Name_____ Date_____

Fungi, Protists, and Monerans

Three scientific kingdom classifications are: fungi, protists, and monerans. There are specific qualifications that scientists use to determine which of the kingdoms a particular organism belongs to.

Fungi (which is the plural form of the word fungus) were originally believed to be part of the plant kingdom since they have cell walls and produce spores. Fungi were separated into a distinct kingdom because it was discovered that fungi get their energy from living on dead plants and animals, which is very different from the way plants receive their energy. For example, mushrooms are created by colonies of fungi. These colonies feed on plant material, like decaying trees. Sometimes, these colonies sprout a mushroom. When mushrooms are ripe, they release millions of tiny spores from their undersides. These spores are tiny seed-like eggs. The wind blows these spores to other places where new colonies of fungi begin to grow. Other examples of fungi are green mold on bread, mildew, and yeast (which makes bread rise).

Protists are tiny and can only been seen with a microscope. For many years, scientists were stumped with regard to classifying these organisms. Scientists observed that some of these organisms exhibited the features of plants, while others shared similarities with animals. As a result, it was decided that these organisms would make up a kingdom of their own.

Protists that act like animals are called protozoan. This term comes from the Greek words *proto* (meaning early) and *zoan* (meaning animal). Protozoans are able to move around. They can eat food that they find in their surroundings. Protozoans can be found in both fresh water and salt water, and some even live in the soil or in the bodies of other organisms.

Protists that are more plant-like are called algae. Algae can form on the tops of lakes and can be seen as a film on top of the water. Algae contain chlorophyll, which is used to make their own food. Euglena are another example of plant-like protists. When euglenas are unable to make their own food because of the lack of sunlight, they eat bacteria and other tiny animals and plants.

Monerans are organisms that are single-celled and live in large groups called colonies. There are two main groups of monerans: bacteria and blue-green algae. Monerans are similar to protists. Once scientists were able to study these organisms, they found that monerans do not have a cell nucleus. Instead of having a cell nucleus, a moneran's cell nucleus is scattered throughout the cytoplasm of the moneran.

Bacteria are monerans. These types of monerans have a cell wall and a cell membrane, similar to plant cells. The difference is that bacteria do not have chlorophyll. Instead, bacteria are classified based on their shape. Some are long rods, some are spiral, and some are round. Bacteria feed off of other living organisms or decaying matter. Bacteria are found almost everywhere. They are found in soil, air, and water, to name a few places.

There are some forms of bacteria that cause diseases. For example, strep throat is caused by a bacteria. Antibiotics kill this bacteria. Like fungi, bacteria help to break down decaying matter in the soil, which frees up nutrients for plants.

Name_____ Date_____

Fungi, Protists, and Monerans (Cont'd)

Blue-green algae are monerans that are found in soil or water. Their looks are very similar to the protist algae, but they do not have a nucleus. They do not have chloroplasts either. Instead, their chlorophyll is located in membranes throughout the cell. While they are called blue-green algae, not all of the algae are blue-green in color. Roughly half of them are blue-green. The other half are different colors. Blue-green algae is important because, like protist algae, they begin the food chain for animals that reside in water.

Name_____ Date_____

Fungi, Protists, and Monerans Questions

Multiple Choice:

1. Fungi get their energy from:

a. animals and plants
b. the sun
c. stones
d. calcium

2. Mushrooms are created by colonies of:

a. birds
b. spores
c. fungi
d. ponds

3. Bacteria are:

a. protists
b. monerans
c. fungi
d. mountains

True or False:

____ 4. Protozoans are able to move around.

____ 5. Blue-green algae are not always blue or green.

____6. Monerans have a cell nucleus.

____ 7. Protists are tiny and can only been seen with a microscope.

Fill Ins:

8. When _____ are unable to make their own food because of the lack of sunlight, they eat bacteria and other tiny animals and plants.

9. _____ do not have chloroplasts.

Name_____ Date_____

Fungi, Protists, and Monerans Answers

Multiple Choice:

1. Fungi get their energy from:

a. animals and plants
b. the sun
c. stones
d. calcium

2. Mushrooms are created by colonies of:

a. birds
b. spores
c. fungi
d. ponds

3. Bacteria are:

a. protists
b. monerans
c. fungi
d. mountains

True or False:

__T__ 4. Protozoans are able to move around

__T__ 5. Blue-green algae are not always blue or green.

__F__ 6. Monerans have a cell nucleus.

__T__ 7. Protists are tiny and can only been seen with a microscope.

Fill Ins:

8. When __euglena__ are unable to make their own food because of the lack of sunlight, they eat bacteria and other tiny animals and plants.

9. _____Blue-green algae_____ do not have chloroplasts.