

# RIBBON OF LIFE

1. Everything is made of atoms, including organisms. Write the sequence of increasing organization of atoms in living organisms.

- |                     |                  |                            |
|---------------------|------------------|----------------------------|
| a. <u>atoms</u>     | d. <u>cell</u>   | g. <u>organ system</u>     |
| b. <u>molecule</u>  | e. <u>tissue</u> | h. <u>complex organism</u> |
| c. <u>organelle</u> | f. <u>organ</u>  | i. _____                   |

2. Some kinds of organisms are simple; others are complex. Put the major groupings of organisms in order from simplest to most complex.

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|--------------------|----------------------------|-----------------------------------|
| a. <u>bacteria</u> | b. <u>single eukaryote</u> | c. <u>multicellular eukaryote</u> |
|--------------------|----------------------------|-----------------------------------|

3. Cells are alive, but not all living cells are organisms. Explain.

To be an organism, a living cell must live independently of other cells.

4. What is the basic unit of life? Why do you think so? \_\_\_\_\_

The cell is the basic unit of life. All living things are one or more cells. Anything less than a cell is not alive.

5. What organelles are found in all cells? \_\_\_\_\_

All cells have a cell membrane, cytoplasm, and ribosomes.

6. What is the difference between a prokaryotic cell and a eukaryotic cell?

Eukaryotic cells have a nucleus (and numerous other organelles inside). Prokaryotic cells do not have a nucleus.

7. How many kinds of organisms have prokaryotic cells? How many have eukaryotic cells?

Bacteria are prokaryotic cells. All other organisms, including  
protists, fungi, plants, and animals, are made of eukaryotic cells.

8. How are paramecia cells and sheep cells the same and how are they different?

Paramecia and sheep cells are eukaryotic cells. They have many of the  
same organelles, including a nucleus, mitochondria, cytoplasm, cell  
membrane, endoplasmic reticulum, and ribosomes. Paramecium cells  
are organisms; sheep cells are not.

9. Plants and animals have tissues. What is a tissue?

A tissue is a mass of cells of the same kind, working together to  
perform a function for a complex multicellular organism.

10. How do cells in animals such as mammals and other vertebrates get the resources they need to survive?

Every cell in a vertebrate is served by a blood vessel (capillary).  
These animals cells get the food (energy), water, gas exchange, and  
waste disposal they need by being in contact with the bloodstream.

11. Some say all life is aquatic. Explain what they mean.

Life happens in cells. Cells are filled with water-based cytoplasm.  
Even though millions of different kinds of organisms live on land, their  
cells are in an aquatic environment. For this reason it is fair to say  
that all life is aquatic (not that all organisms are aquatic)  
because all living cells are surrounded and filled with water.