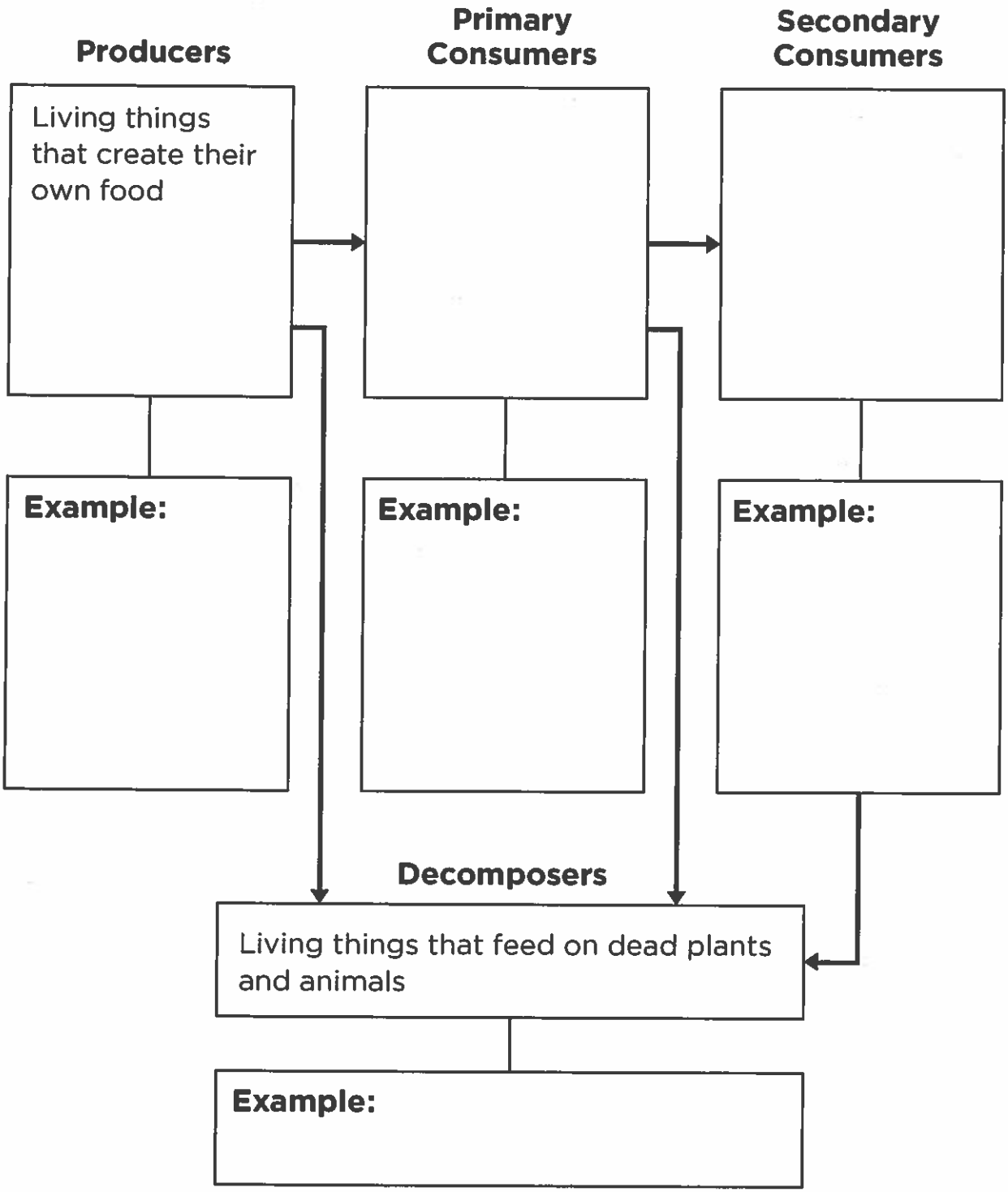
Name _____ Date _____

CHAPTER LEVEL
**Concept Map**

# Living Things Need Energy



CHAPTER LEVEL
**Literature**

Name _____ Date _____

# The Story Goes On

Read the Literature feature in your textbook.

## Write About It

**Response to Literature** The poet brings to life a sequence of events that happens every day in nature. What do you think happens when the enemy spots the bug? Write a fictional narrative in which you tell what happens next. Make sure you bring the conflict to a reasonable conclusion.

Name _____ Date _____ **Outline**

# Plants and Sunlight

**Use your textbook to help you fill in the blanks.**

## What are plants?

1. Plants give off a gas called _____ , which we breathe.
2. Plants come in all sizes, _____ , and colors.
3. Some plants are so small that _____ or as tall as skyscrapers.
4. Tropical bamboo plants can grow about 4 meters a week, which is about _____ an hour.
5. The world's oldest tree is almost _____ years old.
6. The _____ is the deadliest plant of all.
7. There are about _____ different kinds of plants.
8. The roots of a plant take in _____ and _____ from the soil.
9. Leaves collect _____ from the Sun.

## How do plants get energy?

10. The process in which plants make their own food is called _____ .
11. During photosynthesis, plants take in sunlight, water, and _____ .
12. Plants use energy from the Sun to change carbon dioxide and water into _____ .
13. The green material in the leaves called _____ captures sunlight for the plants.

Name _____ Date _____

14. Energy from the Sun is called _____ .

15. Many plants have a system of _____ to carry water and nutrients from the bottom of the plant to the top.

## Why are plants important?

16. Plants provide _____ that travels from one organism to another.

17. When an animal eats a plant, _____ passes from the plant to the animal.

## Where do plants grow?

18. A(n) _____ is everything that surrounds a living thing.

19. _____ is a measure of the total mass of living things in an environment.

## Summarize the Main Idea

20. Briefly describe the photosynthesis process and then explain why plants use photosynthesis.

Name _____ Date _____ **Vocabulary**

# Plants and Sunlight

| | | |
|---|---|---|
| **a.** biomass | **d.** energy | **g.** oxygen |
| **b.** carbon dioxide | **e.** environment | **h.** photosynthesis |
| **c.** chlorophyll | **f.** organisms | **i.** solar energy |

**Match the correct letter with the description.**

1. Plants make their own food in a process called _____ .
2. Plants use energy from the Sun to change _____ and water into sugar.
3. A leaf is filled with _____ , which gives it the green color and helps it capture the sunlight.
4. Plants give off _____ into the air.
5. _____ is the total mass of living things in an environment.
6. Energy from the Sun is called _____ .
7. Plants do not eat _____ or other living things for food.
8. A(n) _____ is everything that surrounds a living thing.
9. A plant gets _____ directly from the Sun.

**Cloze Test** Name _____ Date _____

# Plants and Sunlight

| | | | |
|---|---|---|---|
| environment | photosynthesis | water | roots |
| carbon dioxide | more | chlorophyll | sunlight |
| solar energy | oxygen | amount | |

**Fill in the blanks. You may use one word twice.**

Plants make their own food. This process is called _____ . A plant takes in _____ , _____ , and _____ to produce its own food. The leaves of a plant capture sunlight through the green material called _____ . Energy from the Sun is called _____ . The _____ anchor a plant to the ground and bring water to the stem of a plant. The plant gets the _____ from the air around it. As a result of this process, the plant makes food and gives off _____ , which we breathe in! A(n) _____ is everything that surrounds a living thing. Biomass is a measure of the _____ of living things in an environment. A dense rain forest has _____ plant biomass than animal biomass.

Name _____ Date _____ **Outline**

# Food Chains

**Use your textbook to help you fill in the blanks.**

## What is a food chain?

1. The way energy passes from one organism to another is shown in a(n) _____ .
2. Plants get their energy from the _____ .
3. Plants are called _____ because they can make their own food.
4. Animals are called _____ because they cannot make their own food.
5. Most food chains begin with _____ .
6. Plants, or _____ , are next in the food chain.
7. Decomposers break down organisms and return _____ to the soil.
8. With each step of the food chain, matter and _____ pass from one organism to another.

## What are herbivores?

9. A(n) _____ is an animal that eats only plants.
10. Deer, rabbits, and mice are examples of _____ , which are the first consumers in a food chain.
11. Other animals can consume _____ for food.
12. An animal that is hunted by another animal is called _____ .
13. An animal that hunts another animal for food is called a(n) _____ .

**Outline** Name _____ Date _____

## What are carnivores and omnivores?

**14.** Animals that eat other animals are called _____ .

**15.** Animals that eat both plants and animals are _____ .

## What are decomposers?

**16.** Decomposers break down plant or animal life that is no longer _____ .

**17.** Decomposers work _____ to break down organisms completely.

## What are some examples of food chains?

**18.** Food chains in a pond start with a(n) _____ , contain _____ , and end with decomposers.

**19.** In the California desert, one producer is the _____ tree.

## Summarize the Main Idea

**20.** Explain the order of a pond food chain beginning with algae.

_____

_____

_____

_____

_____

Name _____ Date _____ **Vocabulary**

# Food Chains

| | | |
|---|---|---|
| **a.** algae | **d.** decomposers | **g.** herbivore |
| **b.** carnivores | **e.** food chain | **h.** omnivore |
| **c.** consumers | **f.** fungi | **i.** producer |

**Match the correct vocabulary word with the description.**

1. A(n) _____ shows how energy passes from one organism to another as food.
2. A(n) _____ is also known as a primary consumer.
3. A pond food chain can begin with plant-like producers called _____ .
4. Consumers eat food that is made by a(n) _____ .
5. Animals are called _____ because they cannot make their own food.
6. The food chain continues until _____ break down the organisms and return nutrients to the soil.
7. Animals that eat other animals are _____.
8. Plant-like decomposers called _____ break down what is left of dead animals.
9. A bear is a(n) _____ , an animal that will eat both plants and animals.

**Cloze Test** Name _____ Date _____

# Food Chains

| | | | |
|---|---|---|---|
| decomposers | cannot | producer | consumers |
| food chain | fungi | omnivores | |
| carnivores | earthworm | herbivores | |

Fill in the blanks.

Living things need energy in order to survive. A _____ shows how energy passes from one organism to another as food. First, a plant, also called a _____, uses the Sun's energy to make its own food. Animals _____ make their own food. They are called _____ because they must eat or consume other plants or animals for food. The chain continues until _____ break down the organisms and return nutrients to the soil. A(n) _____ eats plant life that has already died. _____ break down rotting wood and other plant parts. _____ are prey for other animals in the food chain. Animals that eat other animals are called _____. _____ eat both plants and animals. Plants and animals depend on one another for survival.

Name _____ Date _____ **Outline**

# Food Webs

**Use your textbook to help you fill in the blanks.**

## What is a food web?

1. A(n) _____ shows a group of food chains linked together.
2. The struggle of several organisms for the same resource is called _____ .

## How can food webs change?

3. Living things in a food web _____ on one another.
4. All the members of a single type of organism in an environment is a(n) _____ .
5. In the 1700s, too many sea otters were hunted for their _____ .
6. Without sea otters, fewer _____ were eaten.
7. Without the sea otter to help control the size of the sea urchin population, the _____ almost disappeared.

## How do new organisms change food webs?

8. In 1935, Australia's sugar cane fields were being destroyed by the _____ and _____ .
9. The _____ was brought to the sugar cane fields to eat the beetles.
10. The toads changed the food web because they did not eat the beetles, but they did eat _____ .

**Outline** Name _____ Date _____

## What is an energy pyramid?

**11.** A picture that shows the amount of energy passed through a food web is called a(n) _____ .

**12.** At the bottom of the energy pyramid are the _____ .

**13.** The next levels on the pyramid are the _____ , which eat plants to stay alive.

**14.** Each level of the pyramid gets only _____ percent of the energy from the level below.

**15.** Food webs have more producers than _____ .

## Summarize the Main Idea

**16.** How did changes to the ocean's kelp forest show how producers and consumers are related?

_____

_____

_____

_____

_____

_____

_____

_____

Name _____ Date _____ **Vocabulary**

# Food Webs

| | | |
|---|---|---|
| **a.** beetles | **d.** energy pyramid | **g.** herbivores |
| **b.** cane toad | **e.** food chain | **h.** kelp |
| **c.** competition | **f.** food web | **i.** producers |

**Match the correct letter with the description.**

1. _____ A group of food chains linked together.
2. _____ The struggle of several organisms for the same resource.
3. _____ A type of seaweed.
4. _____ In 1935, Australia's sugar cane fields were being destroyed by these insects.
5. _____ Each member of a food web can belong to more than one of these.
6. _____ A model of how energy passes through a food web.
7. _____ The bottom of the energy pyramid.
8. _____ They must eat plants to stay alive.
9. _____ People thought these would help the insect trouble in Australia in 1935.

**Cloze Test** Name _____ Date _____

# Food Webs

| | | | |
|---|---|---|---|
| energy | food web | producers | more |
| energy pyramid | consumers | ten | |

**Fill in the blanks.**

Energy is passed from one living thing to another.

A _____ links together many food chains.

A(n) _____ shows the energy as it moves through a food web. The bottom level of the pyramid is the _____. They use a small amount of the Sun's _____ to live and grow. The next levels of the pyramid are _____. Each level of the pyramid gets about _____ percent of the energy from the level below. This is why there are _____ producers than consumers in a food web.

Name _____ Date _____ **Writing**

## Write About It

**Write a persuasive letter to a community leader. Convince him or her that it is important to protect the environment in your area.**

### Getting Ideas

**Do some print and online research. Make a list of plants and animals that would be lost if we don't protect the environment.**

### Planning and Organizing

**A persuasive letter has a special job. Its job is to persuade the reader to agree with your opinion. Here are two sentences Chris wrote. Does each sentence support his position? Write Yes or No.**

**Opinion: We must protect the environment.**

1. The California condor is a beautiful creature. _____
2. Animals are hurt when the places they live are destroyed. _____

**Now write three of your own sentences on a separate piece of paper. Include facts and details to support the opinion that we must protect the environment.**

### Drafting

**Your assignment is to write a persuasive letter to a community leader. On the next page, write your letter. Use the guidelines below.**

1. Write your complete address and the date.
2. Write the name and address of the person to whom you are writing.
3. Write the word "Dear," the name of the person, followed by a colon.
4. Write an introductory paragraph. Explain your position.
5. Provide facts and reasons that back up your position .
6. Tell what you want to happen in your last paragraph.
7. For the closing, write "Sincerely yours," then a comma. Sign your name on the next line. Print your name under your signature.

## Writing

Name _____ Date _____

[1] _____

_____

_____

_____

[2] _____

_____

_____

[3] _____

[4] _____

_____

_____

[5] _____

_____

_____

[6] _____

_____

_____

[7] _____

_____

_____

### Revising and Proofreading

**Now revise and proofread your letter. Ask yourself:**

- Have I used convincing facts and reasons to support my opinion?
- Have I corrected all grammar errors?
- Have I corrected all spelling, punctuation, and capitalization errors?

Name _____ Date _____ **Outline**

# Microorganisms

**Use your textbook to help you fill in the blanks.**

## What is a microorganism?

1. A(n) _____ is a living thing too small to be seen with just your eye.
2. Many microorganisms are made of only one _____ .
3. Scientists use a(n) _____ to look at tiny cells.
4. One of the smallest kinds of microorganisms is called _____ .
5. Some _____ will eat harmful bacteria and keep them under control.
6. Many harmful protists live in _____ and lakes.

## Which microorganisms are producers and consumers?

7. Some microorganisms are producers because they carry out _____ .
8. A type of protist that lives in the water is called _____ .
9. Algae acts like a producer because it carries out _____ .
10. A(n) _____ is a protist that acts like an animal and is a consumer.
11. A euglena acts like both a(n) _____ and an animal.
12. In the sunlight, a euglena carries out _____ like a plant.

**Outline** Name _____ Date _____

## Which microorganisms are decomposers?

**13.** In the forest, colonies of _____ are the first decomposers to work on a tree when it falls down.

**14.** A type of fungi is called _____ .

**15.** Different types of bacteria _____ different nutrients.

## How do microorganisms work in our bodies?

**16.** Many _____ microorganisms live in the liquids in your body.

**17.** Tears in your eyes keep out _____ microorganisms.

## Summarize the main idea

**18.** Why are plant and animal decomposers considered natural recyclers?

_____

_____

_____

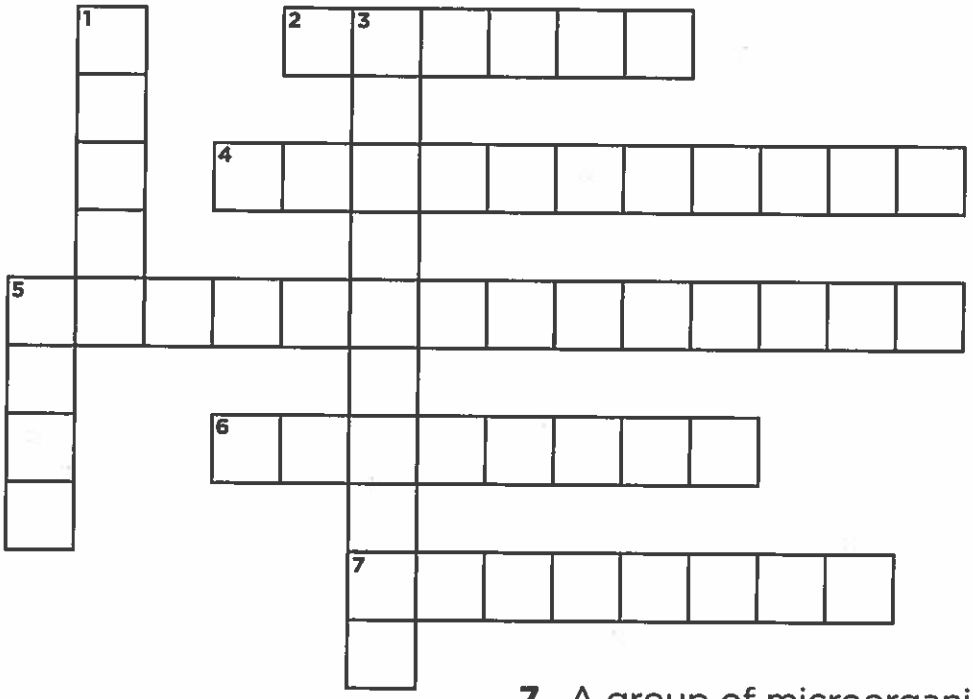
_____

Name _____ Date _____ **Vocabulary**

# Microorganisms

**Complete the crossword puzzle using words from the lesson.**

| | | | |
|---|---|---|---|
| fungi | microorganisms | protists | decomposers |
| mold | bacteria | amoeba | microscope |



## Across

**2.** A protist that acts like an animal in most ways _____

**4.** Break down dead matter so it can be recycled _____

**5.** Living things too small to be seen with just our eyes _____

**6.** A microorganism that can be helpful or harmful to humans _____

**7.** A group of microorganisms. _____

## Down

**1.** First decomposer to attack a tree _____

**3.** A tool used to see tiny cells _____

**5.** One of the first decomposers to work on dead matter _____

**Cloze Test** Name _____ Date _____

# Microorganisms

| | | | |
|---|---|---|---|
| amoeba | euglena | illness | mold |
| bacteria | fungi | jobs | protists |
| body | harmful | microorganism | tail |

**Fill in the blanks.**

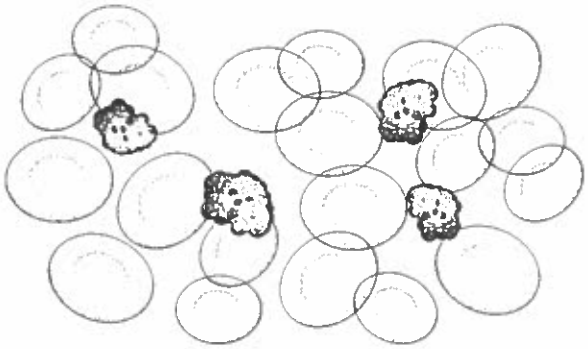
Living things are everywhere even if the naked eye cannot see them. A(n) _____ is a living thing that cannot be seen with just your eye. One of the smallest microorganisms is called _____ . It can be helpful or _____ . Bacteria can cause _____ , or they can help humans swallow and digest food. Organisms called _____ are larger than bacteria and can be found in lakes and ponds. They have structures or parts that do special _____ . A(n) _____ is a protist that acts like an animal. Its _____ changes shape to catch food. A(n) _____ is a protist that carries out photosynthesis in the sunlight. It also has a _____ , which helps it move to get food in the dark. In the forest, _____ clings to dead wood and starts to break it down. Organisms called _____ are decomposers that attach to a tree when it falls. There are many kinds of microorganisms.

Name _____ Date _____ **Reading**

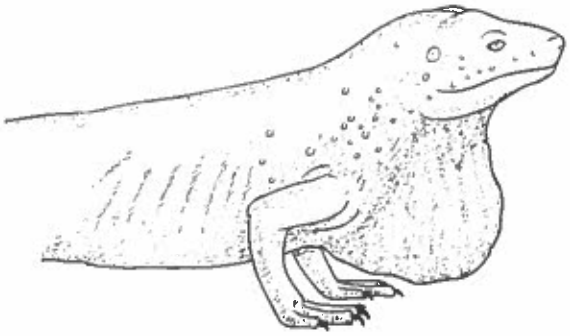
Susan Perkins knows that the smallest things can be the most important. She is a scientist at the American Museum of Natural History who studies microorganisms.

Microorganisms are found all over Earth—in soil, air, and water. They are found from the poles to the desert. There are millions of them in just one drop of ocean water.

Some microorganisms live inside the animals they attach to and cause disease. Susan studies the microorganisms that live in the blood of lizards and cause a disease called malaria.



**These red blood cells are being attacked by microorganisms that cause malaria, a blood disease that causes severe fever in humans.**



**Susan studies Anolis lizards from the eastern Caribbean islands.**

**Sequence**

- Look for words that show order, such as *first*, *then*, and *next*.
- Try to retell the sequence in your own words.

How does Susan investigate these tiny creatures? She starts by taking blood from a lizard. Then she takes the blood to a lab and studies the microorganisms. This helps her understand the relationship between the microorganisms and the lizard it lived inside.

Next, Susan tries to understand how different kinds of malaria are related to each other. She studies why these microorganisms are found in different parts of the world and how they react to different medicines. Susan's research is then applied to humans and helps scientists to fight the disease.

Name _____ Date _____

## Write About It

**Sequence** Reread the article with a partner. Make a sequence-of-events chart to describe what Susan does first, next, and last in her research. Then use your chart to write a summary about her work.

Using the comic strip as a model, create simple drawings in the blank strip below to quickly illustrate the four steps that Susan takes to study the microorganisms that cause malaria.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| | | | |

Next, in a lengthy paragraph, explain why Susan's first three steps help her work on the fourth and most important step in her studies. Directly answer the prompt in your topic sentence. Use details from the reading in addition to your own ideas to clearly explain why Susan could not go on to the fourth step without accomplishing the first three steps. Discuss the steps in sequential order. Smoothly move from one idea to the next with transitional words. Wrap up your paragraph with a closing sentence that restates the main idea of your paragraph. Write your paragraph on a separate piece of paper.

Name _____ Date _____

CHAPTER LEVEL
**Vocabulary**

# Living Things Need Energy

**Choose the letter of the best answer.**

1. Algae and euglena are examples of
   - **a.** bacteria.
   - **b.** carnivores.
   - **c.** herbivores.
   - **d.** protists.

2. The first consumers in a food chain are
   - **a.** carnivores.
   - **b.** herbivores.
   - **c.** omnivores.
   - **d.** producers.

3. What do plants make through photosynthesis?
   - **a.** meat
   - **b.** carbon dioxide
   - **c.** oxygen
   - **d.** water

4. Many microorganisms are made of
   - **a.** yeast.
   - **b.** millions of cells.
   - **c.** one cell.
   - **d.** two cells.

5. Organisms at the bottom of an energy pyramid are
   - **a.** consumers.
   - **b.** herbivores.
   - **c.** producers.
   - **d.** decomposers.

6. Carnivores eat
   - **a.** other animals.
   - **b.** plants.
   - **c.** plants and animals.
   - **d.** rotting plants and animals.

7. Organisms that cannot make their own food are
   - **a.** producers.
   - **b.** decomposers.
   - **c.** herbivores.
   - **d.** consumers.

CHAPTER LEVEL
## Vocabulary

Name _____ Date _____

**Choose the letter of the best answer.**

**8.** Which item is part of the biomass of a desert?

**a.** cactus **b.** rock **c.** sand **d.** sunlight

**9.** What does an omnivore eat?

**a.** other animals
**b.** plants
**c.** plants and animals
**d.** decomposing plants and animals

**10.** The struggle of several animals for the same resources is called

**a.** adaptation.
**b.** competition.
**c.** photosynthesis.
**d.** population.

**11.** A group of food chains linked together form a(n)

**a.** energy pyramid.
**b.** food chain.
**c.** food pyramid.
**d.** food web.

**12.** An organism that makes its own food is a(n)

**a.** animal. **b.** consumer. **c.** decomposer. **d.** producer.

**13.** Solar energy comes from

**a.** oxygen. **b.** soil. **c.** sugar. **d.** sunlight.

**14.** Organisms that eat rotting plants and animals are called

**a.** decomposers.
**b.** herbivores.
**c.** primary consumers.
**d.** producers.

**15.** What does a food chain represent?

**a.** all of the animals in an environment
**b.** all of the plants in an environment
**c.** all of the abiotic factors in an environment
**d.** energy passing from one organism to the next