

# SCIENCE

Student Book

► **3rd Grade | Unit 10**

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# SCIENCE 310

## CHANGE, SOUND, AND HEAT

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LIFEPAC Test | **Pull-out**

**Author:**

Barry Burrus, M.Div., M.A., B.S.

**Editors:**

Alan L. Christopherson, M.S.

Tricia Haley, B.A.

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# CHANGE, SOUND, AND HEAT

This LIFEPAK® is a review of the information you have studied in science during this school year. To review something means to go over again things you have already studied. This LIFEPAK will help you remember the important things you learned. The things you learn and remember will help you in your future science studies. This review will help you understand more about God's wonderful creation.

## Objectives

**Read these objectives.** The objectives tell you what you should be able to do when you have finished this LIFEPAK.

1. Name five things important to a healthy body.
2. Tell three ways you are different from an animal.
3. Draw and label three parts of a plant.
4. Name five things plants need to grow.
5. Name four things that can change an environment.
6. Name the two main groups of animals.
7. Put the growth stages of an insect in correct order.
8. Tell what matter is.
9. Name three states of matter.
10. Tell what causes the four seasons of the year.
11. Tell what causes day and night.
12. Name the three major groups of rocks.
13. List seven forces that change rocks.

14. Tell what sound is.
15. Tell how the eardrum works.
16. Write a definition of energy.
17. Name the five things that can cause heat energy.



# 1. PHYSICAL CHANGE

God's creation is constantly changing. Some things change quickly. Some things take a long time to change. Everything that lives goes through change. When things grow, they are changing. Plants change, animals change, and even you are constantly changing in many ways as you grow. This section of the LIFEPAK will review some of the ways that plants, animals, and people change.

## 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.

**appropriately** (ə prō' prē ĭt lē). Proper, suitable or fitting for a particular purpose.

**carbon dioxide** (kär' bən dī ōk' sīd). The gas exhaled from the lungs.

**chlorophyll** (klôr' ə fīl). Green coloring material in plants.

**conscience** (kŏn' shəns). A sense of right and wrong.

**creative** (krē ā' tīv). Being inventive; able to create.

**dissolve** (diz olv'). To break apart or melt.

**environment** (ĕn vī' rən mənt). Everything that surrounds us.

**invertebrates** (ĭn vûr' tə brīts). Animals with no backbones.

**maggot** (măg' ət). The larva of a fly.

**mineral** (mĭn' ər əl). A natural substance found in the earth; necessary in small amounts to keep living things healthy.

**multiply** (mŭl' tə plī). To increase in number.

**nostril** (nŏs' trəl). The openings in the nose.

**survive** (sər vīv'). To remain alive; to live longer.

**trachea** (trā' kē ə). The tube that carries air to the lungs.

**vertebrates** (vûr' tə brīts). Animals that have backbones.

**Note:** All vocabulary words in this LIFE PAC 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, ĭce; hot, ōpen, ôrder; oil; out; cup, pŭt, rŭle; child; long; thin; /TH/ 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.

**Ask your teacher to say these words with you.**



**Teacher check:**

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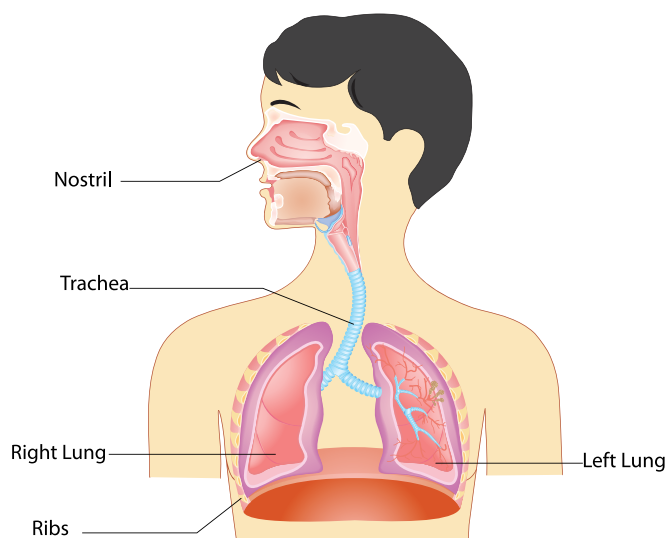


## Change in People

Some of the important things we need to live are air, food, water, exercise, and rest. What we remember about these five things will make a big difference in how we live and change.

**Air.** Air is needed for human life. We get air by breathing in. The air that we breathe enters the mouth or **nostrils**. Then, the air travels through a tube called the **trachea**. The trachea branches out into smaller tubes in the lungs. Tiny blood vessels supply blood to the lungs which take the oxygen from the air you breathe in, or inhale.

Oxygen is the part of air that helps your body work. When you run, jump, and play hard, a lot of oxygen is used by your muscles. The blood from the lungs takes the oxygen to all parts of the body. As your body works or plays, it uses the oxygen and produces **carbon dioxide** as a waste product. This waste is taken back to the lungs again and up the trachea for you to exhale or breathe out. The air you exhale has a lot of carbon dioxide in it. Your body needs to get rid of this gas.



| The Respiratory System



**Food.** The food you eat is very important to your health. You have a choice to make each day about the kind of food you eat. The choice is to eat good food or to eat food that is not good for you. The good food is food from the five food groups. The five food groups are:

(1) **Grains Group** includes all foods made from wheat, rice, oats, cornmeal, and barley. These foods include bread, pasta, oatmeal, breakfast cereals, tortillas, and grits.

(2) **Vegetables Group** includes all fresh, frozen, canned, and dried vegetables and vegetable juices.

(3) **Fruits Group** includes all fresh, frozen, canned, and dried fruits and fruit juices.

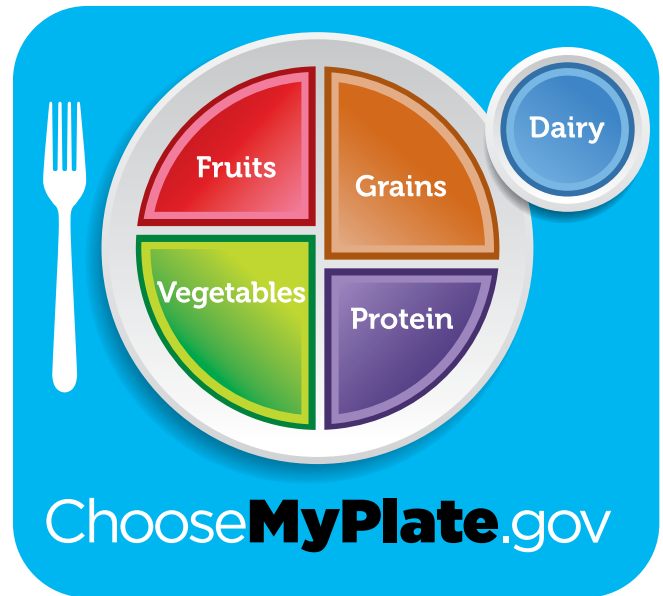
(4) **Dairy Group** includes all fluid milk products and foods made from milk that retain their calcium content, such as yogurt and cheese.

(5) **Protein** includes lean meat, poultry, fish, eggs, peanut butter, beans, and nuts or seeds.

Food eaten every day from each of these groups will make your body healthy.

Food like candy, gum, cookies, and soda pop are called “junk foods.” Junk foods are not needed by your body and can harm it. Try to make a good choice to eat healthy food instead of junk food each day.

**Water.** You also need to drink plenty of water each day to stay healthy. The human body consists largely of water. About one-half to three-fourths of a person’s body weight comes from water. A person might live without food for several weeks, but he can go without water for only about one week.



| For more detailed information, go to [www.ChooseMyPlate.gov](http://www.ChooseMyPlate.gov).



| Make sure to eat healthy foods and drink plenty of water.

The body needs water to carry out all of its life processes. Water helps **dissolve** food so that it can be carried to other parts of the body. Water also helps carry away waste products from the body. Finally, water helps the body to cool itself.

**Exercise.** Exercise is very important for a healthy body. Exercise keeps your muscles healthy. Your muscles give shape to your body. Your bones would not move without the help of muscles. Do you remember that your heart is also muscle? Your heart needs exercise, too. Many things happen when you run and jump. Your heart beats faster. You breathe harder. Your muscles get stronger. Best of all, you feel better. Exercise is healthy.

**Rest.** To take care of your body, you must also give it rest. You cannot exercise all the time. Rest and sleep are very important to good health. You should sleep at least ten hours every night. Older people do not need as much sleep each night. Their bodies are not growing like yours.



## Complete this activity.

- 1.1** Name the five food groups plus other important things that need to be included for a healthy diet. Beside each group, write the name of a food from that group.

Food Group	Food
a. _____	_____
b. _____	_____
c. _____	_____
d. _____	_____
e. _____	_____
f. plus _____	_____



## Make a list.

- 1.2** Write five important things for a healthy body.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_



**Complete these sentences using these words.**

air  
blood

trachea  
carbon dioxide

inhale  
lungs

- 1.3** To breathe in means to \_\_\_\_\_ .
- 1.4** The body inhales \_\_\_\_\_ .
- 1.5** The tube that carries oxygen to the lungs is the \_\_\_\_\_ .
- 1.6** The part of the body used in breathing is the \_\_\_\_\_ .
- 1.7** The \_\_\_\_\_ carries the oxygen to all parts of the body.
- 1.8** The waste product that we breathe out is called \_\_\_\_\_ .



**Teacher check:**

Initials \_\_\_\_\_ Date \_\_\_\_\_

God gave life to all people. He also gave life to all plants and animals. God made plants, animals, and people so that they would change. For example, they grow and develop. God also made them different from each other. People differ from plants and animals in three ways:

- (1) People have a **conscience** to know right from wrong.
- (2) People have a spirit that lives forever.
- (3) People have a mind to think and be **creative**.

God created people to be special. Each living person has a conscience. God gave you a conscience to help you know what is right and what is wrong. Your conscience helps you decide what to do and how to behave. Animals do not have a conscience. They behave by instinct. God wants people to

use their conscience to do good and avoid evil. God will help you do the good and right thing if you pray to Him, read His Word in the Bible, and act according to your conscience.

God also gave you a spirit. Your spirit will live on forever. Animals and plants do not have a spirit that will live forever.

Your mind helps you to understand, choose, and learn. You can learn much more than an animal. Your mind helps you to be creative. People can create new things such as spaceships, art, or books. Animals or plants cannot create things.

God wants us to use our minds for His Glory and for the good of others. We should also use our minds to think about good things. The Bible tells us (Philippians 4:8) to think about things that are true, honest, just, pure, lovely, and of a good report.



| God gave you a special mind to learn new things.



**Write the word in the blank that completes each sentence.**

- 1.9** Animals behave by \_\_\_\_\_ .
- 1.10** Your mind helps you to be \_\_\_\_\_ .
- 1.11** An animal cannot \_\_\_\_\_ things.
- 1.12** We know right from wrong by our \_\_\_\_\_ .
- 1.13** God wants people to use their consciences to do a. \_\_\_\_\_  
and avoid b. \_\_\_\_\_ .



**Complete these activities.**

- 1.14** Tell three ways you are different from an animal.
- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_
- c. \_\_\_\_\_  
\_\_\_\_\_



**Find Philippians 4:8 in your Bible.** Write the things you are to think on.

- 1.15** whatsoever things are
- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_





## Change in Plants

Plants are living things made by God. They are different from animals and people. This part of the section will review plants and how they grow.

Plants have three main parts. The part of a plant that holds it in the ground is the root. The tiny root hairs take in water and **minerals**. The plant needs water and minerals to make food. Growing up from the roots is the stem. The stem takes water and minerals to the leaves. The plant makes its food in the leaves. Flowers and leaves grow out from plant stems. The leaves take in carbon dioxide from the air. They also give off oxygen into the air. Animals and people need oxygen to stay alive. We could not live without the oxygen that is given off by plants.



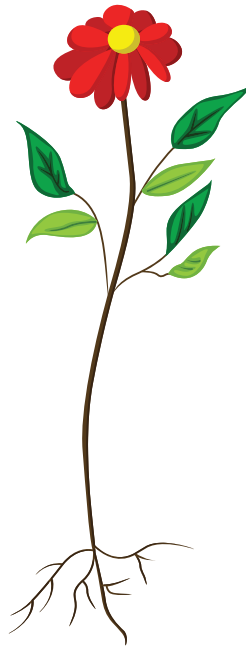
**Complete this activity.**

**1.16** Label this picture with these words.

roots

stems

leaves



A plant needs many things so it can grow. Five things are especially needed for a plant to grow: (1) water, (2) minerals, (3) carbon dioxide, (4) sunlight, and (5) correct temperature.

You have already learned that a plant needs water and minerals to make food. Without water and minerals, the plant cannot grow. Roots are necessary to absorb the water and minerals. Maybe you have watered plants for your parents. The water sinks into the soil, dissolves the minerals, and is taken in by the roots.

Carbon dioxide is taken in by the plant to help it make food, too. Carbon dioxide is a gas that people and animals breathe out. It is taken into the plant through the leaves.



| This is what a pumpkin plant looks like as it grows and changes.

Sunlight is very important for many plants. Most plants have **chlorophyll** inside to help them make food for themselves. Chlorophyll is green and uses sunlight to make food so that the plant can grow.

The correct temperature is also very important for the growth of plants. Plants cannot grow if the temperature is too hot or too cold. They need the right temperature. Some plants grow in warm weather. Some plants, like evergreen trees, grow in places where it is usually cool. Most plants grow best between 60 and 80 degrees Fahrenheit (16 and 27 degrees Celsius).

Once a plant gets water, minerals, carbon dioxide, sunlight, and the correct temperature, it can grow. Most plants grow from a tiny seed. Some plants grow from special, long roots. Grass grows from these special roots. Other plants have special stems that grow into new plants. The strawberry plant grows this way.

**Circle the right answer.**

- 1.17** Plants take \_\_\_\_\_ from the air.  
a. oxygen                      b. carbon dioxide                      c. nitrogen
- 1.18** A plant finds water and minerals in the \_\_\_\_\_.  
a. soil                      b. air                      c. winter
- 1.19** If it gets too cold, a plant will \_\_\_\_\_.  
a. grow faster                      b. die                      c. live longer
- 1.20** Most plants grow from a tiny \_\_\_\_\_.  
a. rock                      b. garden                      c. seed
- 1.21** Plants give \_\_\_\_\_ to the air.  
a. nitrogen                      b. oxygen                      c. carbon dioxide

**Make a list.**

- 1.22** List five things a plant needs to grow.
- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

**Teacher check:**

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## Change in Animals

God created all the animals on the earth. He made them very different so we could enjoy them. In this part of the section, you will review how animals differ. You will learn about the things that animals need to live in their **environments**. Four things that animals need to live are (1) correct temperature, (2) water, (3) sunlight, and (4) soil.

**Temperature.** For an animal to **survive**, it must be created **appropriately** for the place in which it lives. A camel can live in the hot desert because God designed its body in a way that keeps it cool. Animals that live where it is cold must be able to keep warm. Heavy coats of fur help these animals to survive. Temperature is very important for animals. Sometimes, the temperature will not change for a long period of time. When temperatures change too much, some animals might not live. Animals need the correct temperature for which they were created.



| Polar bears have thick fur that allows them to survive in the Arctic.

**Water.** All living things must have water to live, grow, and **multiply**. Animals are created in special ways to survive on the amount of water in their environments. Some animals need more water than others. Some animals need very little water. Fish cannot live outside of water. Snakes, camels, and lizards need very little water to live.

**Sunlight.** Some environments are very sunny. Some are very shady. Different animals like different amounts of light. Some animals like to live underground. Other animals do most of their activity at night.

**Soil.** The kind of soil that is found where an animal lives is important. Some soils are soft. Holes can be made easily in soft soil. Other soils are hard. Some are very sandy. Different animals like different kinds of soil. Worms like soft, dark soil so they can dig into the ground and crawl around.



### Find the words.

- 1.23** In the word puzzle, find the four things important for an animal to live in its environment. The words in the puzzle may be located up, down, across, diagonal, or backwards. Look carefully.

T	X	V	L	B	O	D
E	V	W	A	T	E	R
M	W	M	O	V	X	Y
P	M	N	M	S	W	T
E	N	W	O	U	M	N
R	P	I	B	N	S	U
A	L	T	A	L	I	G
T	Q	E	X	I	L	O
U	R	X	Y	G	Z	X
R	V	W	Z	H	V	Y
E	W	M	B	T	O	B

temperature  
water  
sunlight  
soil

God made animals very different from each other. Some are big and some are very small. Some swim and others fly. Animals are different in many ways. Animals are sometimes put in groups by the ways they are different. They can also be grouped by the ways they are the same.



| Ducks are vertebrates.

Scientists usually put all animals into one of two groups: **vertebrates** or **invertebrates**. If an animal has a backbone, it is called a vertebrate. Fish, amphibians, reptiles, birds, and mammals are examples that belong to the vertebrate group.

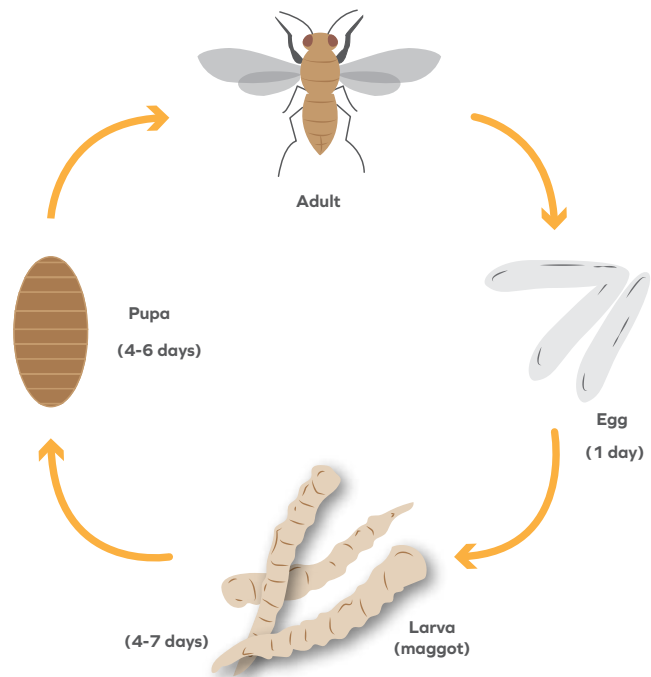
Most of the animals belong to the invertebrates group. If the animal is without a backbone, it is grouped with the invertebrates. Many of the seashore animals like crabs, starfish, and clams belong to the invertebrate group. Insects are also invertebrates.



| Crabs are invertebrates.

A fly is an invertebrate. It does not have a backbone. The fly is an insect that goes through metamorphosis. The female adult lays an egg that turns into a wormlike larva. The larva of a fly is called a **maggot**. You may have seen white maggots crawling in garbage. The larva eats a lot of food and changes into a stage called the pupa. The pupa stage stays in one place and does not travel. At just the right time, the pupa changes into an adult fly.

Most flies are very dirty and carry germs or disease. Did you know that a fly that lives in a city will have over two hundred thousand germs on its body? Do not allow flies to walk on your food to protect yourself from germs and help your body to remain healthy.



| Life cycle of a fly





**Do this crossword puzzle.**

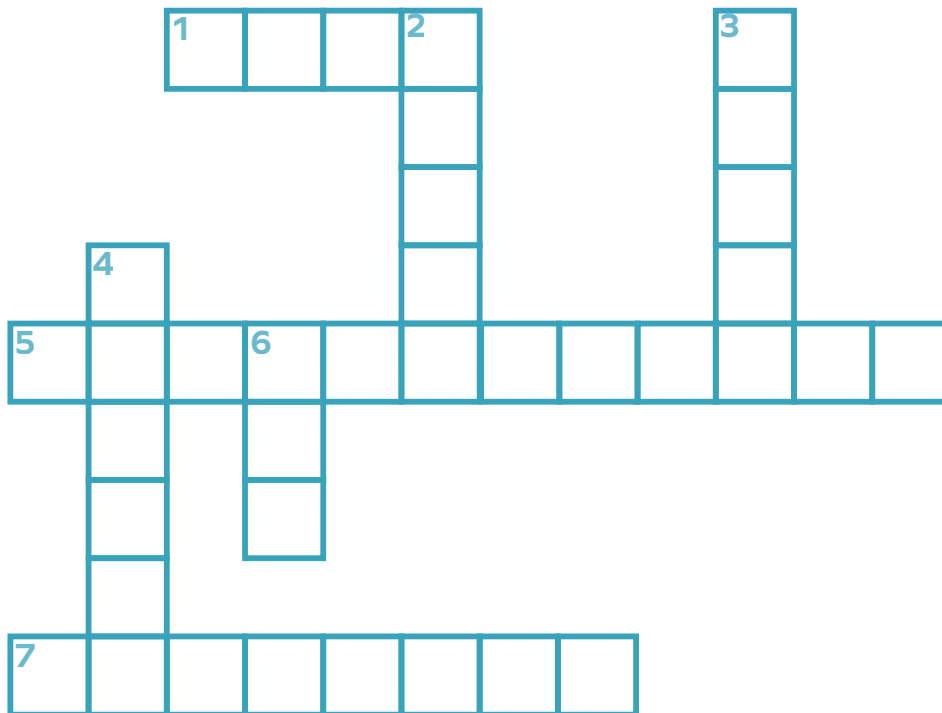
**1.24** Use these words and the puzzle clues to fill the words in the puzzle.

adult  
starfish

insect  
egg

larva  
pupa

invertebrate



**ACROSS**

- 1. Fixed stage of metamorphosis
- 5. Without a backbone
- 7. Seashore animal

**DOWN**

- 2. Final stage of metamorphosis
- 3. Wormlike stage
- 4. Fly, moth, butterfly
- 6. Laid by female



**Teacher check:**

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**For this Self Test, study what you have read and done.** The Self Test will check what you remember.

# SELF TEST 1

Each answer = 1 point

**Find the names of the five food groups.**

**1.01** Put a ring around each group.

- a. C F R U I T S B N P V E G E T A B L E S Z
- b. D X F J L M I D A I R Y L S N A D A F T S
- c. N A M C E G R A I N S P Q L I M S T W X R
- d. M J M T H M E P R O T E I N A N S M D V Y

**1.02** Write the names of the five food groups plus the other important things that you are supposed to eat on the lines.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. plus \_\_\_\_\_

**Write three ways you are different from an animal.**

**1.03** A person has a \_\_\_\_\_ .

**1.04** A person has a \_\_\_\_\_ .

**1.05** A person can be \_\_\_\_\_ .

### Draw a plant.

- 1.06** Draw a plant in the space below and label the roots, stem, and leaves (3 points).



### Make a list.

- 1.07** List five things that a plant needs to grow.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

### Describe metamorphosis.

- 1.08** Put these words in their correct order.

adult

larva

egg

pupa

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

**Write / before each invertebrate (without a backbone) and write V before each vertebrate (with a backbone).**

**1.09** \_\_\_\_\_ reptiles

**1.010** \_\_\_\_\_ starfish

**1.011** \_\_\_\_\_ mammals

**1.012** \_\_\_\_\_ butterfly

**1.013** \_\_\_\_\_ amphibians

**1.014** \_\_\_\_\_ fish

**1.015** \_\_\_\_\_ moth

**1.016** \_\_\_\_\_ clam

**1.017** \_\_\_\_\_ birds

**1.018** \_\_\_\_\_ crab

**Make a list.**

**1.019** What five things are needed for a healthy body?

a. \_\_\_\_\_

b. \_\_\_\_\_

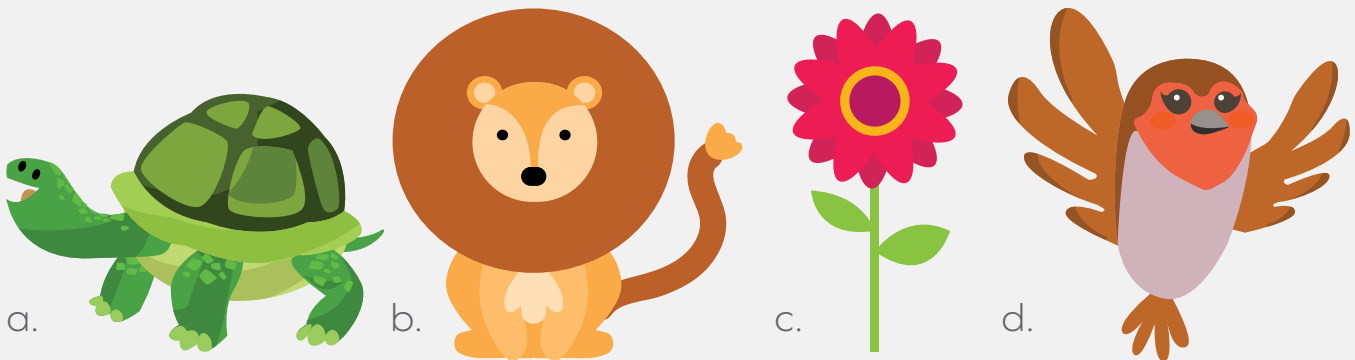
c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

**Complete this activity.**

**1.020** Draw a circle around the picture that is different from the others.



**Teacher check:**

Score \_\_\_\_\_

Initials \_\_\_\_\_

Date \_\_\_\_\_

