

Read pages 1 - 16.

Assignment #1

Write the answers on your own paper, not on this sheet.

1. What is biology?
2. List the four criteria for life.
3. Suppose NASA finds a substance on Mars that appears to have DNA molecules, extracts solar energy from the sun, and senses light and temperature changes, but it cannot reproduce. Would this substance be classified as a living organism?
4. What is metabolism?
5. What is the difference between anabolism and catabolism?
6. What is photosynthesis?
7. What is the difference between an herbivore, a carnivore, and an omnivore.
8. List one example of an organism for each classification: herbivore, carnivore, omnivore.
9. Are plants producers or consumers?
10. Name two organisms that are decomposers.
11. What is the difference between an autotroph and a heterotroph?
12. Name four different receptors that the human body uses.
13. A bacterium splits in two to form two bacteria. Did this organism reproduce by sexual or asexual reproduction? Would the first bacteria and the two new bacteria be genetically the same or different?
14. A botanist cross-pollinates a red flower and a white flower to produce a pink flower. Was the pink flower produced by sexual or asexual reproduction? Is the pink flower genetically the same as its "parent" flowers (the red and white flowers)?
15. What is a mutation?
16. What is the difference between a hypothesis and a theory?
17. Put the steps of the scientific method in the correct order:

Collect data	Make observations
Form a hypothesis	Your hypothesis becomes a theory
Analyze your data	Your data supports your hypothesis
18. Name two limitations of the scientific method.
19. What are microorganisms?
20. What is the difference between spontaneous generation and abiogenesis?

Equipped with his five senses,
man explores the universe
around him and calls the
adventure Science.

Edwin Powell Hubble



Read pages 17 - 32.

Assignment #2

Write the answers on your own paper, not on this sheet.

1. List the hierarchy for biological classification (starting with Kingdom and ending with Species).
2. You are doing a project with two organisms from the same Class and two other organisms from the same Family. Which organisms would be more similar: the ones in the same Class or the ones in the same Family?
3. List the complete biological classification for a person (*Homo sapiens*), from Kingdom to Species.
4. Name the five Kingdoms we are going to study in Biology. List one organism that belongs to each Kingdom.
5. What is the difference between a prokaryotic cell and a eukaryotic cell?
6. Copy the drawing of the two cells in Figure 1.6, page 19. Include the labels, but not the information below each picture.
7. List the Kingdom for each organism described:
 - a. A multi-cellular decomposer.
 - b. A single eukaryotic cell that is a producer
 - c. A multi-cellular consumer.
 - d. A single prokaryotic cell that is a decomposer.
 - e. A multi-cellular producer.
8. What do biologists refer to in order to correctly classify organism?
9. Use the key on pages 21 – 23 to classify the organism described below:

A multi-cellular organism that is a consumer. It has a backbone and jaws. It is furry all over and has a short, stubby tail. It has four feet with toes and powerful hind legs for jumping. It eats plants with its very large front teeth.
10. What is a taxonomy?
11. What is binomial nomenclature?
12. What is the binomial nomenclature for the following organism:

Kingdom: Plantae	Family: Rosaceae
Phylum: Angiosperms	Genus: <i>Malus</i>
Class: Eudicots	Species: <i>pumila</i>
Order: Rosales	
13. What are the three domains of the new three-domain classification system. Describe what type of organism belongs in each domain.
14. What do you call the metal tubes that contain the lenses on a microscope?
15. What is a revolving nosepiece?
16. What is the name of the platform on a microscope where you put your slide?
17. Your microscope has 40x, 100x, and 400x magnification. Which power should you always start with?
18. Why do you put a cover slip on slides?
19. Go online and find an amazing microscopic image. Print it out and turn it in with your homework. Label the name of the organism on your print out.

