

**Cell Webquest**

**MAKE SURE YOUR COMPUTER SOUNDS ARE OFF BEFORE STARTING!!!**

[http://www.wiley.com/legacy/college/boyer/0470003790/animations/cell\\_structure/cell\\_structure.htm](http://www.wiley.com/legacy/college/boyer/0470003790/animations/cell_structure/cell_structure.htm)

1. What are the three basic cells we will study in biology?

A)

B)

C)

2. Click on the CONTINUE arrow in the upper right hand part of the screen. This is a bacteria cell. Is this a prokaryotic or eukaryotic cell? \_\_\_\_\_

Using your *mouse* to scroll over the different parts of a bacteria cell, write the function of the following parts of a prokaryotic cell:

| Structure       | Function |
|-----------------|----------|
| Pilli           |          |
| Flagella        |          |
| Nucleoid Region |          |
| Cytoplasm       |          |
| Ribosome        |          |

3. Click on the ANIMAL CELL button on the right hand side of the screen. This is an example of a Eukaryotic Cell. Using your *mouse* to scroll over the different parts of an animal cell, write the function of the following parts:

| Structure           | Function |
|---------------------|----------|
| Nucleus             |          |
| Cytoplasm           |          |
| Cell Membrane       |          |
| Mitochondria        |          |
| Perxisome/lysosomes |          |

4. Click on the PLANT CELL button on the right hand side of the screen. This is another example of a Eukaryotic Cell. Using your *mouse* to scroll over the different parts of the plant cell, write the function of the following parts:

| Structure | Function |
|-----------|----------|
| Vacuole   |          |

|              |  |
|--------------|--|
| Chloroplasts |  |
| Cell Wall    |  |
| Nucleus      |  |

SKETCH the four parts of the nucleus. Be sure to LABEL the nucleolus, chromatin, pores, and nuclear envelope/membrane

Fill in the following functions of the different parts of the nucleus:

| Structure                 | Function |
|---------------------------|----------|
| Nuclear Envelope/Membrane |          |
| Chromatin                 |          |
| Nucleolus                 |          |

[http://www.phschool.com/science/biology\\_place/biocoach/cells/common.html](http://www.phschool.com/science/biology_place/biocoach/cells/common.html)

1. What are common features of ALL types of cells?
  - a.
  - b.
  - c.
  - d.

Click on the NEXT CONCEPT button on the lower part of the screen.

2. What is an example of a prokaryotic cell? \_\_\_\_\_
3. What are TWO characteristics of prokaryotic cells that make them different than Eukaryotic cells?
  - a.
  - b.

Click on the NEXT CONCEPT button on the lower part of the screen.

4. Which cells are more complex? Prokaryotes or Eukaryotes

Click on the PRACTICE button on the upper right hand side of the screen. ( you might not see the first two screens but the last one will show you the boxes where you will type in your answers and then check them)

5. List ALL the organelles that belonged in the animal cell?

6. List ALL the organelles that belonged in the plant cell?

[http://www.wisc-online.com/objects/index\\_tj.asp?objid=AP11604](http://www.wisc-online.com/objects/index_tj.asp?objid=AP11604)

1. When the screen opens, click on the NEXT button on the button of the screen. Once the introduction sentence pops up click the NEXT button again.

- a. Is this an example of a prokaryotic or a eukaryotic cell? \_\_\_\_\_
- b. Is this a plant or an animal cell? \_\_\_\_\_

2. Answer the following questions by clicking the NEXT button to scroll from the different parts:

- a. which organelle is called the cells protein factory? \_\_\_\_\_
- b. which organelle uses vesicles to release ribosomes to the cell? \_\_\_\_\_
- c. what do you call the inner membrane of the mitochondria? \_\_\_\_\_
- d. which organelle has a nickname of "suicide sacs"? \_\_\_\_\_
- e. which organelle has enzymes for detoxifying biochemicals? \_\_\_\_\_
- f. which organelle is crucial for mitotic division? \_\_\_\_\_
- g. what is chromatin? \_\_\_\_\_
- h. what two things mostly make up the cell membrane? \_\_\_\_\_  
\_\_\_\_\_

3. What are 4 examples of other eukaryotic cells?

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

Research information on your own on Cilia and Flagella

1. What are two main functions of flagella and cilia?

2. Both flagella and cilia have a specialized arrangement of \_\_\_\_\_.
3. What is the name of the molecule that is used as an energy source to help in locomotion?
4. True or False. Microtubules can FREELY move whenever they want.

[http://www.exploratorium.edu/traits/cell\\_explorer.html](http://www.exploratorium.edu/traits/cell_explorer.html)

Click on "Where do you get your energy?" and answer the following questions by reading each section and clicking the next arrow to navigate through the tutorial:

- a. where do we get energy from?
- b. Cells break down the energy in your food to produce a molecule called \_\_\_\_\_.
- c. What are the 3 key players in harvesting energy from food?
- d. In which organelle does the process of producing ATP occur in?
- e. Where does the energy stored in sugars come from?
- f. Click past the photosynthesis section until the last frame.

What TWO things do ATP fuel in the cell that is very important?

Click on "How do cells make proteins?" and answer the following questions by reading each section and click on the next arrow to navigate through the tutorial:

- a. True or False. Proteins are essential in our daily life.
- b. What are the 4 main key players in making proteins?
- c. In which organelle does protein production start?

d. Where are the instructions for making the proteins stored in?

Write the **ANSWER** to the following questions: Feel free to try to answer them then check your answer before you write them down.

1. What determines what traits an organism will have?

\_\_\_\_\_

2. Where is the heredity material located in the cell?

\_\_\_\_\_

3. Groups of similar cells that all do the same sort of work are called

\_\_\_\_\_.

4. What type of instrument is used to look at cells?

\_\_\_\_\_

5. Which of these - closet, table, microwave is similar in function to a vacuole?

\_\_\_\_\_

6. Which of the following -bacteria, plant cell, animal cell does NOT have organelles?

\_\_\_\_\_

7. If a microscope has a lens with a power of 20X, how many times will it magnify something? \_\_\_\_\_

8. What is the function of a nerve cell?

\_\_\_\_\_

9. If a group of organs work together to perform a specific job, what are they called? \_\_\_\_\_

10. Put the level of organization- organ, cell, tissue, organ system in order from smallest to largest:

11. Plants, algae, and many bacteria make their own food through the process of

\_\_\_\_\_.

12. What part of the cell helps control what enters and leaves the cell?

\_\_\_\_\_

13. Chloroplasts capture energy from the \_\_\_\_\_ to make food

14. Which two structures do plant cells have that animal cells do not have? \_\_\_\_\_

15. Which type of cell forms a protective layer for your body? \_\_\_\_\_

16. The statement that all cells come from cells that already exist is part of \_\_\_\_\_.

17. Cytoplasm is made mostly of \_\_\_\_\_.