



LIFE·PAC®

Science



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SCIENCE 508

RECORDS IN ROCK: GEOLOGY

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INTRODUCTION

The earth is the home that God has created for us. It is a wonderful home. The earth has three main parts that we can normally see: the air around the earth, the waters upon the surface of the earth, and the solid part of the earth. This third part of the earth consists mainly of rock. It is very interesting to study. As you learned in the previous LIFEPAC®, fossils are found in the rocks of the earth. By studying the fossils found in the earth, we can learn much about God's creation and the physical record that He has given to us.

However, there are many other things about the solid part of the earth besides fossils that are interesting to study. For example, the rocks themselves are interesting. They come in many types, sizes, shapes, and colors. They can be fun to observe and collect. They can also help us learn more about God's creation and about the history of the earth.

In this LIFEPAC, you will learn more about the solid part of the earth. You will learn not only about the surface parts of the earth, but also about parts that lie deep within the earth. You will also learn about forces that change the solid parts of the earth and how the earth changes over time.



ROCK FORMATION

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 the earth's surface features.
2. Identify the main parts of the earth.
3. Describe the types of rock in the earth.
4. Describe the forces that change the earth's surface.
5. Tell how the surface of the earth is changing.

VOCABULARY

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

aggregates (ag' rə gətz). A clustered mass of individual particles held together. Rocks are aggregates of minerals.

channel (chan' əl). A passage for water to flow through. The deepest part of a waterway.

cleavage (klē' vj). The way in which something splits apart.

conglomerate (kən gləm' ə r ət). Something made up of several different materials, such as a rock made up of different kinds of pebbles.

contract (kon trakt'). Tighten or draw together.

core (kôr). The central part of something. The part that is located at the center.

crust (krust). The outside rock layer that covers the earth.

delta (del' tə). A deposit of soil and sand at the mouth of a river or stream..

dense (dens). Thickly or tightly packed together.

element (el' ə mənt). A basic substance made of atoms that are chemically alike.

equator (i kwā' tər). An imaginary circle around the earth exactly halfway between the poles of the earth.

erosion (i rō' zhən). A wearing or washing away process that usually takes place slowly and regularly.

expand (ek spand'). To swell or increase in size.

explosion (ek splō' zhən). A loud bursting noise caused by the blowing up of something.

faulting (fôl' ting). The result of rock layers breaking or cracking, with part of the layer pushed down or up.

geology (jē ol' ə jē). The study of the earth, both its physical parts and its history.

glacier (glā' shər). A large ice mass formed from snow in cold areas or high mountains.

granite (gran' it). A very hard rock made of small particles of igneous rocks.

igneous (ig' nē əs). Formed by great heat or actions of volcanoes.

landforms (land' formz). The physical features of the earth. Mountains, valleys, and hills are landforms.

lava (lä və). Melted rock flowing from a volcano. Lava is made of materials from below the earth's crust, but includes some rocks and steam from the crust.

luster (lus' tər). Degree of brightness of shine on a surface.

magma (mag' mə). Melted material usually found deep inside the earth. It is made up of minerals.

mantle (man' tl). The earth layer just below the crust.

metamorphic (met ə mōr' fik). Description of something that has changed form. A rock that has changed from one form to another.

minerals (min' ə r əlz). The common solid materials found on earth that make up rock. Their atoms are usually arranged in a regular pattern and form crystals.

pressure (presh' ə r). The force of weight pushing against or squeezing something.

sedimentary (sed ə men' tər ē). Formed as materials settled to the bottom of a liquid.

silt (silt). Very fine mineral particles.

volcanic (vol kan' ik). Caused by a volcano or like a volcano.

weathering (weth' ə r ing). The action of air, water, and temperature on the surface of the earth.

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

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 STRUCTURE OF THE EARTH

INTRODUCTION



The earth is a very interesting part of God's creation to study. The study of the earth is called **geology**, and scientists who study the earth are called *geologists*. One of the things that geologists study is the *structure* of the earth. For example, they are interested in the size and shape of the earth. They also want to know more about the surface of the earth and what causes differences in the features of the earth's surface. They are also interested in what lies below the surface of the earth. All of these areas deal with the structure of the earth.

In this section of the LIFEPAC, you will learn more about the main features of the earth: its size, shape, and surface contours. You will also learn about the different layers of the earth and what lies below the surface of the earth. Finally, you will learn more about the kinds of rocks that are part of the surface of the earth and how to identify these rocks.

THE EARTH

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

1. Describe the earth's surface features.
2. Identify the main parts of the earth.
3. Describe the types of rock in the earth.

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

cleavage
crust
equator
igneous
magma
minerals
silt

conglomerate
dense
geology
landforms
mantle
pressure

core
element
granite
luster
metamorphic
sedimentary