Food for Energy

Humans, like other animals, get their energy from the foods they eat. There's the energy used for big things, like exercising and playing sports. There's the energy that gives you the brainpower to complete homework assignments and study. The truth is, we use energy for everything from brushing our teeth to keeping our hearts pumping. But before our food helps us, and all animals, to perform different activities, it must be broken down through digestion. Digestion is the process by which our bodies break down food into nutrients, which the body can then use for energy, growth, and cell repair. It is critical to our survival.

Digestion is a complicated process, and most of the time, we aren't even aware that it's going on. As food moves through our bodies—from the very first chew to the stomach and intestines—enzymes help transform the food matter so that its nutrients are absorbed into the cells. That means that even when you are sitting on the couch watching television after dinner, your body is doing hard work as digestion involves multiple body systems.

However, not all living organisms access energy in the same way. For example, plants use a process called photosynthesis to convert the sun's light energy into chemical energy. There are three specific elements necessary for photosynthesis to begin: sunlight, water, and carbon dioxide, a naturally occurring gas in our atmosphere. In fact, carbon dioxide is one of the compounds animals exhale during the breathing process. When the sun's rays hit a plant's leaves, the plant is able to transform that light—or solar energy—into chemical energy that is then used as fuel. Plants use this fuel in some of the ways that animals do. While you're never going to see a plant running down the sidewalk (at least, not in real life!), a plant is growing and

changing all the time even though you may not be able to see its incredibly slow growth with your naked eye.

A plant consumes each of the three elements necessary for photosynthesis in a different way. The sunlight is absorbed through "chloroplasts," cell-like structures found in a plant's leaves that trap the sunlight and use its energy. The plant "breathes in" carbon dioxide through tiny pores—or holes—in its leaves that are called stomata. Finally, water is soaked up into the plant, mostly through its roots. Photosynthesis results in two different end-products, oxygen and sugars. These sugars plants make store the chemical energy converted from light energy. And the plant "breathes out" oxygen during photosynthesis. Oxygen is something we animals need to breathe and survive. So, although plants and animals consume energy differently, we are connected in the process. That's something to think about next time you're running fast through a meadow or sitting quietly, admiring a beautiful flower.

Name: _____ Date: _____

1. According to the passage, where do humans get their energy for playing sports?

A from food
B from the sun
C from our hearts pumping
D from enzymes

2. How does the author compare animals and plants?

A The author describes how plants and animals get their energy.
B The author describes where plants and animals live.
C The author describes how plants and animals look.
D The author describes the respiratory systems of plants and animals.

3. Read the following sentence: "When the sun's rays hit a plant's leaves, the plant is able to transform that light—or solar energy—into chemical energy that is then used as fuel."

Based on the evidence above, what conclusion can be made?

A The sun causes plants to produce light.
B Plants can turn food into solar energy.
C Photosynthesis only occurs at night.
D Plants need the sun to make food.

4. Read the following sentences: "For example, plants use a process called photosynthesis to convert the sun's light energy into chemical energy. There are three specific elements necessary for photosynthesis to begin: sunlight, water, and carbon dioxide, a naturally occurring gas in our atmosphere."

Based on the evidence above, why is it important to water your houseplants?

A Plants need water to make food and generate energy.
B Plants need water to make carbon dioxide.
C Plants need water to make solar energy.
D Plants need water to make natural gases.

5. What is this passage mainly about?

A how humans use energy to play sports
B how plants and animals get their energy
C how the process of photosynthesis works
D how the process of digestion works

6. Read the following sentences: "When the sun's rays hit a plant's leaves, the plant is able to transform that light—or **solar** energy—into chemical energy that is then used as fuel."

As used in the passage, what does the word "**solar**" mean?

A relating to heat
B relating to the sun
C relating to plants
D relating to chemicals

7. Choose the answer that best completes the sentence below.

_____ our food can give us energy to perform different activities, it must be broken down through digestion.

A After
B Before
C Since
D Because

8. What three specific elements are needed for photosynthesis?

_____

_____

_____

_____

9. What is the main difference between animals and plants, as described by the author in this passage?

10. How can humans and other animals benefit from photosynthesis? Use evidence from the text to support your answer.

Teacher Guide & Answers

Passage Reading Level: Lexile 1090

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8. What three specific elements are needed for photosynthesis?

Suggested answer: The three specific elements needed for photosynthesis are sunlight, water, and carbon dioxide.

9. What is the main difference between animals and plants, as described by the author in this passage?

Suggested answer: Animals get their energy from food. Plants get their energy from the sun.

10. How can humans and other animals benefit from photosynthesis? Use evidence from the text to support your answer.

Suggested answer: In photosynthesis, plants use the sun's energy to make food and grow. Humans and other animals eat plants and digest the plants in order to turn these plants into energy used to perform different activities. Human and other animals also need to breathe in oxygen which is an end-product of photosynthesis.