

Kingdom Fungi

By Cindy Grigg

¹ Have you ever seen an old orange with gray, white, or blue fuzz growing on it? That "fuzz" is fungi. Mushrooms and yeast are also fungi. Most fungi share three important characteristics. They have one or more cells that have a nucleus. They use spores to reproduce. They cannot make their own food. Instead, they absorb food through thread-like tubes called hyphae that grow into the food. If you cut open a fuzzy orange, you would see the root-like tubes growing from the fungi on the outside through the peel into the orange sections. Digestive chemicals ooze from the tips of the hyphae into the orange. The digestive chemicals break down the food into small substances that can be absorbed by the hyphae.



² Some fungi feed on the remains of dead organisms, like rotting trees. Other fungi are parasites that break down the chemicals in living organisms. For example, athlete's foot is a disease caused by a fungus that feeds on chemicals in a person's skin. Dutch elm disease is caused by another fungus that feeds on elm trees. It eventually kills the trees.

³ Fungi play an important role as decomposers on Earth. Some cause disease, and some fight disease. Others neither help nor hurt the other organisms that live near them. Many fungi live in the soil and break down dead plant matter. This process adds important nutrients to the soil. Many fungi provide food for people. Bakers add yeast to bread dough to make it rise. Yeast cells use the sugar in the dough for food. This process produces carbon dioxide gas. The gas forms bubbles which cause the dough to rise. You see these bubbles as holes in a slice of bread. Without yeast, bread would be flat and solid. Yeast is also used to make wine and beer. Some molds are used in making cheese. Many people enjoy eating mushrooms. Some mushrooms are harmless to us, but some can be poisonous. You should never pick or eat wild mushrooms.

⁴ Some fungi cause diseases in humans and plants. Athlete's foot and ringworm are both diseases that are caused by fungi. Because the fungi produce spores, the disease can spread easily from person-to-person. Both diseases can be treated with anti-fungal medicine. Corn smut and wheat rust are two diseases in plants that are caused by fungi.

⁵ Penicillin is an important medicine made from fungi. Penicillin is the first

known antibiotic, discovered in 1928 by Alexander Fleming. An antibiotic is used to treat bacterial infections in people and animals. Since the discovery of penicillin, many additional antibiotics have been found that come from fungi. Penicillin has saved the lives of many millions of people who would have died before the discovery of the antibiotic.

⁶ Some plants and fungi become partners. The fungi's hyphae grow among the plant's roots. The hyphae absorb more water and nutrients from the soil. The plant benefits because it can grow larger than it could alone. The fungi benefit by feeding on the extra food the plant makes and stores in its roots. This is a symbiotic relationship called mutualism. Some plants have become so dependent on their fungi partners they can't survive without them. Orchids are one plant that cannot grow without a fungi partner.

⁷ Fungi and algae first appeared in the fossil record one billion years ago. They have evolved a variety of adaptations that help them to survive in different environments. Humans have learned that some fungi are very helpful to them, while some fungi can be hurtful to them.

Name _____

Science Pd: _____

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<p>1. Name the three characteristics that all fungi share.</p> <p>_____</p> <p>_____</p>	<p>2. What are hyphae?</p> <p><input type="radio"/> A Root-like tubes that fungi use to absorb food</p> <p><input type="radio"/> B A type of fungi</p> <p><input type="radio"/> C A disease caused by fungi</p>
<p>3. What is a function of the hyphae?</p> <p><input type="radio"/> A Absorb food</p> <p><input type="radio"/> B Ooze digestive chemicals to break down food</p> <p><input type="radio"/> C Both a and b</p>	<p>4. What important medicine comes from fungi?</p> <p><input type="radio"/> A Athlete's foot cream</p> <p><input type="radio"/> B Vitamin F</p> <p><input type="radio"/> C Penicillin</p>
<p>5. _____ is a disease caused by a fungus</p> <p><input type="radio"/> A Athlete's foot</p> <p><input type="radio"/> B Malaria</p> <p><input type="radio"/> C The common cold</p>	<p>6. Bakers use yeast to make dough rise because</p> <p><input type="radio"/> A Yeast is light and fluffy</p> <p><input type="radio"/> B Yeast eats air and makes sugar</p> <p><input type="radio"/> C Yeast eats sugar and makes carbon dioxide</p>
<p>7. List one plant disease caused by a fungus</p> <p>_____</p>	<p>8. What do we call it when both organisms benefit from being together?</p> <p><input type="radio"/> A Friendly</p> <p><input type="radio"/> B Commensalism</p> <p><input type="radio"/> C Mutualism</p>