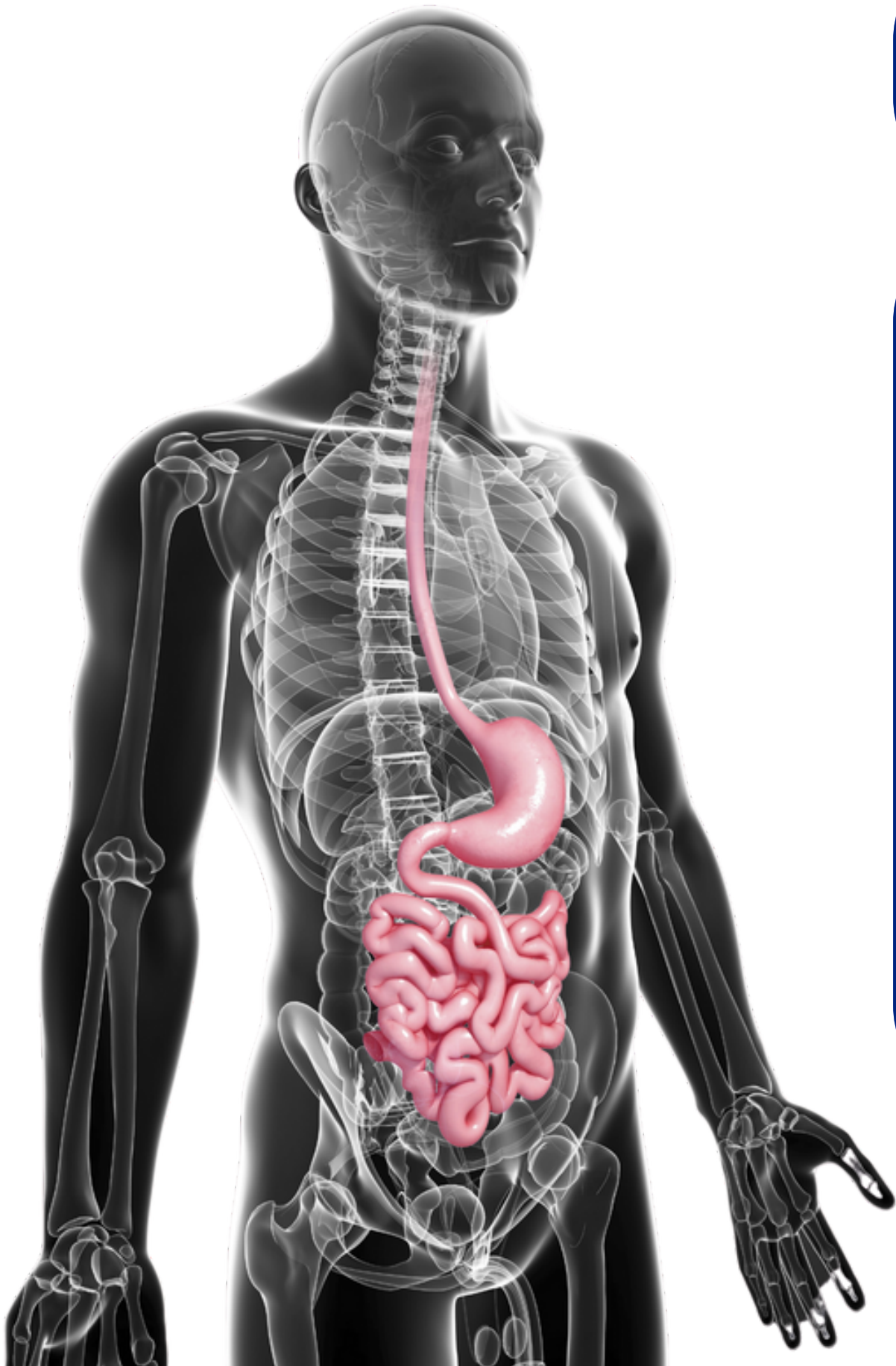


The Digestive System

5. Find 10 true cognates in the text and write them down in the spaces below.

6. Analyze the following selected words from the text and find out others related to the same family. Indicate the grammatical category of each word.

This activity should be discussed with your teacher.



WORD	WORD FAMILY & GRAMMATICAL CATEGORY
<i>Chemical</i>	<i>Chemistry (Noun)</i>
Elimination	1.
Indigestible	2.
Continuous	3.
Salivary	4.
Circulatory	5.

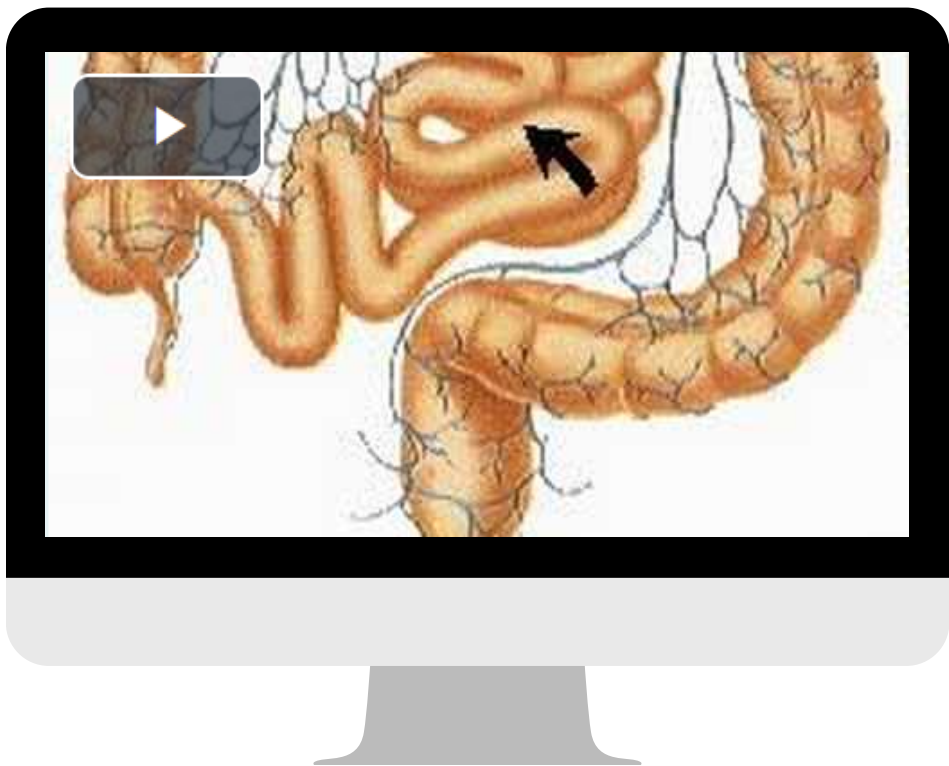
The Digestive System

Closure



3. Listening Comprehension

Watch the video *How the Body Works : The Digestive System* and then answer the questions.



Scan this QR code to watch the video!



Dan Ezzo -izzo. (2007). *How the Body Works: The Digestive System* [Video]. Retrieved from: <https://www.youtube.com/watch?v=sCn5uvvc3WE>

1) Why does the stomach release mucus when the bolus passes through it?

.....

.....

.....

2) What is the bolus subjected to?

.....

.....

.....

3) What functions do the following parts of the digestive system perform during the process?

- The tongue
- Pylorus
- The lymphatics

.....

.....

.....

The Endocrine System



ACTIVITY 8: THE ENDOCRINE SYSTEM

Objectives

- To reach a detailed understanding of the text by verifying the information contained in it.
- To make predictions and guesses about a text by analyzing keywords.
- To recognize and understand the use of referents in a text.
- To identify the relationship between sentences by recognizing connectors.

Preparation

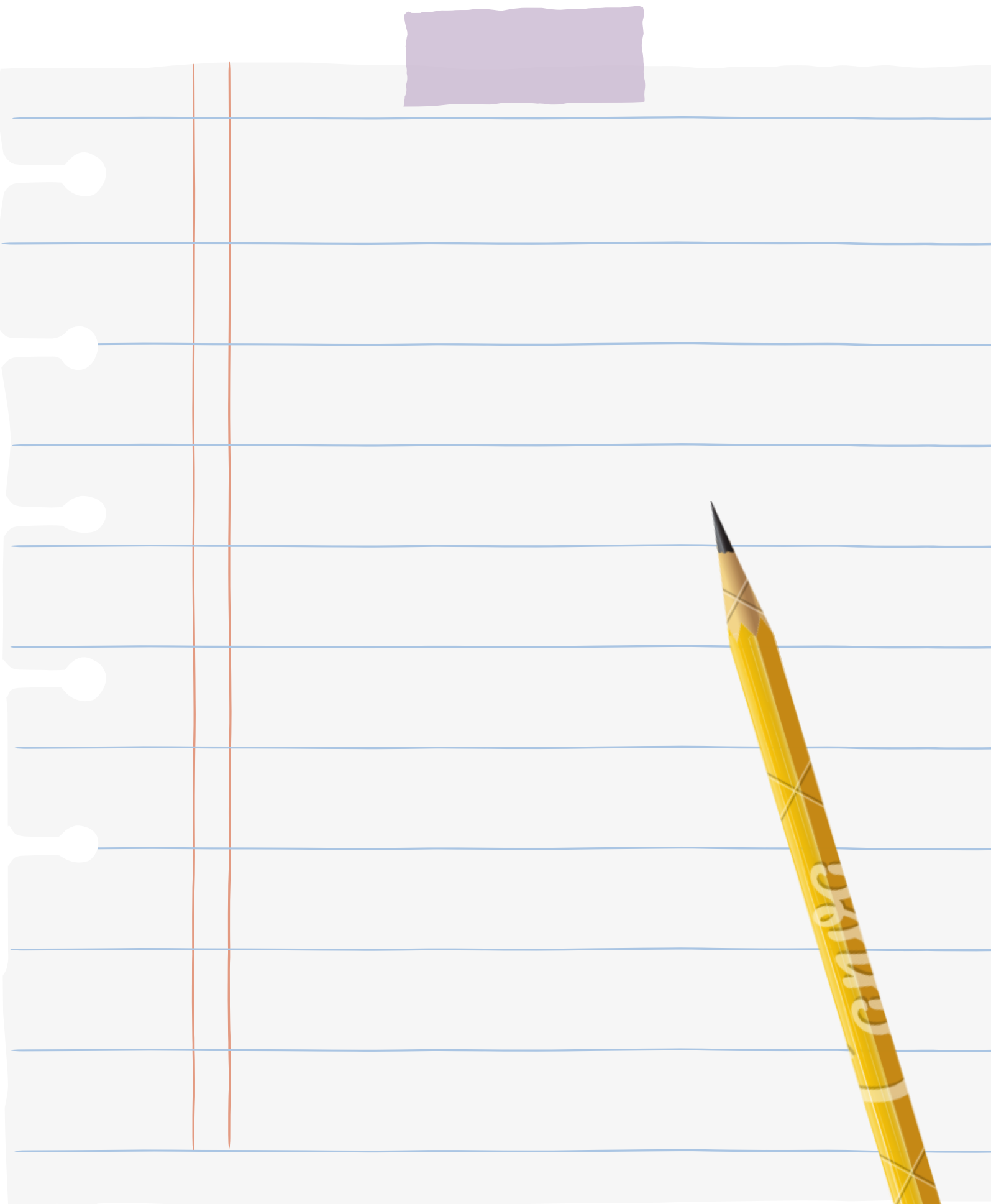
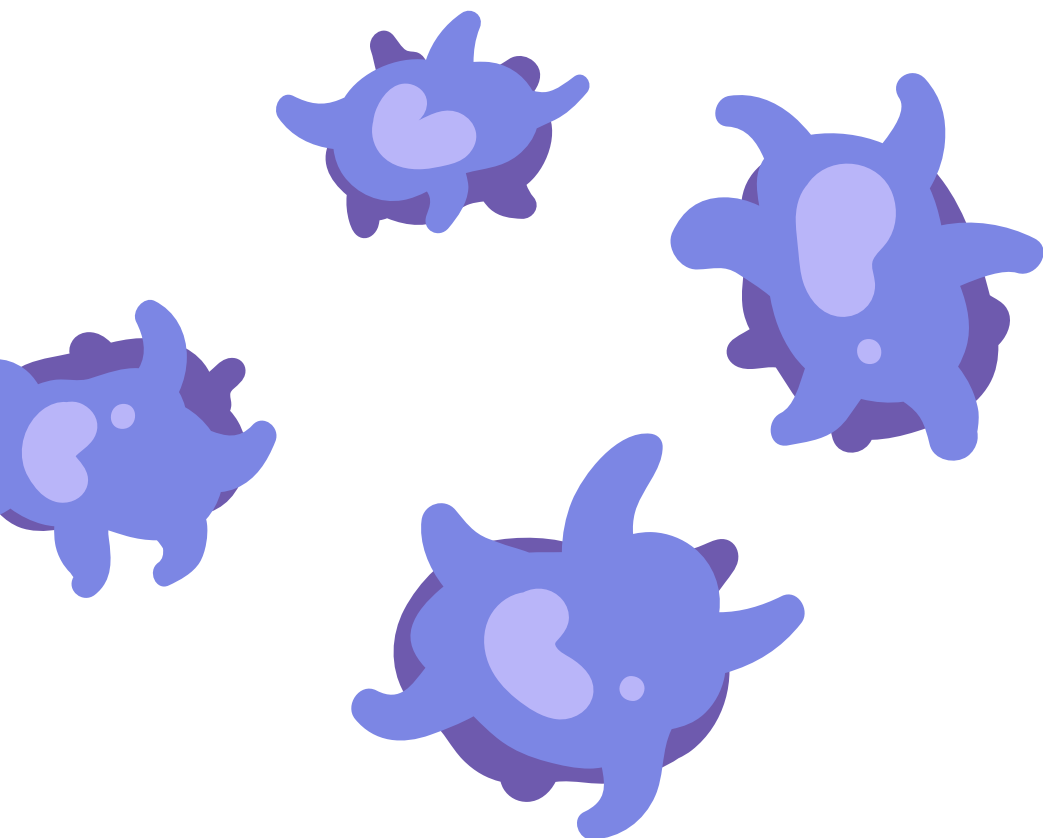


1. Activating Prior Knowledge

THE ENDOCRINE SYSTEM

1) Look at the following words selected from the first paragraph of the text. **What kind of information do you think will appear in the reading?**

Endocrine
Secretion
Chemical
Messengers
Hormones
Growth
Development
Metabolic
Activities



The Endocrine System



Development



2. Reading Comprehension

- A) Read and listen to the text: *The Endocrine System*.
B) Based on the reading, do the next activity.

The Endocrine System



(1) The endocrine system, along with the nervous system, functions in the regulation of body activities. The nervous system acts through electrical impulses and neurotransmitters to cause muscle contraction and glandular secretion. The effect is of short duration, measured in seconds, and localized. The endocrine system acts through chemical messengers called hormones that influence growth, development, and metabolic activities. The action of the endocrine system is measured in minutes, hours, or weeks and is more generalized than the action of the nervous system.

(2) There are two major categories of glands in the body - exocrine and endocrine.

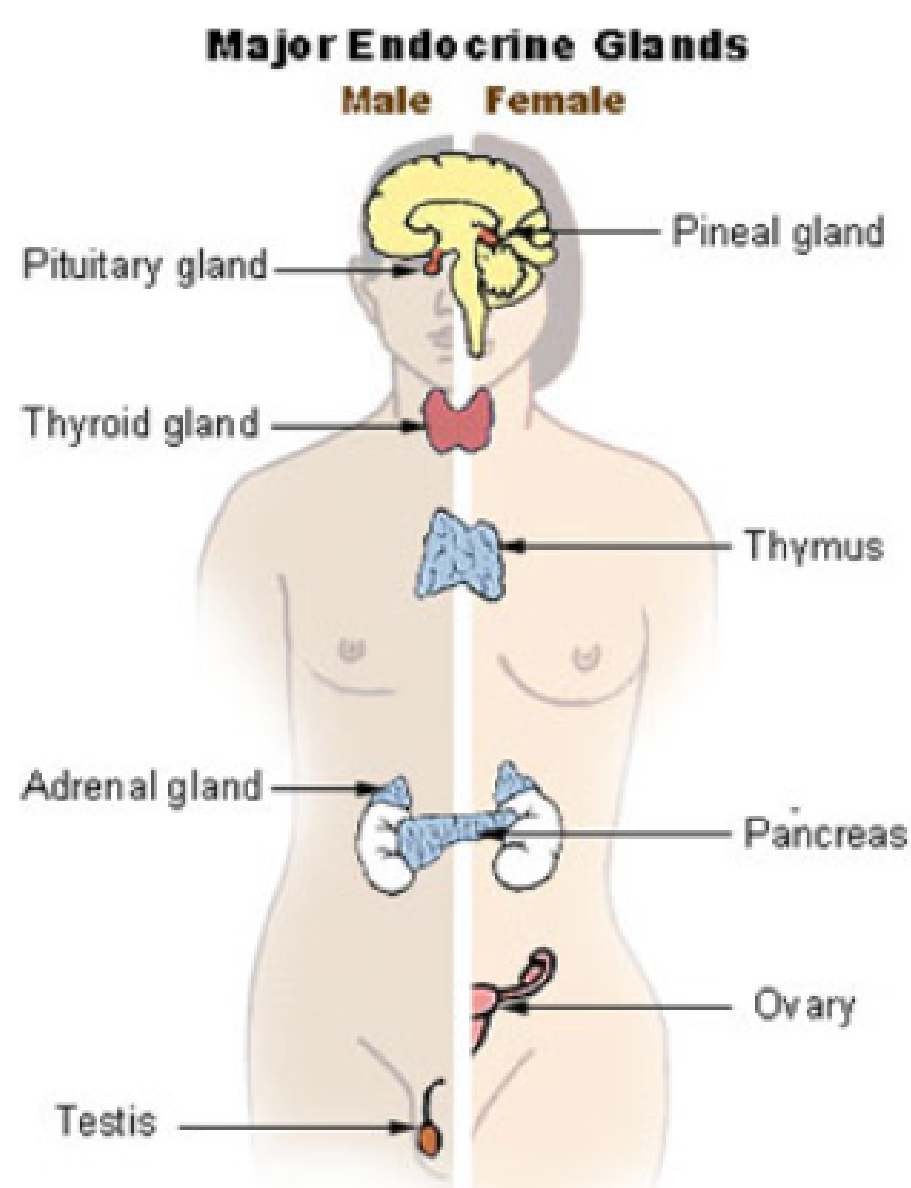
Exocrine Glands: Exocrine glands have ducts that carry their secretory product to a surface. These glands include the sweat, sebaceous, and mammary glands and, the glands that secrete digestive enzymes. **Endocrine Glands:** The endocrine glands do not have ducts to carry their product to a surface. They are called ductless glands. The word endocrine is derived from the Greek terms "endo," meaning within, and "krine," meaning to separate or secrete. The secretory products of endocrine glands are called hormones and are secreted directly into the blood and then carried throughout the body where they influence only those cells that have receptor sites for that hormone.

Endocrine Glands & Their Hormones

(3) The endocrine system is made up of the endocrine glands that secrete hormones.

Although there are eight major endocrine glands scattered throughout the body, they are still considered to be one system **because** they have similar functions, similar mechanisms of influence, and many important interrelationships.

(4) Some glands also have non-endocrine regions that have functions other than hormone secretion. **For example**, the pancreas has a major exocrine portion that secretes digestive enzymes and an endocrine portion that secretes hormones. The ovaries and testes secrete hormones and also produce the ova and sperm. Some organs, **such as** the stomach, intestines, and heart, produce hormones, but their primary function is not hormone secretion.



National Cancer Institute (2009). Digestive system. U.S. National Institutes of Health. SEER Training Modules. Retrieved October 2009

The Endocrine System



ACTIVITY

Answer the questions based on the text: *The Endocrine System*.

1. Look for the meaning of the these prefixes: **EXO-** and **ENDO-**. Then, taking into account these definitions and the information given in the text, write in your own words what the concepts Exocrine and Endocrine mean.

.....

.....

.....

2. Why do the pancreas, ovaries and testes are different from the other endocrine glands?

.....

.....

.....

3. Analyze the following sentences. First, identify the **connector or linking word** in the sentence, write it in the blank; then, select the function it has in the sentence. An example has been done for you.

1) Some organs, such as the stomach, intestines, and heart, produce hormones, but their primary function is not hormone secretion. (Paragraph 4)

Linking word:

such as

Function:

Example

2) Although there are eight major endocrine glands scattered throughout the body, they are still considered to be one system... (Paragraph 3)

Linking word:

.....

Function:

Contrast

Comparison

Reason

3) ...they are still considered to be one system because they have similar functions, similar mechanisms of influence, and many important interrelationships. (Paragraph 3)

Linking word:

.....

Function:

Contrast

Comparison

Reason

4) For example, the pancreas has a major exocrine portion that secretes digestive enzymes and an endocrine portion that secretes hormones. (Paragraph 4)

Linking word:

.....

Function:

Addition

Example

Result

The Endocrine System



4. Look for the following referents in the text, then select the concepts they are referring to:

1) These glands (**Paragraph 2**)

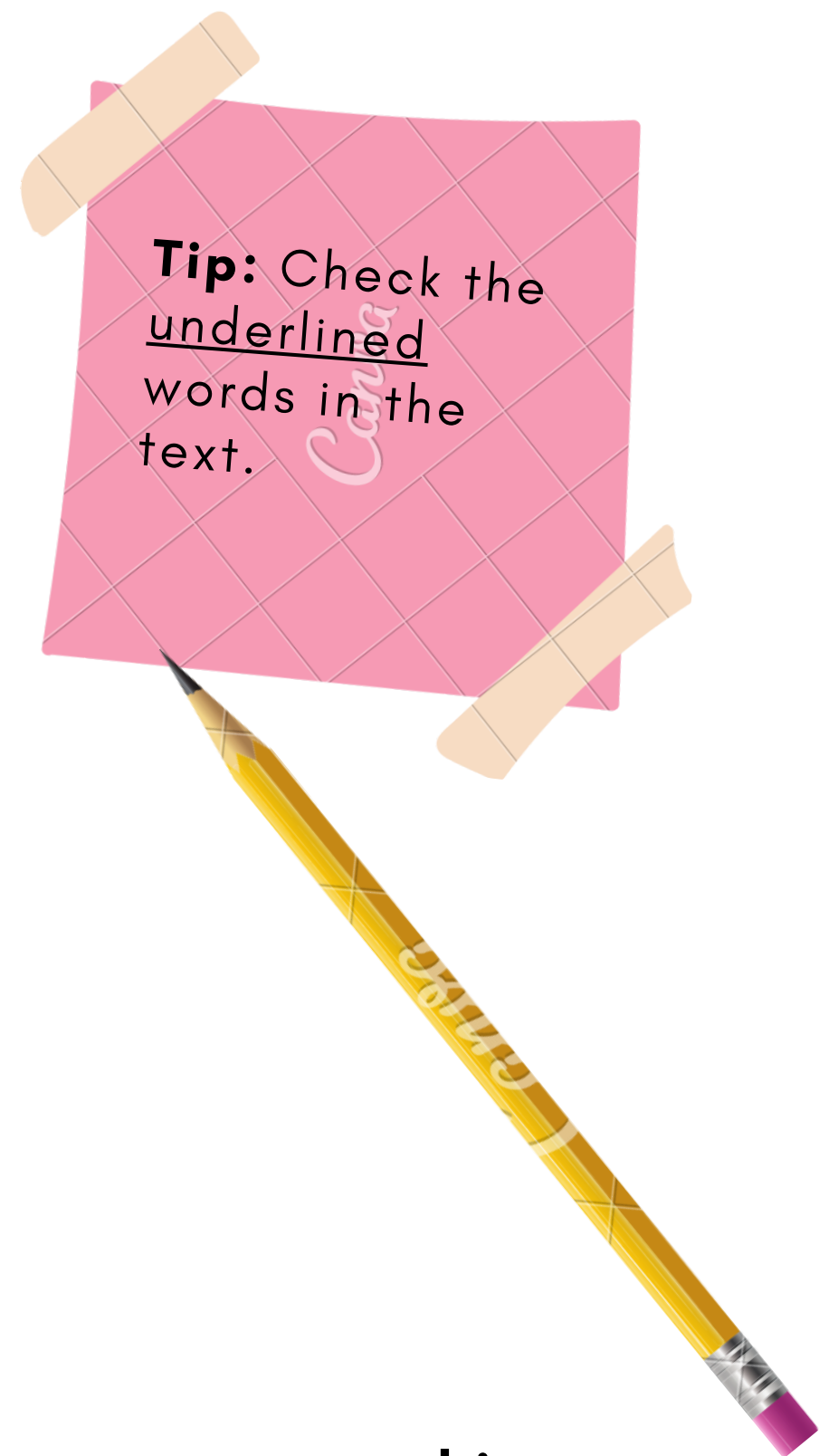
- ☐ Exocrine Glands.
- ☐ Endocrine Glands.
- ☐ The secretory products.

2) Those cells (**Paragraph 2**)

- ☐ Hormones.
- ☐ The ones that have receptor sites for hormones.
- ☐ Endocrine Glands.

3) They (**Paragraph 3**)

- ☐ The eight major endocrine glands.
- ☐ The endocrine system.
- ☐ Hormones.



5. Read the text carefully to complete the sentences presented in the following exercise:

1) The endocrine is in charge of the of of the body activities.

2) The are directly deposited into the bloodstream.

3) The has a non-endocrine region (exocrine region) that secretes digestive .

Hormones

Pancreas

Enzymes

Regulation

System

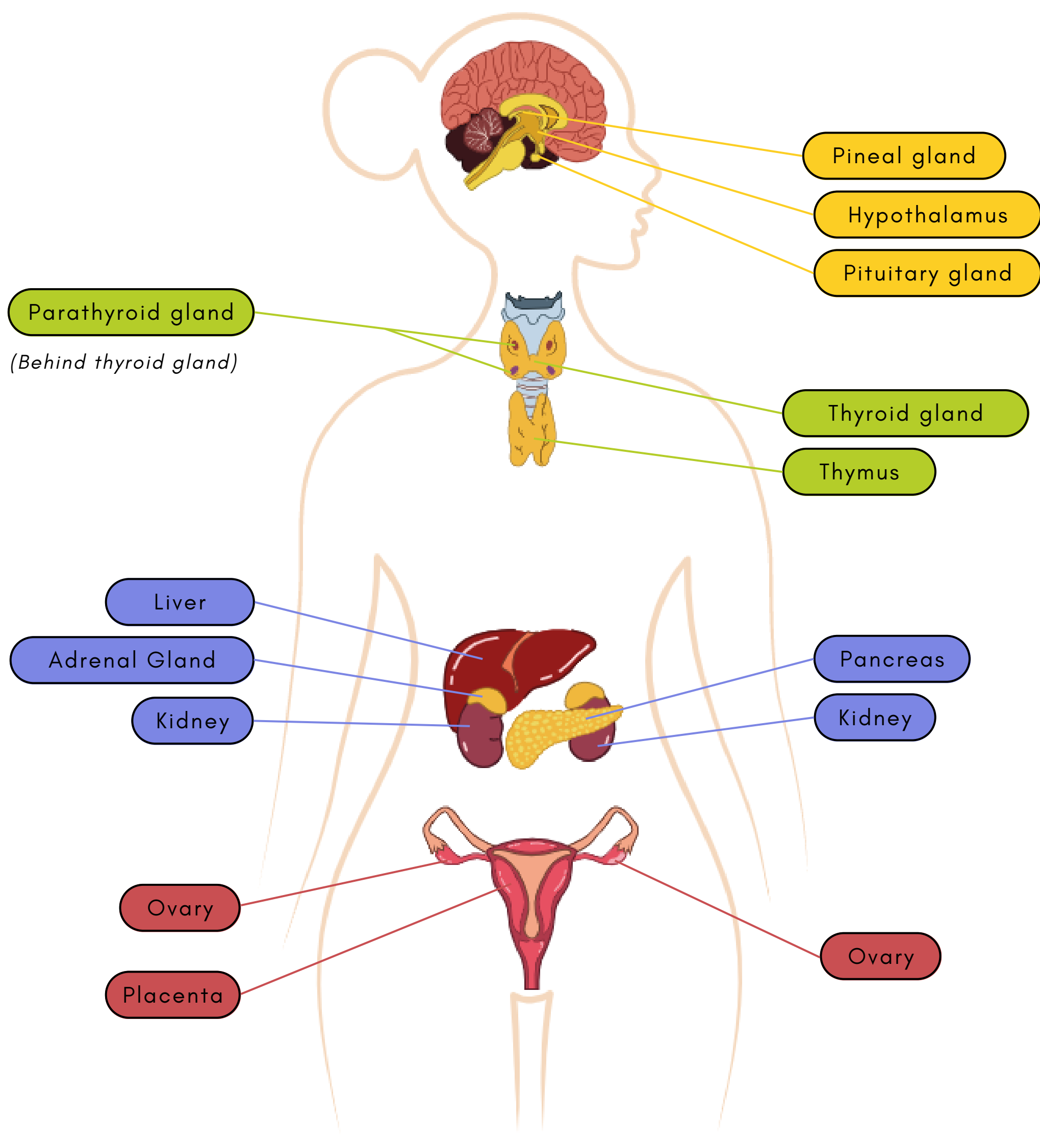
The Endocrine System



Closure

Observe the following illustrations of **the major endocrine glands** and look for information about their composition, location and function. Then, decide if the statements are **TRUE** or **FALSE**.

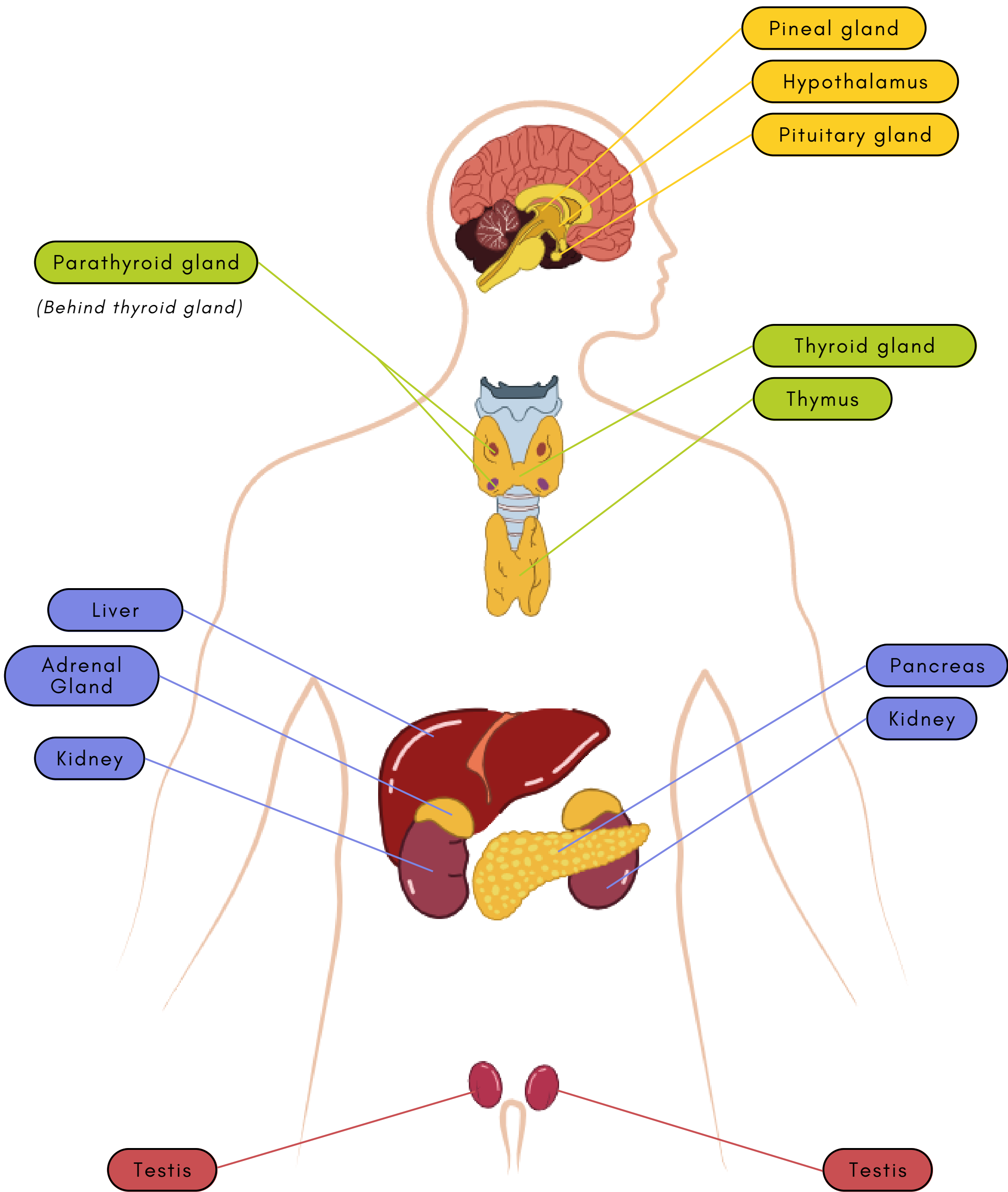
THE FEMALE ENDOCRINE SYSTEM



The Endocrine System



THE MALE ENDOCRINE SYSTEM



The Endocrine System



1) Pituitary glands are divided into three regions: the anterior lobe, the adenohypophysis, and the neurohypophysis.

TRUE

FALSE

2) The neurons, neuroglial cells and pinealocytes are parts of the pineal gland.

TRUE

FALSE

3) The function of the thyroid gland is to secrete about 95% of thyroxine and 5% of triiodothyronine.

TRUE

FALSE

4) The adrenal cortex and the adrenal medulla are parts of the adrenal gland and both are essential to life.

TRUE

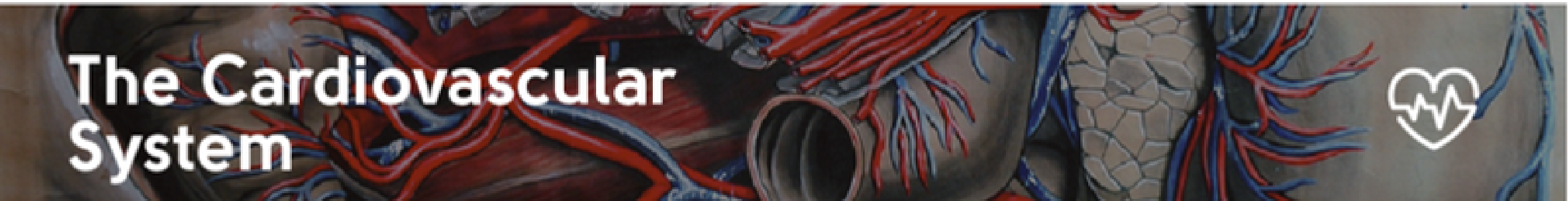
FALSE

5) The pancreas goes from the duodenum to the spleen and secretes enzymes to the duodenum.

TRUE

FALSE





ACTIVITY 9:

THE CARDIOVASCULAR SYSTEM

Objectives

- To recognize relations within and between sentences by analyzing connectors.
- To recognize word formation and derivation by analyzing word families.
- To understand the structure of a noun phrase.
- To identify passive voice structure and use.

Preparation



1. Activating Prior Knowledge

THE CARDIOVASCULAR SYSTEM

1) Find the words in the **alphabet soup** according to the clues given.

d	g	p	q	h	b	s	k	e	l	e	t	o	n
e	y	e	s	u	y	o	v	o	h	u	v	e	e
w	m	u	v	t	x	q	b	d	d	i	v	f	w
w	a	c	o	l	o	n	u	a	k	u	l	r	x
t	i	a	i	s	z	m	i	g	e	s	t	e	k
n	s	o	q	r	a	v	a	m	x	h	e	e	d
f	a	p	r	c	p	a	t	c	x	o	d	b	m
u	x	b	i	m	q	h	e	i	h	u	f	l	x
d	j	z	x	n	s	b	s	s	w	l	c	u	d
y	h	m	p	w	e	f	e	e	t	d	t	n	w
b	t	b	o	z	l	x	a	e	v	e	r	g	j
l	a	b	g	z	s	c	e	z	p	r	v	s	l
m	l	h	e	a	r	t	p	h	f	s	r	g	t
e	n	o	r	h	a	n	d	s	n	p	w	a	i

CLUES:

- 1) The bones in a human or animal.
- 2) The joints in the middle of human arms.
- 3) A backbone.
- 4) An organ in the body that digests food.
- 5) Organ that extracts oxygen for a body's use.
- 6) The body parts one uses to walk.
- 7) The organ in the chest that pumps blood through the body.
- 8) Extremities containing fingers, pointers.
- 9) Body parts at the very top of the arms.
- 10) Lower part of the large intestines.

The Cardiovascular System



2) Unscramble the following words to find the correct names of some parts of the body.

1) yee

2) irah

3) rea

4) seon

5) houtm

6) oushlrde

7) edah

8) andh

9) nungl

10) rivle

11) trhea

12) toshacm

13) eyknid

14) Ienetints

The Cardiovascular System



Development



2. Reading Comprehension

- A) Read and listen to the text: *The Cardiovascular System*.
B) Based on the reading, do the next activity.

The Cardiovascular System



(1) The cardiovascular system is sometimes called the blood-vascular, or simply the circulatory, system. It consists of the heart, which is a muscular **pumping** device, and a closed system of vessels called arteries, veins, and capillaries. As the name implies, blood contained in the circulatory system is **pumped** by the heart around a closed circle or circuit of vessels as it passes again and again through the various "circulations" of the body.

(2) As in the adult, survival of the developing embryo depends on the circulation of blood to maintain homeostasis and a favorable cellular environment. In response to this need, the cardiovascular system makes its appearance early in development and reaches a functional state long before any other major organ system. Incredible as it seems, the primitive heart begins to beat regularly early in the fourth week following fertilization.



(3) The vital role of the cardiovascular system in maintaining homeostasis depends on the continuous and controlled movement of blood through the thousands of miles of capillaries that permeate every tissue and reach every cell in the body. It is in the microscopic capillaries that blood performs its ultimate transport function. Nutrients and other essential materials pass from capillary blood into fluids surrounding the cells as waste products are removed.

(4) Numerous control mechanisms help to regulate and integrate the diverse functions and component parts of the cardiovascular system in order to supply blood to specific body areas according to need. These mechanisms ensure a constant internal environment surrounding each body cell regardless of differing demands for nutrients or production of waste products.

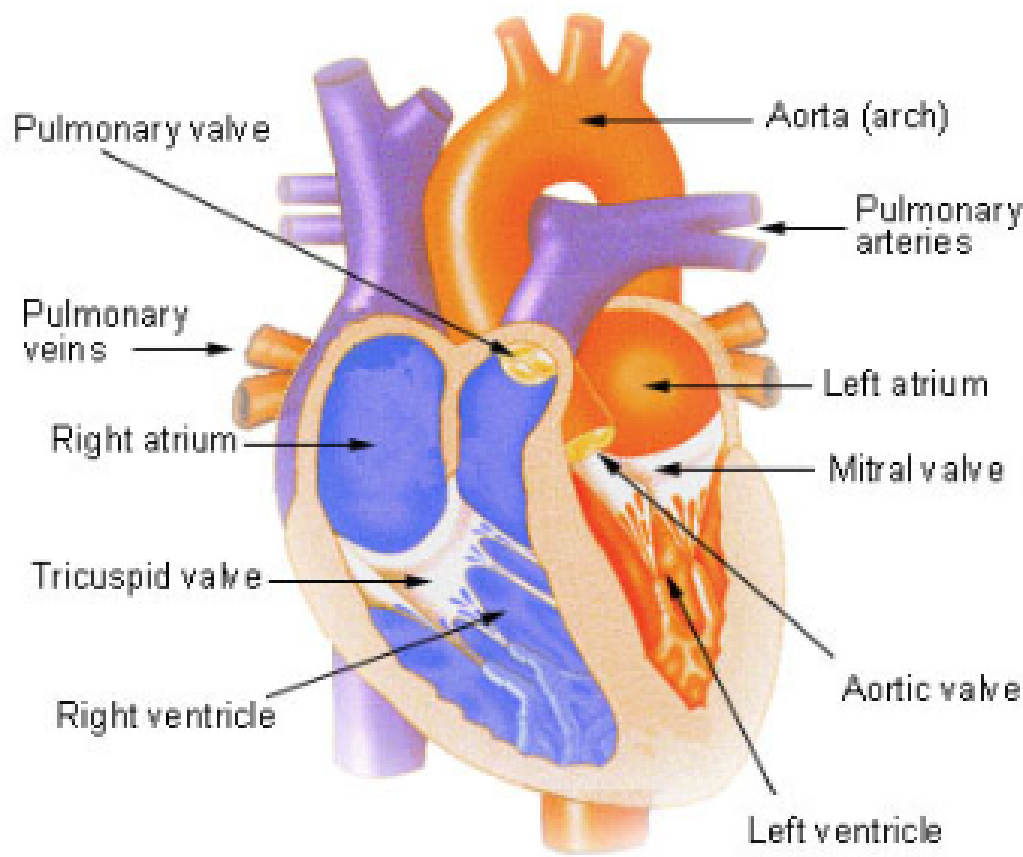
Heart

(5) The heart is a muscular **pump** that provides the force necessary to circulate the blood to all the tissues in the body. Its function is vital because, to survive, the tissues need a continuous supply of oxygen and nutrients, and metabolic waste products have to be removed. Deprived of these necessities, cells soon undergo irreversible changes that lead to death. While blood is the transport medium, the heart is the organ that keeps the blood moving through the vessels. The normal adult heart pumps about 5 liters of blood every minute throughout life. If it loses its pumping effectiveness for even a few minutes, the individual's life is jeopardized.

The Cardiovascular System



Internal View of the Heart



Structure of the Heart

(6) The human heart is a four-chambered muscular organ, shaped and sized roughly like a man's closed fist with two-thirds of the mass to the left of midline. The heart is enclosed in a pericardial sac that is lined with the parietal layers of a serous membrane. The visceral layer of the serous membrane forms the epicardium.

Layers of the Heart Wall

(7) Three layers of tissue form the heart wall. The outer layer of the heart wall is the epicardium, the middle layer is the myocardium, and the inner layer is the endocardium.

Chambers of the Heart

(8) The internal cavity of the heart is divided into four chambers:

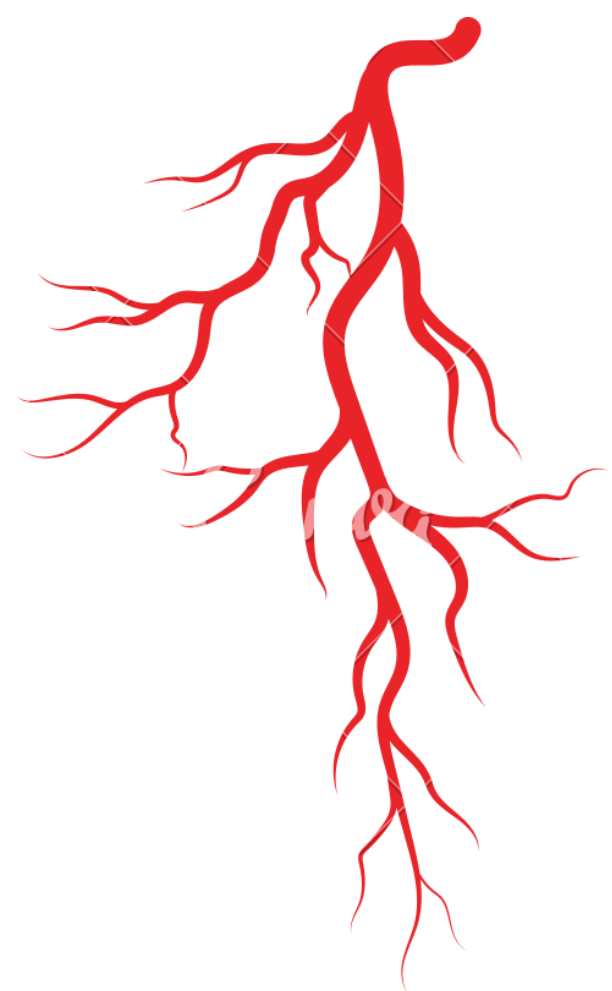
- Right atrium
- Right ventricle
- Left atrium
- Left ventricle

(9) The two atria are thin-walled chambers that receive blood from the veins. The two ventricles are thick-walled chambers that forcefully pump blood out of the heart. Differences in thickness of the heart chamber walls are due to variations in the amount of myocardium present, which reflects the amount of force each chamber is required to generate.

Valves of the Heart

(10) **Pumps** need a set of valves to keep the fluid flowing in one direction and the heart is no exception. The heart has two types of valves that keep the blood flowing in the correct direction. The valves between the atria and ventricles are called atrioventricular valves (also called cuspid valves), while those at the bases of the large vessels leaving the ventricles are called semilunar valves.

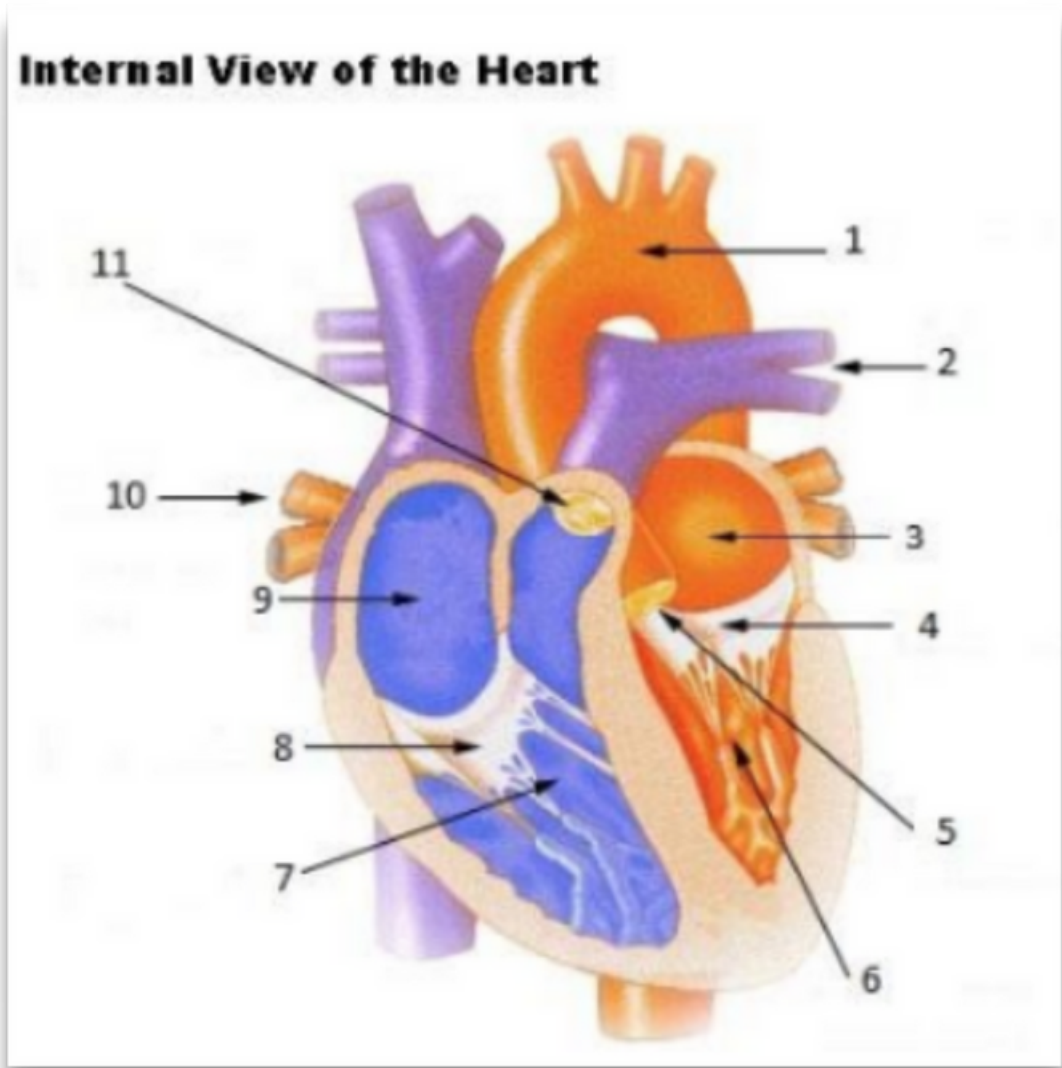
(11) The right atrioventricular valve is the tricuspid valve. The left atrioventricular valve is the bicuspid, or mitral, valve. The valve between the right ventricle and pulmonary trunk is the pulmonary semilunar valve. The valve between the left ventricle and the aorta is the aortic semilunar valve. When the ventricles contract, atrioventricular valves close to prevent blood from flowing back into the atria. When the ventricles relax, semilunar valves close to prevent blood from flowing back into the ventricles.



ACTIVITY

Answer the questions based on the text: ***The Cardiovascular System.***

1. Look at the picture below and match the corresponding part of the heart with its name.



- Aorta
- Pulmonary valves
- Left atrium
- Right atrium
- Mitral valve
- Pulmonary arteries
- Right ventricle
- Tricuspid valve
- Aortic valve
- Pulmonary veins
- Left ventricle

- 1)

2)

3)

4)
- 5)

6)

7)

8)
- 9)

10)

11)

2. Answer the following questions in your own words.

1) What is the function of the heart?

.....

.....

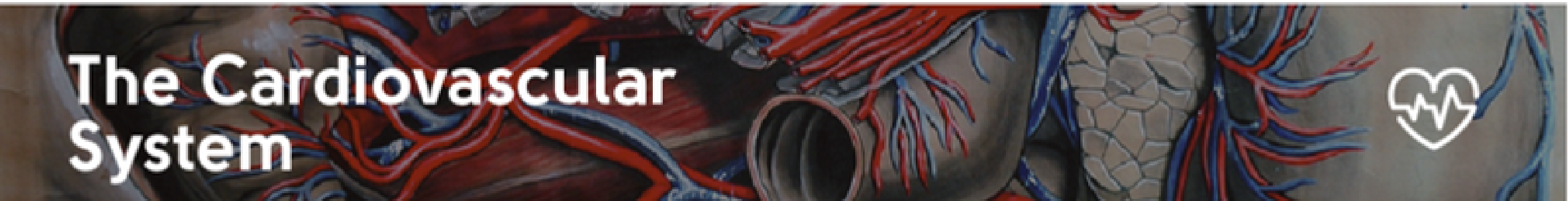
.....

2) What is the importance of the control mechanisms in the cardiovascular system?

.....

.....

.....



3. Write the suffix of each form of the word.

WORD	ROOT	SUFFIX	GRAMMATICAL CATEGORY
A) Pumping Paragraph 1	Pump	-	☐ Adjective ☐ Verb ☐ Noun
B) Pumped Paragraph 1	Pump	-	☐ Adjective ☐ Verb ☐ Noun
C) Pump Paragraph 5	Pump		☐ Adjective ☐ Verb ☐ Noun
D) Pumps Paragraph 10	Pump	-	☐ Adjective ☐ Verb ☐ Noun

4. Read the following noun phrases and write the **main concept or nucleus** in the blank.

1) A constant internal environment.

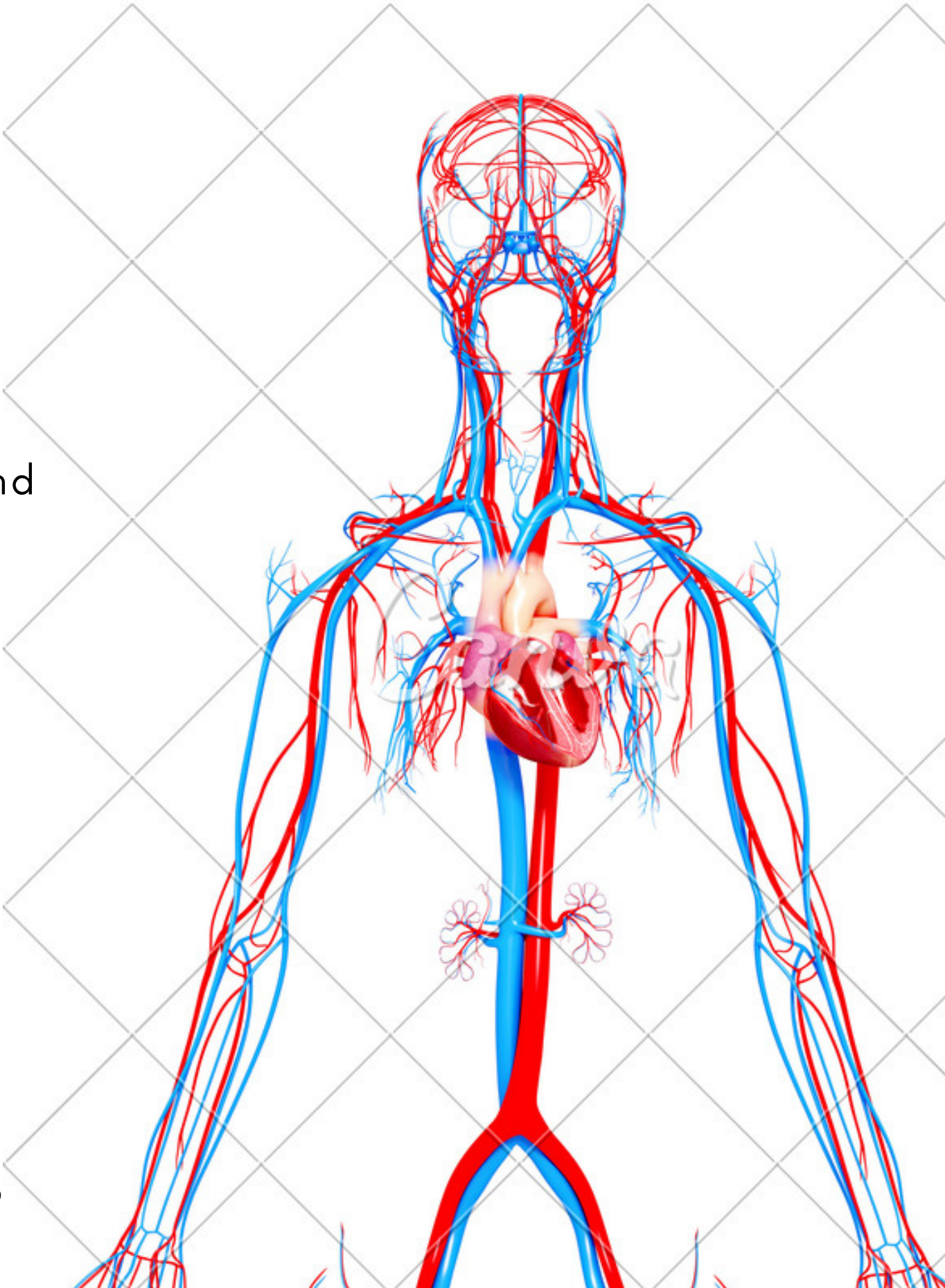
.....

2) A continuous supply of oxygen and nutrients.

.....

3) The outer layer of the heart wall.

.....



The Cardiovascular System



5. Read the following two sentences and replace the underlined connector by choosing one of the options.

1) Differences of the thickness of the heart chamber walls are due to to variations in the amount of myocardium present.

- ☐ consequently
- ☐ but
- ☐ caused by

2) Nutrients and other essential materials pass from capillary blood into fluids surrounding the cells as waste products are removed.

- ☐ while
- ☐ and
- ☐ or

6. Analyze the following sentences in passive voice. Then, fill in the blank with the right word to rewrite each sentence in **active voice.**

1) The cardiovascular system is sometimes called the blood-vascular system.

Active voice:

Someone **Something** **Somewhere** **calls** **called** **calling** the blood-vascular system by the name of cardiovascular system.

2) Metabolic waste products have to be removed.

Active voice:

Someone **Something** **Somewhere** **has to remove** **had have to remove**
have to remove metabolic waste products.

3) The blood is pumped by the heart through a closed circuit of vessels.

Active voice:

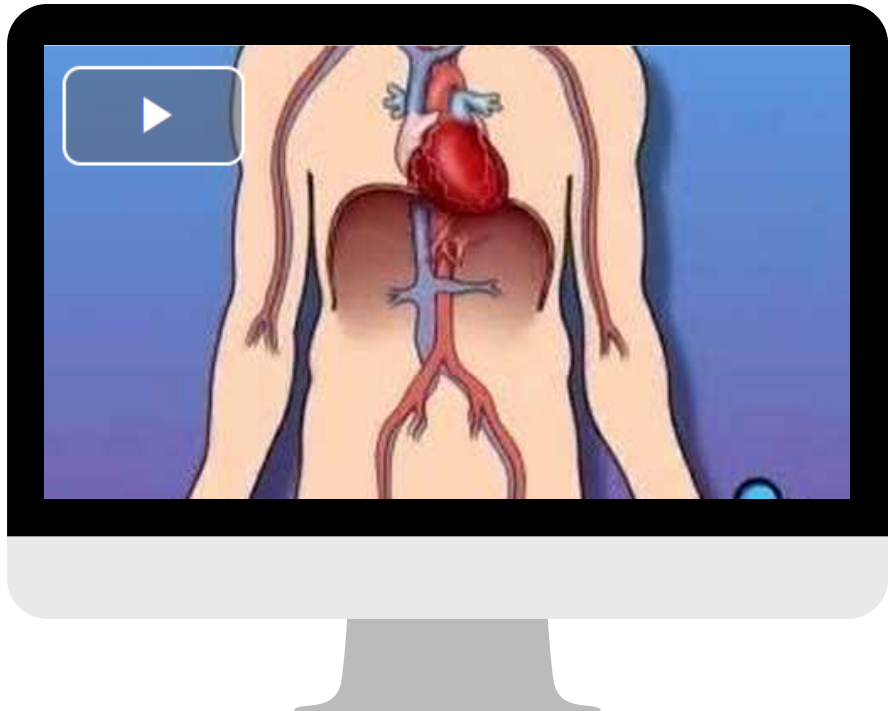
The heart **The blood** **The vessels** **pumps** **pumped** **pumping** the blood through a closed circuit of vessels.

Closure



3. Listening Comprehension

Watch the video *Balloon Angioplasty Coronary* and then answer the questions.



Scan this QR code to watch the video!



PreOp.com Patient Engagement - Patient Education. (2007). PreOp® Patient Education Balloon Angioplasty Coronary [Video]. Retrieved from: <https://www.youtube.com/watch?v=3ZXuTykJUX0>

1. Fill in the blanks with **the verbal forms** and **verb tenses** used to describe the process.

Your doctor 1. _____ that you undergo a balloon angioplasty with a stent implant. But what does that actually mean? The heart 2. _____ in the center of the chest. Its job is 3. _____ blood continually circulating throughout the body. The blood vessels that supply the body with oxygen-rich blood 4. _____ arteries. The arteries that supply blood to the heart muscle itself 5. _____ coronary arteries. Sometimes, these blood vessels can narrow or become blocked by plaque deposits, restricting normal blood flow. In simple terms, a balloon angioplasty with stent insertion is a procedure used 6. _____ the amount of blood flowing through the coronary artery. During a balloon angioplasty, a heart specialist 7. _____ a thin tube into an artery in your arm or leg and gently guide it towards the problem area in your heart. Once the tube is in place, a small balloon 8. _____ in order to widen the narrowed artery. During and after the procedure, your doctor 9. _____ x-rays in order to monitor your progress.

2. Identify the **rhetorical functions** used by the previous video. Select them from the box below and write them in the blanks.

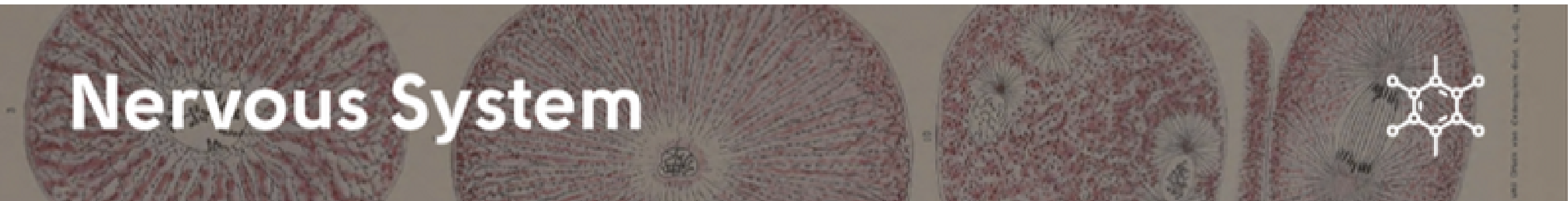
Description of a Process / Instruction
Definition / Explanation / Comparison
Cause and Effect / Illustration
Description of a Place / Contrast

Rethorical functions:

1)

2)

3)



Nervous System

ACTIVITY 10: THE NERVOUS SYSTEM

Objectives

- To learn to recognize the way functions are expressed in the text.
- To understand how the nervous system works.
- To recognize the way a classification is presented.

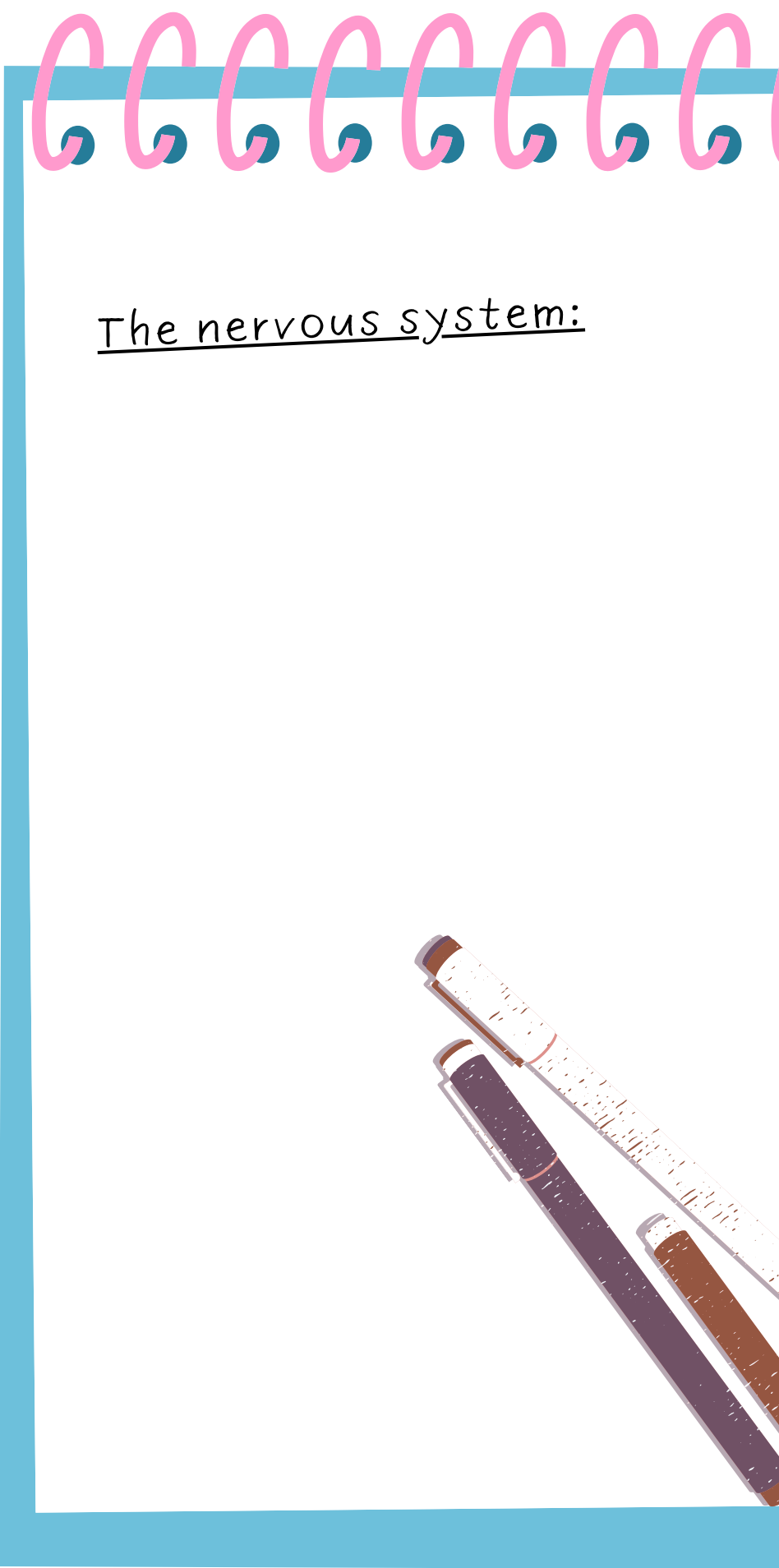
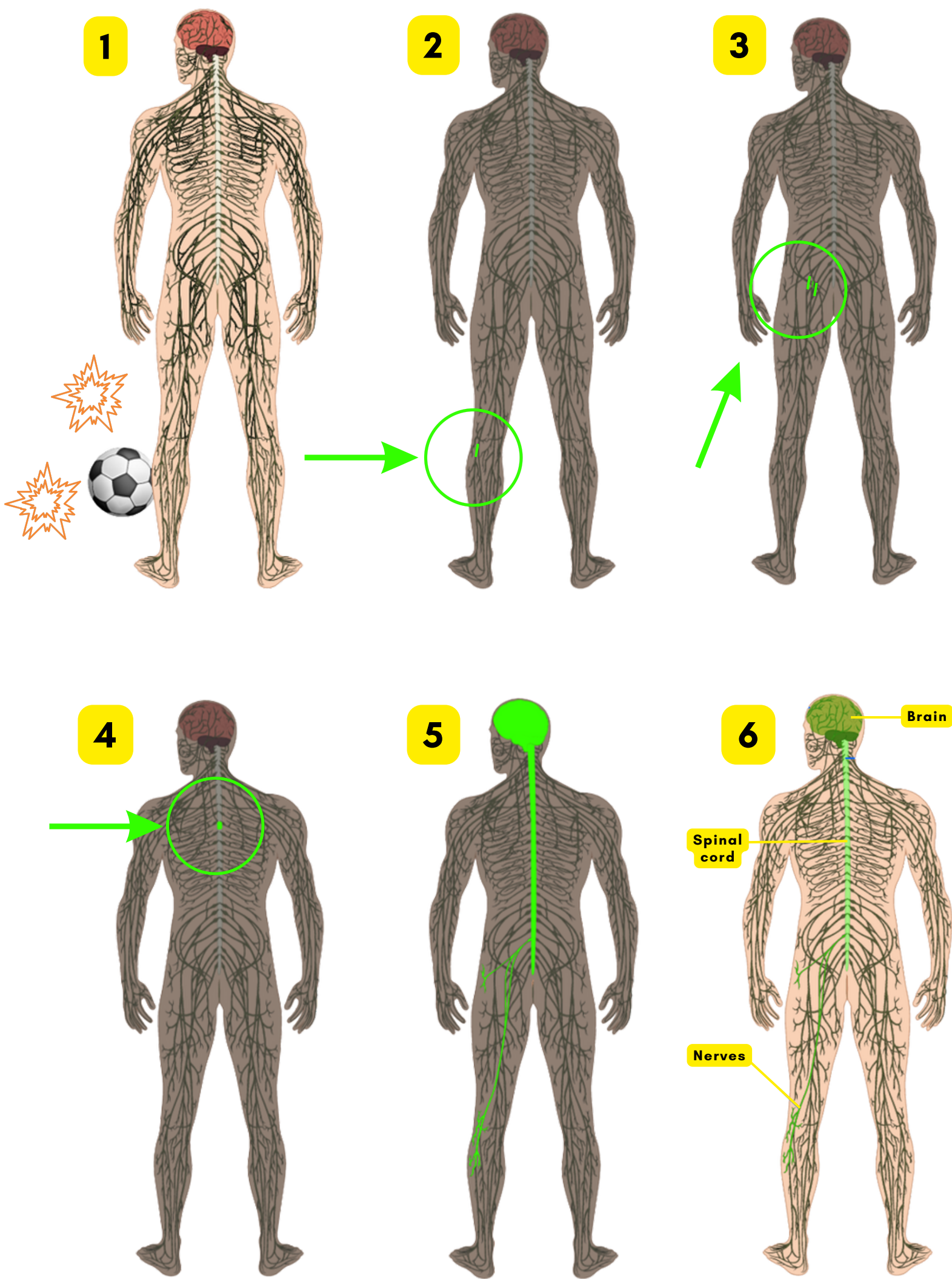
Preparation



1. Activating Prior Knowledge

THE NERVOUS SYSTEM

1) Look at the sequence below and write what you know about the nervous system.

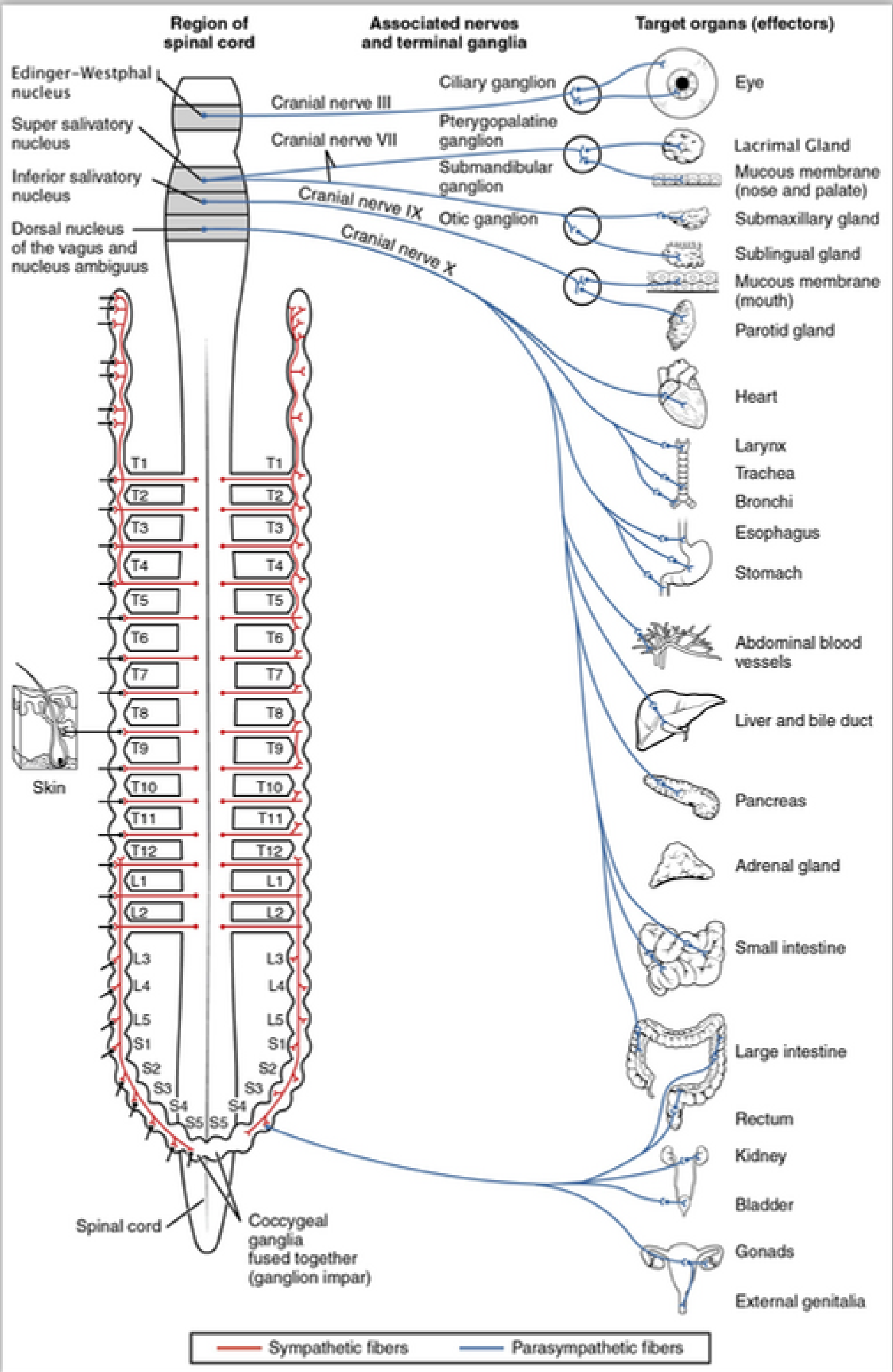


Nervous System



PARASYMPATHETIC-SYMPATHETIC NERVOUS SYSTEM

2) Analyze the **Parasympathetic-Sympathetic** image of the nervous system and then write in the blanks the organs from the **Digestive System** that are connected to the Parasympathetic fibers.



Gray, H. (1918). Diagram of efferent sympathetic (red) and parasympathetic (blue) nervous system. In: *Anatomy of the Human Body* [Image]. Lea and Febiger: New York.

3) Write the name of the organ that is associated with the sympathetic fibers:

.....

Nervous System



Development



2. Reading Comprehension

- A) Read and listen to the text: *The Cardiovascular System*.
B) Based on the reading, do the next activity.

Introduction to the Nervous System



(1) The nervous system is the major controlling, regulatory, and communicating system in the body. **It** is the center of all mental activity including thought, learning, and memory. Together with the endocrine system, the nervous system is responsible for regulating and maintaining homeostasis. Through its receptors, the nervous system keeps us in touch with our environment, both external and internal.

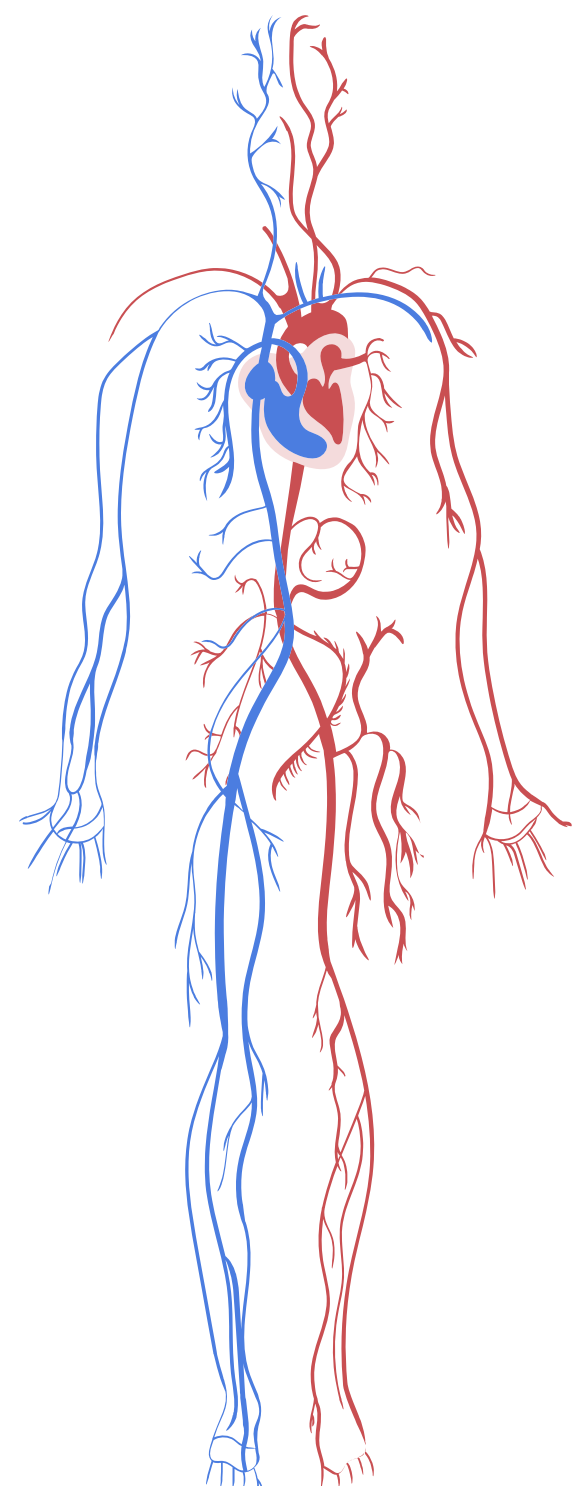
(2) Like other systems in the body, the nervous system is composed of organs, principally the brain, spinal cord, nerves, and ganglia. **These**, in turn, consist of various tissues, including nerve, blood, and connective tissue. Together **these** carry out the complex activities of the nervous system.

(3) The various activities of the nervous system can be grouped together as three general, overlapping functions:

- Sensory
- Integrative
- Motor

(4) Millions of sensory receptors detect changes, called stimuli, **which** occur inside and outside the body. **They** monitor such things as temperature, light, and sound from the external environment. Inside the body, the internal environment, receptors detect variations in pressure, pH, carbon dioxide concentration, and the levels of various electrolytes. All of this gathered information is called sensory input.

(5) Sensory input is converted into electrical signals called nerve impulses that are transmitted **to** the brain. There the signals are brought together **to** create sensations, **to** produce thoughts, or **to** add **to** memory; Decisions are made each moment based on the sensory input. This is integration.



Nervous System



(6) Based on the sensory input and integration, the nervous system responds by sending signals to muscles, causing **them** to contract, or to glands, causing **them** to produce secretions. Muscles and glands are called effectors **because they** cause an effect in response to directions from the nervous system. This is the motor output or motor function.

Organization of the Nervous System

(7) Although terminology seems to indicate otherwise, there is really only one nervous system in the body. **Although** each subdivision of the system is also called a "nervous system," all of these smaller systems belong to the single, highly integrated nervous system. Each subdivision has structural and functional characteristics that distinguish it from the others. The nervous system as a whole is divided into two subdivisions: the central nervous system (CNS) and the peripheral nervous system (PNS).

The Central Nervous System

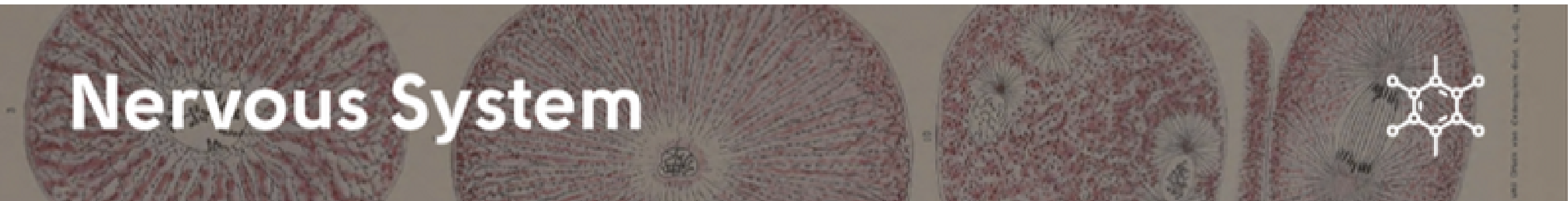
(8) The brain and spinal cord are the organs of the central nervous system. Because **they** are so vitally important, the brain and spinal cord, located in the dorsal body cavity, are encased in bone for protection. The brain is in the cranial vault, and the spinal cord is in the vertebral canal of the vertebral column. Although considered to be two separate organs, the brain and spinal cord are continuous at the foramen magnum.

The Peripheral Nervous System

(9) The organs of the peripheral nervous system are the nerves and ganglia. Nerves are bundles of nerve fibers, much like muscles are bundles of muscle fibers. Cranial nerves and spinal nerves extend from the CNS to peripheral organs such as muscles and glands. Ganglia are collections, or small knots, of nerve cell bodies outside the CNS.

(10) The peripheral nervous system is **further** subdivided into an afferent (sensory) division and an efferent (motor) division. The afferent or sensory division transmits impulses from peripheral organs to the CNS. The efferent or motor division transmits impulses from the CNS out to the peripheral organs to cause an effect or action.

(11) Finally, the efferent or motor division is again subdivided into the somatic nervous system and the autonomic nervous system. The somatic nervous system, also called the somatomotor or somatic efferent nervous system, supplies motor impulses to the skeletal muscles. Because these nerves permit conscious control of the skeletal muscles, it is sometimes called the voluntary nervous system. The autonomic nervous system, also called the visceral efferent nervous system, supplies motor impulses to cardiac muscle, to smooth muscle, and to glandular epithelium. **It** is further subdivided into sympathetic and parasympathetic divisions. Because the autonomic nervous system regulates involuntary or automatic functions, **it** is called the involuntary nervous system.



Nervous System

ACTIVITY

Answer the questions based on the text: *Introduction to the Nervous System*.

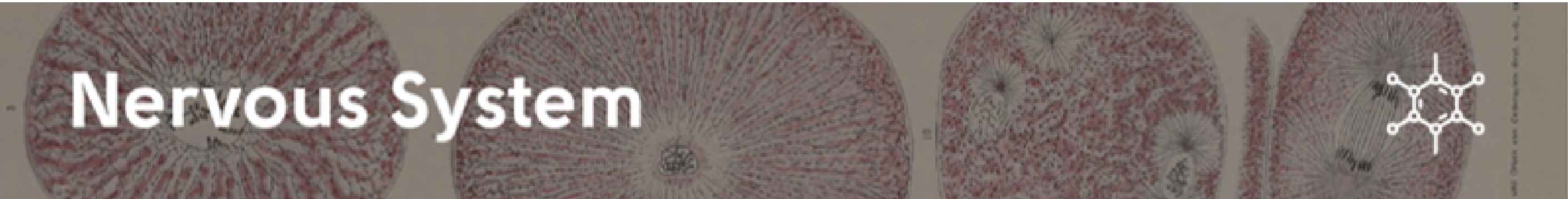
1. Create a mind map of the reading that includes the **FUNCTIONS OF THE NERVOUS SYSTEM**, **THE SENSORY RECEPTORS**, and the **EFFECTORS**.



2. In the **5th paragraph** of the text there are several "TO" words, analyze them. Then, decide if their functions are **DIRECTION** or **PURPOSE**.

1)	4)
2)	5)
3)	





Nervous System

3. Search for the underlined words in the text. They are the **Referents**. Analyze them and complete the requested information:

Paragraph	Referent	Reference in the text
1) Paragraph #1	It	☐ The Nervous System. ☐ The body. ☐ A system.
2) Paragraph #2		The brain, spinal cord, nerves, and ganglia.
3) Paragraph #4	They	☐ Sensory receptors. ☐ The changes. ☐ Stimuli.
4) Paragraph #6		Muscles.
5) Paragraph #8	They	☐ The brain and spinal cord. ☐ The central nervous system. ☐ Organs.

4. Go back to the text and look at the **6th paragraph**. The "**because**" highlighted in blue is a linking word. Keeping this in mind, complete the following information:

Linking word:
BECAUSE

1) Relationship:

- ☐ Cause.
- ☐ Effect.
- ☐ Example.

• Idea #1

2)

 and

3)

 are called

4)

.

• Idea #2

they cause an

5)

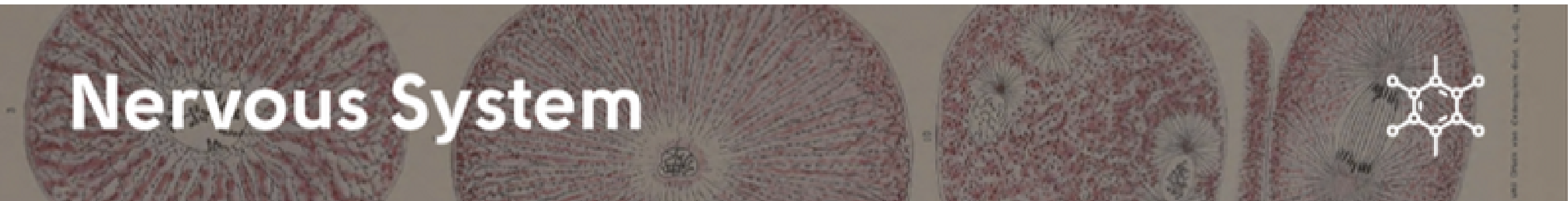
 in response to

6)

 from the

7)

 system.



Nervous System

5. What is the relationship established by the **2nd** word "Although" in **paragraph 7th**? Complete the requested information:

Linking word:
ALTHOUGH

1) Relationship:

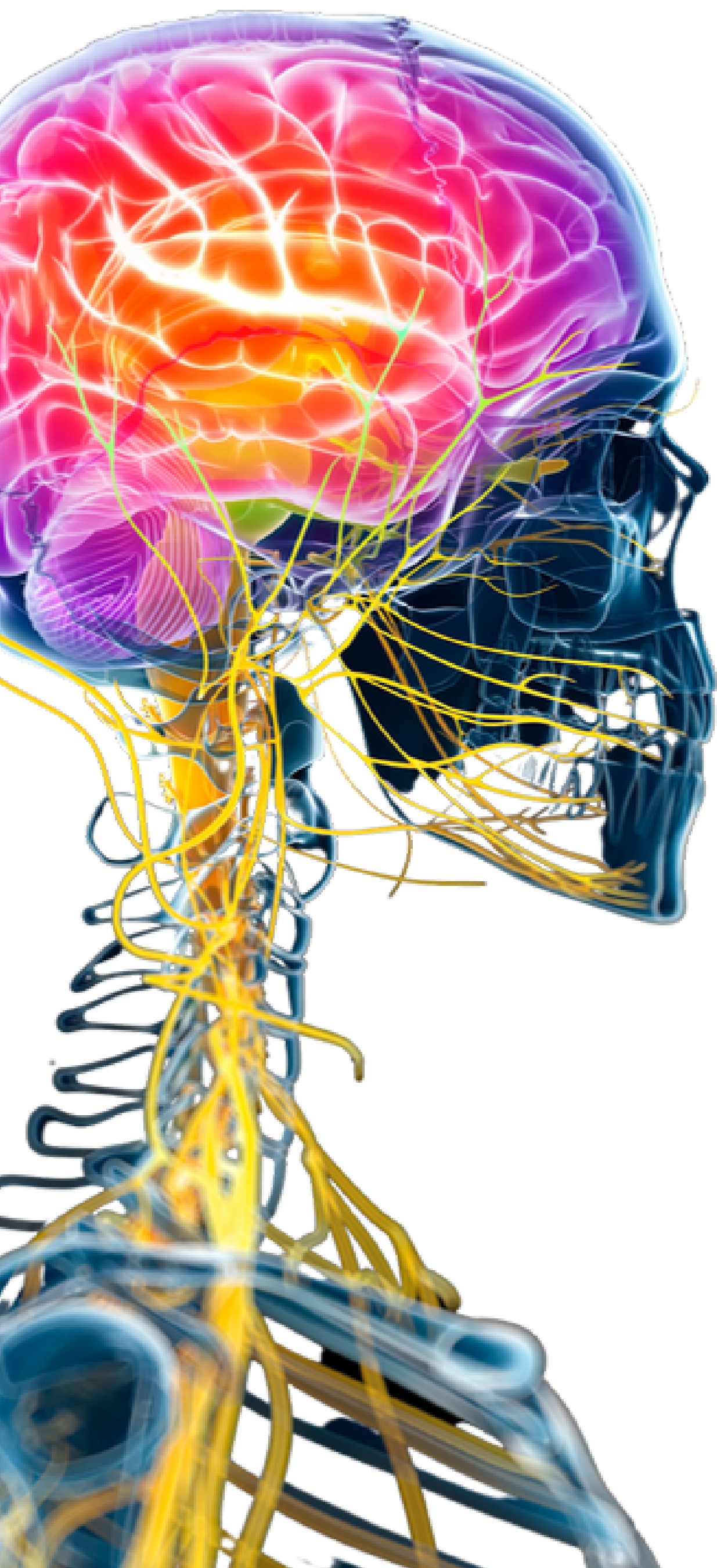
- ☐ Cause.
- ☐ Concession.
- ☐ Numeration.

• Idea #1

each **2)** of the system is also called a "**3)**".

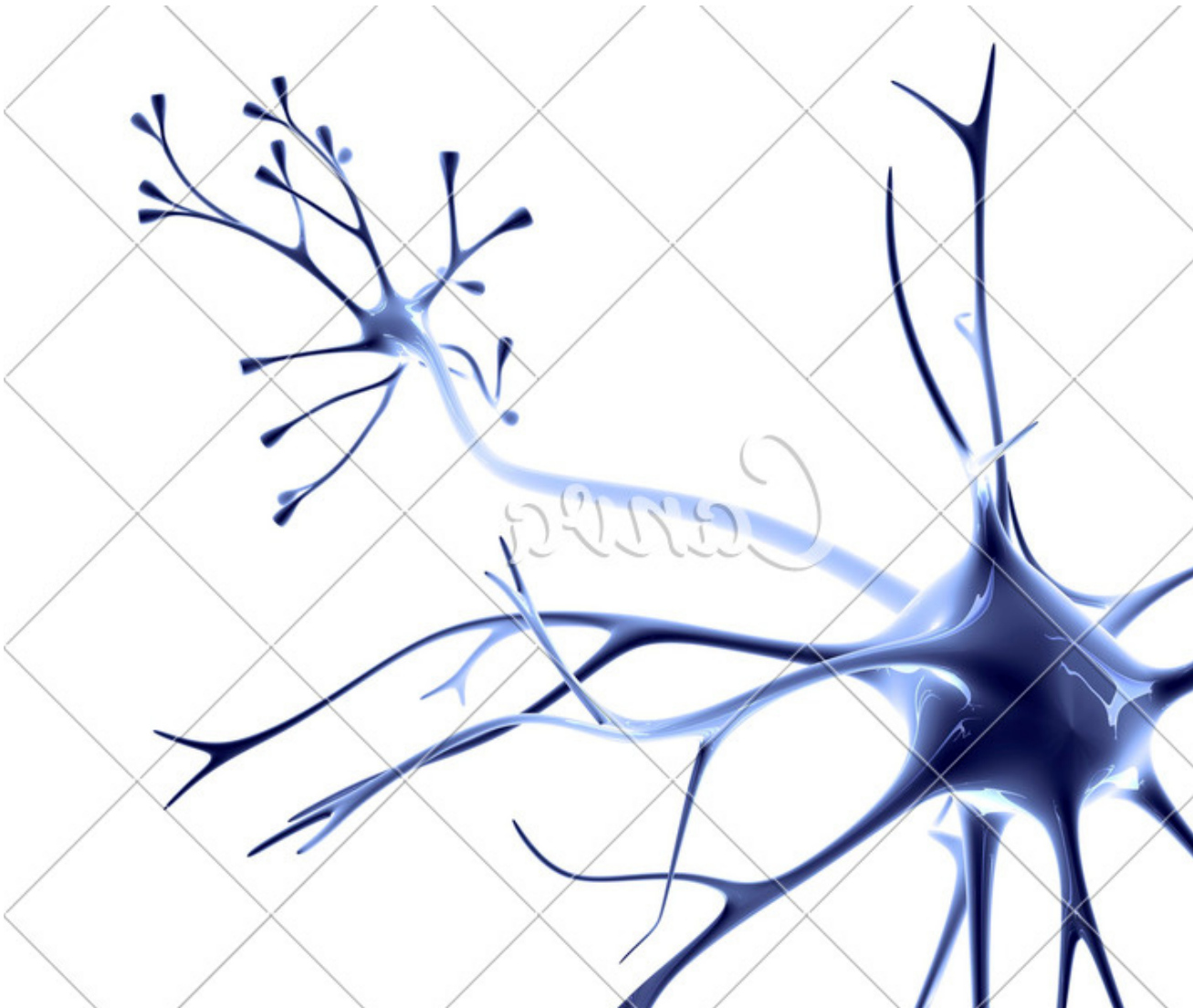
• Idea #2

4) is really only one nervous system in the **5)**.



6. In **paragraph 10th**, the word "FURTHER" is a **synonym** of:

- ☐ Well.
- ☐ Possibly.
- ☐ Additionally.
- ☐ Simply.



Nervous System

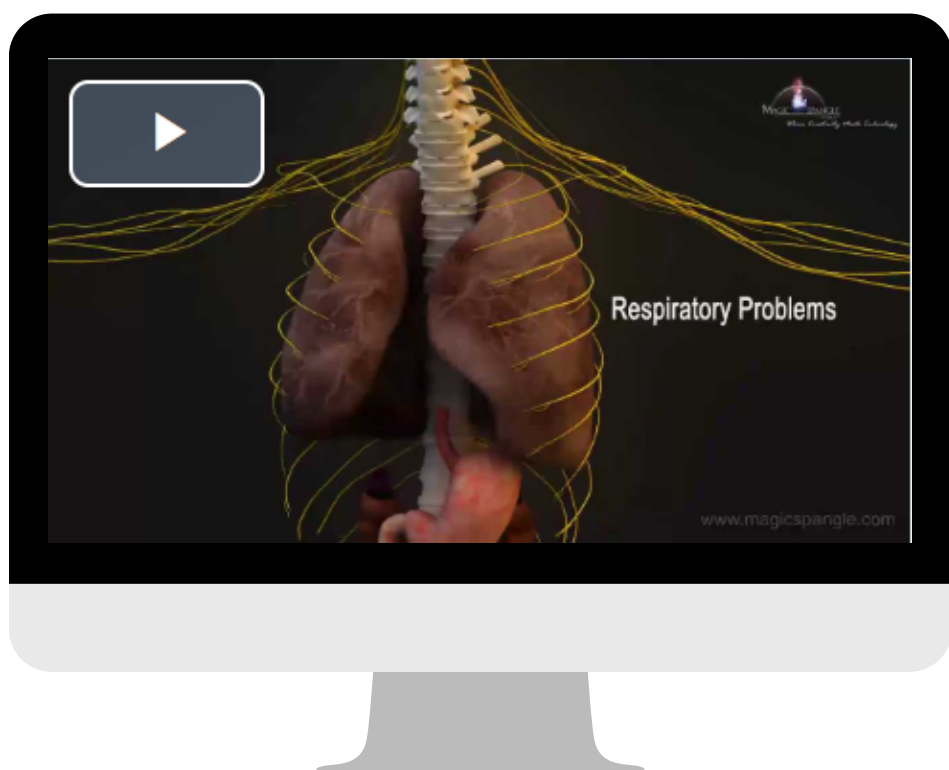


Closure



3. Listening Comprehension

Watch the video **3D Medical Animation - Central Nervous System** one time, then watch it for the second time and fill in the blanks with the right word to complete the transcription from minute 2:18 to 3:03.



Scan this QR code to
watch the video!



*Magic Spangle Studios. (2012). 3D Medical Animation
- Central Nervous System [Video]. Retrieved from:
<https://www.youtube.com/watch?v=s8yEhRZgvw>*

..although potentially painless at first 1. can develop rapidly and when a subluxation is 2. untreated your 3. begins to decay, your discs begin to thin and wear down and your 4. start to deform and degenerate, leading to the 5. of these spurs or osteophytes which then further compresses and damages your 6. . So when a 7. occurs in your lower back it can cause back 8. sciatica, bladder weakness, irritable bowel syndrome and erectile dysfunction. A subluxation in your upper back can cause 9. problems, digestive 10. , and decreased energy levels; and subluxation in your neck can cause headaches, dizziness, tinnitus, carpal tunnel syndrome, numbness tingling and weakness to one or both of your 11. .

Cell Functions



ACTIVITY 11: CELL FUNCTIONS

Objectives

- To recognize word formation and derivation by way of sequences.
- To recognize the topic sentences and the relation of other sentences to them.
- To find out how the text is organized.



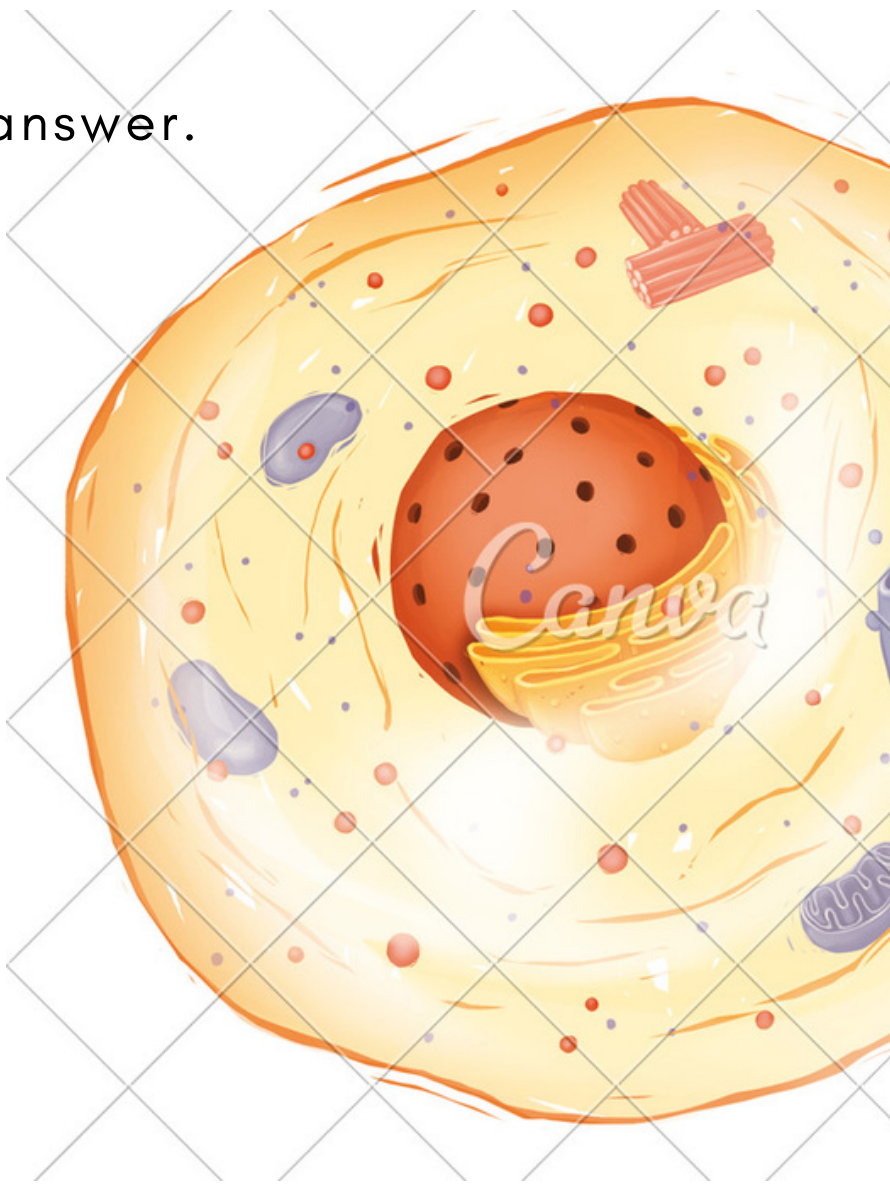
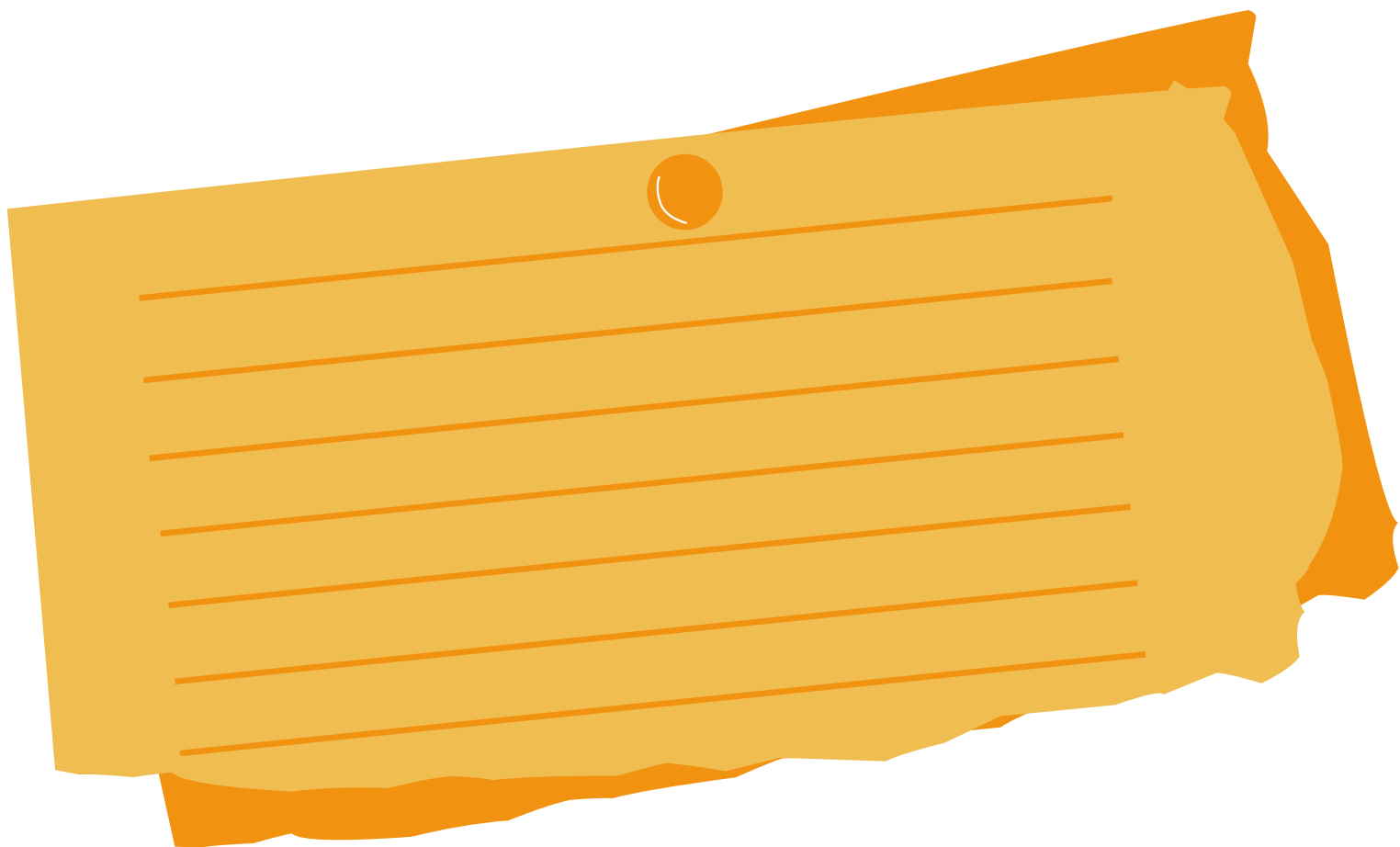
Preparation



1. Activating Prior Knowledge

CELL FUNCTIONS

1) What do you know about cell functions? Write down you answer.



2) Then, use a digital device (smartphone, tablet, computer, etc.) and look for texts which include the words "**Cell Functions**" and identify **10 common words** in the texts. Write them below and discuss them with your classmates.

☐		☐	
☐		☐	
☐		☐	
☐		☐	
☐		☐	

Cell Functions



Development



2. Reading Comprehension

- A) Read and listen to the text: *The Cardiovascular System*.
B) Based on the reading, do the next activity.

Cell Functions



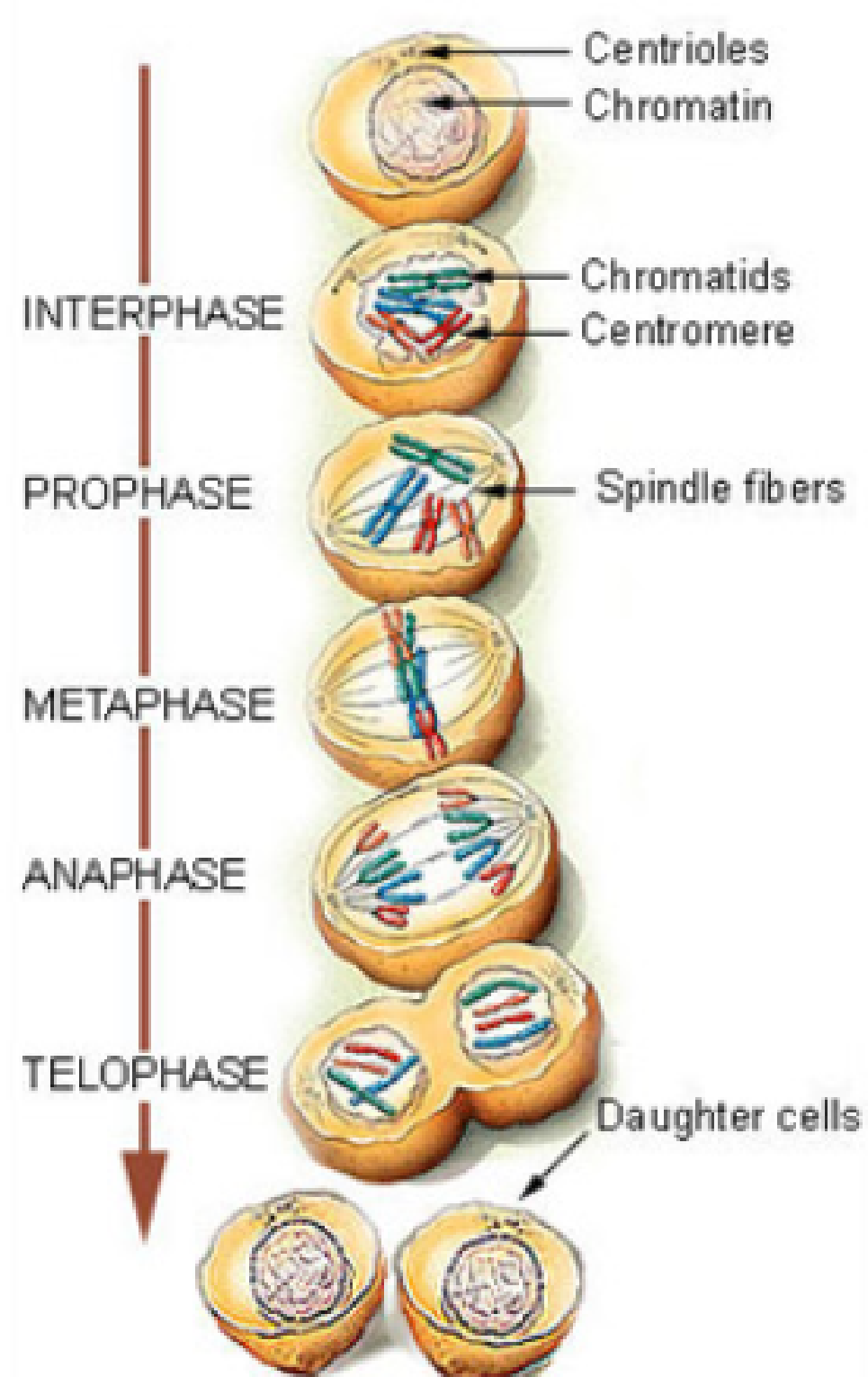
(1) The structural and functional characteristics of different types of cells are determined by the nature of the proteins present. Cells of various types have different functions because cell structure and function are closely related. It is apparent that a cell that is very thin is not well suited for a protective function. Bone cells do not have an appropriate structure for nerve impulse conduction. Just as there are many cell types, there are varied cell functions. The generalized cell functions include movement of substances across the cell membrane, cell division to make new cells, and protein synthesis.

Movement of Substances across the Cell Membrane

(2) The survival of the cell depends on maintaining the difference between extracellular and intracellular material. Mechanisms of movement across the cell membrane include simple diffusion, osmosis, filtration, active transport, endocytosis, and exocytosis.

(3) Simple diffusion is the movement of particles (solutes) from a region of higher solute concentration to a region of lower solute concentration. Osmosis is the diffusion of solvent or water molecules through a selectively permeable membrane. Filtration utilizes pressure to push substances through a membrane. Active transport moves substances against a concentration gradient from a region of lower concentration to a region of higher concentration. It requires a carrier molecule and uses energy. Endocytosis refers to the formation of vesicles to transfer particles and droplets from outside to inside the cell. Secretory vesicles are moved from the inside to the outside of the cell by exocytosis.

Mitosis



Cell Functions



Cell division

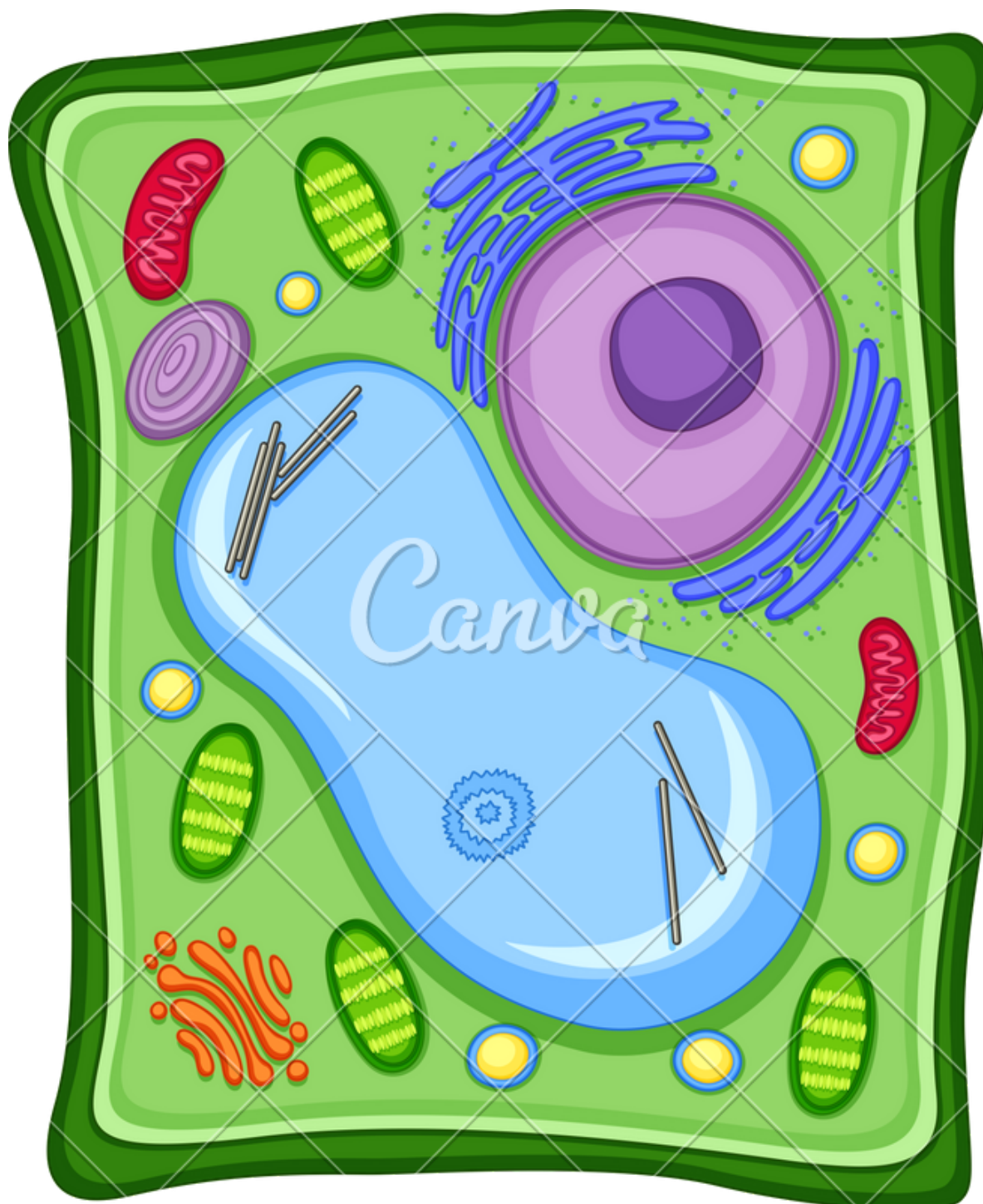
(4) Cell division is the process by which new cells are formed for growth, repair, and replacement in the body. This process includes division of the nuclear material and division of the cytoplasm. All cells in the body (somatic cells), except those that give rise to the eggs and sperm (gametes), reproduce by mitosis. Egg and sperm cells are produced by a special type of nuclear division called meiosis in which the number of chromosomes is halved. Division of the cytoplasm is called cytokinesis.



(5) Somatic cells reproduce by mitosis, which results in two cells identical to the one parent cell. Interphase is the period between successive cell divisions. It is the longest part of the cell cycle. The successive stages of mitosis are prophase, metaphase, anaphase, and telophase. Cytokinesis, division of the cytoplasm, occurs during telophase.

(6) Meiosis is a special type of cell division that occurs in the production of the gametes, or eggs and sperm. These cells have only 23 chromosomes, one-half the number found in

somatic cells, so that when fertilization takes place the resulting cell will again have 46 chromosomes, 23 from the egg and 23 from the sperm.



DNA replication and protein synthesis

(7) Proteins that are synthesized in the cytoplasm function as structural materials, enzymes that regulate chemical reactions, hormones, and other vital substances. DNA in the nucleus directs protein synthesis in the cytoplasm. A gene is the portion of a DNA molecule that controls the synthesis of one specific protein molecule. Messenger RNA carries the genetic information from the DNA in the nucleus to the sites of protein synthesis in the cytoplasm.

Cell Functions



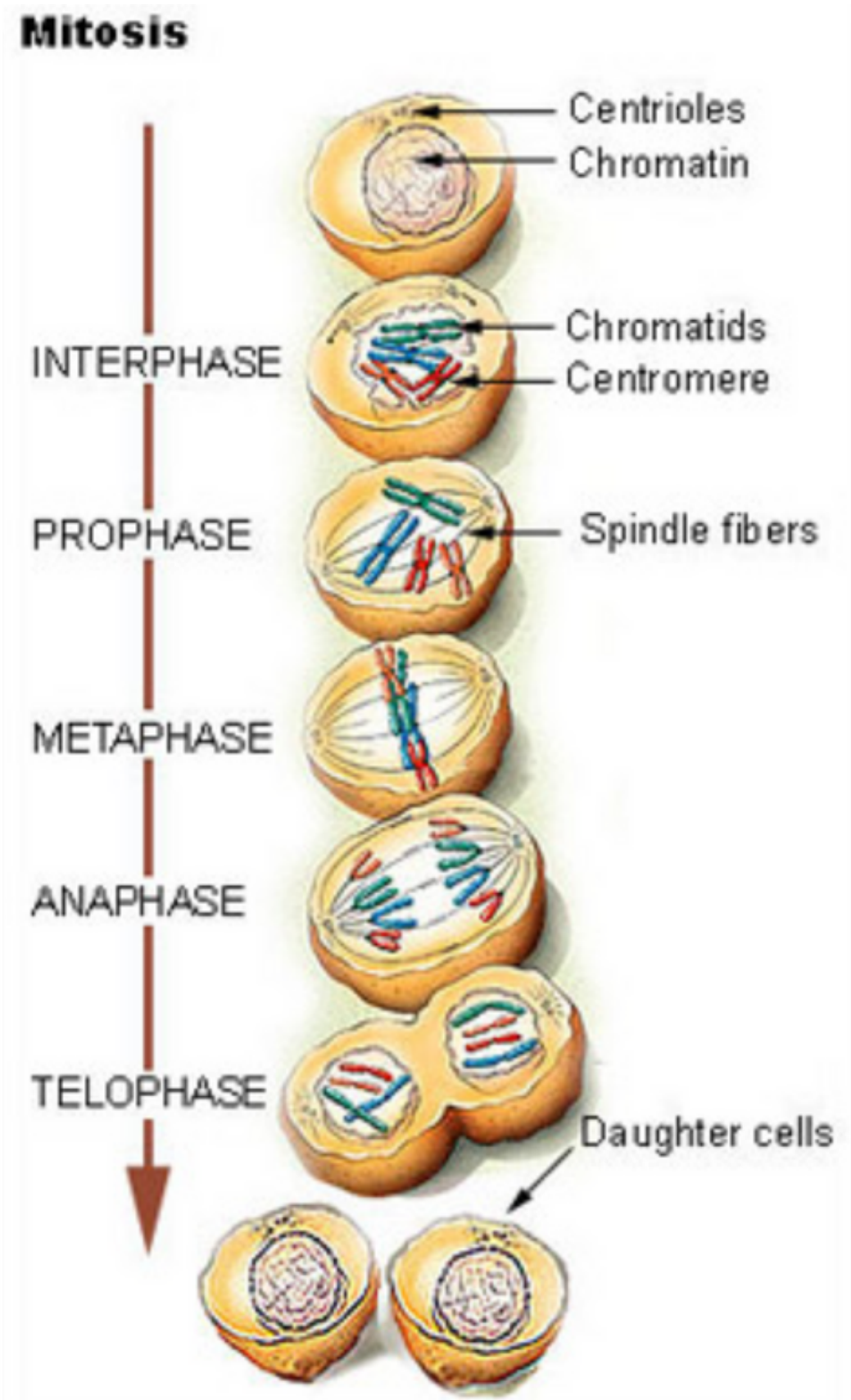
ACTIVITY

Answer the questions based on the text: **Cell Functions**.

1. Look at the image below, it describes the sequence of **how the mitosis is done**. Then, analyze the name of each step, specially its prefix. Match each **prefix** with its meaning.

- A) More
- B) Earlier than / Before
- C) Occurring later than / In succession to / Change
- D) Back / Backward / Again
- E) Located between

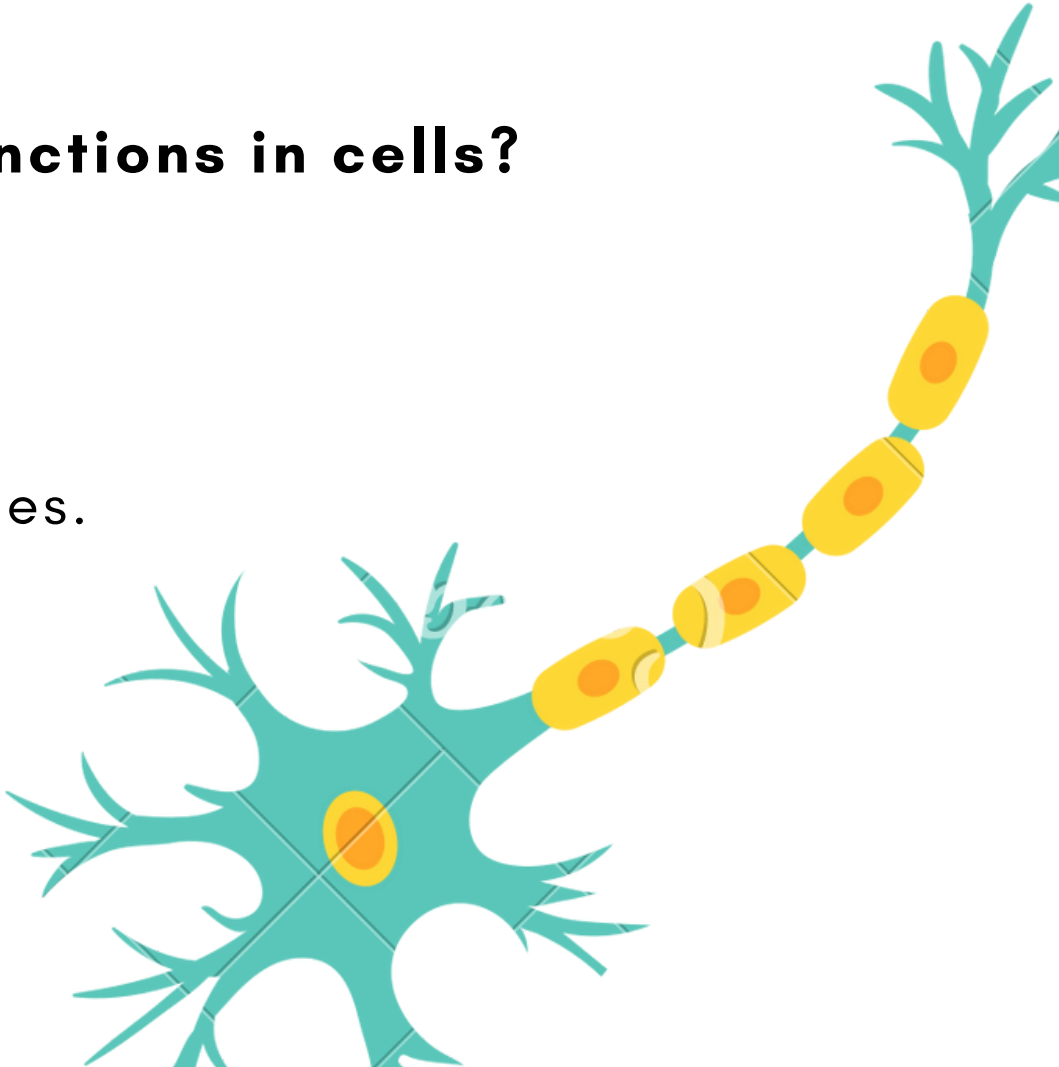
- 1) Ana-phase (**Anaphase**)
- 2) Telo-phase (**Telophase**)
- 3) Pro-phase (**Prophase**)
- 4) Inter-phase (**Interphase**)
- 5) Meta-phase (**Metaphase**)



SEER Training. (2017). Mitosis [Picture]. United States: National Cancer Institute.

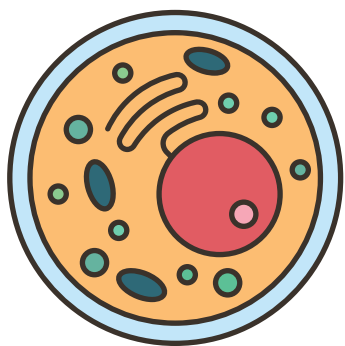
2. What is the reason for the diversity of functions in cells?

- ☐ Its close relationship to structure.
- ☐ Its reproduction system.
- ☐ The movement of substance across membranes.
- ☐ Its protection.

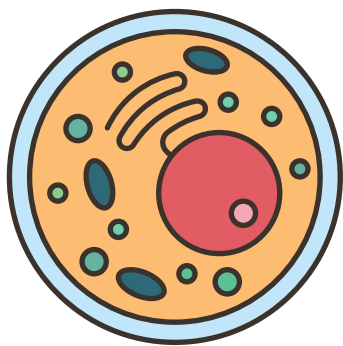


Cell Functions

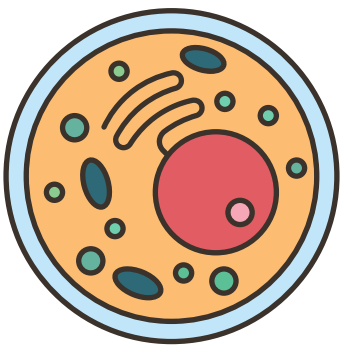
3. Match each definition with the concept it refers to.



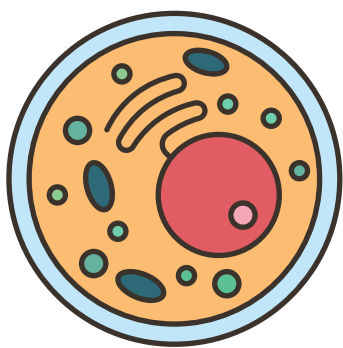
Gametes



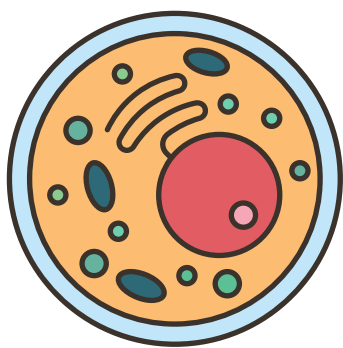
Meiosis



Cell division



Somatic cells



Cytokinesis

- ☐ 1) Special type of nuclear division of egg and sperm cells.
- ☐ 2) It is the division of the cytoplasm.
- ☐ 3) Cells that give rise to the eggs and sperm.
- ☐ 4) It is the process by which new cells are formed for growth, repair and replacement in the body.
- ☐ 5) They are cells that reproduce by mitosis.

4. Read again the 3rd paragraph, then answer the questions below.

1) Select **six to eight words** from the paragraph that help you to get its main idea. Write them below.

.....

.....

.....

2) From your previous list, select **five words** and put them in a logical order that reflects the main idea of the **paragraph 3**.

.....

.....

.....

Cell Functions

5. Identify 5 noun phrases and complete the table below. An example has been done for you.

A **NOUN PHRASE** is the part of a sentence that can work as a subject or as a direct complement of a verb. It includes a **main noun** plus **its modifiers** such as **adjectives, adverbs or another noun**.

Therefore, **△ IT DOES NOT INCLUDE A VERB △**

For example, the following sentence is composed by two noun phrases:

The **survival** of the **cell** depends on maintaining the **difference** between **extracellular** and **intracellular** material.

Pre-modifier	Nucleus	Post-modifier	Spanish equivalent
an appropriate	structure	for nerve impulse conduction.	Una estructura apropiada para la conducción de los impulsos nerviosos.

6. Identify and write down the **PASSIVE VOICE** sentences in the reading. Study carefully their structure and then make up new sentences with each of the following verbs:

Active Voice

The subject is a doer.
It shows a direct relation between the subject and the verb.

Alyssa writes a book

Passive Voice

The focus is on the object.
It can be also used when the subject is unknown or obvious. When the agent is mentioned, it is stated after the preposition "by".

A book is written by Alyssa

Call / Know / Excrete / Transform / Break down

Watch the videos below and get their general idea.



A stylized illustration of a cell. It features a large, bright yellow nucleus in the center, surrounded by a thick, light green cytoplasm. The cell is enclosed by a thin, dark green outer membrane. Several small, dark green, comma-shaped structures are scattered throughout the cytoplasm, representing organelles like mitochondria.

[illegible]

The Mouth



ACTIVITY 12:

THE MOUTH

Objectives

- To recognize related words in a text.
- To learn how to recognize general and specific ideas using their close context.
- To identify different functions of connectors depending on their specific context.

Preparation



1. Activating Prior Knowledge

THE MOUTH

1) Talking about the human being, we usually focus our attention on the heart and brain, but what do you really know about the mouth? Write down a list of parts of the mouth that you know.



The Mouth



2) Think of food and the path it follows to reach the stomach. Complete the flow chart with the steps the food follows. One **example** has been done for you. Out of the 8 options below, only 5 are correct.

As food **enters** the mouth...



1) it is by the teeth.



2) Then, saliva is secreted helping to the food.



3) Once the food is into smaller pieces,



4) it is thanks to the tongue...



5) ... which the food into the back to the esophagus.

sliced and pulverized

swallowed

mix

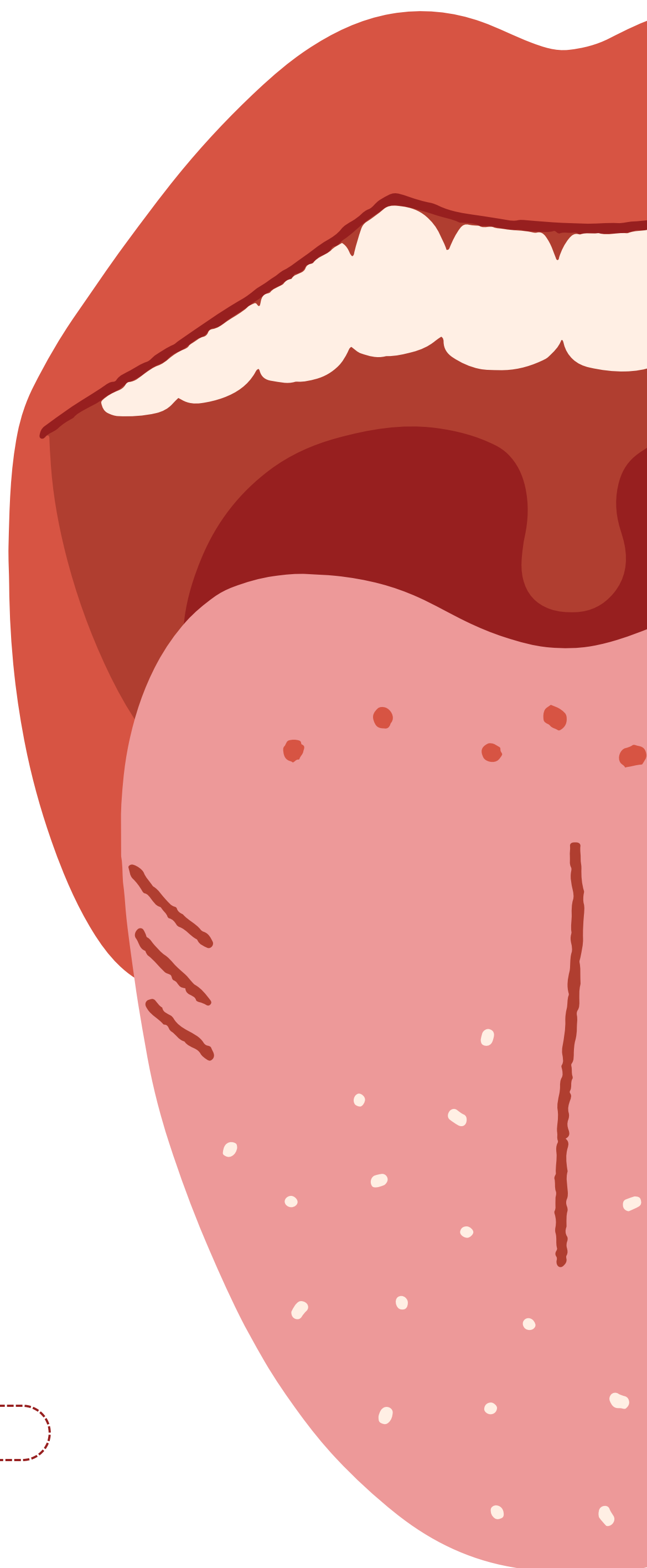
propelled

passes

liquefy

broken down

pushes



The Mouth



Development



2. Reading Comprehension

- A) Read and listen to the text: *The Mouth*.
B) Based on the reading, do the next activity.

The Mouth



(1) The mouth is a complex structure in which food is physically and chemically broken down. Food that enters the mouth is sliced and pulverized by the teeth in our jaws. This process results in the production of smaller, more digestible pieces.

(2) **As** the food is chewed, it is mixed with saliva. Saliva is a watery secretion released by the salivary glands, located around the oral cavity. The release of saliva is triggered by the smell, feel, taste, and sometimes even by the thought of food.

(3) Saliva helps to liquefy food in our mouths, making it easier to swallow. It dissolves food molecules so they can be tasted. It **also** begins to break down starch molecules with the aid of the enzyme amylase (AM-ah-lase), **also** produced by the salivary glands.

(4) But saliva does more. It also cleanses the teeth, washing away bacteria and food particles. Because the release of saliva is greatly reduced during sleep, bacteria tend to accumulate on the surface of the teeth. Here they break down tiny food particles remaining in our mouths after meals. The breakdown of food particles, in turn, produces some foul-smelling chemicals that produce bad breath known as "dragon breath," or "morning mouth."

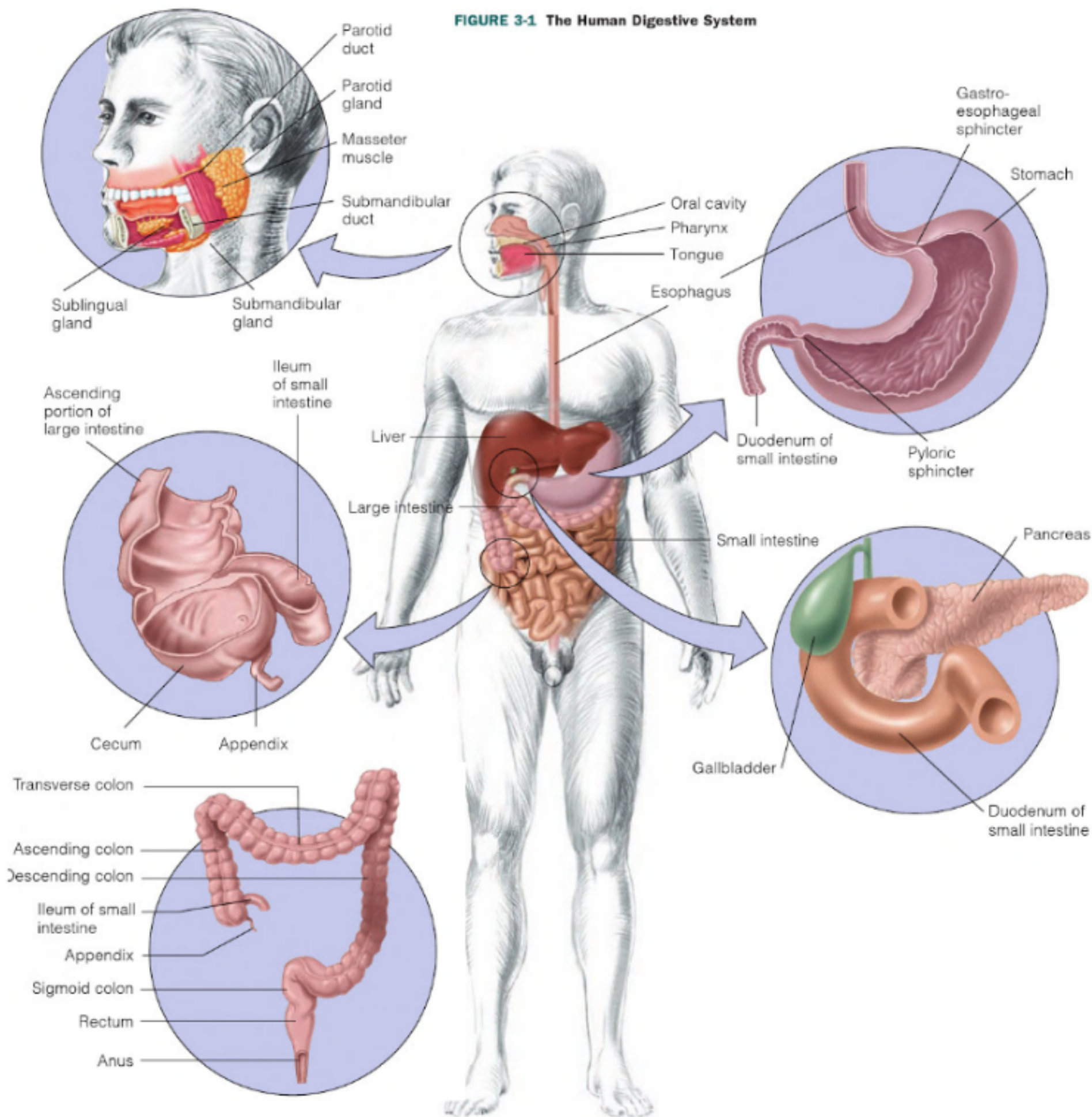
(5) **Controlling** the bacteria that live on the teeth **by** regular brushing is important to prevent bad breath, but it also reduces cavities caused **by** bacteria. Bacteria secrete a sticky material called plaque. It adheres to the surface of our teeth, trapping the bacteria. The trapped bacteria then release small amounts of a weak acid that dissolves the hard outer coating of our teeth, the enamel. The acid forms small pits in the enamel, commonly referred to as cavities. If the cavity is left untreated, an entire tooth can be lost to decay.

(6) **Brushing** helps reduce cavities by removing food particles and plaque. Most toothpastes also contain small amounts of fluoride that hardens the enamel, making them more resistant to acids. In many cities and towns, fluoride is added to drinking water to provide additional protection.

(7) **Flossing** your teeth also helps reduce cavities by removing food particles between your teeth where toothbrushes can't reach.

(8) After food is chewed, it must be swallowed. The tongue plays a key role in swallowing by pushing food to the back of the oral cavity where it passes into the esophagus (ee-SOFF-ah-gus). The esophagus is a long muscular tube that leads to the stomach (**Figure 3-1**).

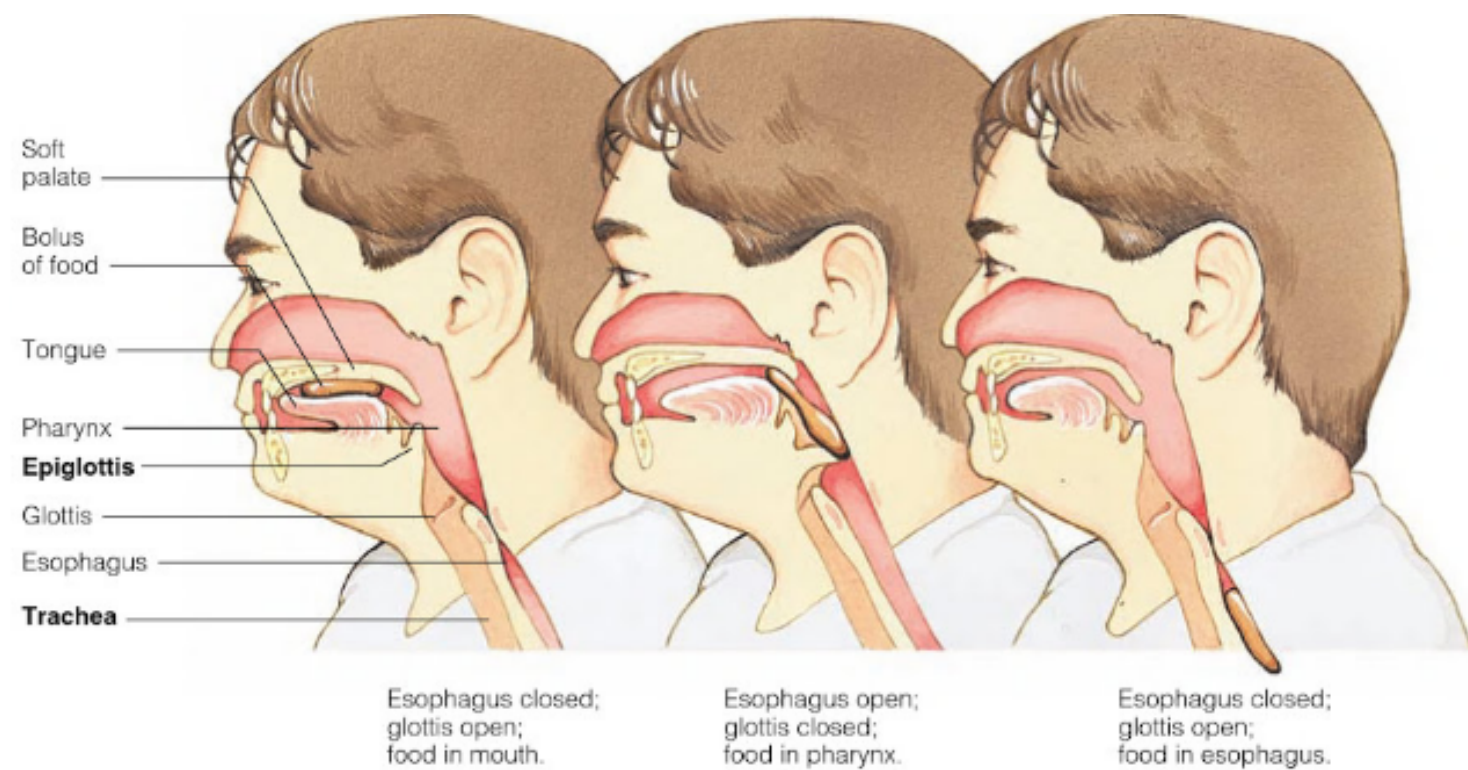
The Mouth



(9) The tongue also aids in speech and contains taste stimulated by four basic flavors: sweet, sour, salty, and bitter. Various combinations of these flavors (combined with the odors we smell) give us a rich assortment of tastes.

(10) Food propelled into the esophagus is prevented from entering the trachea (TRAY-key-ah), or windpipe, which carries air to the lungs and lies in front of the esophagus, by a flap of tissue called the epiglottis (ep-ah-GLOT-tis) (**figure3-3**). It acts like a trapdoor, closing off the trachea during swallowing.

FIGURE 3-3 The Epiglottis This trapdoor prevents food from entering the trachea during swallowing. As illustrated, the trachea is lifted during swallowing, pushing against the epiglottis, which bends downward.



CHIRAS, D. DANIEL (2003) The Digestive System- The Mouth. Human Body Systems, Structure, Function and Environment (pp 15-17) Sudbury, Massachusetts: Jones and Bartlett Publishers.

The Mouth



ACTIVITY

Answer the questions based on the text: *The Mouth*.

1. What does the first section deal with?

- ☐ The damages caused by bacteria.
- ☐ The importance of brushing your teeth.
- ☐ The way saliva contributes to controlling bacteria.
- ☐ The processes that take place within the mouth.

2. What does the second section deal with?

- ☐ The importance of cleaning the teeth and the role of the tongue in processes in the mouth.
- ☐ The importance of the tongue in speech and propelling food particles.
- ☐ The importance of toothbrush in cleaning the mouth.
- ☐ The way bacteria are cleaned from the mouth and how the teeth propel food particles through the esophagus.

3. What words from the context help you get the meaning of the these concepts? Fill in the chart below.

Concept	Paragraph	Words in context associated with the concept	Meaning in Spanish
☐ Saliva.	#2	Watery secretion / salivary glands / Oral cavity	
☐ Plaque.			
Cavities.	#5	Bacteria / ☐ Breath. ☐ Plaque. / Teeth / ☐ Enamel. ☐ Eyes. / to decay	

The Mouth



4. The word "AS" in the **second paragraph** has the function of...

- ☐ Making a comparison.
- ☐ Reinforcing an idea.
- ☐ Telling about the simultaneity of two actions.
- ☐ Giving a reason or cause.

5. The word "BY" has two different functions in paragraph 5. Read the text and explain the different use in it.

Tip:

Tip: The word is used for linking two ideas and also for specifying the agent of an action. Identify which use is in each case and justify your answer by providing the characteristics and elements that have helped you to identify the different uses.

[illegible]

6. Find a synonym for "ALSO" in the 3rd paragraph.

- ☐ In addition / as well
- ☐ Nevertheless / For example
- ☐ But / First



Read their sentences very carefully and then say what they may have in common (both grammatically and in relation to the writer's purpose when organizing the ideas)

[illegible]

Image 1

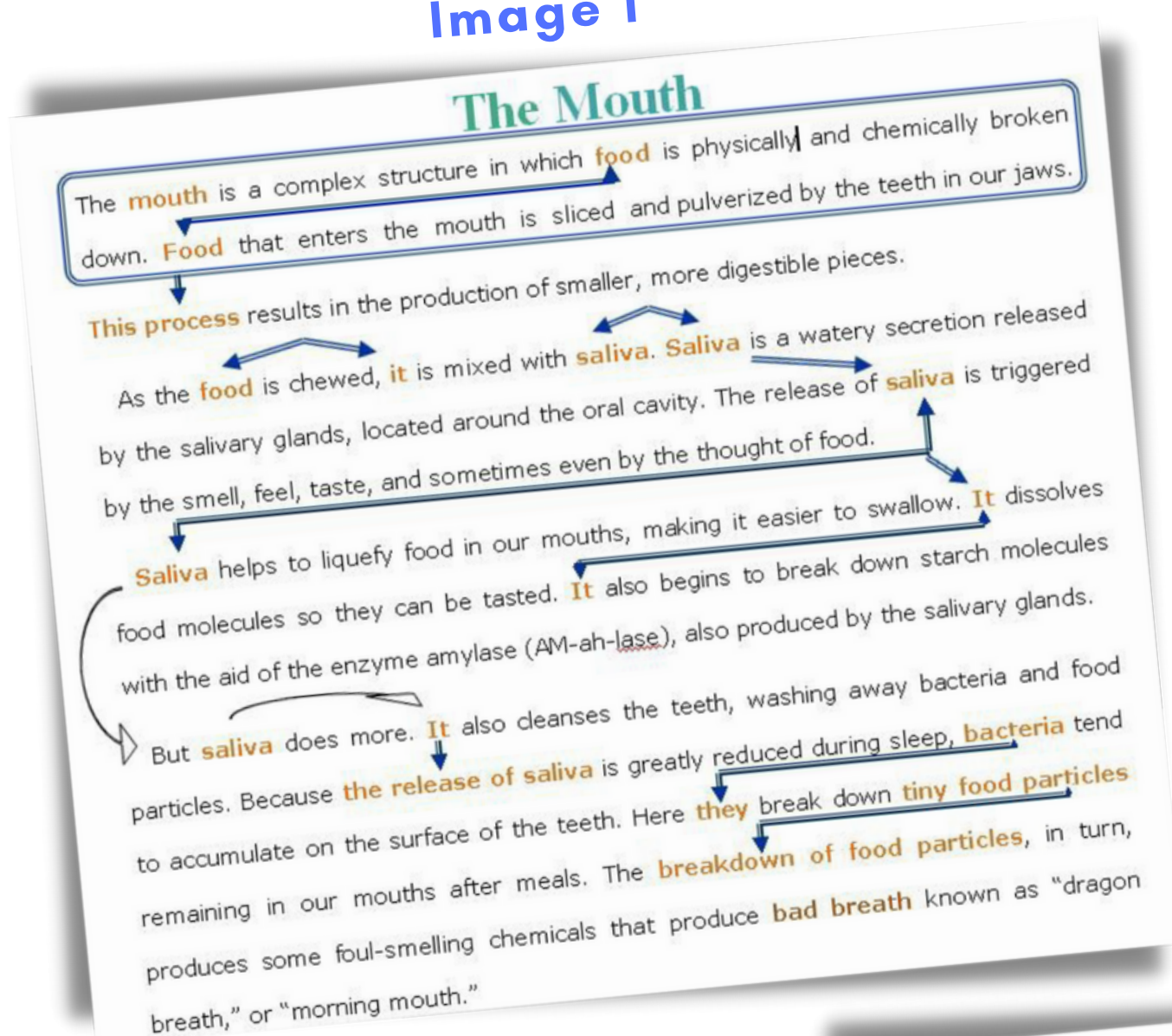


Image 2

Food propelled into the esophagus is prevented from entering the trachea (TRAY-key-ah), or windpipe, which carries air to the lungs and lies in front of the esophagus, by a flap of tissue called the epiglottis (ep-ah-GLOT-tis) (figure3-3). It acts like a trapdoor, closing off the trachea during swallowing (Module

The Mouth

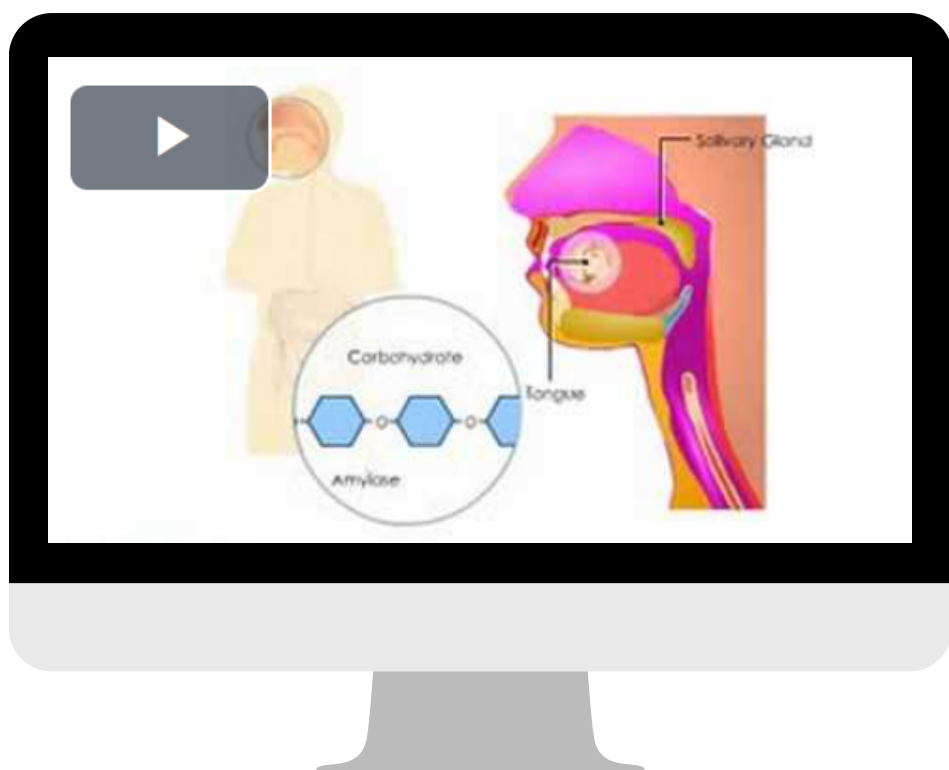


Closure



3. Listening Comprehension

Watch the video below ***Oral Cavity***, what is the main idea of the video?



Scan this QR code to watch the video!



Geneedinc. (2008). *GI Anatomy: Oral Cavity Mechanics* [Video]. Retrieved from: https://www.youtube.com/watch?v=vBtJ1D3S_p8



UNIVERSIDAD DEL VALLE

Actividades Complementarias Asistidas por Tecnologías Salud I

Answer sheets

Autores

Asnorald Cadavid Ríos
Marcela del Pilar Castellanos Olmedo
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Could Stem Cells Patch Up a Broken Heart?



ACTIVITY 1: STEM CELLS

Preparation

1. Activating Prior Knowledge

- 1) Open question.
- 2) It is not established.
- 3) Because each cell in the body comes from this type of cell.
- 4) When it receives an indication to do it.
- 5) To activate some specific genes to make proteins.

Development

2. Reading Comprehension

- | | |
|---|---|
| <p>1) A) PARAGRAPH 2
B) PARAGRAPH 4
C) PARAGRAPH 3
D) PARAGRAPH 1</p> <p>2) 1) FALSE
2) TRUE
3) TRUE
4) FALSE
5) TRUE</p> | <p>3) 1) ACTIVE
2) PASSIVE
3) ACTIVE
4) PASSIVE</p> |
|---|---|

Closure

3. Listening Comprehension

- 1) Kenneth Chien
Heart Cells
Congenital Heart



Preparation

1. Activating Prior Knowledge

- | | |
|------|------|
| A) 1 | E) 6 |
| B) 4 | F) 3 |
| C) 5 | G) 2 |
| D) 7 | |

Development

2. Reading Comprehension

- | | | |
|--|--|---|
| 1) 1) Harmful
2) Chronic
3) Alcoholism
4) Intellectual
5) Thinking | 6) Behavior
7) Movement
8) Damage
9) Weakness
10) Speech | 4) 1) Citation
2) Citation
3) Definition
4) Source
5) Explanation |
| 2) A) 5
B) 1
C) 6 | D) 4
E) 2
F) 3 | 5) Definition
Description
Exemplification
Cause/Effect |
| 3) 1) C
2) D | 3) B
4) A | |

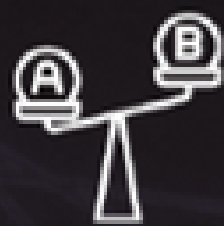
Closure

3. Listening Comprehension

- | | | |
|---|---|---|
| 1) 1) FALSE
2) TRUE
3) TRUE
4) FALSE
5) FALSE | 6) TRUE
7) TRUE
8) FALSE
9) TRUE | 2) 1) Argument
2) Contrast
3) Instruction |
|---|---|---|

ACTIVITY 2:

THE HARMFUL EFFECTS OF ALCOHOL



ACTIVITY 3:

HEARING AND BALANCE

Preparation

1. Activating Prior Knowledge

- 1) The volume of the sound.

2) Determine direction of sound and frequency.
- 3) The eardrum vibrates.

4) Send electrical impulses to the brain.

Development

2. Reading Comprehension

- 1) A) PARAGRAPH 3
B) PARAGRAPH 5
C) PARAGRAPH 4

D) PARAGRAPH 6
E) PARAGRAPH 2
F) PARAGRAPH 1
- 2) 1) Middle ear.
3) Outer ear.
4) Choclea / It contains the receptors for hearing.
5) Outer / It contains the receptors for hearing.
6) Hammer.
7) Stirrup / Middle ear.

4) Open question.
- 3) 1) C
2) B
3) D

4) E
5) A
- 5) 1) Piece.
2) Canal.
3) Bone.
4) Valve.
5) Cavity.

6) Open question.

Closure

3. Hangman

- 1) 1) Earlobe.
2) Auricular.
3) Hammer.
4) Cochlea.
5) Eardrum.

Hearing Loss



Preparation

1. Activating Prior Knowledge

Open question.

Development

2. Reading Comprehension

- 1) A) TRUE
B) FALSE
C) FALSE
D) TRUE

E) FALSE
F) TRUE
G) FALSE
- 2) 1) Does not mature emotionally.
2) House receptors that detect body position and movement.
3) The head rotates, so the fluid in the semicircular canals moves causing the stimulation of the hair cells of the receptors. This creates impulses which are sent to the brain.
4) Provide input at rest and help us to stay balanced when we are not moving and also provide information when we are moving in a straight line.

3) Open question.
- 4) Open question.

5) 1, 2, 3) Degenerate, Deafen, Characterize
4, 5, 6) Treatment, Receiver, Loss
7, 8, 9) Unaware, Auditory, Electrical
10, 11, 12) Emotionally, Usually, Slowly

6) 1) generate
2) deaf
3) deaf
4) treat
5) search
6) active
7) addition
8) emotion

Closure

3. Crossword

ACROSS

- 1: Skull.

4: Device.

8: Hearing.

10: Deaf.
- 11: Loss.

15: Fuse.

DOWN

- 1: Throat.

3: Earwax.

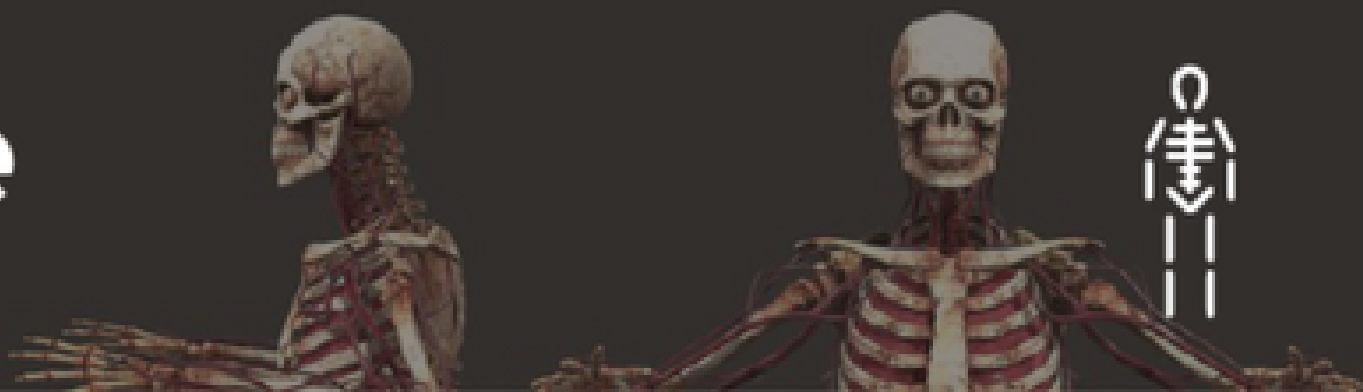
4: Damage.

5: Noise.
- 7A: Lose.

7B: Flow.

9: Deafness.

Introduction to the Skeletal System



Preparation

1. Activating Prior Knowledge

- 1) 206.
- 2)

A. Skull.	G. Radius.
B. Ribs.	H. Ulna.
C. Sternum.	I. Femur.
D. Spine.	J. Fibula.
E. Pelvis.	K. Tibia.
F. Humerus.	

Development

2. Reading Comprehension

- 1)

1) They change shape or remodel.		
2) To support and protect the soft organs in the body.		
3) The large bones of the lower limbs.		
4) <table border="0"><tr><td>a) They release calcium.</td></tr><tr><td>b) The excess of calcium is stored in the bone matrix.</td></tr></table>	a) They release calcium.	b) The excess of calcium is stored in the bone matrix.
a) They release calcium.		
b) The excess of calcium is stored in the bone matrix.		
- 2)

A) Skeleton.
B) Bones of the ribcage.
C) The large bones of the lower limbs.
D) Vertebrae.
E) Bones and muscles.
- 3)

1) Injury.
2) Limbs.
3) Cord.
4) Support.

ACTIVITY 5:

INTRODUCTION TO THE SKELETAL SYSTEM

- 4)

1) Frame.	5) Parts.
2) System.	6) System.
3) Weight.	7) Matrix.
4) Bones.	
- 5)

1) PARAGRAPH #1
2) PARAGRAPH #1
3) PARAGRAPH #8
4) PARAGRAPHS #3 & #4
- 6)

1) ACTIVE.
2) ACTIVE.
3) PASSIVE.
4) PASSIVE.

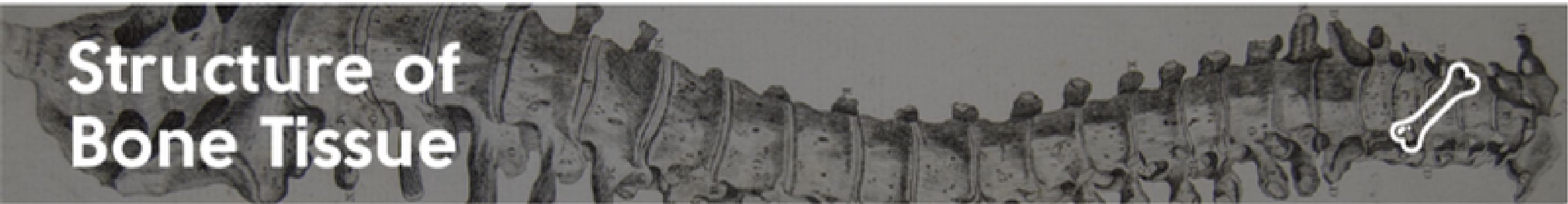
Closure

3. Listening Comprehension

- 1)

1, 2, 3: Axial.	3) Open question.
4, 5, 6: Appendicular.	
- 2) Open question.
- 4)

A) TRUE	C) TRUE
B) FALSE	D) FALSE



Structure of Bone Tissue

Preparation

1. Activating Prior Knowledge

- 1) Open question.
- 2) Open question.

Development

2. Reading Comprehension

- 1) Open question.
 - 2)
 - 1) Types.
 - 2) Central Canal.
 - 3) Plates.
 - 4) Parallel.
 - 5) Maximum.
 - 3)
 - 1) Above.
 - 2) Interconnects.
 - 3) In the middle.
- 4)
 - 1) Concentric rings.
 - 2) Spaces between bones.
 - 3) Osteonic.
 - 4) Osteocytes.
 - 5) Osteonic.
 - 5)
 - 1) -nic.
 - 2) -cyte.
 - 3) -on.
 - 4) -blast.
 - 5) -clast.
 - 6)

1) Tightly. 2) Lighter. 3) Haphazard.	4) Loosely. 5) Heavier. 6) Organized.
---	---

Closure

3. Listening Comprehension

- 1)
 - 1) support the body.
 - 2) phosphorus, calcium and magnesium.
 - 3) low bone mass and structural deterioration.
 - 4) Fragility and fracture of bones.
- 2)
 - 1) Bone.
 - 2) Mass.
 - 3) Calcium.
 - 4) Fractures.
 - 5) Older adults.
 - 6) Posture.

The Digestive System



ACTIVITY 7: THE DIGESTIVE SYSTEM

Preparation

1. Activating Prior Knowledge

- 1) Open question.

Development

2. Reading Comprehension

- 1) Open question.
- 2) 1) **E)** is pushed toward the esophagus.
2) **D)** digest proteins, fats and carbohydrates.
3) **F)** supply the small intestine, take away the final products of digestion.
4) **B)** regulate the blood sugar level.
5) **A)** manufactures bile for the gall bladder.
6) **C)** helps to break down fats into minute droplets.
- 3) **Complex:** Simple
Small: Large
Digestible: Indigestible
Accessory: Chief
- 4) 1) Large.
2) Digestion.
3) Mastication.
- 5) Open question.
- 6) Open question.

Closure

3. Listening Comprehension

- 1) Open question.

The Endocrine System



ACTIVITY 8:

THE ENDOCRINE SYSTEM

Preparation

1. Activating Prior Knowledge

- 1) Open question.

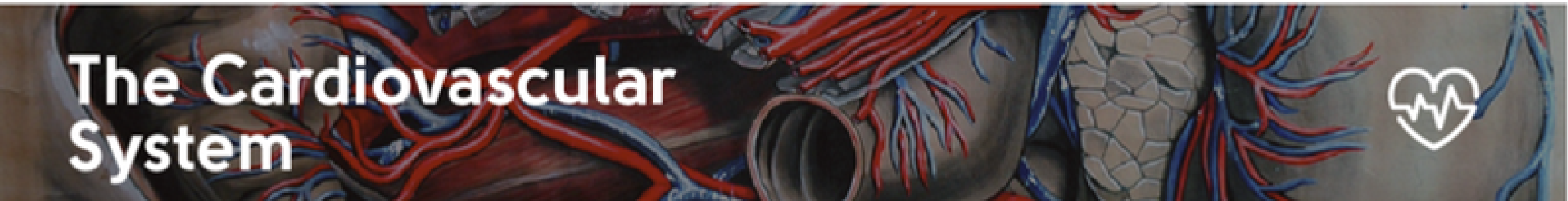
Development

2. Reading Comprehension

- 1) Open question.
- 2) Open question.
- 3) 1) EXAMPLE.
2) **Linking word:** Although **Function:** Contrast
3) **Linking word:** Because **Function:** Reason
4) **Linking word:** For example **Function:** Example
- 4) 1) Exocrine Glands.
2) The ones that have receptor sites for hormones.
3) The eight major endocrine glands.
- 5) 1) System / Regulation.
2) Hormones.
3) Pancreas / Enzymes.

Closure

- 1) FALSE.
- 2) TRUE.
- 3) FALSE.
- 4) FALSE.
- 5) TRUE.



The Cardiovascular System



Preparation

1. Activating Prior Knowledge

- | | | |
|-----------------|---------------|-----------------|
| 1) 1) Skeleton. | 6) Feet. | |
| 2) Elbows. | 7) Heart. | |
| 3) Spine. | 8) Hands. | |
| 4) Stomach. | 9) Shoulders. | |
| 5) Lung. | 10) Colon. | |
| | | |
| 2) 1) Eye. | 6) Shoulder. | 11) Heart. |
| 2) Hair. | 7) Head. | 12) Stomach. |
| 3) Ear. | 8) Hand. | 13) Kidney. |
| 4) Nose. | 9) Lung. | 14) Intestines. |
| 5) Mouth. | 10) Liver. | |

ACTIVITY 9:

THE CARDIOVASCULAR SYSTEM

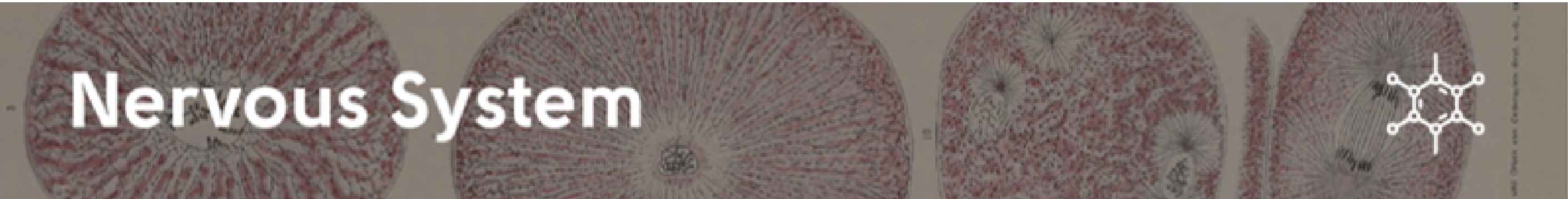
Development

2. Reading Comprehension

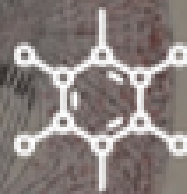
- | | | |
|-------------------------|-----------------------|-------------------------------|
| 1) 1) Aorta. | 7) Right ventricle. | 4) 1) Environment. |
| 2) Pulmonary arteries. | 8) Tricuspid valve. | 2) Supply. |
| 3) Left atrium. | 9) Right atrium. | 3) Layer. |
| 4) Mitral valve. | 10) Pulmonary veins. | |
| 5) Aortic valve. | 11) Pulmonary valves. | 5) 1) caused by. |
| 6) Left ventricle. | | 2) while. |
| | | |
| 2) Open questions. | | 6) 1) Someone / calls. |
| | | 2) Something / has to remove. |
| 3) A) -ing / Adjective. | | 3) The heart / pumps. |
| B) -ed / Verb. | | |
| C) Noun. | | |
| D) -s / Noun. | | |

Closure

- | | | |
|-----------------------|------------------------|----------------------------------|
| 1) 1) has recommended | 7) will insert | 2) 1, 2, 3) Description of |
| 2) is located | 8) is briefly inflated | process, Definition, Explanation |
| 3) keep | 9) will take | |
| 4) are called | | |
| 5) are called | | |
| 6) to increase | | |



Nervous System



Preparation

ACTIVITY 10:

THE NERVOUS SYSTEM

1. Activating Prior Knowledge

- 1) 1) Open question.
- 2) 1) Esophagus. 6) Large intestine.
2) Stomach. 7) Rectum.
3) Liver.
4) Pancreas.
5) Small intestine.
- 3) Skin.

Development

2. Reading Comprehension

- 1) Open questions.
- 2) 1) Direction.
2) Purpose.
3) Purpose.
4) Purpose.
5) Direction.
- 3) 1) The Nervous System.
2) These.
3) Sensory receptors.
4) Them.
5) The brain and the spinal cord.
- 4) 1) Cause.
2) Muscles/glands.
3) Muscles/glands.
4) Effectors.
- 5) 1) Concession.
2) Subdivision.
3) Nervous system.
- 5) Effect.
6) Directions.
7) Nervous.
- 4) There.
5) Body.
- 6) Additionally.

Closure

- 1) 1) Symptoms.
2) Left.
3) Spine.
4) Vertebrae.
5) Development.
6) Nerves.
- 7) Subluxation.
8) Pain.
9) Respiratory.
10) Problems.
11) Arms.

Cell Functions



ACTIVITY 11: CELL FUNCTIONS

Preparation

1. Activating Prior Knowledge

- 1) 1) Open question.
- 2) Open question.

Development

2. Reading Comprehension

- | | |
|---|---|
| <ol style="list-style-type: none">1) 1) D.
2) A.
3) B.
4) E.
5) C.2) Its close relationship to structure.3) 1) Meiosis.
2) Cytokinesis.
3) Gametes.
4) Cell division.
5) Somatic cells. | <ol style="list-style-type: none">4) 1) Open question.
2) Open question.5) 1) Open question.
2) Open question.
3) Open question.
4) Open question.
5) Open question.6) Open question. |
|---|---|

Closure

- 1) 1) Open question.



Preparation

1. Activating Prior Knowledge

- 1) 1) Open question.
- 2) 1) sliced and pulverized.
2) liquefy.
3) broken down.
4) swallowed.
5) pushes.

ACTIVITY 12: THE MOUTH

Development

2. Reading Comprehension

- 1) The processes that take place within the mouth.
- 2) The importance of cleaning the teeth and the role of the tongue in processes in the mouth.
- 3) - Saliva/Saliva.
- Plaque/Enamel/Caries
- 4) Telling about the simultaneity of two actions
- 5) Open question.
- 6) In addition / as well
- 7) Open question.
- 8) Open question.

Closure

- 1) 1) Open question.

Acerca de nosotros

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Enseñanza de lenguas con fines académicos y específicos

Diseño de materiales y uso de plataformas virtuales

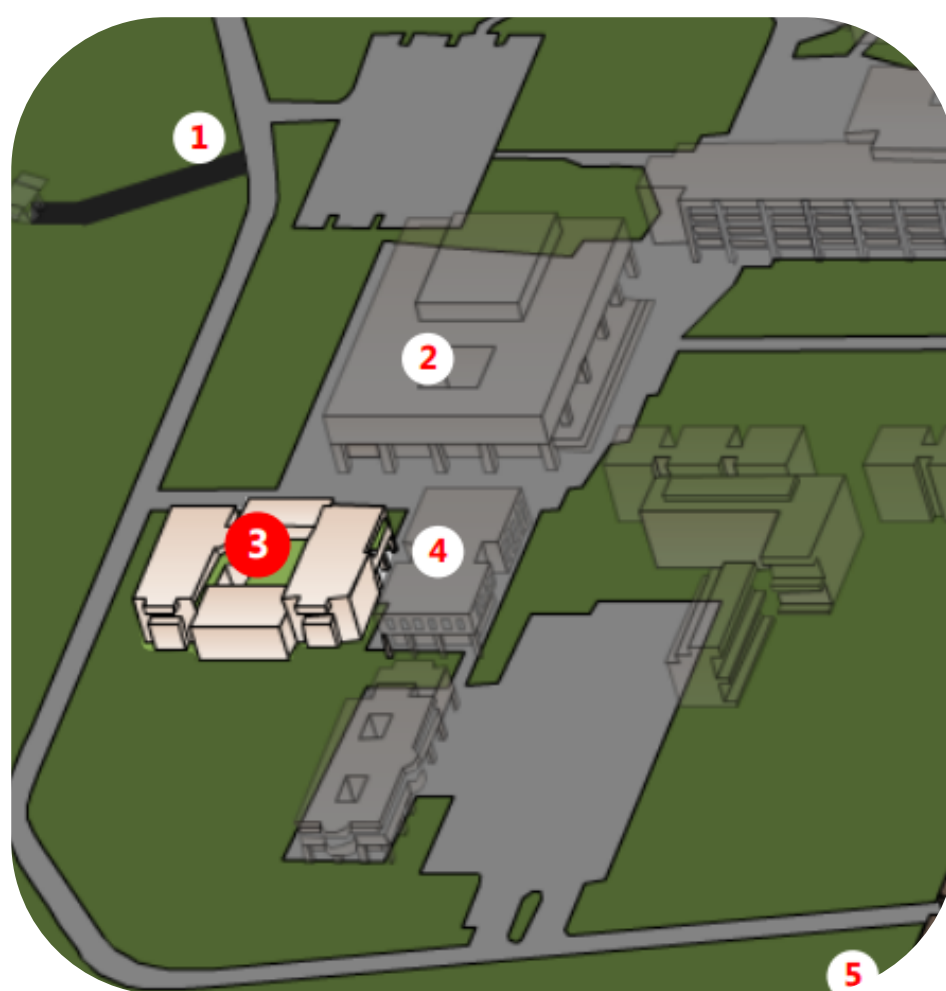


UNIVERSIDAD DEL VALLE
FACULTAD DE HUMANIDADES
ESCUELA DE CIENCIAS DEL LENGUAJE
2023

ANEXOS

El Campus Virtual

El Campus Virtual de la Universidad del Valle es una herramienta a disposición de estudiantes y profesores cuyo fin es fomentar la utilización de nuevas tecnologías en la práctica docente. Este campus utiliza la plataforma de licencia libre *Moodle 3,5* como interfaz y brinda una amplia variedad de herramientas interactivas como foros, cuestionarios, encuestas, entre otras.



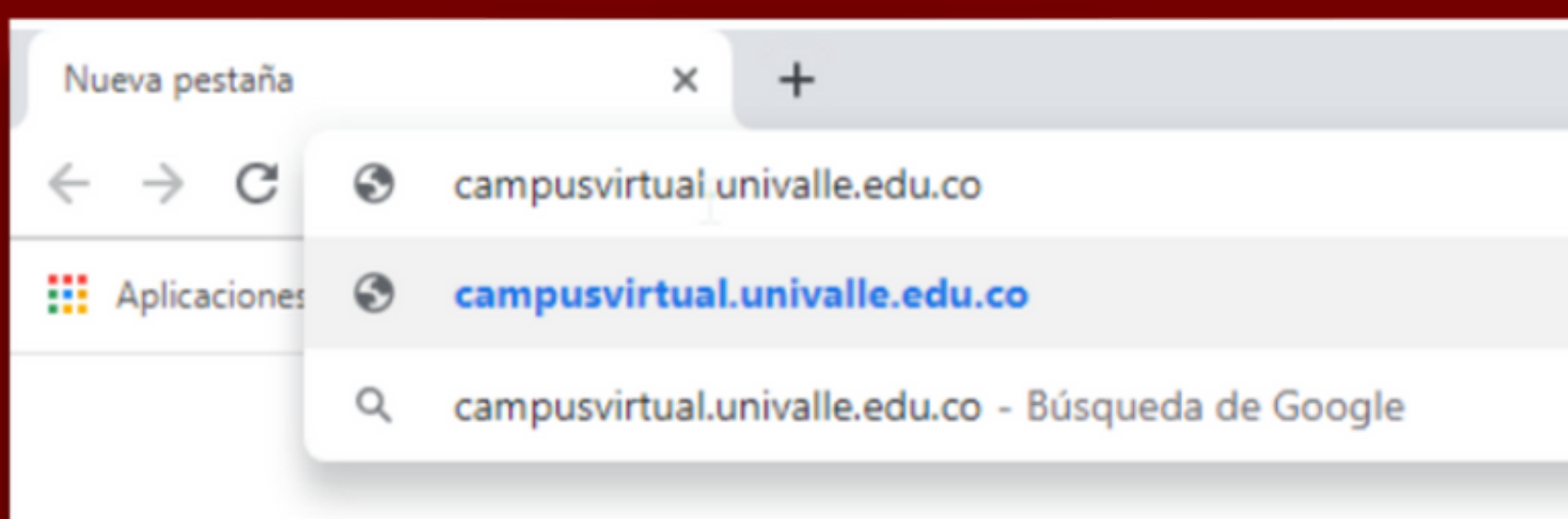
1. Entrada vehicular: Carrera 86
2. Biblioteca Mario Carvajal
3. Edificio E18 (CREE)
4. Edificio E17. Escuela de Ciencias del Lenguaje
5. Entrada Peatonal: Avenida Pasoancho

Localización Edificio E18 (CREE)

Para ingresar al campus, se requiere que el docente y/o el estudiante cuente con una cuenta de correo electrónico institucional, la cual es gratuita y se genera automáticamente una vez vinculados a la institución. Sin embargo, si usted no posee una cuenta aún o presenta problemas para ingresar, debe dirigirse a la **oficina del Campus Virtual** localizada en el **segundo piso del edificio E18 CREE**.

Ingresar al Campus Virtual:

1. En su navegador ingrese a:
<https://campusvirtual.univalle.edu.co>



2. En la página principal del campus, busque el recuadro de acceso y escriba los datos.

a. Si es DOCENTE:

- Su nombre de usuario es el número de su cédula sin espacios.

- Si es USUARIO NUEVO, su contraseña es el número de su cédula sin espacios. Si olvidó su clave puede dar clic en ¿Olvidó su nombre de usuario o contraseña?.

b. Si es ESTUDIANTE:

- Su nombre de usuario es su código de estudiante (sin los dos primeros números del año) seguido por un guión y el código de su programa académico. Por ejemplo: 1056899-3625

- Si es USUARIO NUEVO, su contraseña es la primera letra del primer nombre (en mayúscula), seguido del código estudiantil (sin los dos primeros números del año) y la primera letra del primer apellido (en mayúscula). Por ejemplo: L1056899T

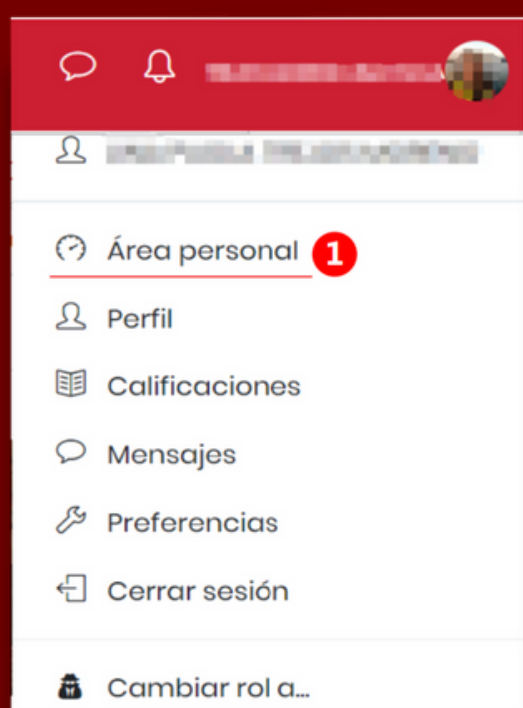
Si olvidó su clave puede dar clic en ¿Olvidó su nombre de usuario o contraseña?.

A screenshot of the login form on the campus virtual page. It features two input fields: 'Nombre de usuario' with a person icon and 'Contraseña' with a lock icon. Below these fields is a checkbox labeled 'Recordar nombre de usuario'. A red 'Acceder' button is positioned below the checkbox. At the bottom of the form, there is a link that reads '¿Olvidó su nombre de usuario o contraseña?'.

3. Dé click en **ACCEDER.**

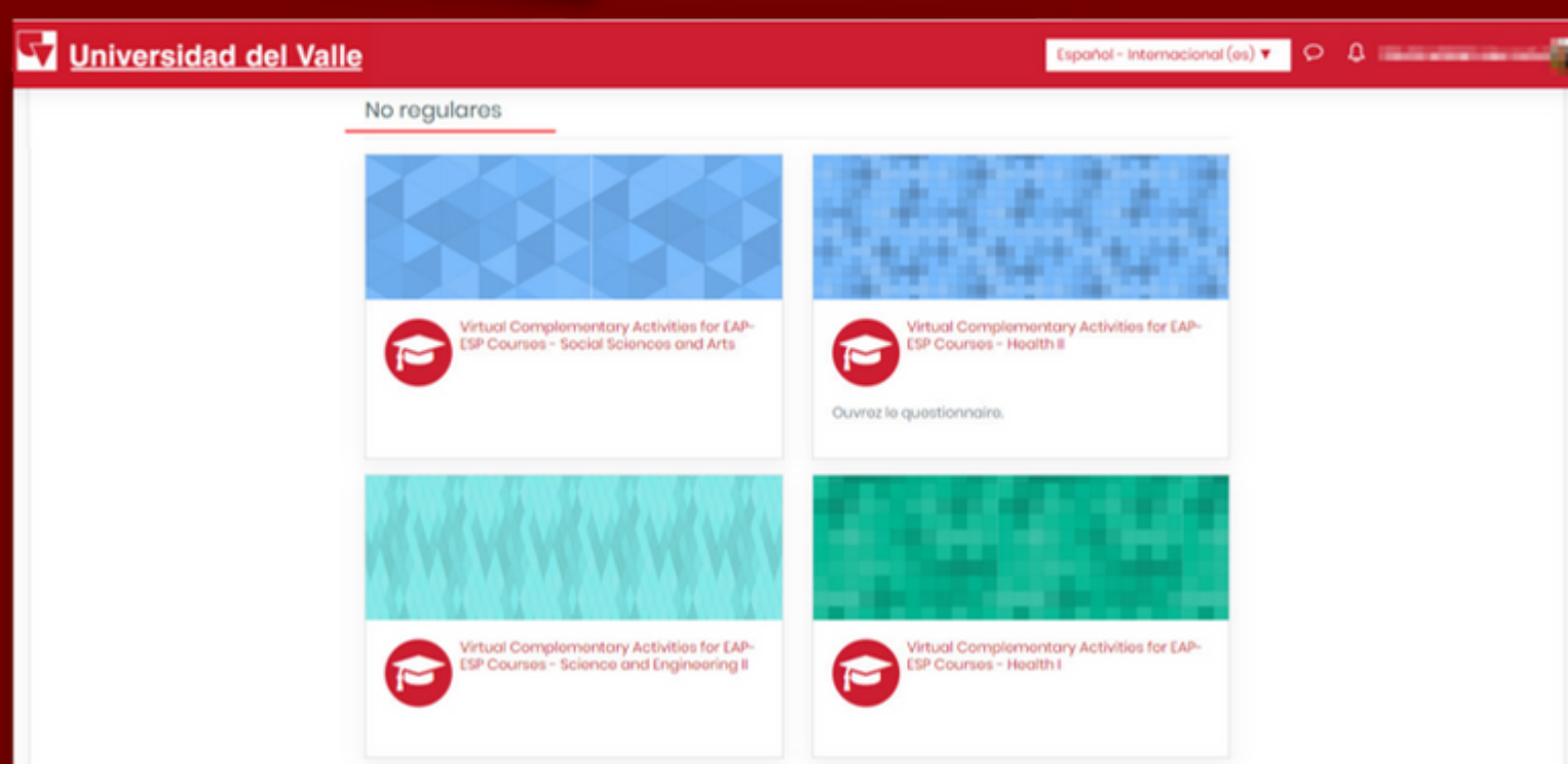
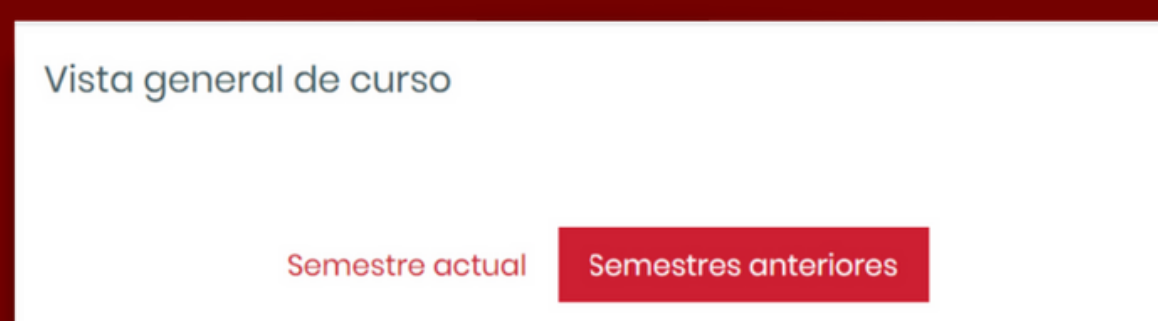
Cómo ingresar a las actividades:

1. Ingrese a su Campus Virtual, sección **ÁREA PERSONAL**.*



* El Área Personal es la sección que se abre por defecto al ingresar al Campus Virtual. Si usted presenta inconvenientes para encontrarla, en la parte superior derecha encontrará su nombre y una imagen, dé clic en la imagen y seleccione Área Personal, tal y como se muestra en la imagen.

2. En el Área Personal, busque la sección **Cursos** y seleccione la opción **SEMESTRES ANTERIORES**. Desplácese hacia abajo hasta encontrar la sección **CURSOS NO REGULARES**. Dé clic en el módulo al cual desea ingresar.



Descripción de los módulos

Cada módulo se compone de un promedio de **10 a 12 actividades**, las cuales son autónomas entre sí y no dependen de la anterior, el orden asignado obedece a otros criterios como por ejemplo los niveles de exigencia de la lengua y los contenidos del curso presencial. Las actividades tienen entre **7 a 9 ejercicios** divididos en tres momentos: **preparación, desarrollo y cierre**. Adicionalmente, cada módulo contiene una introducción, un manual de gramática, y una página de créditos.

A continuación se explican en detalle:

Introducción

Es por defecto la pestaña inicial de todos los cursos. En la introducción, se explica el propósito del material de apoyo y cómo está organizado.

Universidad del Valle

Virtual Complementary Activities for EAP-ESP Courses - Science and Engineering I

Dashboard Courses 00-EAP_ESP_SCIENCE_ENGINEERING_LEVEL_I Introduction

Introduction Act. 1: Scientific Method Act. 2: What is Chemistry? Act. 3: Using Chemistry to Feed the World Act. 4: Human Energy Requirements Act. 5: Knives and Steel Act. 6: Lasers Act. 7: Scientists Study Holstein Milk Production Act. 8: Engineering Ethics Act. 9: Contributions of the Greeks Act. 10: Civil Engineering Act. 11: Plastics Act. 12: Volcanoes and Earthquakes Grammar Manual Credits

Virtual Complementary Activities for EAP-ESP Courses I

INTRODUCTION

The activities offer to students and teachers appropriate material for exploring different levels of an **EAP-ESP class** in different disciplines of **Science and Engineering**. They can be used for autonomous practice or supporting material for the class. There are **12 activities** to explore, each one divided into 3 sections **preparation, development** and **closure**. The first section will explore the students' prior knowledge; the second section provides the opportunity for learning the language by using it in context within a specific topic which is relevant and interesting for the student scope of study. Finally, the closure section aims to expand what the students have learned throughout the previous sections.

Avisos

Act. 1: Scientific Method ▶

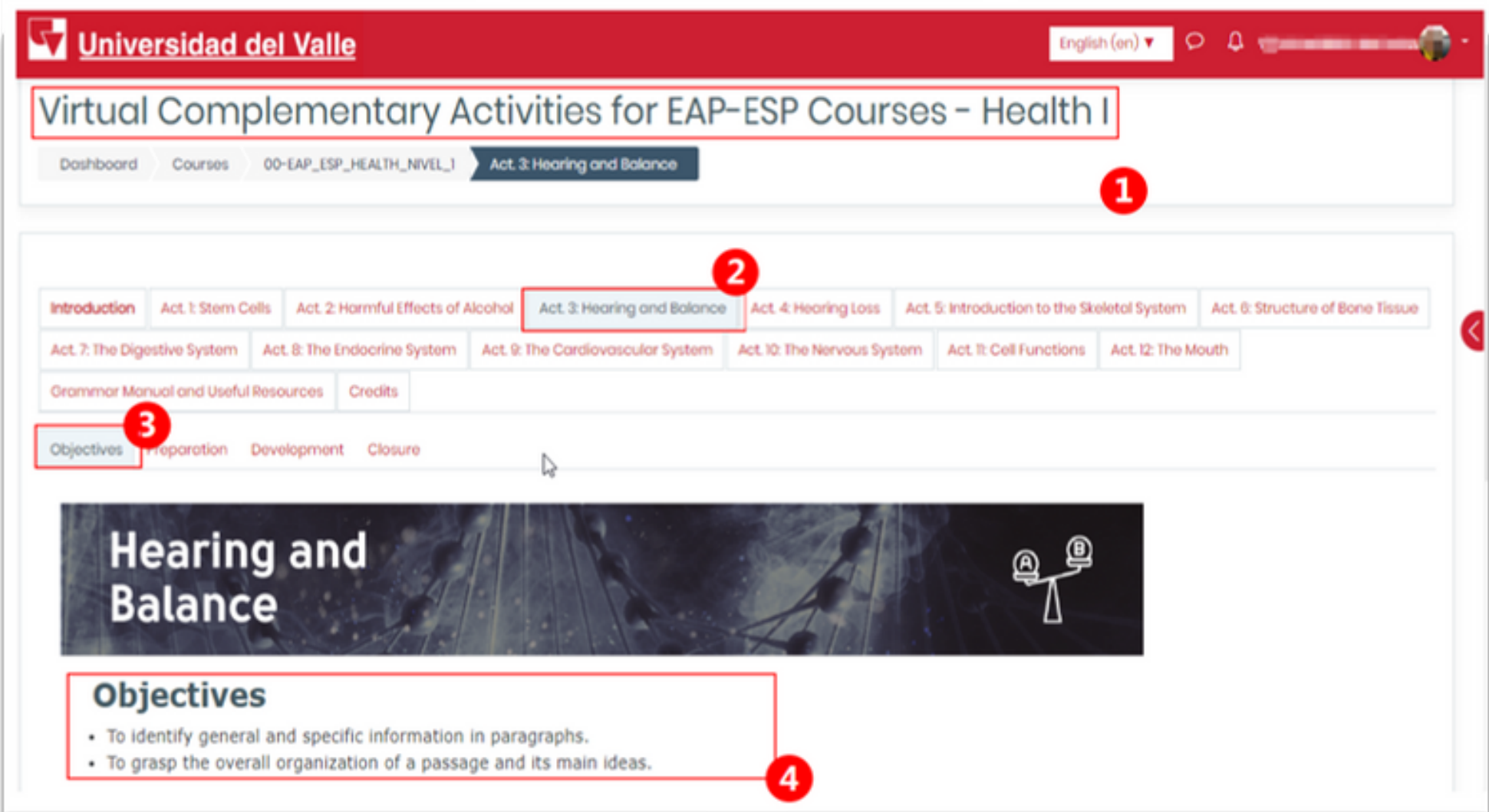
1. Nombre del curso

2. Pestaña de introducción

3. Introducción

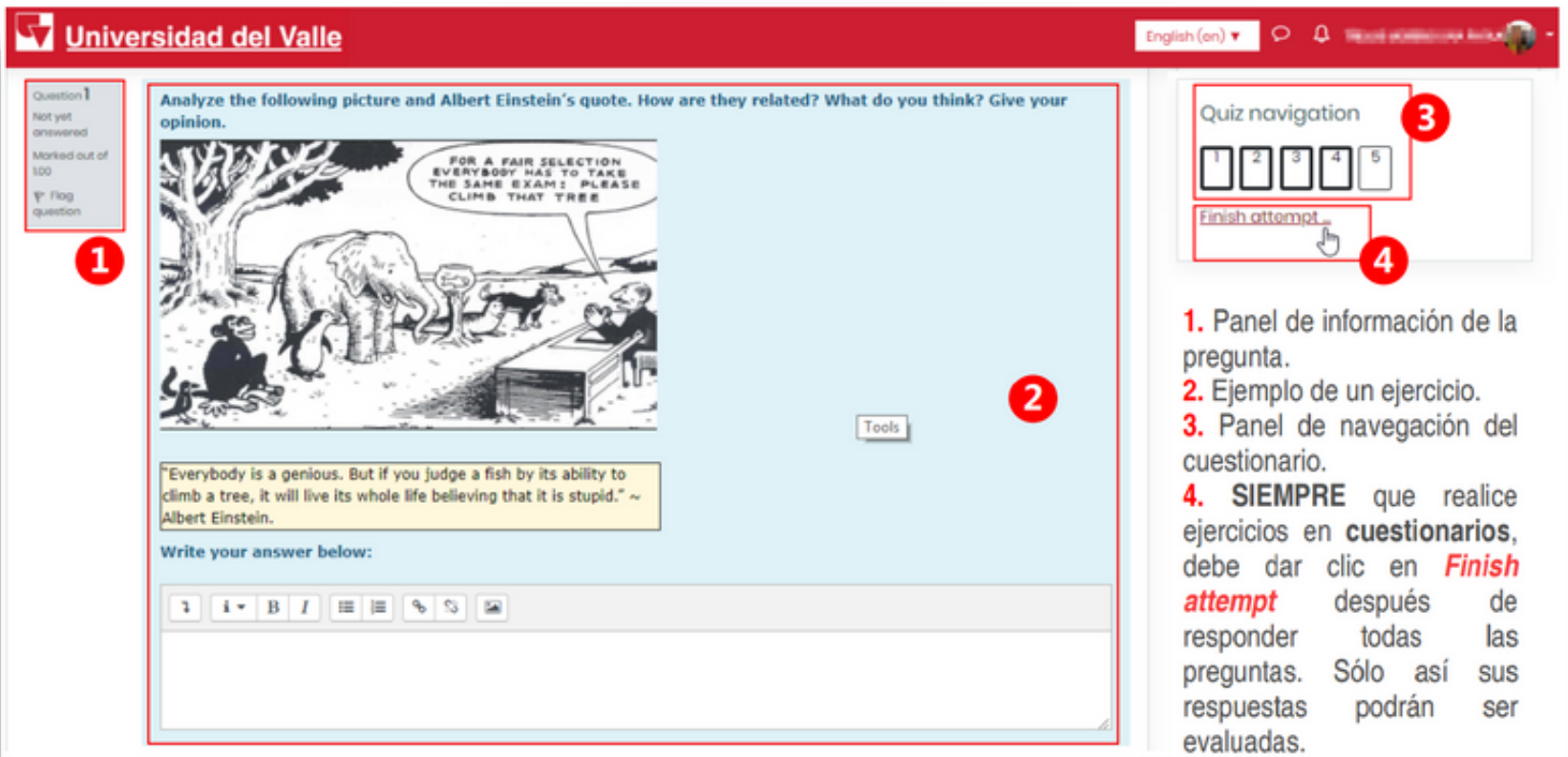
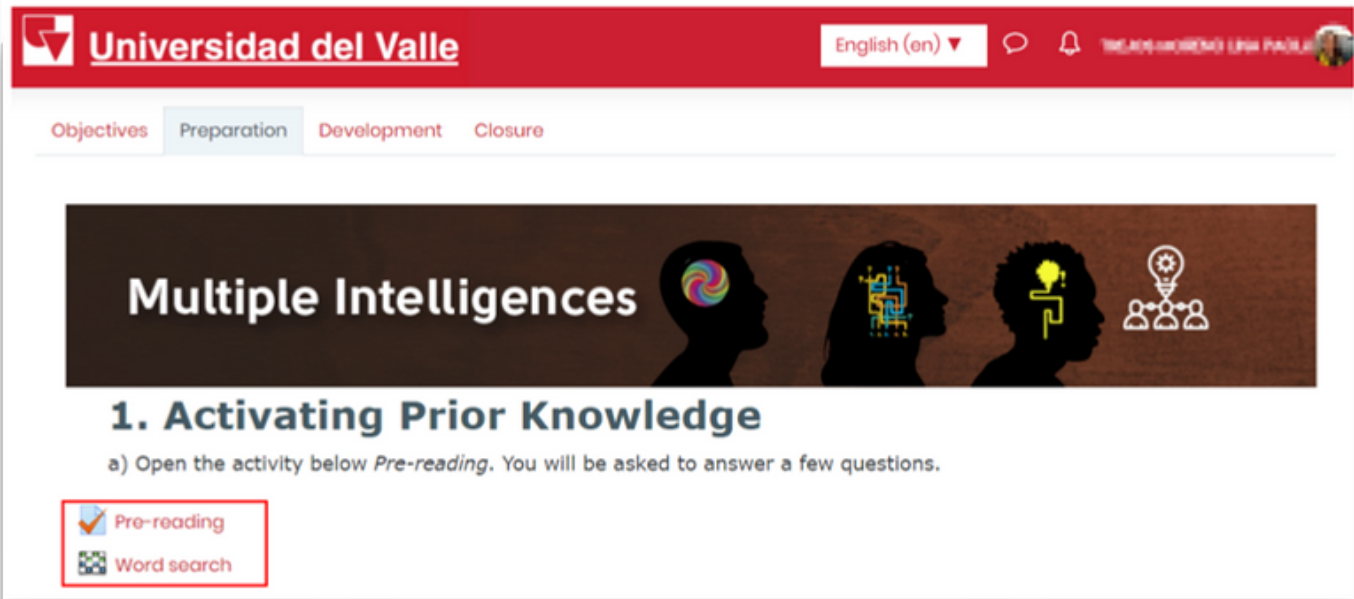
Actividades complementarias asistidas por tecnología

Cada actividad contiene unos **objetivos** que guían al estudiante durante la consecución de la tarea, la cual, como se había mencionado anteriormente, se desarrolla en tres momentos: **preparación, desarrollo y cierre**.



1. Nombre del módulo
2. Nombre de la actividad
3. Pestaña de objetivos
4. Ejemplos de objetivos de una actividad

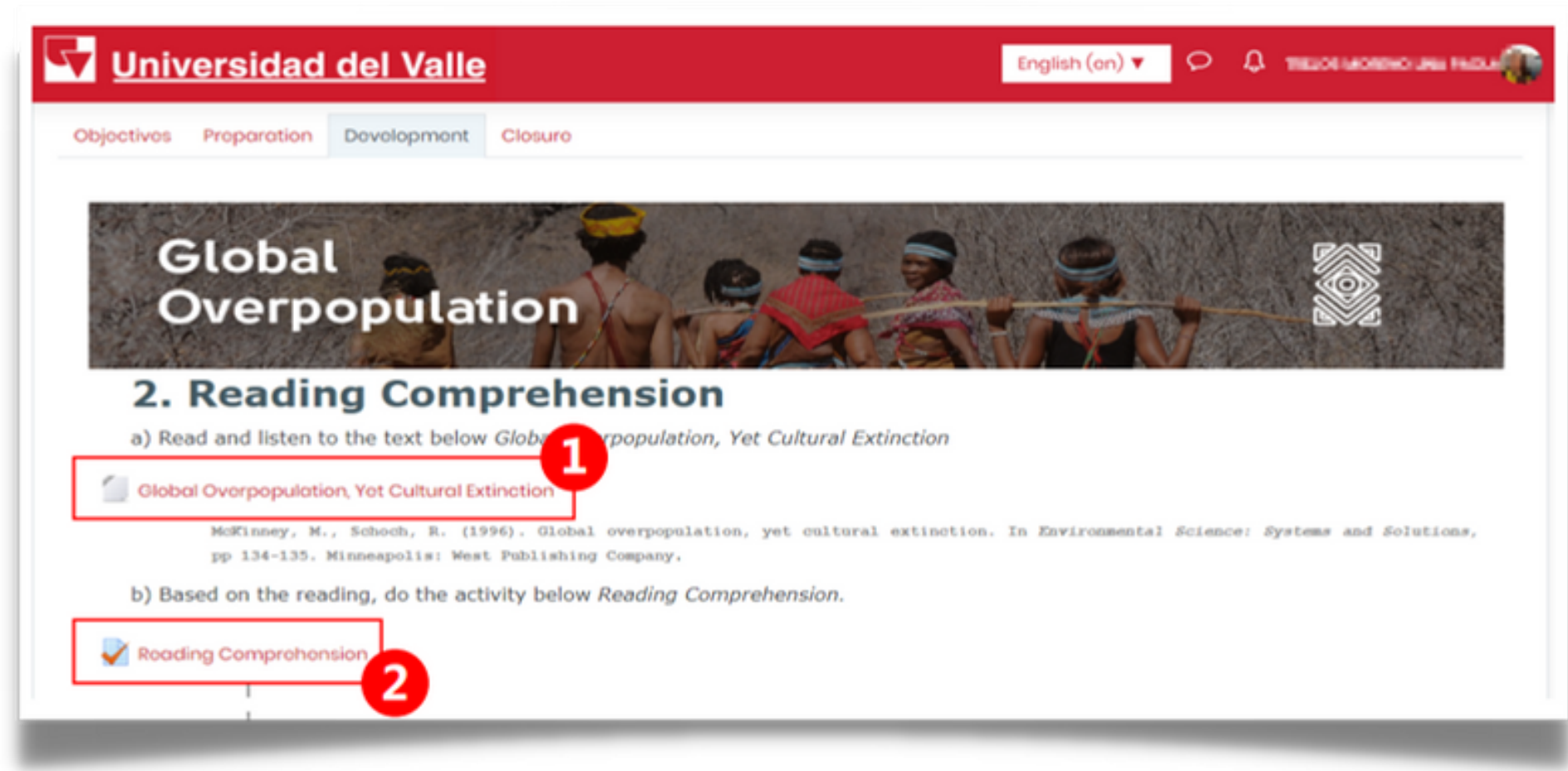
En el momento de **preparación** se exploran los conocimientos previos (*background knowledge*) del estudiante y se introduce el tema central. Los ejercicios parten desde clasificación de palabras, pasando por lecturas cortas y vídeos en inglés, hasta juegos en línea y preguntas abiertas para expresar opiniones.



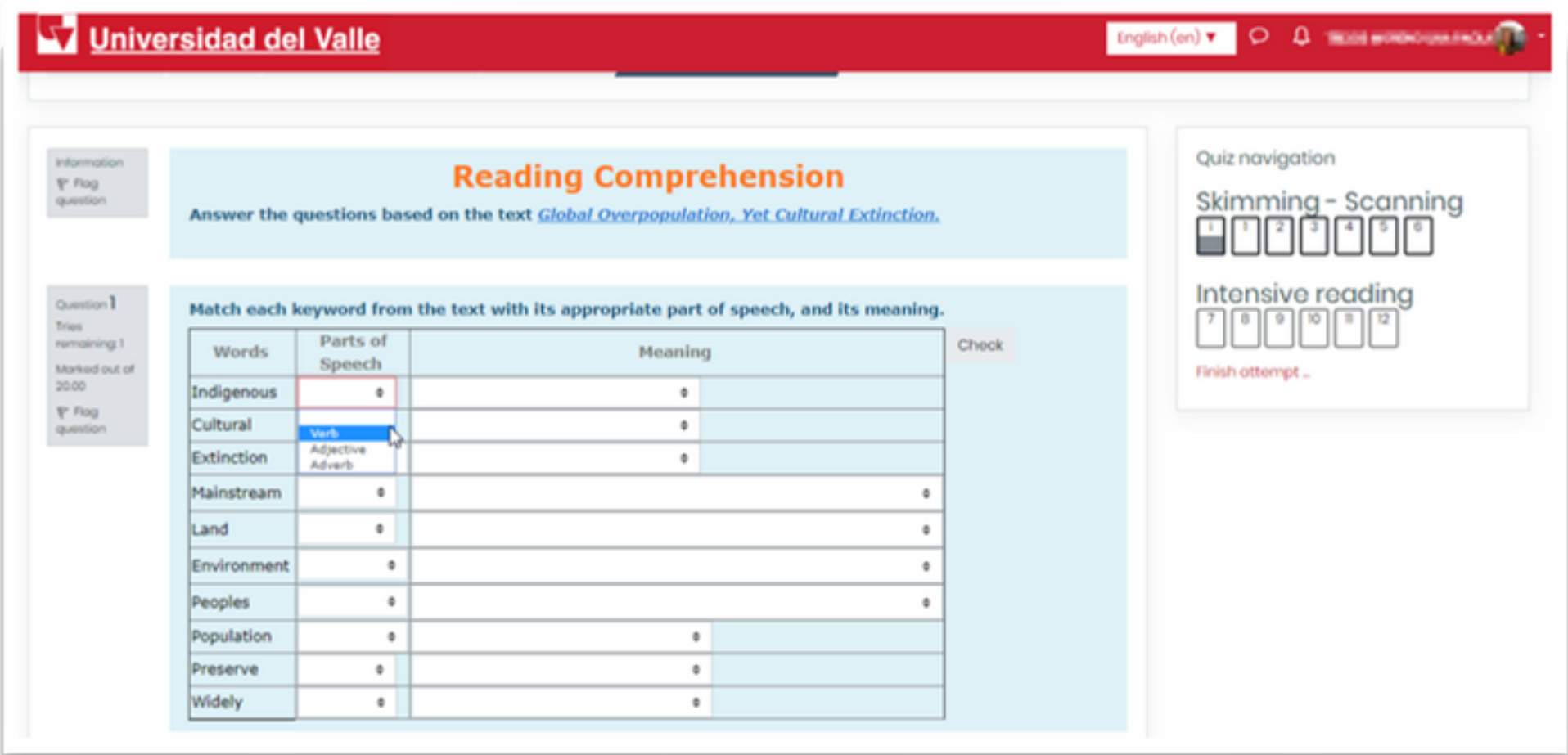
1. Panel de información de la pregunta.
2. Ejemplo de un ejercicio.
3. Panel de navegación del cuestionario.
4. SIEMPRE que realice ejercicios en cuestionarios, debe dar clic en **Finish attempt** después de responder todas las preguntas. Sólo así sus respuestas podrán ser evaluadas

Ejemplo de un ejercicio del momento de preparación

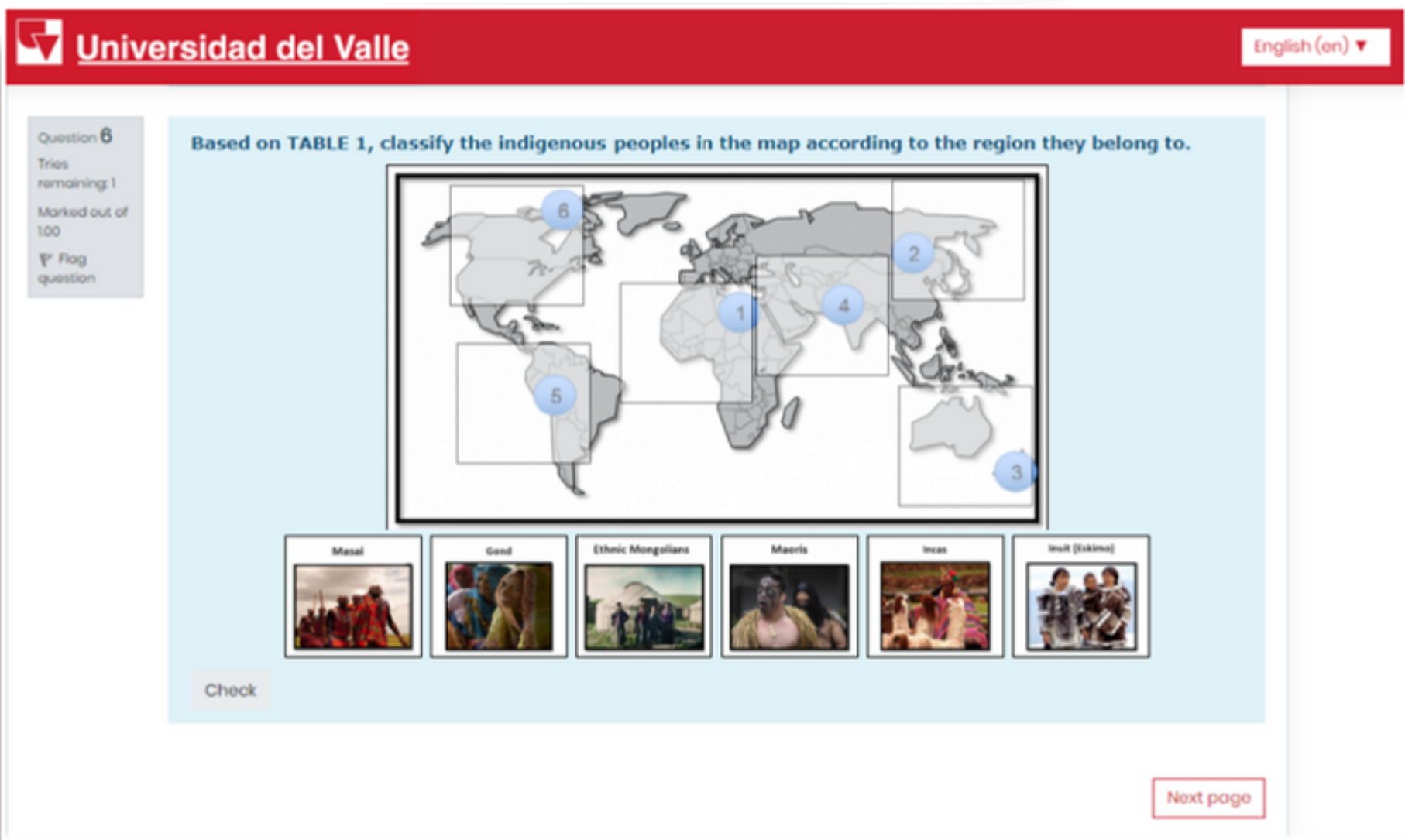
En el momento de **desarrollo** se encuentra una lectura principal de tipo académico y un cuestionario que reúne una serie de ejercicios basados en la lectura, tales como preguntas de opción múltiple, falso/verdadero, preguntas abiertas, completar tablas, entre otras.



1. Enlace a la lectura principal
2. Cuestionario con ejercicios basados en la lectura



Ejemplos de ejercicios al momento de desarrollo



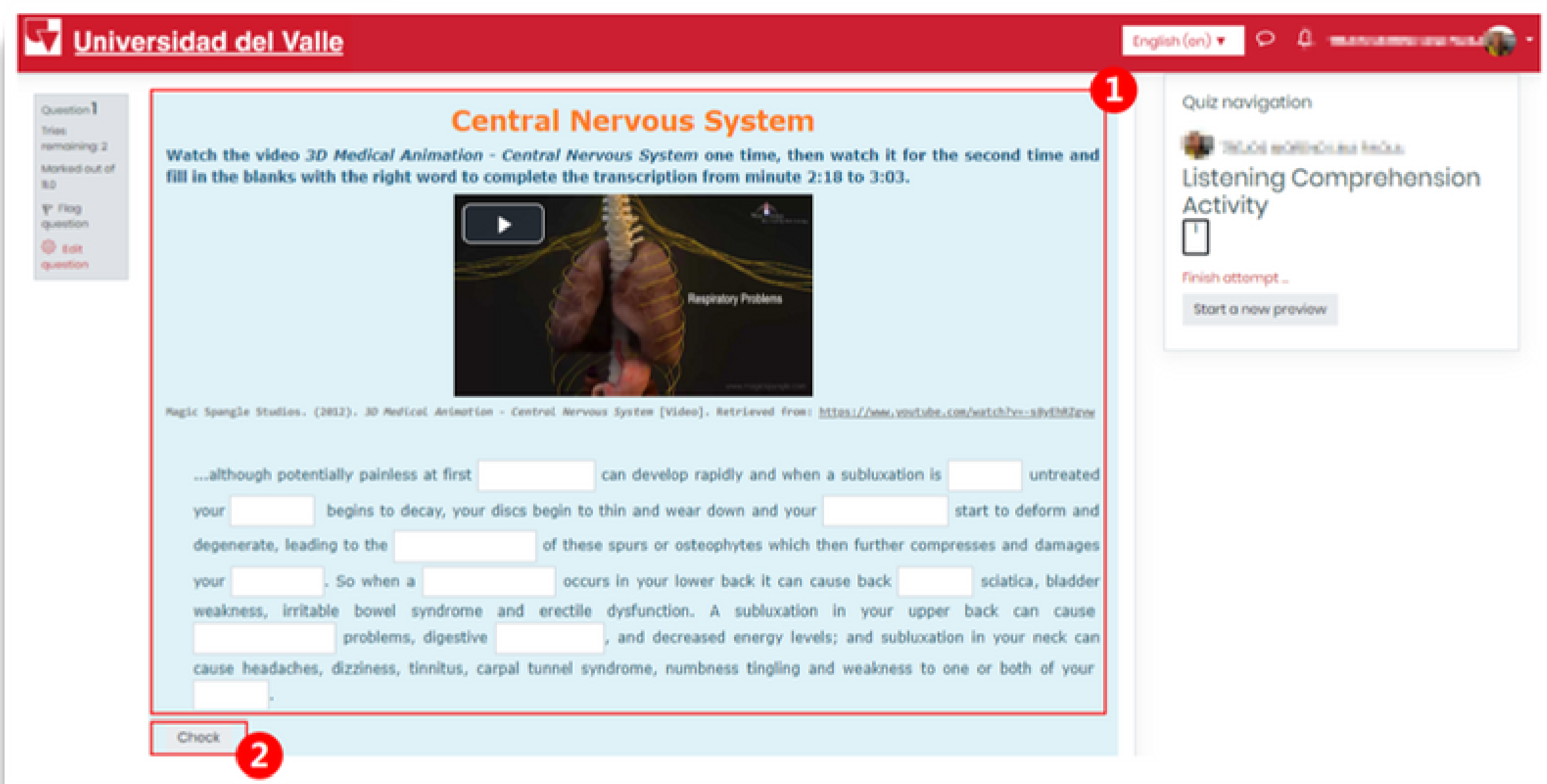
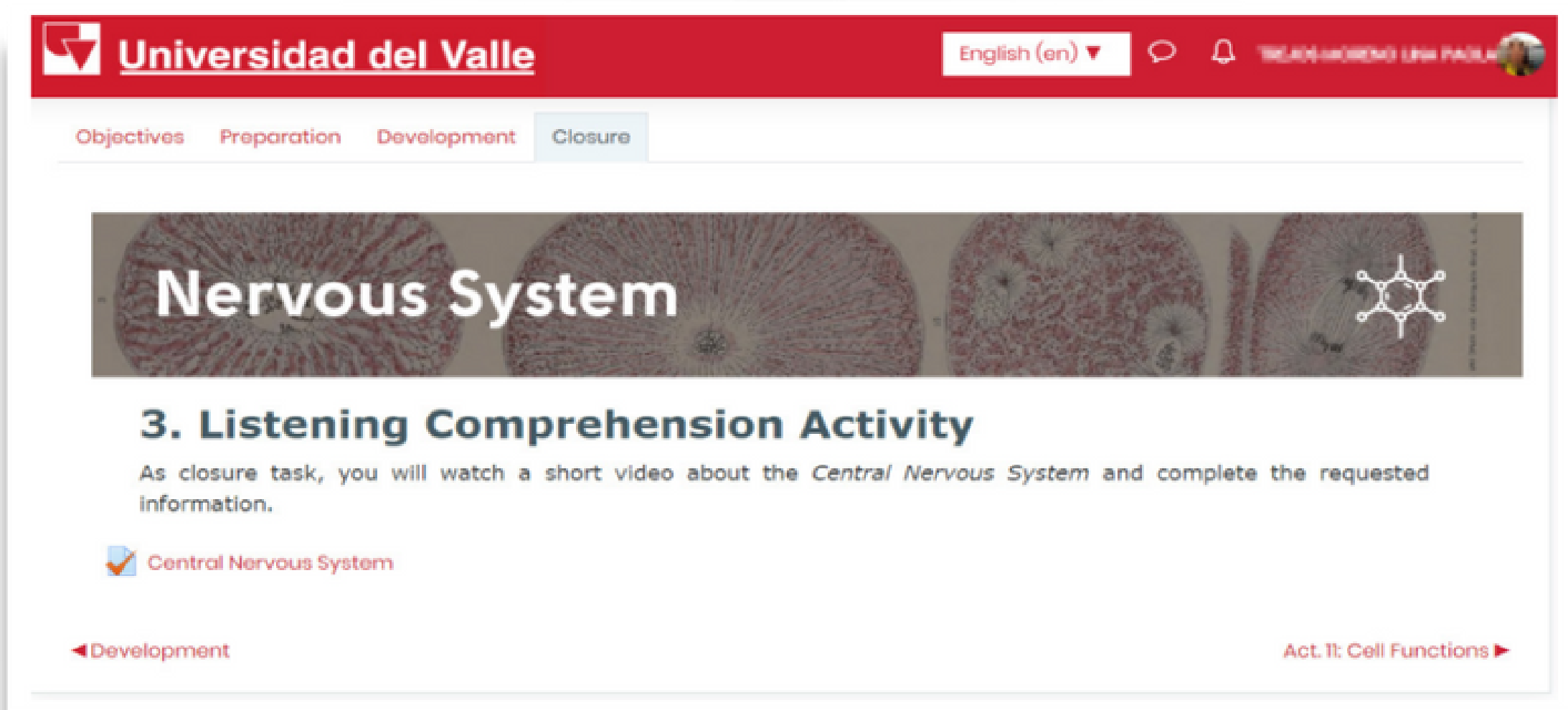
Para la presentación de las lecturas, se ha creado una aplicación interactiva en formato **HTML5** que permite ser visualizada en diferentes dispositivos tales como celulares y tablets.

En esta aplicación, el estudiante cuenta con el texto tanto en forma escrita como oral. También, cuenta con una barra de navegación llamada **Menú de Análisis Textual**, la cual permite visualizar diferentes elementos gramaticales y sintácticos en el texto, como por ejemplo: palabras claves, conectores lógicos, referentes, frases nominales, cognados, palabras compuestas, derivación, entre otros.



1. Menú de Análisis Textual
2. Audio de la lectura
3. Botón para imprimir

El momento de **cierre** busca reforzar y/o ampliar los conocimientos adquiridos en las diferentes etapas de la actividad. Los estudiantes deben dar cuenta de lo aprendido mediante un producto final, que puede tener formato de respuestas abiertas, grabaciones, creación de mapas conceptuales, entre otros.

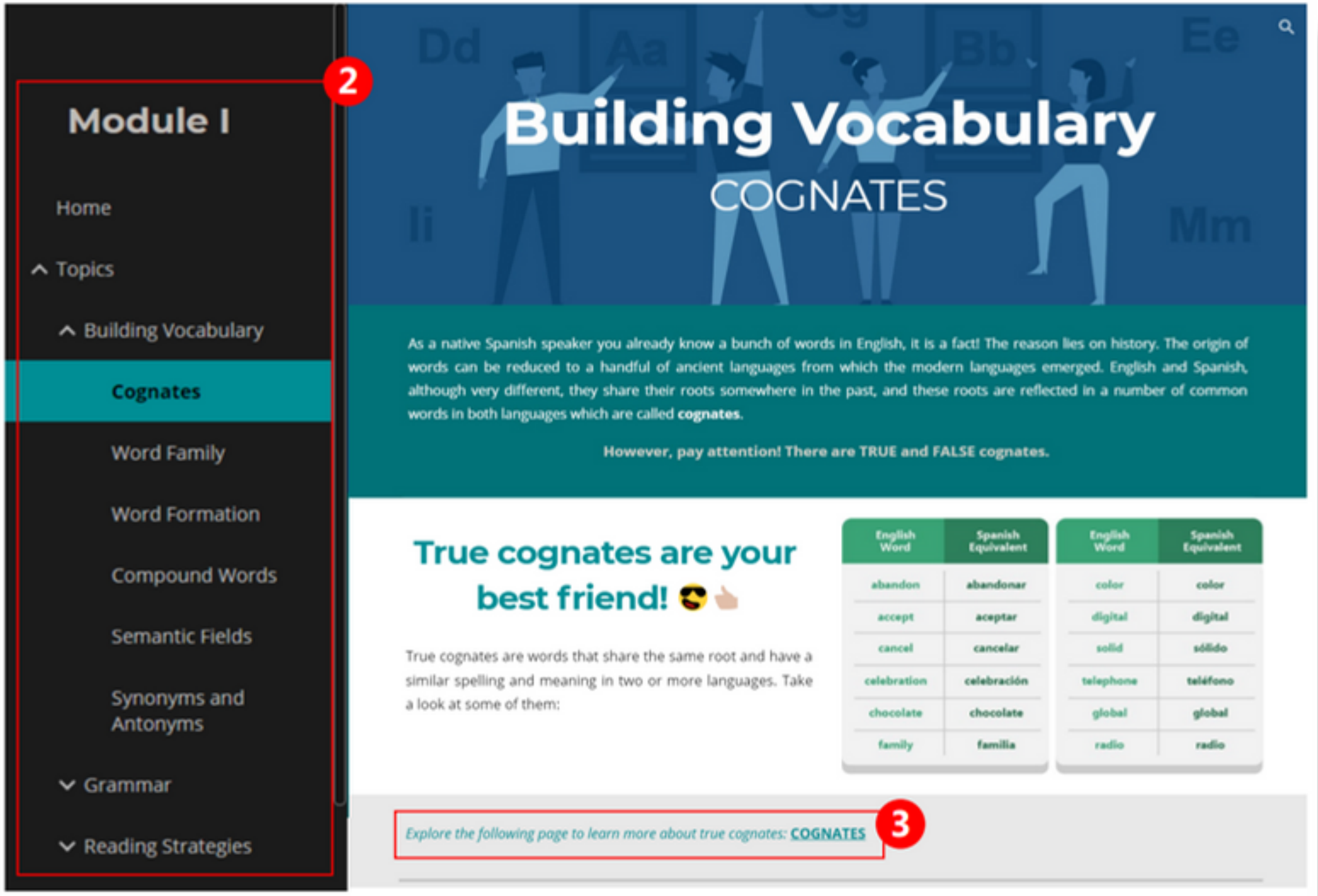
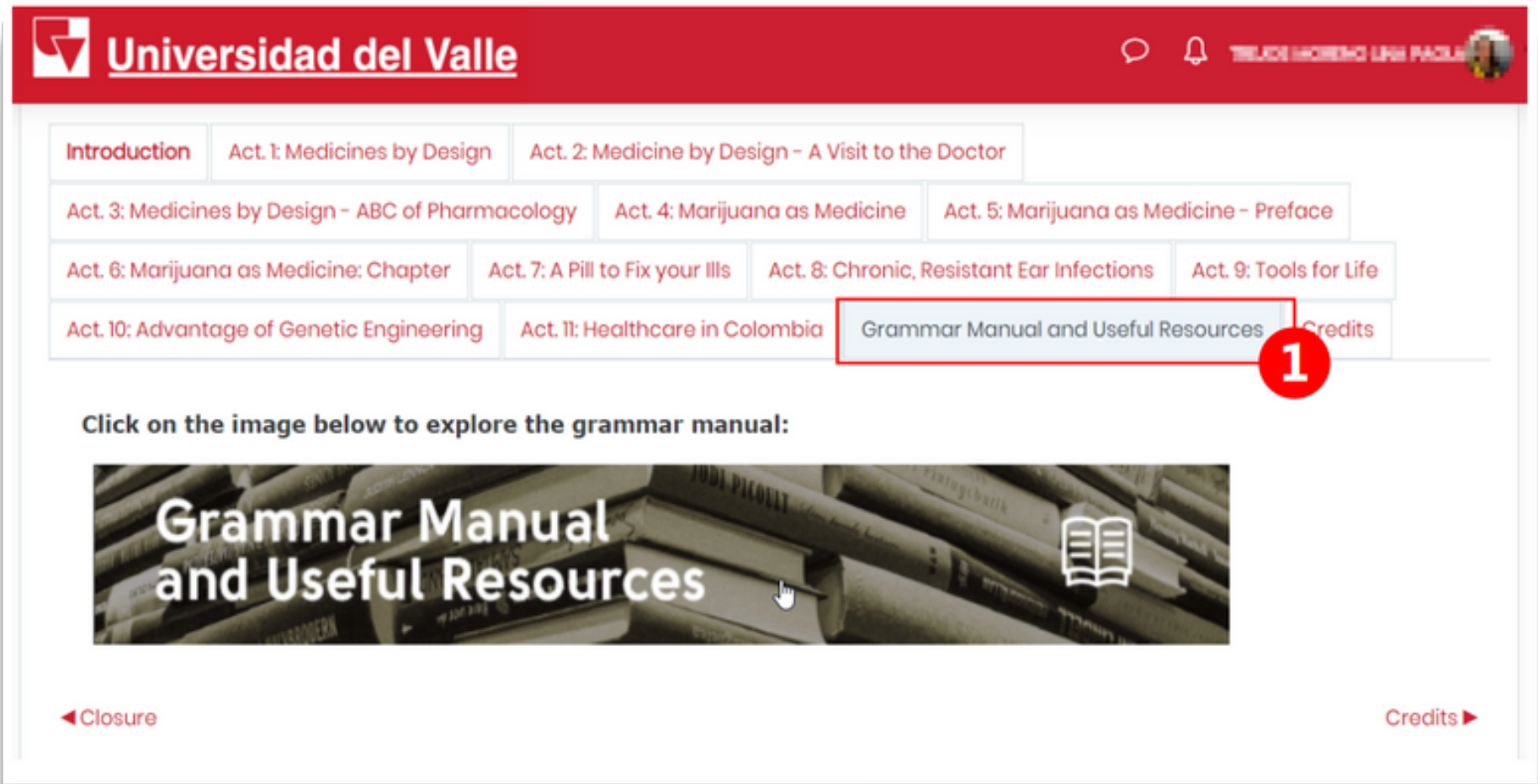


1. Ejemplo de un ejercicio del momento de cierre

2. Botón **Check** que le permite al estudiante comprobar la cantidad de respuestas correctas hechas. Sólo funciona con preguntas cerradas.

Recursos Adicionales

En esta sección se encuentra el enlace directo a diferentes recursos adicionales como *Building Vocabulary*, *Grammar*, *Reading Strategies* y *Reading Comprehension*. Cada sección ha sido enriquecida con enlaces externos para profundizar o practicar la temática abordada.



1. Pestaña Recursos Adicionales
2. Panel de navegación de Recursos Adicionales
3. Enlace externo a actividades complementarias relacionadas con el tema tratado



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