



LIFE·PAC®

Science



Alpha Omega Publications®

**SCIENCE 504**  
**BALANCE IN NATURE**  
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## INTRODUCTION

In the first three LIFEPACs 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 LIFEPAC® 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*!

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## OBJECTIVES

**Read these objectives.** The objectives tell you what you should be able to do when you have successfully completed this LIFEPAC.

When you have finished this LIFEPAC, 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.

## VOCABULARY

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

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

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

**decomposers** (dē kəm pōz' ərz). Plural of decomposer. A tiny organism that eats 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 mənt). 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.

**exposed** (ek spōzd'). Open, uncovered.

**influence** (in' flü əns). To have an effect on someone or something.

**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.

**numerous** (nü' mər əs). Many.

**pollution** (pə lü' shən). Substances that make an environment dirty or not clean.

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

**prairie** (prer' ē). A large land area with rolling hills and few trees. Mostly grasses grow there with a few trees.

**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.

**predators** (pred' ə tərz). Plural of predator. Animals that hunt and kill other animals.

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

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

**scavengers** (skav' ən jərz). Plural of scavenger. Animals that feed on dead or rotting animals. They seldom kill the other animals.

**stewardship** (stü' ərd ship). The duty of taking care of things for someone else.

**terrarium** (tə rer' ēəm). 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.

**thrive** (thriv̄). To be successful or grow strong.

**Note:** These words appear in **boldface** print the first time they are used in this LIFE PAC. If you are unsure of the meaning when you are reading, restudy the definition given in this LIFE PAC.

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

# I. THE BALANCE OF NATURE

## INTRODUCTION

God has created everything that exists. God planned for a great variety of things in His Creation. In previous LIFEPACS, 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**.

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**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.

**Restudy these words.** They will appear for the first time in Section I of this LIFEPAC.

affected	consumers	decomposers
dew	drought	ecology
ecosystem	environment	evaporates
nature	nitrogen	population
precipitation	producers	terrarium

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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 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 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.