

A vibrant blue background featuring various science-related icons: a dropper, a magnifying glass over a cell diagram, a yellow pencil, a calculator, a ruler, and a clipboard with lined paper.

SCIENCE

Student Book

► **5th Grade | Unit 4**

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SCIENCE 504

BALANCE IN NATURE

Introduction | **3**

1. The Balance of Nature **5**

The Physical Environment | **8**

The Chemical Cycle | **13**

Ecosystems | **15**

Self Test 1 | **25**

2. The Prairie Web of Life **28**

The Prairie Ecosystem of the Past | **30**

Changes in the Prairie Balance of Nature | **39**

Self Test 2 | **43**

3. Humans and the Web of Life **46**

Problems | **47**

Stewardship | **50**

Self Test 3 | **54**

LIFEPAC Test | **Pull-out**

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BALANCE IN NATURE

In the first three LIFE PACs of this series, you learned about cells, the basic unit of life. All living things are made of cells. You also learned about the life cycles of many living things, especially plants and animals. God has created all these living things. He has given a wonderful variety to all living things.

God has also planned that all living things depend upon one another. You have learned how animals depend upon plants for oxygen and food. Plants, in turn, depend upon animals for carbon dioxide and nutrients. Some plants also depend upon animals to help them reproduce. For example, flowering plants depend upon bees and other insects to help in the process of fertilization. In some way, all living things are connected to other living things and depend upon them.

Have you ever seen a spider's web? The threads of the web are connected to each other so that it forms one whole web. The different parts of the web support one another because they are connected. In a similar way, all living things are "connected" to one another and to the air, water, and earth. We call this great system of the connection among all living things *the web of life*.

In this LIFE PAC® you will learn more about the web of life that God has established among all living things. You will learn how God has planned a *balance of nature* in His creation on earth. You will examine the web of life in one particular type of region on earth—the *prairie*. You will also learn how God has placed human beings on the earth to help care for His creation and to be good stewards of the web of life. Finally, for an experiment, you will have the opportunity to build a small, living model of the web of life—a *terrarium*!

Objectives

Read these objectives. The objectives tell you what you will be able to do when you have successfully completed this LIFEPAK. Each section will list according to the numbers below what objectives will be met in that section. When you have finished this LIFEPAK, you should be able to:

1. Describe three cycles in the physical environment.
2. Explain the balance of nature in the web of life.
3. Explain what is meant by a food chain and to give examples.
4. Know some details about the web of life in a prairie ecosystem.
5. Name two problems that human beings have made for God's web of life.
6. Name at least five things that you can do for plants and animals that will help care for the web of life that God has created.



1. THE BALANCE OF NATURE

God has created everything that exists. God planned for a great variety of things in His Creation. In previous LIFEPAKS, you have learned something about the great variety of living things that God has created. There is also a great variety of nonliving things that God has created such as the water, air, soil, rocks, minerals, and chemicals. We often refer to all these things in our world that God has created—both living and nonliving—as **nature**.

Objectives

Review these objectives. When you have completed this section, you should be able to:

1. Describe three cycles in the physical environment.
2. Explain the balance of nature in the web of life.
3. Explain what is meant by a food chain and to give examples.

Vocabulary

Study these new words. Learning the meanings of these words is a good study habit and will improve your understanding of this LIFEPAK.

affected (ə fekt' ed). To have had an effect on someone or something.

consumers (kən süm' urz). Someone or something that uses up or destroys things.

decomposers (dē' kəm pōz' ərz). Tiny organisms that eat the dead remains of former living things.

dew (dü). Moisture from the air that settles on cool surfaces during the night.

drought (drou). A long time without rain. Plants begin to dry up during a drought.

ecology (ē kol' ə jē). The scientific study of the relationships of living things to one another and to their environment.

ecosystem (e ko' sis təm). The complex level of organization within nature consisting of both the physical and biological environments.

environment (en vī' rən mən). Everything around a living thing—such as the earth, air, water—that helps to determine how it develops.

evaporates (i vap' ə rätz'). The natural process that occurs when a liquid changes to a gas or vapor.

nature (na' chər). All of the living and nonliving external things in our world that God has created.

nitrogen (nī' trə jən). A very important gas that makes up most of the air. It is colorless, tasteless, and odorless. It is part of the chemical cycle in nature.

population (pop' yə lā' shən). The members of one species of living things within a given area.

precipitation (pri sip' ə tā' shən). Water that falls to the earth such as rain, snow, sleet, hail, mist, dew, or some other form of water.

producers (prə dü' sərz). Green plants that grow and are partly or fully eaten by animals.

rodents (rōd' ntz). A member of a group of animals with teeth that are especially good for chewing wood, woody plants, or seeds.

terrarium (tə rer' ē əm). A transparent container (plastic or glass) in which small plants or animals are kept. It reproduces as closely as possible a natural setting or environment.

Note: All vocabulary words in this LIFEPAAC appear in **boldface** print the first time they are used. If you are unsure of the meaning when you are reading, study the definitions given.

Pronunciation Key: hat, āge, cāre, fār; let, ēqual, tērm; it, īce; hot, ōpen, ōrder; oil; out; cup, pūt, rūle; child; long; thin; /FH/ for then; /zh/ for measure; /u/ or /ə/ represents /a/ in about, /e/ in taken, /i/ in pencil, /o/ in lemon, and /u/ in circus.

God has so arranged nature that living things are able to exist by depending on other living and nonliving things for food and energy. For example, green plants receive energy from the sun. The plants receive minerals, nutrients, and water from the soil. Plants also receive carbon dioxide from the air. The plants give off oxygen to the air.

Rabbits feed on the plants. The rabbits also receive oxygen from the air and water to drink. Rabbits give off carbon dioxide as they breathe and add chemicals to the soil through their wastes.

Foxes sometimes eat rabbits for food. The foxes also receive oxygen from the air and water to drink. The foxes, like other animals, give off carbon dioxide to the air and add minerals to the soil through wastes. Eventually, the foxes will die and their dead bodies will provide food for other organisms. Their dead bodies will also be turned into minerals and nutrients for the soil which will, in turn, be used by new plants.

In this example, we see how the life needs of living things are met. When the life needs of all the living things in an area of the earth are met, we say that there is a *balance of nature*. When there is a balance of nature, the **population** of one species of living things stays fairly stable. For example, the population of rabbits and the population of foxes would be stable over time when there is a balance of nature. Enough of these animals would receive adequate food, oxygen, and water in order to survive, grow, and reproduce.

If something happened so that adequate water, food, or air was not received by the rabbits or foxes, the balance of nature would be upset, and the populations of rabbits and foxes would begin to change. However, in time, the balance of nature could be restored as the living things adjust to the changes. God also wants human beings to help keep or restore the balance of nature. The balance of nature has been provided by God so that the life needs of all living things are met. Through the balance of nature, the web of life continues.

There is a name for the scientific study of the balance of nature and the relationships of living things to one another and to their **environment**. This science is called **ecology**. The scientists who study these relationships are called *ecologists*.

In this first section of the LIFE PAC, you will learn more about the balance of nature. You will learn how nonliving things help meet the life needs of living organisms. These are such things as water, the air, the soil, and the weather. This can be called the *physical environment*. You will also learn in this section about the way living things within the environment depend on one another, especially for food. The living things make up what can be called the *biological environment*. Finally, you will have an opportunity to build a small, living model of the web of life—a **terrarium**.



Answer these questions.

1.1

What are some of the nonliving things that God has created? _____

1.2 What is *the balance of nature*? _____

1.3 What is the difference between the physical environment and the biological environment? _____



Do this activity.

1.4 Look up Psalm 104: 24-30 in the Bible. Explain how this passage relates to *the balance of nature*. _____

The Physical Environment

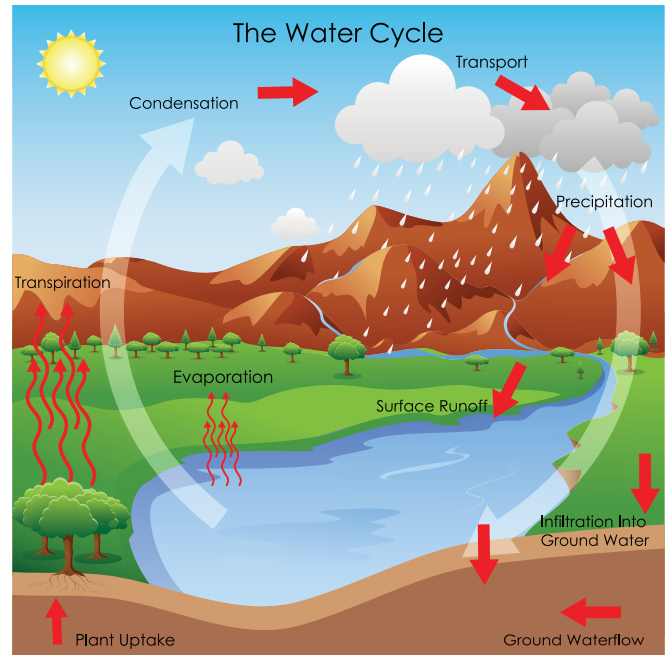
The physical environment includes such nonliving things as water, the air, the soil, and the weather. These things help support life on the earth. They help supply the life needs of living things. Some parts of the physical environment go through *cycles* as they help support living things and the balance of nature. We will consider three of these cycles: the *water cycle*, the *carbon cycle*, and the *chemical cycle*.

Water cycle. Water is the most common substance that God has put on the earth. Water covers more than 70 percent of the earth's surface. Water is in the oceans, rivers, lakes, and other streams of the earth. It is also in the ground and in the air.

Without water, there would be no life on the earth. Every living thing consists mostly of water. In fact, the cells in all living things are mostly water. Your body is about 65 percent water. An elephant is about 70 percent water. A potato is about 80 percent water. So, all living things need water to support life.

Water helps living things grow and survive. It helps the cells do their work. Water helps the nutrients dissolve and flow to the different parts of plants and animals. Water is also used to transport wastes out of plants and animals. The water that is lost by the plants and animals must be replaced or they will die.

Organisms that live in the sea, lakes, or rivers can easily receive water. Plants and animals that live on the land receive water through the rain or **dew** that falls on the earth. The plants absorb this water, primarily through their roots. This water is collected into lakes, rivers, and streams from which the animals can drink. Animals also receive water through the food they eat. God has provided a way for all living things to receive water.



| The water cycle.

All of the water on the earth continually goes through a *water cycle*. In the water cycle, the waters of the earth move continuously from the oceans, lakes, rivers, and streams to the air. It does this when the sun's heat **evaporates** the water so that it enters the air. Actually, some of the water on the earth also evaporates into the air. The water that evaporates becomes water vapor. The water vapor mixes with the cool air in the atmosphere and forms clouds. Eventually, enough water vapor collects so that it produces rain, snow, dew, or some other form of **precipitation**. The precipitation falls from the clouds to the earth and to the bodies of water on the earth. This precipitation not only supplies the water needed to "make up" for the water that has evaporated, but it also supplies the water needed to support the living things on earth and in the waters.

Eventually, much of the water that falls on the earth collects into streams and rivers and makes its way back to the ocean. Then the water evaporates again, and the water cycle continues over and over. In the process, God provides water to support the web of life.

The balance of nature is supported by the water cycle. It is also **affected** by the water cycle. For example, if there is not enough rain or precipitation in an area or region of the earth, **drought** occurs. The soil then dries up. Water levels in lakes, rivers, and streams go down. Some of the plants and animals that depend on the soil or these bodies of water may die. The balance of nature changes.

Too much water in an area or region of the earth may also cause a problem. Floods may occur, causing drowning of plant and animal life. Snow may cover the earth too long, making it difficult for animals to get adequate food. Again, the balance of nature changes, depending upon the way the water cycle is working.

Fortunately, God is watching over His creation. The water cycle eventually returns to favorable conditions. The balance of nature is restored. The web of life adjusts and continues.

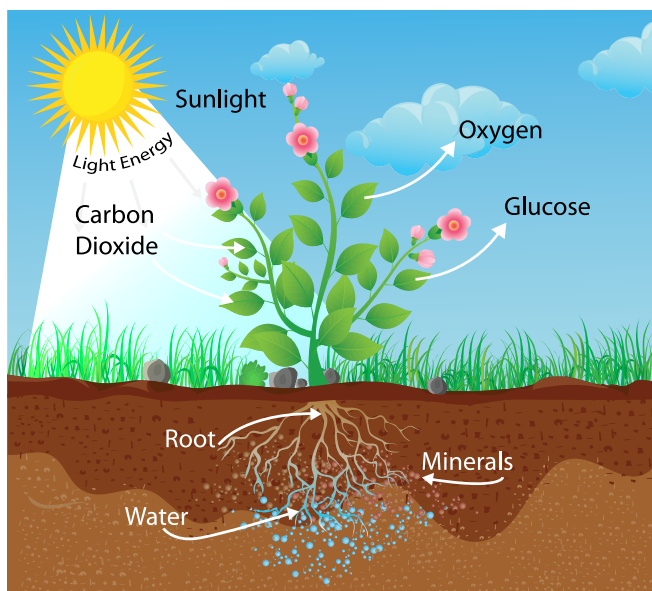
**Write the correct word in the blank space.**

- 1.5** The most common substance on earth is _____ .
- 1.6** The cells in all living things are mostly _____ .
- 1.7** The heat from the sun _____ water so that it enters the air.
- 1.8** Rain, snow, dew, and hail are all forms of _____ .
- 1.9** If there is not enough rain or precipitation in an area, _____ occurs.
- 1.10** The _____ of nature is supported by the water cycle.

**Answer this question.**

- 1.11** What is the water cycle? Describe what happens. _____
- _____
- _____
- _____
- _____

Carbon cycle. There is another “cycle” in the physical environment that helps support living things and the balance of nature. Green plants use energy from the sun to convert carbon dioxide and water into food and oxygen. As you learned in LIFEPAK Science 501, this process is called *photosynthesis*. Plants and animals, in turn, “burn” food by combining it with the oxygen produced by photosynthesis to release energy for growth. Carbon dioxide and water are given off in this process, which is called *respiration*. Respiration is the reverse of photosynthesis. Plants then use the carbon dioxide produced by respiration to produce more oxygen. Thus, there is a cycle of carbon dioxide and oxygen being used and produced by plants and animals. This cycle is called the *carbon cycle*. The oxygen and carbon dioxide produced in the carbon cycle are part of the physical environment that supports life.



| Photosynthesis

The balance of nature also depends on this carbon cycle of oxygen and carbon dioxide. For example, consider what would happen in a small pond if all the plants died. If the plants died, there would not be any more oxygen produced by the plants for the water. Soon, the fish and other microscopic organisms would not have enough oxygen to survive. Other animals that feed on the fish and the microscopic organisms in the pond would not have adequate food supplies, and they, too, would die. The balance of nature would be upset by the death of the plants, and, eventually, the other living things would die. The web of life would be broken.

**Complete this activity.****1.12**

Draw a diagram of the carbon cycle on a separate piece of paper. (Use a cow, some grass, and the sun as some examples in your diagram. Use other plants and animals, too, if you wish.) Refer to the carbon cycle diagram in Section 3 of LIFEPAK Science 501 if you need to.

**Teacher check:**

Initials _____ Date _____

**Write *true* or *false*.****1.13**

_____ Plants would die without carbon dioxide.

1.14

_____ Part of the carbon cycle includes plants giving off oxygen.

1.15

_____ Fish give off oxygen into the water.

1.16

_____ Cells burn oxygen.

1.17

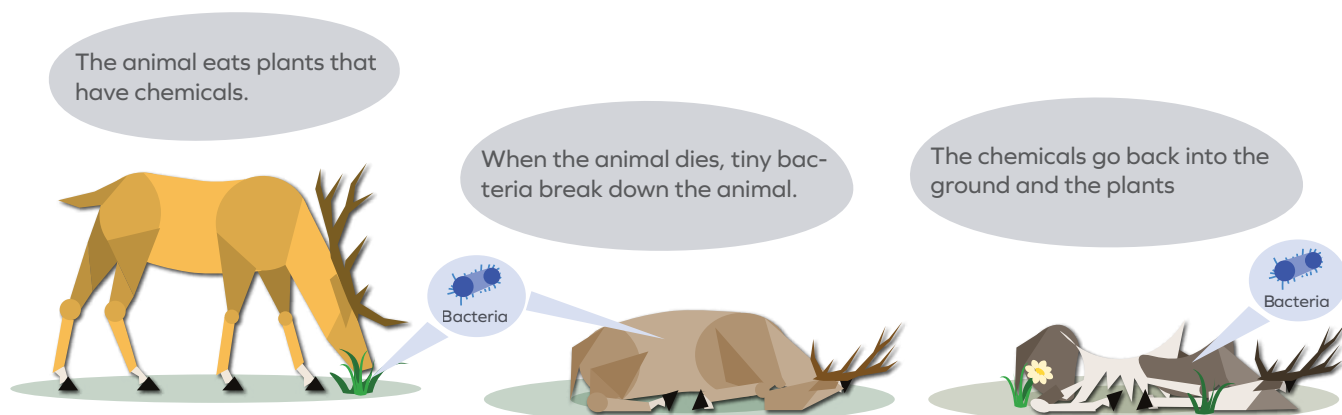
_____ The balance of nature needs carbon dioxide.

The Chemical Cycle

Chemical cycle. The final cycle in the physical environment is called the *chemical cycle*. Besides water, carbon dioxide, and oxygen, there are other chemicals that are important to the web of life and the balance of nature. Plants need bacteria and other micro-organisms to break down dead things. Animals need the chemicals in plants. These chemicals include hydrogen, **nitrogen**, phosphorus, and sulfur.

These chemicals come into plants through their roots. From the sugars produced by photosynthesis— together with nitrogen, sulfur, and phosphorus obtained from the soil through the roots—green plants can make “food.” This food consists of starch, fat, protein, vitamins, and other complex compounds that are essential for life. Animals get these chemicals when they eat the plants.

The next step is when the plants or animals make waste products or die. Bacteria help dead plants and animals to decay. The chemicals then return to the ground. These chemicals go into new plants and begin the chemical cycle again.



Write the letter of the correct answer in the blank.

- 1.18** Some chemicals that cycle through the environment are _____.
 a. hydrogen and nitrogen b. phosphorus and sulfur c. all of these
- 1.19** These chemicals are brought into plants mainly through their _____.
 a. leaves b. stems c. roots
- 1.20** These chemicals are needed by plants to make _____ and other food essential for life.
 a. protein b. chlorophyll c. energy

- 1.21** Waste products and dead organisms return to the soil with the help of _____.
a. sunlight b. bacteria c. predators
- 1.22** Chemicals are provided to support life through the _____.
a. chemical cycle b. air c. offspring of animals



Read Genesis 3:19 and answer these questions.

- 1.23** In Genesis 3:19, God is speaking. With whom is He talking? _____

- 1.24** In Genesis 3:19, what is God speaking about? _____

- 1.25** God says something will happen to the body. What will happen? _____

- 1.26** What have you learned in this LIFEPAK that God created to help this process take place? _____



Complete this activity.

- 1.27** In the space below, draw a diagram that includes the water cycle, carbon cycle, and chemical cycle. You may use pictures to illustrate your diagram.



Teacher check:

Initials _____ Date _____

Ecosystems

God made the physical environment that consists of nonliving things such as the water, soil, air, weather, nutrients, and energy. He also made the biological environment that consists of all living things. God planned that the physical and biological environments depend on one another to support life and maintain a balance of nature.

There are many activities that take place within nature, both in the physical environment and the biological environment. Ecologists, the scientists who study ecology and the environment, try to understand how all these activities interact within nature. They call this complex level of organization within nature an **ecosystem**.

To better understand an ecosystem, ecologists have given names to various things that make up the ecosystem. They also study the way energy and food move through the ecosystem. They call this the *food chain*. Ecologists follow the movement of energy and food through the ecosystem by identifying parts of the food chain. We will first examine the ecological names for things in the ecosystem. Then we will look more closely at how they are part of the food chain.

Producers. Green plants use the energy from the sun, carbon dioxide from the air, and chemicals and water from the soil to produce food. They are the main living things that produce food. Animals, fungi, and some other plants cannot make their own food. They must receive it from green plants. Since green plants are the only food makers in the ecosystem, they are called **producers**. Examples of producers are grass and trees.



| Wild grass is a producer.

Consumers. Living things that must get their food from green plants are called **consumers**.

There are two types of consumers:

- (1) *primary* consumers and
- (2) *secondary* consumers.

Primary consumers get their food directly by eating green plants. They are able to digest the plants and receive energy from the food stored in the plants. Examples of primary consumers are grasshoppers, mice, rabbits, sheep, and goats. Birds are primary consumers when they eat the seeds of plants.

Secondary consumers are animals that eat other animals for food. They eat the primary consumers. In this way, the secondary consumers receive the necessary food and energy stored in the primary consumers who have eaten plants. Foxes, dogs, lions, and wolves are examples of secondary consumers. Birds are secondary consumers when they eat insects, **rodents**, or other birds that have eaten plants.

Decomposers. There are other living things in the ecosystem that are called **decomposers**. Bacteria and fungi are examples of decomposers. They feed on the waste products or dead bodies of plants or animals. You learned that these organisms are an important part of the chemical cycle. When bacteria or fungi use the food stored in the wastes or dead remains of plants or animals, they break them down into chemicals that go back into the soil. These chemicals and nutrients in the soil can then be used again by the producers: the green plants.



| Lambs and birds are primary consumers. The wolf eats birds and lambs, making it a secondary consumer.



| Bacteria is a decomposer of dead animals, plants, or other wastes. The bacteria decomposes the bodies of the animals.

**1.28****Write the correct answer in the blank.**

The complex level of organization within nature is called a(n) _____.

- a. physical environment b. ecosystem c. chemical cycle

1.29

A living thing that makes its own food is called a _____.

- a. producer b. consumer c. decomposer

1.30

Some _____ are both primary consumers and secondary consumers.

- a. sheep b. bacteria c. birds

1.31

A primary consumer can _____.

- a. digest green plants b. make its own food c. decompose animals

1.32

An example of a producer is _____.

- a. a grasshopper b. a pine tree c. a mushroom

**1.33****Complete this activity.**

Fill in this chart. Each of the organisms can be put in one or more groups. Put a check mark in the column of the ecological name or names where you think it belongs. (You may use library or Internet resources to help you.)

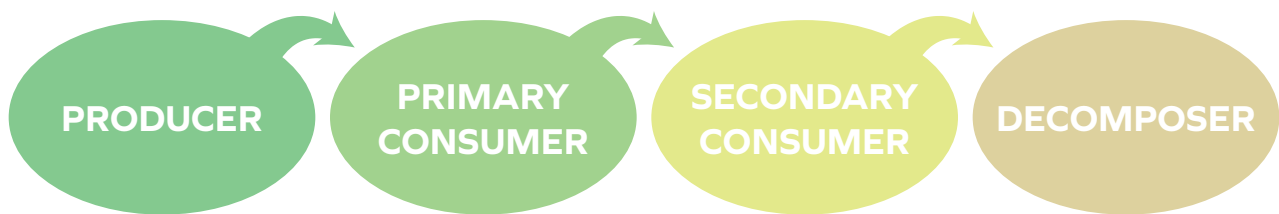
ORGANISM	PRODUCER	PRIMARY CONSUMER	SECONDARY CONSUMER	DECOMPOSER
chicken				
lettuce				
tiger				
monkey				
cow				
mouse				
mushroom				
bull snake				
silverfish				
salmon				

**Teacher check:**

Initials _____ Date _____

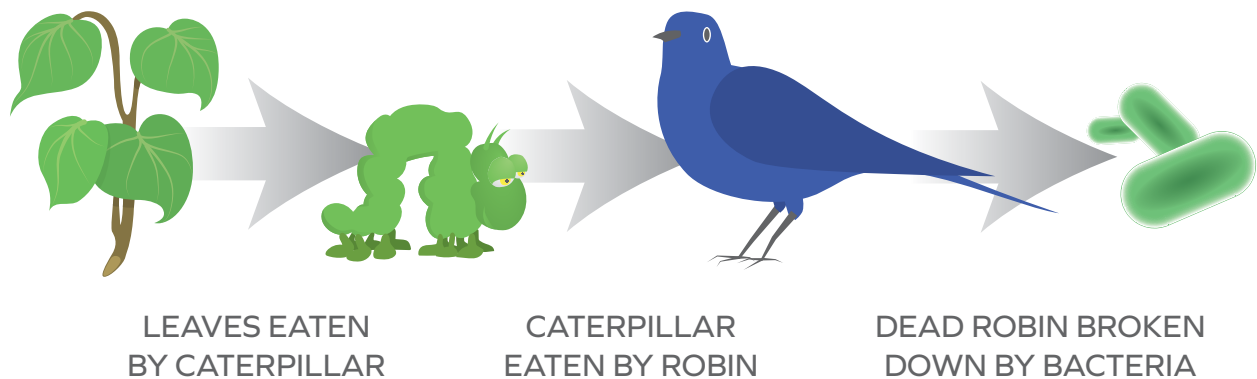
The food chain. In an ecosystem, the series of stages that energy goes through in the form of food is called a *food chain*. Producers, consumers, and decomposers all have a role in the food chain.

Many food chains are found in nature. Some of them are long and complex. Some of them are short and simple. For example, one simple food chain is shown in the “Introduction” to this section of the LIFEPAK. In this example of a food chain, grass is the producer. The primary consumer, a rabbit, eats the grass. The rabbit, in turn, is eaten by the secondary consumer, a fox. The decomposer, bacteria, breaks down the dead body of the fox when it dies. Energy, in the form of food, moves along this simple food chain from producer to primary consumer to secondary consumer to decomposer.



| Nature's food chain

The kind of food chain that exists depends upon the particular ecosystem where the organisms live. For example, a food chain in a wetland area might be very different from the food chain in a desert region. Climate and land features are also important factors in determining food chains. You will examine some food chains in a specific ecosystem in the next section of this LIFEPAK.

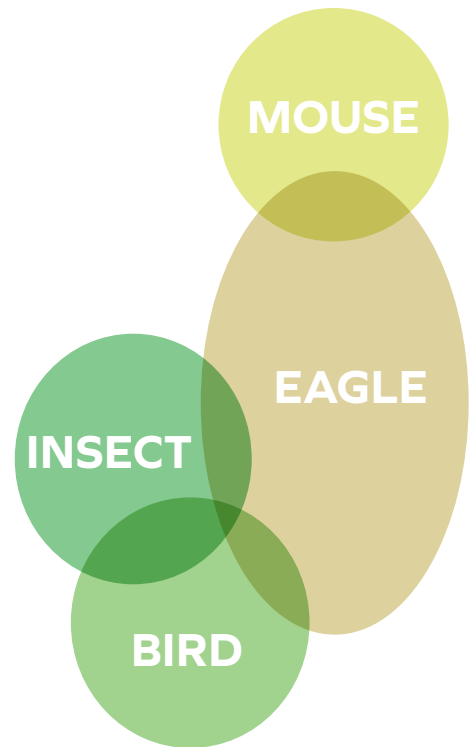


| Woodland food chain

Often, many food chains exist in a particular type of ecosystem. For example, in a woodland area, robins may be part of a food chain. Another food chain might exist in the same woodland that involved deer. The robin and the deer exist side by side in the same woodland, but one is not part of the other's food chain.

The balance of nature depends on the food chain. For example, if a secondary consumer in a food chain were removed, problems would result. Other primary consumer animal groups could grow too large. These larger groups of primary consumers could destroy the population of some green plants. Then, other smaller primary consumer groups would begin starving. This process would, in turn, cause other secondary consumers to starve. The balance of nature would be upset.

Food webs. Most ecosystems have a great variety of producers, consumers, and decomposers. These form an overlapping network of food chains called a *food web*. Usually, primary consumers eat a variety of producer plants. Secondary consumers usually prey on different kinds of primary consumer animals. Also, some animals, like the birds we have already seen, eat both plants and animals. In all of this variety, interconnected food chains called food webs are established. Once again, we learn that God has provided a rich variety of things that make up the web of life.



| Food web



Complete these activities.

1.34

What is the correct order of these food chains? Draw arrows to show the order. Draw arrows from the organism to the organisms it is eaten by (eaten by = →).

FOOD CHAIN #1



FOOD CHAIN #2



Teacher check:

Initials _____ Date _____

**1.35****Draw a picture of a food chain.**

Follow these directions:

- Think of some food chains that might be in the ecosystem where you live. Choose one of these food chains to draw. (If you need some ideas, go to a friend, parent, or teacher.)
- Find a large piece of drawing paper for your drawing.
- Draw pictures of your producers, consumers, and decomposers.
- Label each picture using one of these terms: producer, primary consumer, secondary consumer, decomposer.
- Take the drawing to your teacher for display.

**Teacher check:**

Initials _____ Date _____

**1.36****Answer these questions.**

What is a food web? _____

1.37

How is the food chain related to the web of life? _____

EXPERIMENT 504 BUILD A TERRARIUM

Overview: A terrarium is the name for a plastic or glass container in which small land animals and/or plants are kept. The container is usually covered to prevent the loss of moisture. The terrarium is really a model of a natural life system or ecosystem.

In this experiment, you will build a terrarium if conditions permit. You will be gathering examples of living things from a certain place. These living things will be placed inside the terrarium container so you may observe them. You will record your observations over a period of time. Hopefully, you will be able to see how living things depend on each other.

If you are having winter now, you may have difficulty finding an adequate number of living things to establish your terrarium. Three ways to solve this problem are suggested:

1. Use an aquarium as an example of a life system. Do the activities suggested.
2. Ask a friend, parent, or teacher about where you could look for plant or animal life. A hobby store or pet shop may also be of help. If your problem is solved, build the terrarium by following the directions in this experiment.
3. Wait until spring to do this experiment.

After you have discussed your ideas on this experiment, write your plans here and share them with your teacher or parent. _____

These supplies are needed:

Large container (glass or clear plastic)—at least 2-liter capacity
 container cover or lid
 gravel
 several cans or small jars
 small sprinkling can
 something to punch holes in lid
 potting soil
 bottle cap
 sand
 small shovel
 water



Follow these directions carefully. Place a check in the box when each step is completed.

- ☐ 1. Place the gravel in the bottom of the large container until it is about 3 cm deep.
- ☐ 2. Cover the gravel with sand.
- ☐ 3. Put a 5 cm layer of potting soil over the sand. Make some hills and valleys in the soil by making the soil thicker in some places.
- ☐ 4. Position the bottle cap in a lower place and fill it with water. Also sprinkle some water over the soil.
- ☐ 5. Go to an area near your home or school to gather small plants. Choose several kinds of plants. Use the shovel to dig them up. Roots and soil should be kept on the plants. (Be sure to obtain permission before digging plants on private property.)
- ☐ 6. Bring the plants back to your terrarium in the small cans. Gently place them in the terrarium soil. Water them lightly.
- ☐ 7. Use the cans and jars to bring in a few small animals from the outside. Insects, frogs, worms, or lizards are best. Birds or kittens are too large.
- ☐ 8. Place the cover over the terrarium container opening. You will need to water the plants regularly. Some of the creatures may need food. Use the library or internet to research how to properly feed the creatures you selected for your terrarium. Remove the lid for a short time each day or make small holes in the lid.
- ☐ 9. Place the terrarium where it can get some sunlight each day.



Teacher check:

Initials _____ Date _____



Answer these questions.

1.38 Why is water necessary for the terrarium? _____

1.39 Why should you feed some of the creatures? _____

1.40 Why should you allow outside air to come inside the terrarium? _____

1.41 Why should you place the terrarium where the sun reaches it? _____



Keep a daily record.

1.42 Each day you will spend some time recording information about your terrarium. A small notebook might help keep your records organized. After each daily observation and recording, you should continue to work in this LIFEPAK. Several times as you work in this LIFEPAK, you will be directed to take your terrarium records to the teacher for a teacher check.

The following example of a daily terrarium log shows how one student recorded his observations. His ideas may help you plan your observations. Be sure to discuss your recording plans with your teacher.

DATE	WHAT I DID	DESCRIPTION, CHANGES, BEHAVIOR, PROBLEMS
10/7	I watered the plants. I fed an ant to the spider. I will put the jar in a dark place before I go home.	The spider has begun to spin a web. Small drops of water are on the side of the jar. Everything is still alive.
10/8	I put a fly in the jar	I saw the worm today when I came to school. It went into the ground when I put the jar in the sunlight. The spider web is larger.
<div>Teacher check: Initials _____ Date _____</div>		



Review the material in this section to prepare for the Self Test. The Self Test will check your understanding of this section. Any items you miss on this test will show you what areas you will need to restudy in order to prepare for the unit test.

SELF TEST 1

Match these items (each answer, 3 points).

- | | | |
|--------------|----------------------|---|
| 1.01 | _____ nature | a. movement of hydrogen, nitrogen, phosphorus, and sulfur |
| 1.02 | _____ ecology | b. the complex level of organization within nature |
| 1.03 | _____ water cycle | c. all living and nonliving things in our world |
| 1.04 | _____ carbon cycle | d. the study of the relationships of living things to their environment |
| 1.05 | _____ chemical cycle | e. get their food from producers |
| 1.06 | _____ ecosystem | f. bacteria and fungi |
| 1.07 | _____ food chain | g. movement from oceans to air to earth |
| 1.08 | _____ producers | h. oxygen and carbon dioxide are used and produced |
| 1.09 | _____ consumers | i. transparent containers |
| 1.010 | _____ decomposers | j. a mixture of air and water |
| | | k. the way energy and food move through the ecosystem |
| | | l. green plants like grass and trees |

Answer true or false (each answer, 3 points).

- 1.011** _____ The most common substance on earth is water.
- 1.012** _____ Carbon dioxide is used by plants.
- 1.013** _____ Some animals produce their own food.
- 1.014** _____ A bird could be both a consumer and a producer.
- 1.015** _____ Some animals can be part of several food chains.
- 1.016** _____ The balance of nature depends on the food chain.
- 1.017** _____ A food web is an overlapping network of food chains.

- 1.018** _____ Bacteria are used in photosynthesis.
- 1.019** _____ The connection among all living things is called the web of life.
- 1.020** _____ A mushroom is a decomposer.

Write the letter of the correct answer on the blank (each answer, 4 points).

- 1.021** The heat from the sun _____ water so that it enters the air.
 a. cools b. evaporates c. illuminates
- 1.022** Rain, snow, dew, and hail are forms of _____.
 a. producers b. consumers c. precipitation
- 1.023** Green plants use energy from the sun during _____.
 a. photosynthesis b. drying c. evaporation
- 1.024** Chemicals are needed by plants to make _____ and other food essential for life.
 a. protein b. chlorophyll c. energy
- 1.025** Some _____ are both primary consumers and secondary consumers.
 a. sheep b. bacteria c. birds

Put these items in order (each correctly placed item, 2 points).

- 1.026** Here is a list of organisms in a food chain. Put them in order starting with the producer.

cat	bird	bacteria	leaf	caterpillar
-----	------	----------	------	-------------

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

Answer this question (this answer, 10 points).

1.027 What is *the balance of nature*? (Use examples if you wish.) _____



Teacher check:

Score _____

Initials _____

Date _____

