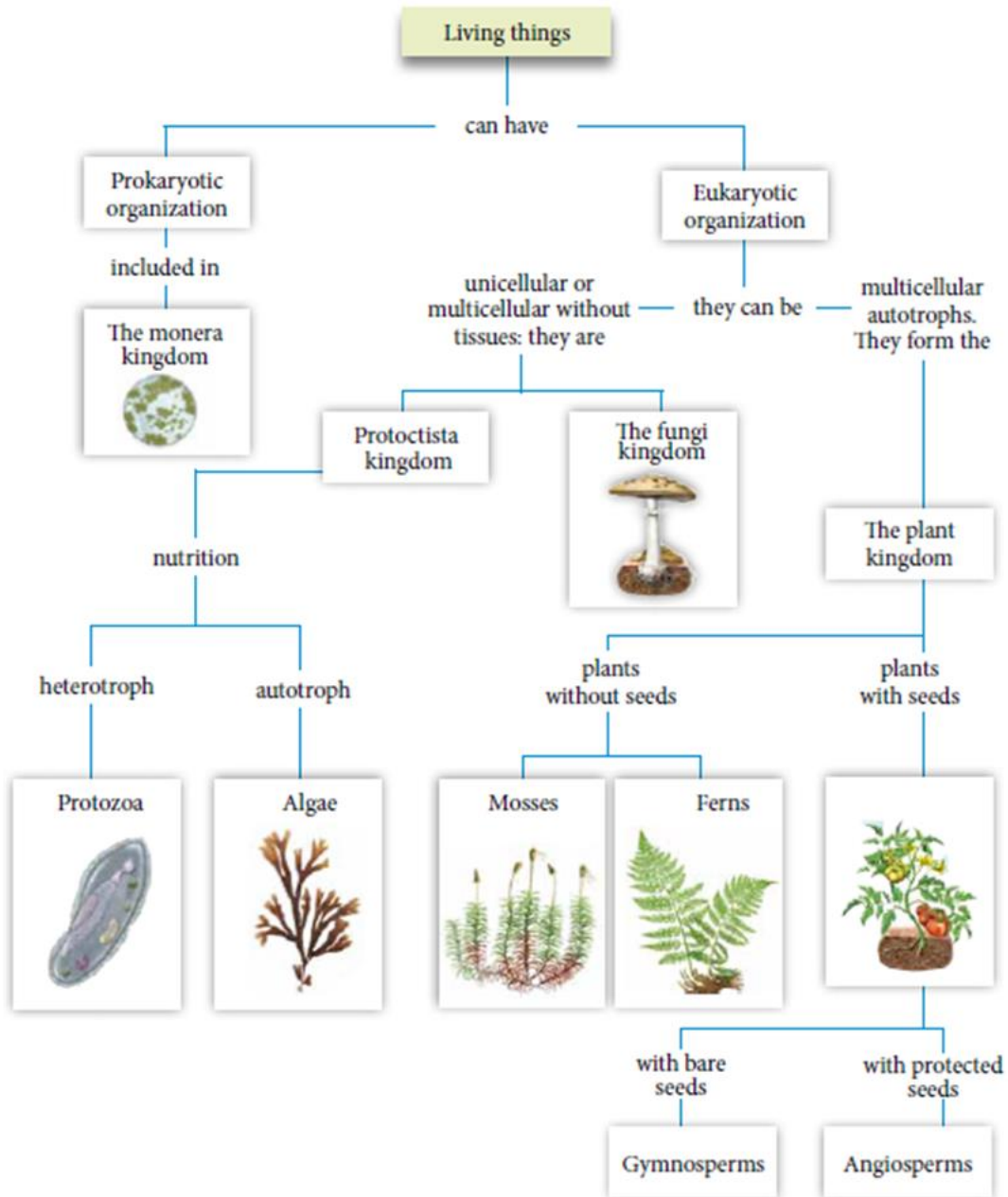


Unit 4. Monera, Protocists, Fungi and Plants.



Adapted from *Natural Science*. 1º ESO. Anaya

NAME _____ GROUP _____

Natural Science 1º ESO

INDEX

1. VOCABULARY..... 1

2. VOCABULARIO..... 2

3. UNIT CHART.....Cover and 3

4. UNIT ACTIVITIES AND NOTES..... 4-14

1. VOCABULARY UNIT 4. MONERA, PROTIST, FUNGI AND PLANTS

Here you have 5 key words of this Unit. You have to study them. If you include more definition in your notebook (4 MORE AT LEAST), you will have extra points in your notebook marks.

1. **PHOTOSYNTHESIS:** process used by some organisms to make food from sunlight, carbon dioxide and water.
2. **PARASITE:** organism that lives on or in another organism and feeds on it.
3. **LEAVE:** one of the flat, green structures attached to a plant’s stem that is used for photosynthesis.
4. **STEM:** the main part of a plant’s body, from where the leaves and the flowers grow.
5. **SEED:** unit of reproduction of a flowering plant.

Activity 0. Write the translation to these words

1. leaf	2. stem	3. parasite
4. Photosynthesis	5. mammal	6. intestinal flora
7. cones	8. seed	9. moss
10. Fern	11. Yeast	12. Mushroom
13. saprophyte	14. symbiont	15. pollination
16. to belong to	17. mould	18. kingdom
19. pathogen	20. to feed on	21. pollen



2- VOCABULARIO TEMA 4. MONERAS, PROTISTAS, HONGOS Y PLANTAS

De cada palabra escribe su definición, un ejemplo si te lo pido y su traducción al inglés. No olvides incluirlo en tu cuaderno.

1. **Parásito. Ejemplo**

2. **Saprófito. Ejemplo**

3. **Simbiótico. Ejemplo**

4. **Flagelo**

5. **Plancton.**

6. **Levadura.**

7. **Hifas**

8. **Protozoo. Ejemplo.**

9. **Fotosíntesis**

10. **Pistilo**

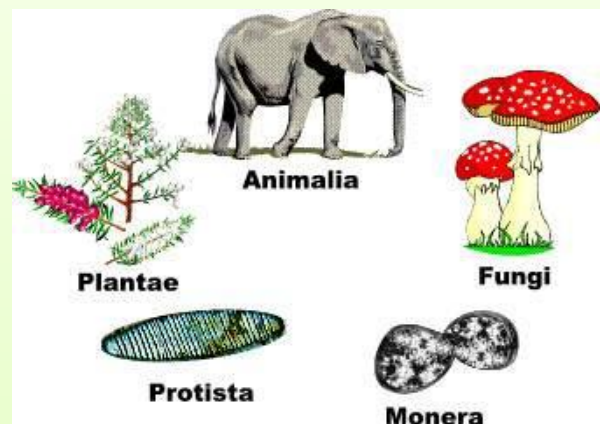
3. UNIT'S CHART

1. Look the diagram on the cover and add the following terms in the appropriate place: **bacteria, green algae, almond tree, pine tree, amoeba, sunflower, pinsapos, yeast, mould, red algae, brown algae, watermelon, potatoes.**
2. Review: What does prokaryotic mean?
3. And Eukaryotic?

4. BASIC CONCEPTS. ACTIVITIES AND NOTES.

THE FIVE KINGDOMS OF THE LIVING BEINGS.

Scientists sort out all living beings into groups according to the similarities between them. Firstly, all living beings are divided into kingdoms. Perhaps you have heard of the Animal Kingdom and the Plant Kingdom but living beings are classified into five kingdoms: monera, protista, fungi, plants and animals. This is a summary of their characteristics:



THE FIVE KINGDOMS OF THE LIVING BEINGS.

	Type of cells	Grouping of cells	Feed	Ejemplos
Reino Monera	Procaryotic	Unicellular (sometimes simple cell chains)	Autotrophic	Algas cianofíceas
			Heterotrophic	Bacteria
Reino Protista	Eucaryotic	Unicellular (or very simple groups of cells)	Autotrophic	Algas
			Heterotrophic	Protozoos
Reino Fungi (de los hongos)	Eucaryotic	The majority are multicellular but without real tissues.	Only heterotrophic	Setas moho
Reino Animal	Eucaryotic	Pluricellular	Only heterotrophic	Vaca
Reino Vegetal	Eucaryotic	Pluricellular	Only autotrophic	Naranjo

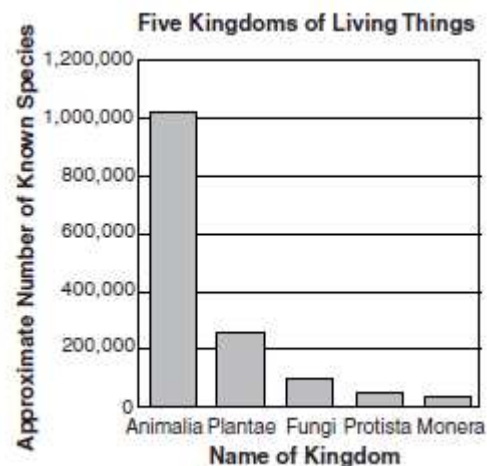
Activity 1. Answer the following questions

- a) Which kingdoms are the well-known?
- b) Which kingdoms are formed only by heterotrophic beings?
- c) Which difference is there between fungi and plants?

- d) Which kingdom do bacteria belong to?
- e) Is there any similarity between fungi and animals?
- f) What living beings can make their own food?
- g) Which kingdom does a tree belong to?
- h) Is there any difference between protists and moneras?
- i) Which kingdom do mushrooms belong to?
- j) What do animals and plants have in common?
- k) Which kingdom do you belong to?

Activity 2. The graph below shows the number of known species in the five kingdoms of living things. Based on the graph, which kingdom contains approximately twice as many known species as the Protista Kingdom?

- (1) Animalia (3) Fungi
- (2) Plantae (4) Monera



Bacteria's Role in the world

Some bacterias are very usefull for us for example:

Some are **Saprophytic** like the **decomposer bacteria** which are very useful in agriculture for soil enrichment or the bacteria used to **make food** like cheese, Vinegar, yogurt...

Others are **Symbiotic** and live **inside animals and persons** they can be found in the digestive system of many mammals. **In humans:** Bacteria get the food they need and produce vitamins. The human body protects the bacteria. They form the **intestinal flora**.

Other are Parasitic bacteria. They are **pathogens** (their growth harms the **host organism** and they often cause illness or disease). **Exmples:** Tuberculosis, Syphilis, Typhoid fever...

Activity 3. Identify the types of bacteria in the picture (use the Power point in the wiki: SIMPLEST LIVING BEINGS)



--	--	--	--

Copy from the Power point:

Activity 4. Some microorganisms cause human disease. Other microorganisms are used in making cheese, yogurt, and bread. Based on this information, the relationship between humans and microorganisms can be

- (1) beneficial, only (2) harmful, only (3) beneficial or harmful

Explain your answer

Activity 5. Animals have symbiotic bacteria in their intestines. Are these bacteria autotroph or heterotroph? What do they feed on?

Activity 6. Read the link: **Habitat on Humanity** in the wiki and write the scientific name of two bacteria which live in your body. Copy some information about them in your note book

Protist video worksheet

Instructions:

- Read the sheet and ask the teacher if there is anything you don't understand.
- Write the translation in Spanish beside any words that you didn't know.
- While we watch the video try to answer the questions in English.
- After watching the video we will correct the questions together.

Questions:

1. Which University does Chris Clements work at?
2. What kingdom of life do protists belong to?
3. Where do protists live?
4. Are they unicellular or pluricellular?
5. How big are the biggest protists?
6. What instrument do you need to use to be able to see most protists?
7. Are protists autotrophic or heterotrophic?
8. Give an example of a parasitic protist.
9. What disease does this parasitic protist cause?
10. What is Chris Clements' research about?

11. Why is it hard to study extinction in the wild?
12. Because of this, Chris Clements doesn't do his experiments in the wild. Where does he do his experiments?
13. A _____ is a collection of different species living in the same area.
14. What does Chris Clements do to simulate climate change in his experiments?
15. These experiments can help us to answer some really complicated questions about the _____.

Copy from the Power Point in the wiki: SIMPLEST LIVING BEINGS:

- Useful microorganism
- Harmful microorganism
- Two actions to prevent illness caused by microorganism
- Resources to fight against infection disease. Which one is preventive?

What are fungi like?

Activity 9. Video: The reproduction of fungi that form mushrooms. From Anaya Digital.

Listen to the video and answer. True or false. Correct all the false.

- 1- The Mushroom is only in the ground surface.
- 2- They reproduce by seeds
- 3- Most of them reproduce in spring.
- 4- The mushroom in the video, *Anmanita muscaria*, is very poisonous.
- 5- They produce hundred of spores.

Main characteristics:

- They can be unicellular (yeasts) or multicellular (mushrooms).
- They do not produce their own food.
- The body is made up of microscopic filaments
- Fungi reproduce by spores.
- There are three groups of fungi: yeasts, moulds and mushrooms

Activity 10. Label in the picture the following words: cap, spores, hyphae, gills, stalk





Activity 11. Read and Circle the correct one:

1. Fungi have **one/more than one cell**
2. Their cells have **no nuclei/nuclei**.
3. Fungi **can/ can't** make their own food
4. **Amoebas/Mushrooms** and moulds are examples of Fungi.

Activity 12. Make this experiment at home.” This happens to people a lot, maybe even to you. You take some old bread out of the bag and ... what a surprise! It has green and white stains, made of little hairs, on it. It smells damp and looks horrible.

- Get some pieces of bread.
- Wet them with a little bit of water and put them in a plastic bag.
- Then put them in a warm, dark place.
- Wait five or six days and then take them out and look at them.

Draw what you have seen

THE PLANT KINGDOM

The plant kingdom is made up of eukaryotic and autotrophic living things. They cannot move about.

Main characteristics:

- I. Have roots, stems and leaves
- II. Have eucaryotic cells
- III. Are autotrophic: they can make photosynthesis
- IV. They live attached to the soil, however, they are able to make some movements for example: they grow towards light

Activity13. Use the terms from the following list to complete the sentences below.

Ancestor/ cell walls/photosynthesis/ plants





1. Green algae are not _____.
2. Green algae and plants have _____ that are very alike
3. Green algae and plants might share a common _____ .
4. Green algae and plants both make food through _____ .

Activity 14. Answer these questions:

- a) Which of the following does not belong to the plant kingdom? Moss, spider, fern, pine.
- b) Do all plants have real roots?
- c) Which differences are there between conifers and flowering plants?
- d) Do mosses and ferns have something in common?
- e) Do ferns and flowering plants have something in common?

What living things make up the plant kingdom?

Plants can be classified into four groups: mosses, ferns, non-flowering plants (or gymnosperms) and flowering plants (or angiosperms). Look at the differences between them:

Mosses	Ferns	Non flowering plants (Gymnosperms)	Flowering plants (Angiosperms)
			
No proper roots or stems.	They have stems, roots and leaves.	They have stems, roots and leaves	They have stems, roots and leaves
They make spores, not seeds.	They make spores, no seeds.	Very simple flowers. Seeds inside cones (no fruits)	They have flowers which turn into fruits with seeds inside.

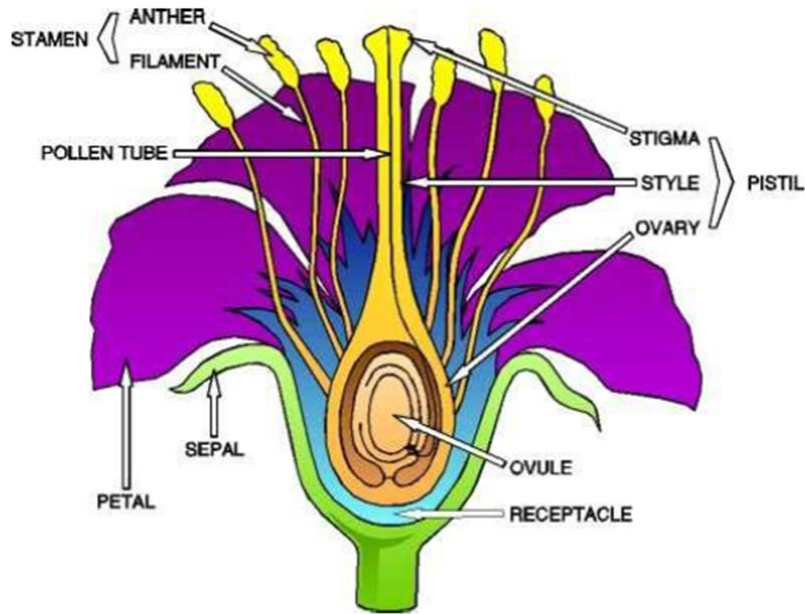
Activity 15. Match the two columns:

- | | |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> a) Leaf b) Stem c) Roots d) Stoma f) Petiole | <ul style="list-style-type: none"> 1. Absorb substances from the soil 2. Joins the leaf to the stem 3. Small holes that are on the underside of leaves and are where transpiration occurs 4. Axis that provides support to a plant and to its leaves and flowers 5. Part of the plant that carries out photosynthesis |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Activity 16. Label your plant picture (notebook) with these words: Petiole- Fruit-Stem- Roots- Seeds-Petals-Sepal-Leaf-Stamen-Pistil.

How do plants reproduce?

Flowers are the reproductive organs of angiosperms and gymnosperms. Plants have sexual reproduction. They may have four parts: sepals, petals, stamens (male part), and one or more pistils(female part). The pistil is usually located in the center of the flower. The ovary of a pistil contains **ovules**, which contain eggs. When **pollination** occurs, pollen moves from the male parts to the female parts. This can be achieved by wind or by insects. Pollen grains land on the stigma and a tiny tube grows from it, down the style into the ovary. The pollen nucleus moves down the tube to join with the ovule nucleus. **Fertilization** has occurred. The fertilized ovule becomes the seed and the ovary becomes the fruit.



Activity 17. Use the terms from the following list to complete the sentences below: **Flowers/ fruit/ pollen**

- The reproductive structures of angiosperms are _____.
- Animals may be attracted to flowers and carry _____ from flower to flower.
- Angiosperm seeds are surrounded by _____.

Activity 18. Use the terms from the following list to complete the sentences below.
Wind/ fur/ seeds

- Some fruits and seeds are blown away by the _____.
- Some animals eat fruit and get rid of the _____.
- Some fruits, such as burrs, stick to the fur of animals _____.

Activity 19. Use the terms from the following list to complete the sentences below.
Stamen/ ovary/ pistil

- The filament and anther are parts of the _____.
- The stigma, style, and ovary are parts of the _____.
- A fruit develops from the _____.

Activity 20. Look at the picture above and complete these sentences: **pollen flowers petals fruits stamen sepals pistil ovules**

The reproductive organs of the plants are the They have two parts: the reproductive and the protective. The reproductive parts of a flower are the and the The protective parts of the flower are the which make up the calyx and the which attract insects and make up the corolla. The are inside the ovary. When the ovules come into contact with the produced in the stamen they turn into seeds. The ovaries turn into.....

Activity 21. Which part of the flower turns into the fruit?

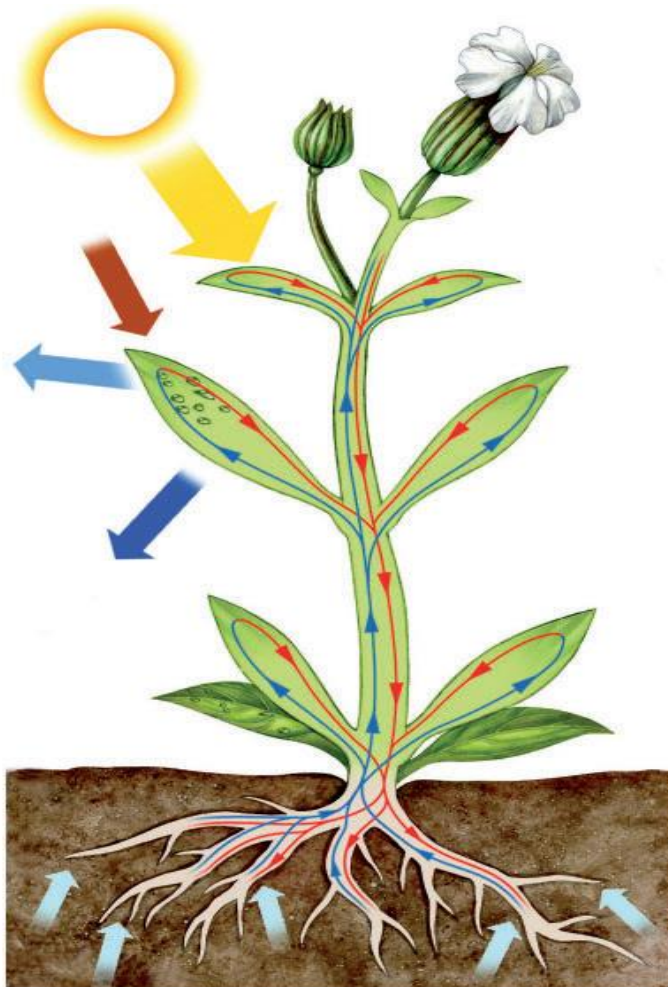
What is the plant nutrition?

Plants are autotrophic: they produce their own food.

Phases:

- I. Absorption: Plants absorb water and mineral salts (the mix is called raw sap) from the soil through their roots.
- II. Transportation: The raw sap travels up the conductor vessels from the roots to the stem and leaves.
- III. Transpiration: Excess water is expelled as water vapour.
- IV. Photosynthesis: Raw sap is transformed into elaborated sap.
- V. Respiration: Plants breathe and they take in oxygen from the air and expell CO_2 .

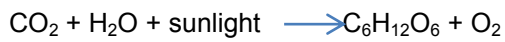
PHOTOSYNTESIS. Complete these drawings with your teacher explanation



Activity 22. When does photosynthesis take place?

- a. During the day.
- b. At night.
- c. Night and day.
- d. In the winter.

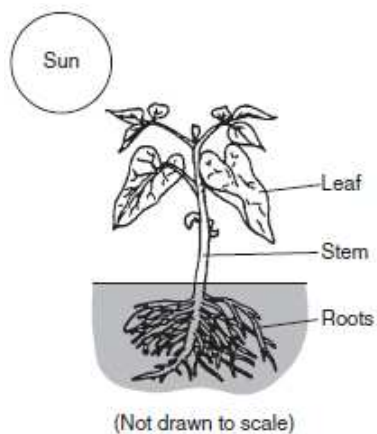
Activity 23. Look at the equation of photosynthesis and answer:



Which basic ingredients does photosynthesis need?

- The photosynthesis makes food, basically glucose. Can you write its formula?
- Which gas is released by photosynthesis?

Activity 24. The diagram shows the Sun and a green plant.



Identify one labeled part of the plant that carries out photosynthesis.

In addition to sunlight and chlorophyll, what are the two materials that a plant needs to carry out photosynthesis?

(1) _____

(2) _____

Identify one product that results from the process of photosynthesis.

Activity 25. Do plants breathe? When?

DAYTIME



NIGHTTIME



Review

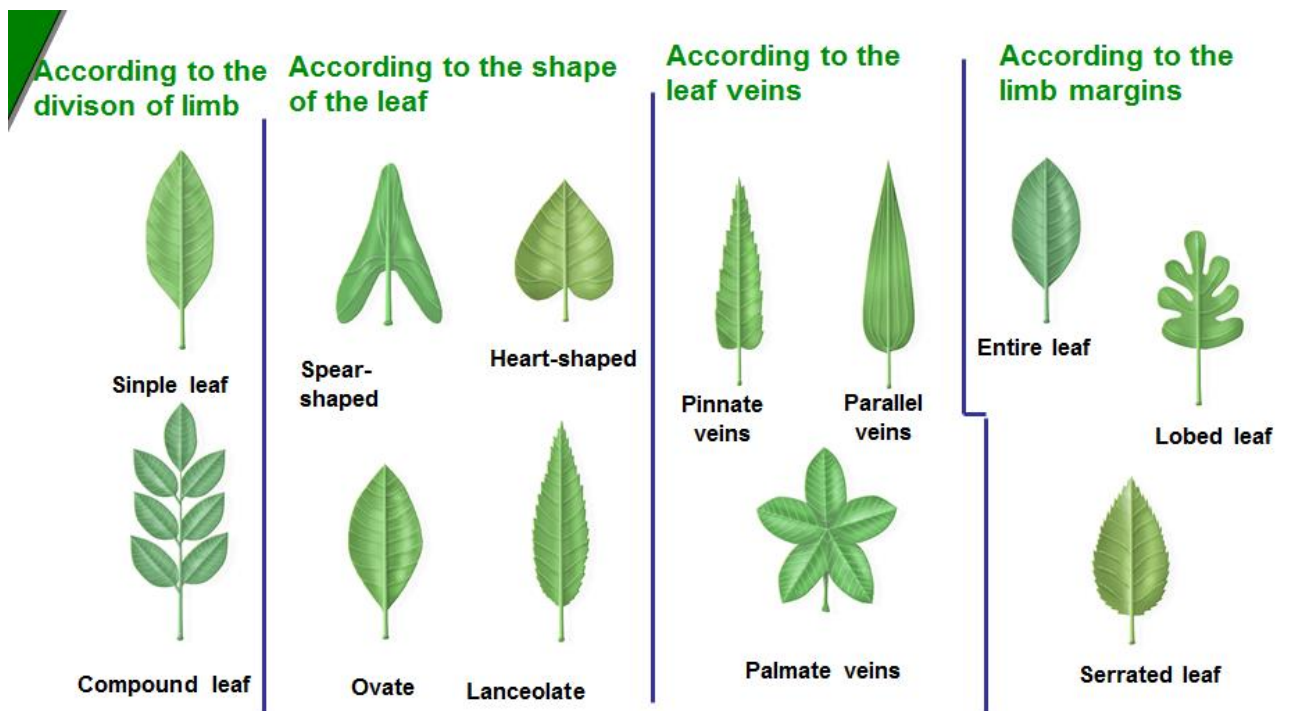
1. Because of the way theythey are heterotrophicbeings but they don't move and they like plants. They are
2. Animals and have them. They are verybut you can see them using a They are
3. It is a that people don't usually know about. Living beings belonging to this group are always and their cells have no Which kingdom is it?
4. Animals and fungi are heterotrophic and they have to get their from other living beings but plants can their own food thanks to a called
5. Plants and animals are but they have two important things in common: they are both living beings and their are
6. are given different names in different but if you don't want to get confused you can use names written in
7. During the trees that to Spain from theof Europe and became
8. They little plants without and they don't seeds. They are
9. When we a tree with our, the bark was by
10. need three for photosynthesis:, carbon dioxide and
11. Water from the has to into the leaves, so it has to move through the
12. The flower is the organ of the plant but it has some which are not for reproduction; those elements are and
13. Insect pollination occurs when move pollen from the parts of a flower to the female parts and stick to the
14. When you inside the corolla of a flower you can see many; one is the and all the others are
15. Flowers have several mechanisms to insects: they produce nectar, and, above all, have very (?)
16. occurs when the pollen nucleus down from the stigma to the and joins with the
17. If the flower has no nectar and petals and it produces pollen that shows that is achieved through
18. the fertilization the ovules turn intoand the grow and become _____
19. seeds are dispersed by animals, little seeds can be dispersed but use a different method. Which one?
20. Next deals with living beings that are pluricellular, heterotrophic and the majority can Which kingdom do theyto?

TRABAJO DE BOTÁNICA.

En este trabajo vas a reunir hojas, flores y otros elementos vegetales que tendrás que preparar adecuadamente. Recógelos respetando los jardines, colócalas entre periódicos y prénsalas. Cambia los periódicos cada dos o tres días para eliminar la humedad.

Tu colección incluirá:

Diez hojas colocadas en una o en varias láminas (tamaño A4- A3- Cartulina). Cada hoja debe acompañarse de cuatro adjetivos de los que aparecen en la siguiente clasificación:



In this notebook you could find some information from:

- 1- Activity Book 2008. Pablo Acosta Robles. 1º ESO Natural Science.
- 2- I.E.S. LLANES SEVILLA. DEPARTAMENTO DE BIOLOGÍA Y GEOLOGÍA. Unit 3. The Living beings.
- 3- C. Echevarría, E. Dehesa, et al. Natural Science 1º Secondary Education. Editorial Anaya