

BIOLOGY SECOND CHANCE FINAL PORTFOLIO

UNIT1. BIOSPHERE

1. Which characteristics share all living beings?

3. Complete the following table:

Biomolecule	Type (organic/inorganic)	Function	Example
Water			
Mineral salts			
Glucids			
Lipids			
Proteins			
Nucleic acids			

4. Which are the three vital functions? Describe them briefly.

5. Which are the three components that all cells have?

6. Describe the main differences between prokaryotic and eukaryotic cells.

7. Complete the following table about differences between eukaryotic animal cells and eukaryotic plant cells.

	Animal cell	Plant cell
Shape		
Position of the nucleus		
Movement		
Centrosome		
Chloroplasts		
Vacuole		
Cell wall		

8. Order from more to less complex: individual, cell, organ, organ system, tissue.

9. Define:

-Taxonomy

-Species:

10. Complete the following table about the five kingdoms.

Kingdom	Unicellular/multicellular	Eukaryotic/Prokaryotic	Nutrition (autotrophic/heterotrophic)	Tissues	Examples
Monera					
Protocist					
Fungi					
Plant					
Animal					

UNIT2. PLANT KINGDOM

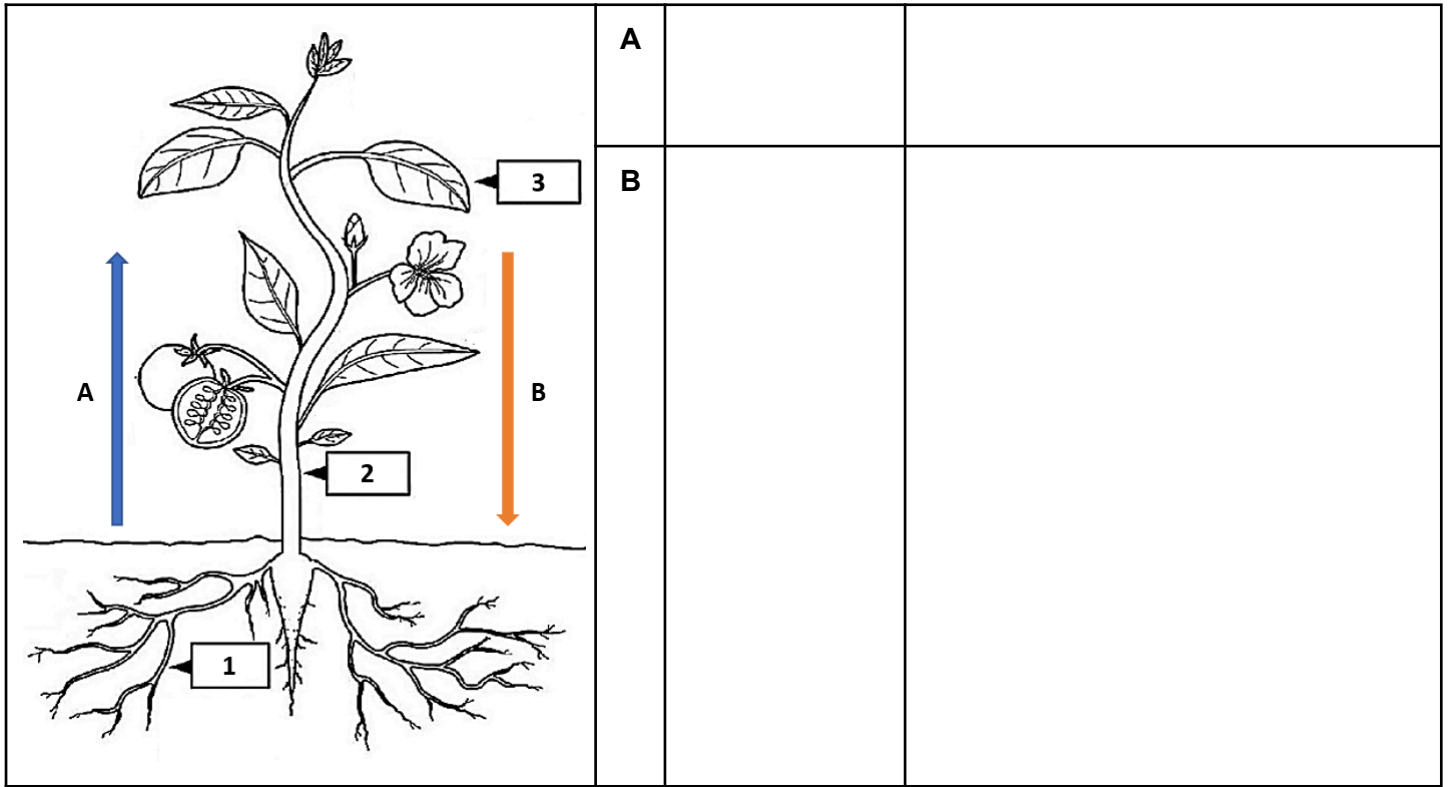
1. Which are the main characteristics of the plants?

2. Use the drawing of the plant that you did during your classes and complete the table:

a. Parts of the plant (1,2,3) and their function.

b. Tubes are labelled with A and B. Which are the names of the tubes? What substance do they transport?.

		PARTS OF THE PLANT	FUNCTION
	1		
	2		
	3		
		TUBE	SUBSTANCE



3. About photosynthesis:

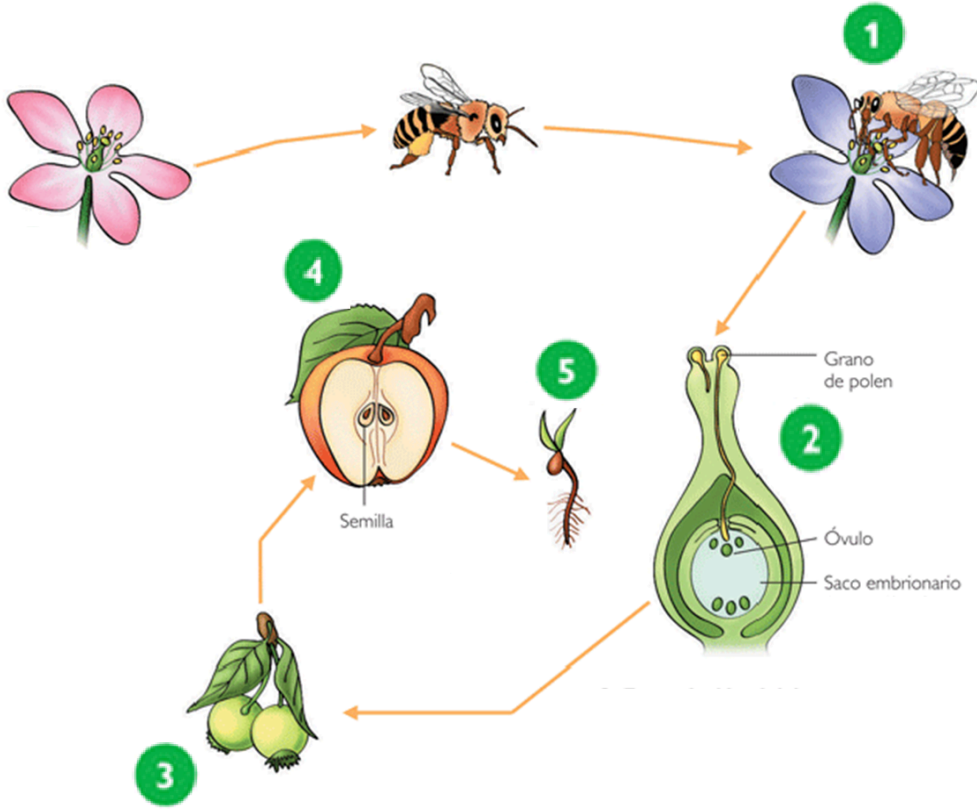
- a. Write the formula of the photosynthesis.
- b. The energy of the photosynthesis, where does it come from?
- c. Which is the function of the chlorophyll? In which cellular organelles can you find chlorophyll?

4. Rellena la siguiente tabla.

NASTIC MOVEMENTS		
Type	Stimulus	Example
Photonasty		
Thigmonasty		
Seismonasty		
TROPISMS		
Type	Stimulus	Example
Phototropismo		
Gravitropism		

Hydrotropism		
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5. Write the name of the different steps in plant sexual reproductions.

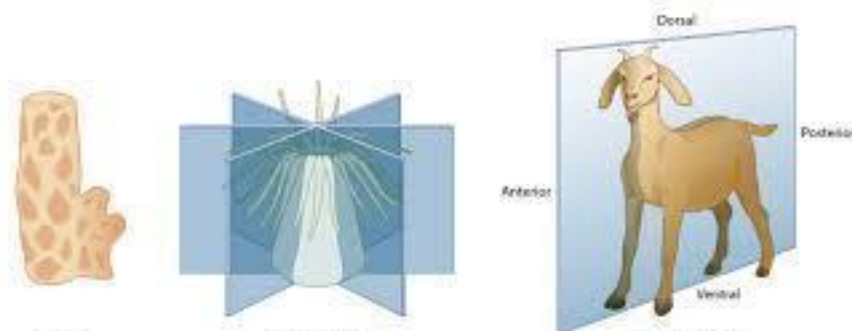


UNIT3. VERTEBRATES

1) Which are the main characteristics of vertebrate animals?:

- a) -
- b) -
- c) -
- d) -

2) Which type of symmetry can you identify on these animals?



- a) b) c)

3) Explain the functions of the internal skeleton in vertebrates.

4) Complete the following table about reproduction in vertebrates

Type of animal depending on when the embryo develops	Where does the embryo develop?	Example
Oviparous		
	inside the mother's womb	
		viper

Fish

5) Why do fish have a hydrodynamic shape?

6) Explain the function of these structures of the fish body:

- a) Gills:
- b) Caudal fin:
- c) Lateral line:

7) Which kind of reproduction do fish have depending on...:

- a) where the fertilisation occurs:
- b) where the embryo develops:

8) Design a “Compare and contrast” between bony fish and cartilaginous fish

Bony fish vs. Cartilaginous fish	
What do they have in common?	
Only in bony fish	Only in cartilaginous fish
Conclusions:	

Amphibians

9) The process by which the amphibian larvae undergoes a series of drastic transformations to become an adult is called _____

10) Why do frogs lay their eggs on water?

11) Complete the following table about larvae and adult stages in amphibians

Characteristic	Larvae (Tadpole)	Adult (Frog)
Breathing		
Feeding		
Limbs		

12) Amphibians are classified in two groups. Which are the names of these groups? What are the main differences between them?

Reptiles

13) What structures are found on reptiles' skin?

14) How do reptiles breathe?

15) Why do reptiles constantly stick out their tongue?

16) Complete the following tables about reptiles:

	Lizards and geckos	Quelonians
Characteristics		
Example		
Picture		

	Crocodylians	Snakes and vipers
Characteristics		
Example		
Picture		

Birds

17) What characteristics of birds are most related to their adaptation to flight? Name at least three.

18) What structure do birds have at the mouth?

Indicate the diet of these birds depending on the shape and size of their beak



Food	Number
Insects	
Fish	
Mice, rabbits...	
Seeds, fruits...	
Flowers nectar	
Fish	

19) Indicate two differences between flying birds and running birds.

-
-

Mammals

20) What is the name of the milk-producer gland in mammals?

21) How do mammals breathe?

22) Name three structures that we can find in mammals heads:

23) Describe the mammals nervous system comparing to other vertebrates

24) Complete the following table about the mammals

	Monotremes	Marsupials	Placental mammals
Characteristics			
Example			
Picture			

UNIT4. INVERTEBRATES

Introduction

1) Invertebrate animals don't have _____

2) Complete the following table with the 6 invertebrate groups and their symmetry:

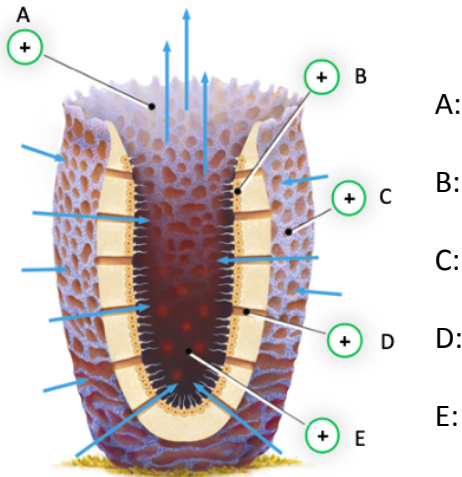
Group	Symmetry
Porifera	No symmetry (asymmetrical) or radial symmetry

Porifera

3) Porifera are commonly known as _____

4) How do sponges breathe and feed?

5) Name the following structures in sponges anatomy



6) How do sponges reproduce asexually?

7) Do sponges have sense organs or nervous systems?

Cnidarians

8) Write three examples of cnidarians:

-
-
-

9) What is the name of the extensions around mouth/annus in cnidarians?

10) The tube that acts as a digestive system in cnidarians is called: _____

11) What is a cnidocyte/cnidoblast?

Annelids

12) The name of the small appendages that some annelids use for movement is _____

13) Focusing in the digestive system, which is the most important evolutionary acquisition that annelids have compared to cnidarians.

14) Some annelids are hermaphrodite, what does it mean?

15) Complete the following tables about annelida classification

Subtypes			
Examples			
Picture			

Molluscs

16) Which three main parts of their anatomy are shared by all molluscs?

-
-
-

17) Define the following important structures in molluscs:

- a) Mantle
- b) Radula

18) Indicate which characteristic is typical of each type of mollusc

Characteristic	Type of Mollusc	Example
Shell with two valves		
Foot for crawling		
4 tentacles in the head (2 tactile + 2 eyes)		
Foot with shovel/spade shape for digging		
Predators, capturing preys with their tentacles and beak		
Filter feeding		
They are aquatic and terrestrial		

Arthropods

19) Arthropods have exoskeleton and they need to replace it as they grow. What is the scientific name for this phenomenon?

20) Find a picture of the tracheal system that some terrestrial arthropods use for breathing?

21) Look on the internet and write the main difference between complete and incomplete metamorphosis.

22) Which two segments are fused in the cephalothorax?

Equinoderms

23) What is the ambulacral system? Which is the function of this structure?

24) Complete the following table about echinoderms classification.

Asteroidea			
Sea stars			
			

UNIT 5. MICROORGANISMS

1. Why are viruses not living things?

2. Are bacteria important? Why?

3. If a bacterium takes 20 minutes to reproduce itself, and after a period of time we have a colony of 1024 bacteria, how long would it take a single bacterium to become a colony of 1024 bacteria?

4. What two groups of protists do you know?

5. Classify protozoa according to their movement and their structures.

6. Is the Anopheles mosquito the cause of malaria?

7. Plants are the only group of living things that can produce organic matter. Is this right? Why?

8. Depending on the pigments, there are different types of algae. What are those types?

9. What industries are important algae in?

10. Can a fungus perform photosynthesis? Why?

12. What fungi are unicellular? and multicellular?

13. Why are fungi important for humans?

14. What is a saprophytic organism? Why are saprophytic fungi and bacteria so important in ecosystems?

UNIT6. ECOSYSTEMS

1. Define the following terms:

a. Ecosystem:

b. Biotope:

c. Biocenosis:

2. Underline the correct option (italic):

a) *Rivers / Fields* belong to aquatic ecosystems.

b) Rocks,air and water belong to *abiotic factors /physical environment*.

c) Solarradiation is a *biotic factor / an abiotic factor*.

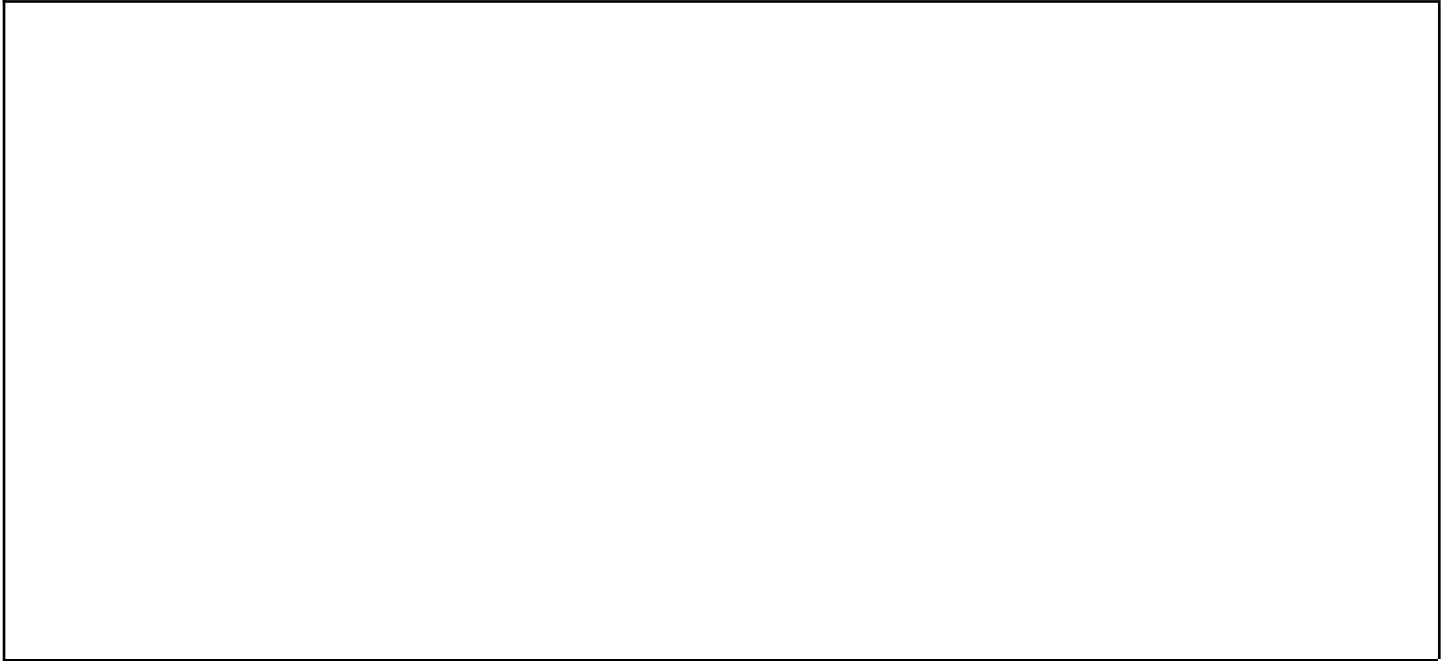
d) The different populations that live together in an ecosystem are a *community / the biotope*.

3. Read the following terms and choose the correct words to fill in each column:

FUNGI PLANTS SUNLIGHT ROCKS AIR ALGAE WATER WIND LION
BACTERIA ANIMALS TEMPERATURE HUMIDITY RAINFALL WORM

Biotope	Biocenosis

4. Draw an ecosystem of a LITTLE LAKE with 5 biotic elements and 5 abiotic elements (use two colours to differentiate biotic and abiotic factors); name each element. Explain two relationships between biotope and biocenosis of your picture.



5. Underline actions that unbalance an ecosystem:

**Cutting down trees, Fire, Rain, Oil spills, Invasive species, Extensive crops, Indiscriminate hunting
Building roads, Living inside a trunk**

6. Which actions do prevent negative impacts on the environment? (Yes/No)

- a. Adopt innocuous agro-ecological practices for the environment.**
- b. Rehabilitate sites contaminated by mining waste.**
- c. Devise hybrid and electric vehicles and implement their use.**
- d. Reduce emissions from important manufacturing sources.**
- e. Increase the treatment, recycling and reuse of wastewater.**

7. About the soil as an ecosystem:

A. Explain the following sentence: Soil is not only made of stones.

B. Draw a picture of the soil which represents your explanation.

