**COLEGIO NACIONES UNIDAS I.E.D.**
**PREPARATORY WORKSHOP**
**III TRIMESTER**
**SCIENCES 3°**

This workshop must be solved in the science notebook, as a requirement to take the competency test.
**Delivery date:** November 10

**Vital functions**
The vital functions of living beings are those biological functional characteristics that each and every living being shares. Unlike inert beings, living beings have complex functions and characteristics throughout their growth and development.
There are three common vital functions of living beings: Nutrition, Relationship, Reproduction.

**1.** What are the vital functions of living beings?
**2.** What happens if any of these functions are not executed? Explain

**Kingdoms of Nature**
Living beings are classified into 5 kingdoms of nature. This organization is called taxonomy of living beings. There are five kingdoms: the animal kingdom (animals), the vegetable kingdom (plants), the fungal kingdom (mushrooms, molds and yeasts), the protoctist kingdom (protozoa and algae) and the kingdom moneras (bacteria).
**The animal kingdom** is classified into two large groups: vertebrates (they have a skeleton), which are subdivided into fish, amphibians, reptiles, birds and mammals, and invertebrates (they do not have bones), which include insects, mollusks and worms.
**The kingdom Plantae** is composed of multicellular, eukaryotic, autotrophic, anaerobic, immobile organisms that reproduce sexually or asexually. Together with the animal kingdom, they belong to the first two groups of classification of living beings formulated by Aristotle in 350 BC. of C.
Plants are the only beings (except for some unicellular algae of the kingdom protista) that are autotrophs thanks to the generation of their own food through photosynthesis.
**Kingdom fungi**, belong to the kingdom fungi, or kingdom of fungi, multicellular, eukaryotic, heterotrophic, aerobic and immobile organisms that reproduce through spores sexually or asexually.
The kingdom fungi was considered within the classification of kingdoms of nature in 1969 by the American ecologist Robert H. Whittaker (1920-1980).
**The kingdom protista** is made up of all organisms that are not classified in any of the other identified kingdoms. They can be both unicellular and multicellular organisms, aerobic or anaerobic, autotrophic or heterotrophic, sexually or asexually reproduced.
They are defined as the kingdom of the first eukaryotic forms of life and protozoans and algae belong to it.
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**The kingdom protista** was considered a kingdom in 1866 by the German naturalist Erndt Haeckel (1834-1919), although in his proposal the kingdom included all unicellular organisms.
**Kingdom Monera**: all single-celled, prokaryotic organisms are found here. They are the only beings whose cells do not have a defined nucleus and contain the simplest genetic material in nature.
Examples of this kingdom are: the bacteria Chlamydia and Escherichia coli.

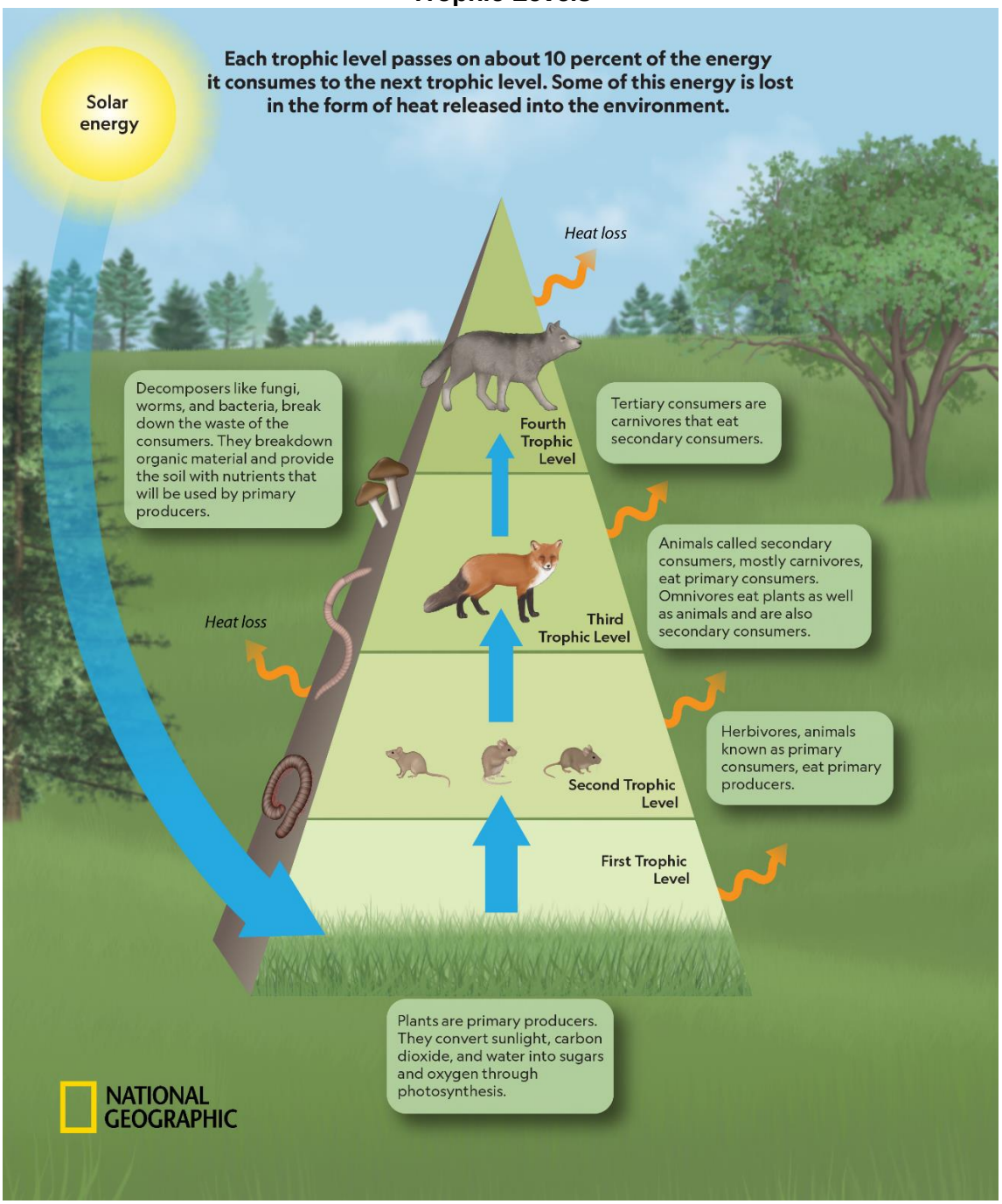
**3.** How is the animal kingdom classified?
**4.** What is the main difference between vertebrate animals and invertebrate animals? write three examples from each group
**5.** What is photosynthesis?
**6.** Name the elements necessary in the photosynthesis process
**7.** Draw a plant and point out its parts.
**8.** Write the function that each part of the plant fulfills.
**9.** Write two characteristics of the fungi kingdom

**10.** Thanks to whom was the fungi kingdom included among the kingdoms of nature?
**11.** In what year was the protista kingdom recognized?
**12.** Define prokaryote
**13.** Give two examples from the Monera kingdom.

**The ecosystem**
An ecosystem is a delimited area where a set of biotic components and abiotic components interact, exchanging matter and energy; Let us remember that biotic components are those that have life, and abiotic components are those that do not have life but without them life would not be possible.

**14.** What is an ecosystem?
**15.** What is the difference between biotic beings and abiotic beings?
**16.** Write 2 examples of each

**Trophic Levels**



**17.** What would happen to all living beings if producers did not exist?
**18.** Name and explain each of the groups into which consumers are classified.
**19.** Why are decomposers important?

**Types of relationship**
Let us remember that one of the vital functions of living beings is relationship, the five main forms of relationship are: mutualism, competition, predation, parasitism and commensalism.
**Mutualism:** both species benefit
**Competition:** two species fighting for the same food or territory.
**Predation:** occurs when one species feeds on another.
**Parasitism:** one organism takes advantage of another, causing harm.
**Commensalism:** one organism takes advantage of another, without affecting it for better or worse.

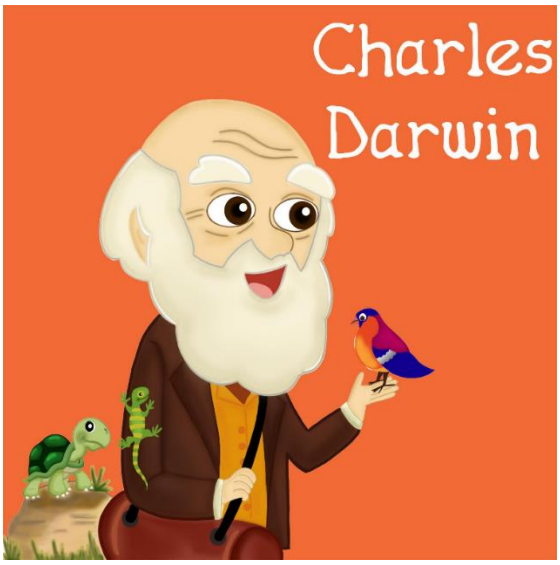
**20.** Write three examples of each of the relationships shown.

**The adaptation**
The adaptation of living beings to the environment is a set of physiological processes, morphological characters or behavioral changes that allow the survival of living beings in different ecosystems. Adaptation is one of the reasons why there is a great variety of life forms on our planet.

**21.** What is adaptation?
**22.** Write an example of adaptation
**23.** What happens when a species does not adapt?

**Types of Adaptation**
**Morphological adaptations**
It occurs when the body itself of the species is varied (anatomical variation), whether in the loss or gain of members, their specialization, or the development of mimicry and cryptic colorations.
**Physiological Adaptations**
These adaptations are related to changes in the metabolism of organisms. Certain organs begin to function differently when certain changes occur in the environment. The two best-known physiological adaptations are hibernation and aestivation.
**Ethological Adaptations**
They are changes in the behavior of species that are transmitted to their offspring to ensure reproductive success and survival.

**24.** What is the difference between the different types of adaptation?
**25.** The long neck of the giraffe, what type of adaptation is it? Explain
**26.** During hibernation, the metabolism of animals decreases to a very low level, in addition to having a lower than normal body temperature and respiratory rate, so what type of adaptation is hibernation? Explain
**27.** The Peacock expands its tail with the aim of conquering a female. What type of adaptation is this? Explain




**Charles Darwin**

Charles Darwin (1809 –1882) revolutionized biology and his studies and research have led to great advances in science. He was the father of the Theory of Evolution in which he explains much of what we currently know about life on Earth.

Darwin was a nature lover and, since he was a child, he was interested in knowing the life and behavior of animals. What he did not know then is that this curiosity would make him become one of the fathers of evolution, discovering that all species, including humans, have the same origin.

After finishing his studies, he embarked as a naturalist on the renowned ship HMS Beagle with which he began a scientific expedition around the world. The trip lasted five years and allowed Darwin to collect most of the data and information that later formed part of his discoveries.

**28.** What was Darwin's greatest contribution to science?