

# Fungi are Alive!

**Cross-Curricular Focus: Life Science**



You might think that all living things are classified as either plants or animals, but there are some mysterious little organisms which are neither, yet are still alive. Many are invisible, hiding deep in the ground or floating silently on the air. Unlike plants, they do not rely on the heat or light of the sun for survival. They have no chlorophyll and do not create food through photosynthesis. They must find a source of nutrients outside themselves. They are very adaptable to any weather conditions. If temperatures fall too low to support life, they go into a deep sleep. This sleep is like the hibernation state that some animals use during the coldest part of the winter. In this inactive state, they wait for living conditions to get better.

These mysterious little creatures are all around us. We call them **fungi**, and we even use their extraordinary abilities to help us produce some of our favorite foods. If you enjoy biting into a nice, fluffy piece of bread, you can thank the yeast that helped the bread rise. Yes, yeast is a **fungus**. If you like mushrooms on your pizza or in your salad, you are eating fungi, too.

Because of fungi, we are able to control nasty infections with antibiotics. You may have heard of the most common antibiotic: penicillin. Dr. Alexander Fleming discovered penicillin in 1928 completely by accident. He left his science experiment out on the counter instead of cleaning up after himself. When he came back from his vacation, a strange bluish fungus was growing on it. Penicillin had been discovered.

As people become more aware of better ways to meet our survival needs without harming our planet, we are finding more and more uses for fungi. We can create pesticides to control insects and make detergents that are more Earth-friendly. It makes sense that fungi can do things without harming Earth. They have been turning dead plant materials into rich soil for thousands of years. They eat the nutrients that would otherwise be wasted. Without them, we'd be walking around on thick layers of dead leaves and other discarded plant materials.

Although there are many good things about fungi, we must not forget that some fungi are harmful. There are certain varieties that will make us sick or give us skin reactions, like athlete's foot. It is important to be aware of the various types of fungi. We can benefit from the good fungi and protect ourselves from the harmful ones.

Name: \_\_\_\_\_

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) Why can't fungi make their own food using photosynthesis?

\_\_\_\_\_

\_\_\_\_\_

2) Name at least two ways that fungi can be beneficial for us.

\_\_\_\_\_

\_\_\_\_\_

3) Give an example of one way that fungi can be harmful for us.

\_\_\_\_\_

\_\_\_\_\_

4) What do fungi do when it gets too cold for them?

\_\_\_\_\_

\_\_\_\_\_

5) Imagine a world with no fungi. How would their absence impact your life?

\_\_\_\_\_

\_\_\_\_\_

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Name: **Key**

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

**Actual wording of answers may vary.**

1) Why can't fungi make their own food using photosynthesis?

**They have no chlorophyll.**

2) Name at least two ways that fungi can be beneficial for us.

**Example of correct answer: They taste good and they control infections.**

3) Give an example of one way that fungi can be harmful for us.

**Example of correct answer: They make us sick.**

4) What do fungi do when it gets too cold for them?

**They go into an inactive state until it warms up.**

5) Imagine a world with no fungi. How would their absence impact your life?

**student's choice**

# Plants Are Producers

**Cross-Curricular Focus: History/Life Science**



People are consumers. We have to spend large parts of our days finding, buying, cooking and eating our food. Did you ever think it might be nice to be able to make your own food like plants do? Plants are producers and perform a process called **photosynthesis** using light from the sun, water and carbon dioxide. Carbon dioxide is the gas we exhale when we breathe. The end result of this chemical reaction is sugar for the plant to "eat." The plant releases water and oxygen, a gas all animals need to breathe, into the air.

So how do plants do it, and why can't we? Plants have special structures called **chloroplasts** that animals don't have. Chloroplasts are round, flat organelles that are arranged in stacks called **grana**. These stacks are filled with chlorophyll. **Chlorophyll** is what gives leafy green plants their green color. Their main job is to absorb light from the sun. Chloroplasts can absorb every color except green. Light activates the chlorophyll. It creates an energy that splits molecules of water, separating them out into hydrogen and oxygen. Chemical reactions take place. Hydrogen from the water combines with carbon from the carbon dioxide we breathe out. Oxygen is released into the air.

People and plants make perfect partners. Plants rely on the carbon dioxide that we breathe out, and we rely on the oxygen that they "breathe" out. This is one good reason for protecting plant life on Earth. Algae fields near the poles produce a constant supply of oxygen for us. So do the many plants of Earth's rainforests. We need plants in order to survive.

Conservation projects around the globe are aimed at protecting our natural resources, including numerous species of plants. Our quality of life and the very quality of the air we breathe depends upon our green plant partners.

Name: \_\_\_\_\_

**Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.**

1) Why are plants called producers?

\_\_\_\_\_

2) Where do plants get their green color?

\_\_\_\_\_

3) Explain the relationship between people and plants. Why are we good partners?

\_\_\_\_\_

4) What would happen if there were not enough plants on Earth?

\_\_\_\_\_

5) What is a chloroplast?

\_\_\_\_\_

\_\_\_\_\_

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1) Why are plants called producers?  
**They produce their own food.**

2) Where do plants get their green color?  
**chlorophyll**

3) Explain the relationship between people and plants. Why are we good partners?  
**because we breathe out carbon dioxide which plants need and they release oxygen which we need**

4) What would happen if there were not enough plants on Earth? **We would run out of oxygen to breathe. or There would be too much carbon dioxide in the air.**

5) What is a chloroplast?  
**an organelle in plant cells**

## The Moon

The moon is a made of rock. It revolves around the earth every . We see the moon from the sun's on the moon. When the near side of the moon is dark it is called a . The next phase is the waxing , the moon looks like a thin banana. A few days later half the moon is lit, this is phase three called the . Phase four the moon is almost full, the biggest the moon gets is called a full moon. Now let's reverse the order , and back to days the moon returns to the . After 28 .

### Explain:

Waxing:

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Waning:

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### Extend your knowledge:

It's 9:00 pm, when I looked at the moon it was a full moon. What will the next phase be as the moon starts to disappear?

# Phases of The Moon

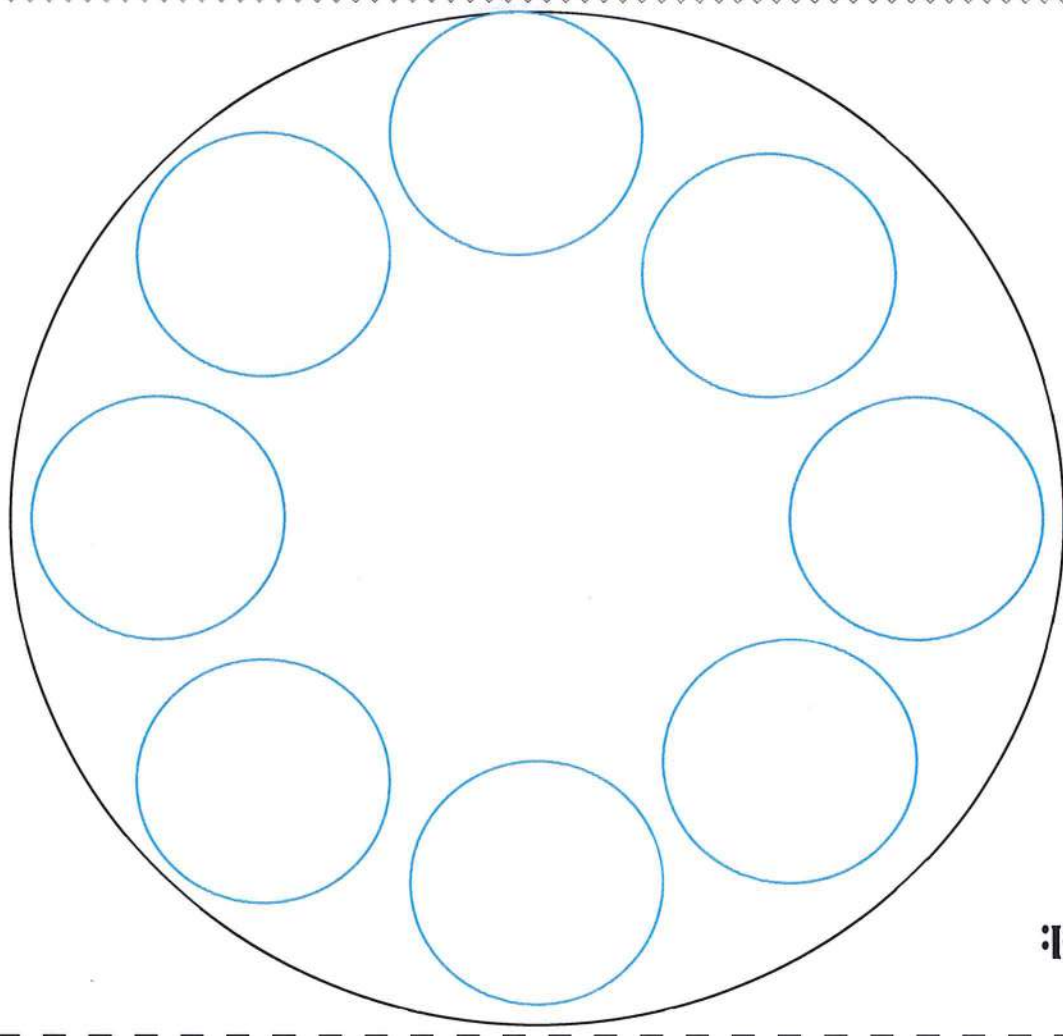
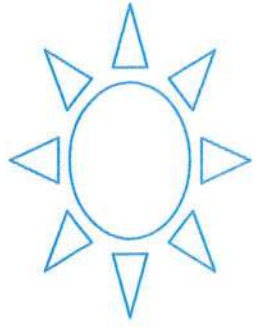
Describe:

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Draw and Label:



Phases in Order:

- 1) New Moon
- 2) Waxing Crescent
- 3) First Quarter
- 4) Waxing Gibbous

- 5) Full Moon
- 6) Waning Gibbous
- 7) Last Quarter
- 8) Waning Crescent

# EARTH'S AXIS

Rotation is the spinning of Earth on its axis. The axis is an imaginary line that passes through the North and South Poles of the planet.



The Earth's axis is not vertical, but tilted 23.5 degrees.

# SUN



What causes day and night?

**24**

**EARTH'S ROTATION**

*hours*

Sketch a map showing how light from the Sun is to the day. Try going on the on a sunny day. Notice how shadows of buildings and trees cast in lines of various directions. Show your observations below.

# EARTH'S ORBIT

Earth's orbit is the elliptical "AKA" revolution path that the Earth takes around the sun once every year.

