

## Characteristics and Needs of Living and Nonliving Things

- 1.1a Animals need air, water, and food in order to live and thrive.
- 1.1b Plants require air, water, nutrients, and light in order to live and thrive.
- 1.1c Nonliving things do not live and thrive.
- 1.1d Nonliving things can be human-created or naturally occurring.
- 1.2a Living things grow, take in nutrients, breathe, reproduce, eliminate waste, and die.
- 5.1a All living things grow, take in nutrients, breathe, reproduce, and eliminate waste.

Living things are both similar to and different from each other and from nonliving things.

Nutrients are substances a living thing needs for energy and growth.

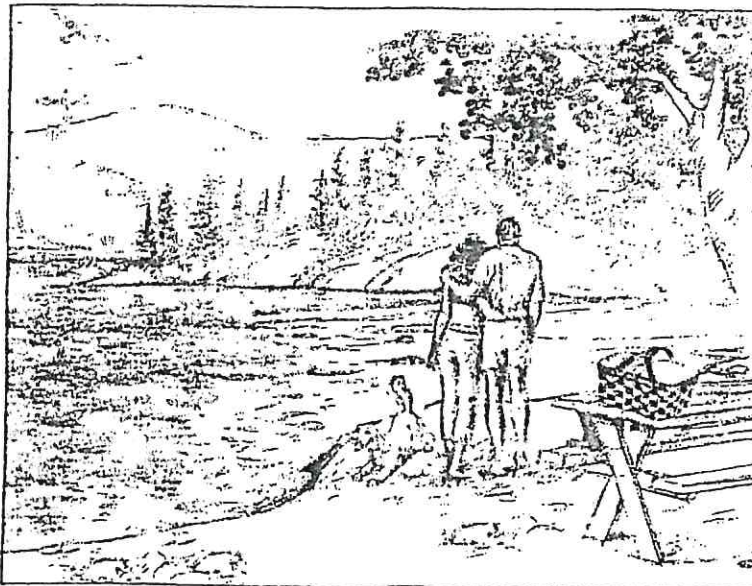
Reproduction means producing young, or more of your own kind.

### Guided Instruction

Directions Read the following information.

The world around us is made up of both living and nonliving things. A plant growing in a flowerpot is living, but the flowerpot is not alive, so it is called a nonliving thing. Scientists use characteristics to group or classify something as a living thing. For example, all living things grow during their lives. Therefore, something that grows is classified as a living thing.

In order to live and be healthy, all animals need air, water, and **nutrients** in food. Animals use the nutrients for energy to grow and stay healthy.



### Guided Questions

Where do animals get **nutrients**?

Name the living and nonliving things in the picture.

Plants need air, water, and nutrients, too. They use sunlight to make their own food, using nutrients from the water and soil. Therefore, plants need air, water, nutrients, and light in order to live.

Animals cannot make their own food. For energy and growth, animals must eat. As they use the nutrients they take in, animals release waste products. Animals also release waste products when they breathe. Animals release carbon dioxide as a waste product.

Most plants can make their own food using water, air, and sunlight. The nutrients plants take in from the soil also help them grow strong and healthy. Plants release waste products too. They release oxygen as a waste product.

All living things can make more of their own kind through **reproduction**. Sunflowers produce seeds that grow into new sunflowers. Cats have litters of kittens, dogs produce puppies, and human beings have babies.

The last characteristic of living things is that at the end of their life cycles, they die. Some plants live only one year, and others live for many years. All animals die at the end of their life spans.

Nonliving things are not alive, so they do not need air, water, or food. Nonliving things cannot reproduce. Many nonliving things are part of the natural world, such as rocks. Other nonliving things have been made by human beings. Cars, for example, are made by factory workers, using nonliving substances such as metal and plastic. Even though cars need gasoline, water, and air to move, they are nonliving.

**Guided Questions**

Where do plants get **nutrients**?

What is **reproduction**?

Where do nonliving things come from?

**Directions** For each question, write your answer in the space provided.

1. What do all living things need in order to live and stay healthy?

2. What other things do plants need—that animals do not need—in order to live? Why?

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3. What do all living things do?

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4. An icicle “grows” as more water freezes. Is an icicle a living thing? How do you know?

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5. Explain why cats cannot produce puppies.

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6. In order to run, a car needs air, water, and its own kind of “food.” It also eliminates wastes and sometimes a car can “die.” How is a car the same as a living thing? How is it different from a living thing?

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Apply the  
New York State  
Learning Standards  
to the State Test

Directions: Mark an "X" in the appropriate rows below to answer items 7 through 9. Then answer question 10.

	ARE FOUND IN NATURE	ARE MADE BY HUMAN BEINGS	NEED AIR, WATER, AND NUTRIENTS	REPRODUCES ITS OWN KIND	ELIMINATES WASTES
7 Living Things					
8 Nonliving Things					
9 Both Living Things and Nonliving Things					

10 Suppose you put a hamster and a plant in a very dark room. You give them both water every day. You also feed the hamster and give the plant nutrients. Explain what will happen to the hamster and the plant.

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Directions (11-16): Each question is followed by four choices. Decide which choice is the best answer. Circle the letter of the answer you have chosen.

11 What do all animals need in order to live?

- A air, water, and light
- B air, water, and nutrients
- C air and water
- D air, nutrients, and light

12 Which of the following things is living?

- A rock
- B sand
- C air
- D seaweed

13 Which of the following things needs light to make food?

A



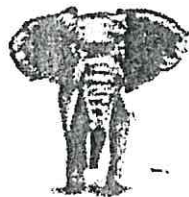
B



C



D



14 Which of the following things can grow bigger but is nonliving?

A grass

B beetle

C icicle

D mushroom

15 What does a car do that a living thing also does?

A It uses air and water.

B It needs light, water, and nutrients.

C It can move from place to place by itself.

D It has adapted to its environment.

16 Suppose you see some dark specks floating in a jar of water. You put a lid on the jar and look at it the next day. What might make you think the specks are tiny living things?

A They have settled to the bottom.

B They are still floating in the water.

C The number of specks has doubled.

D The specs are gone and the water is gray.

