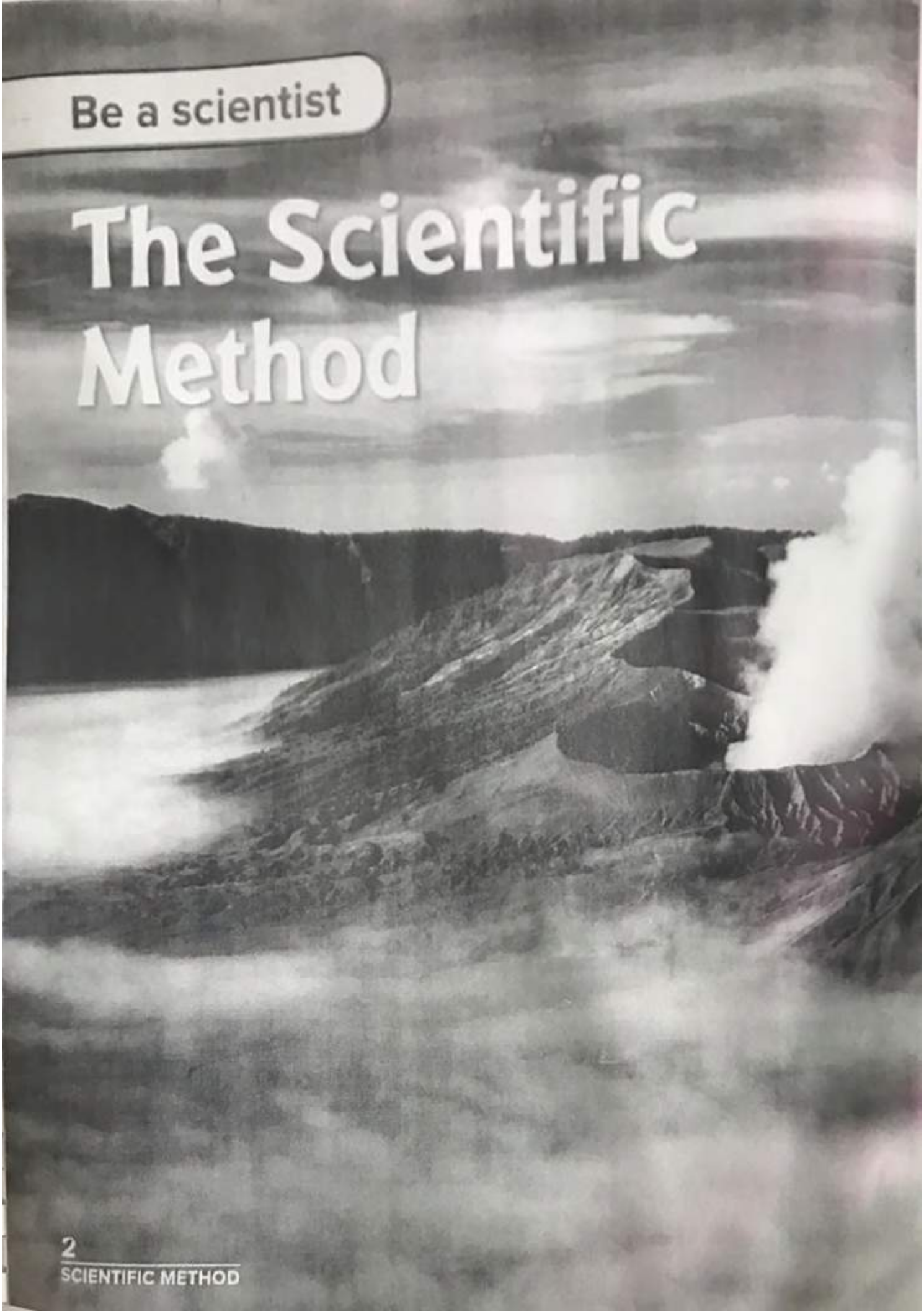

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Look and Wonder

Rashid is a geologist who works at the United Arab Emirates University. Geologists are scientists who study what goes on inside and outside Earth. Rashid and other geologists are curious about volcanoes. They want to understand more about why volcanoes erupt. What do you think happens inside Earth that sends these clouds of ash and gas into the sky?

The chemicals inside the volcano interact with one another causing the volcano to erupt

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Asking Questions

Volcanoes are filled with melted rock called *magma*. Magma is found deep inside Earth. Sometimes a gas is present in the magma. The gas may have water vapor, chlorine, or other substances in it.

When magma erupts from a volcano, lavas (LAH•vuhz) form. Many lavas are filled with small holes. These holes were once bubbles of gas in the hot magma.

Rashid and others ask why some volcanic eruptions are more explosive than others. They already know that water vapor affects how volcanoes erupt. Based on what they know, Rashid and others make a prediction. They predict that other substances will also affect volcanic eruptions. One variable (VAYR•ee•uh•buhl) they want to test is a substance called chlorine. A variable is something that changes, or varies.

Form a Hypothesis

1. Ask many "why" questions.
2. Look for connections between important variables.
3. Suggest possible explanations for those connections.

▶ **Make sure the explanations can be tested.**

Forming a Hypothesis

Rashid and others form a hypothesis (hi•PAH•thuh•sis). A **hypothesis** is a statement that can be tested to answer a question. Their hypothesis states that if magma has chlorine, then a volcano will have a larger explosion.

Quick Check

1. What is the "why" question that Rashid and others want to answer?

Why Some volcanic eruptions are more explosive ?

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How do scientists test their hypotheses?

Can Rashid and others do research in an active volcano? No! Instead they use a laboratory, or lab for short. An instrument in Rashid's lab models the heat and pressure deep inside a volcano. "We're trying to imitate the temperature and pressure inside Earth's crust," Rashid explains.

Selecting a Strategy

To test their hypothesis, Rashid and others need to collect evidence. They decide to perform a set of experiments. An **experiment** is a scientific test that can be used to support or disprove a hypothesis. The pair design a set of experiments to test the effects of chlorine.

Planning a Procedure

Rashid and others write the steps of their procedure clearly. That way, they and others can repeat their experiments. Why? Good experiments are done again and again. If the results are similar, the evidence is stronger.

The plan is to add known amounts of chlorine to volcanic rock samples. Chlorine is the only variable they will change. The variable that changes in an experiment is the *independent variable*. Most experiments test only one independent variable at a time.

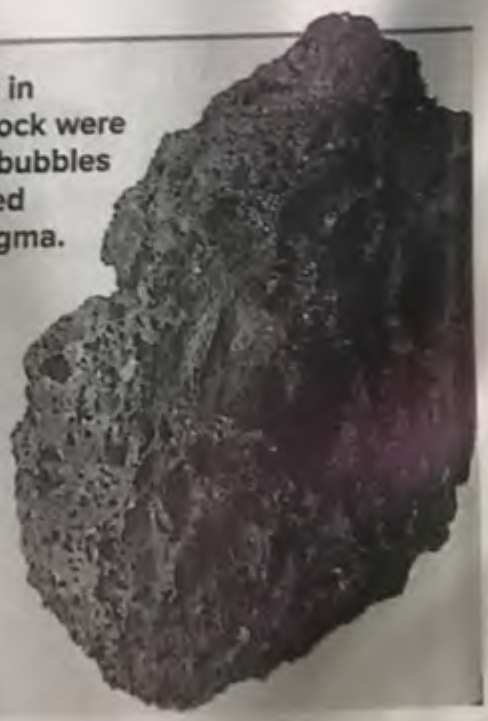
A good experiment also has *controlled variables* that are kept the same. Here, the scientists plan to control the mass, pressure, and temperature of each sample. How will they know if chlorine has any effect? They will count the number of holes in each rock. These holes are their dependent variable.

Collecting Data

Quick Check

2. Why are Rashid and other geologists unable to collect data directly from an active volcano?

Because of the temperature and pressure in an active volcano.



The holes in volcanic rock were once gas bubbles that formed inside magma.

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Rashid and others follow their plan. They pour crushed rock and water into tiny metal capsules. They add different amounts of chlorine. One capsule has no chlorine.

Another geologist puts the sealed capsules inside a strong steel cylinder. Then Rashid increases the pressure inside the cylinder. He also increases the temperature to about ten times hotter than a pizza oven!

After one week, it is time to cool the cylinder and open it. Rashid and others open the capsules. They observe the cooled rocks under a microscope. They count and record the number of holes. Later, they repeat the experiment exactly. They make sure the data are dependable.

Testing A Hypothesis

1. Think about the different kinds of evidence needed to test the hypothesis.
2. Choose the best strategy to collect this data.
   - **perform an experiment** (in the lab)
   - **observe the natural world** (in the field)
   - **make and use a model** (on a computer)
3. Plan a procedure and gather data.

▶ **Make sure the procedure can be repeated.**

Quick Check

3. What are the controlled variables in their experiment?

The mass, temperature and pressure, also sample

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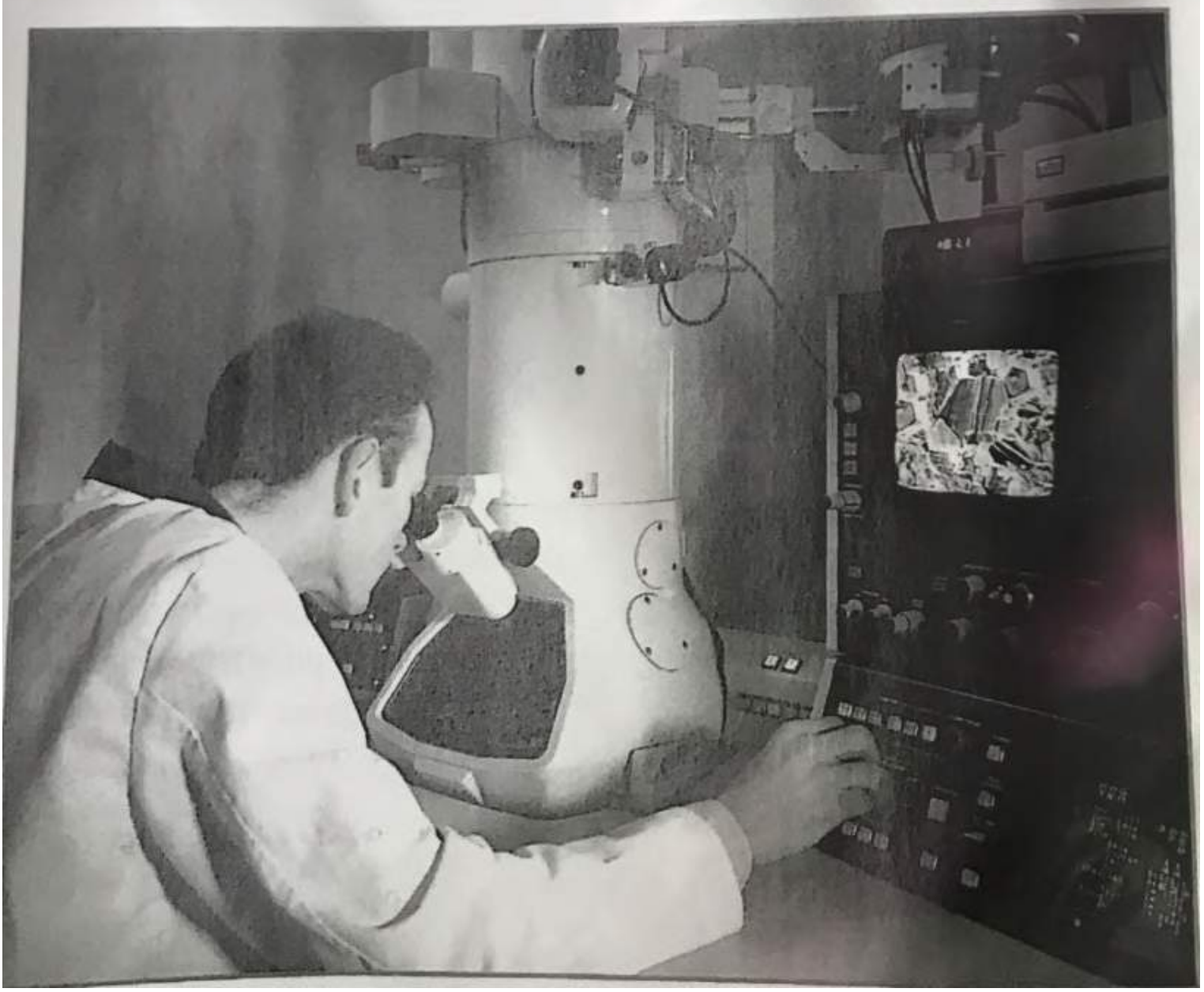
How do scientists analyze data?

When Rashid and others collect data, they keep careful records of their observations. They record how much chlorine went into each capsule. They carefully describe each tiny piece of cooled rock. They record the number of holes. Then they organize all this data in a way that makes sense.

Underline what they do with the data after it has been recorded.

Lab assistants look at samples using electron microscopes. ▼



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Data Chart				
Run	Temperature	Pressure	Chlorine	Bubble
1	920°C	200 MPa	0%	none
2	920°C	200 MPa	0.8%	some
3	920°C	200 MPa	0.9%	many

Looking for Patterns

The table above has some of the results from this study by Rashid and other geologists. In total, they ran about 50 experiments. Each one took about one week to complete. That means it took almost a year to collect their data!

After Rashid and others organize all their data, they look for patterns. What do their data show? When a sample has more chlorine, the cooled rock has more holes. The control sample, without chlorine, has no holes at all.

Checking for Errors

As they go along, Rashid and others review their procedures. They check that the experiments were run correctly. If they find any errors, they cannot use the data. Errors mean they must try again.

Analyzing the Data

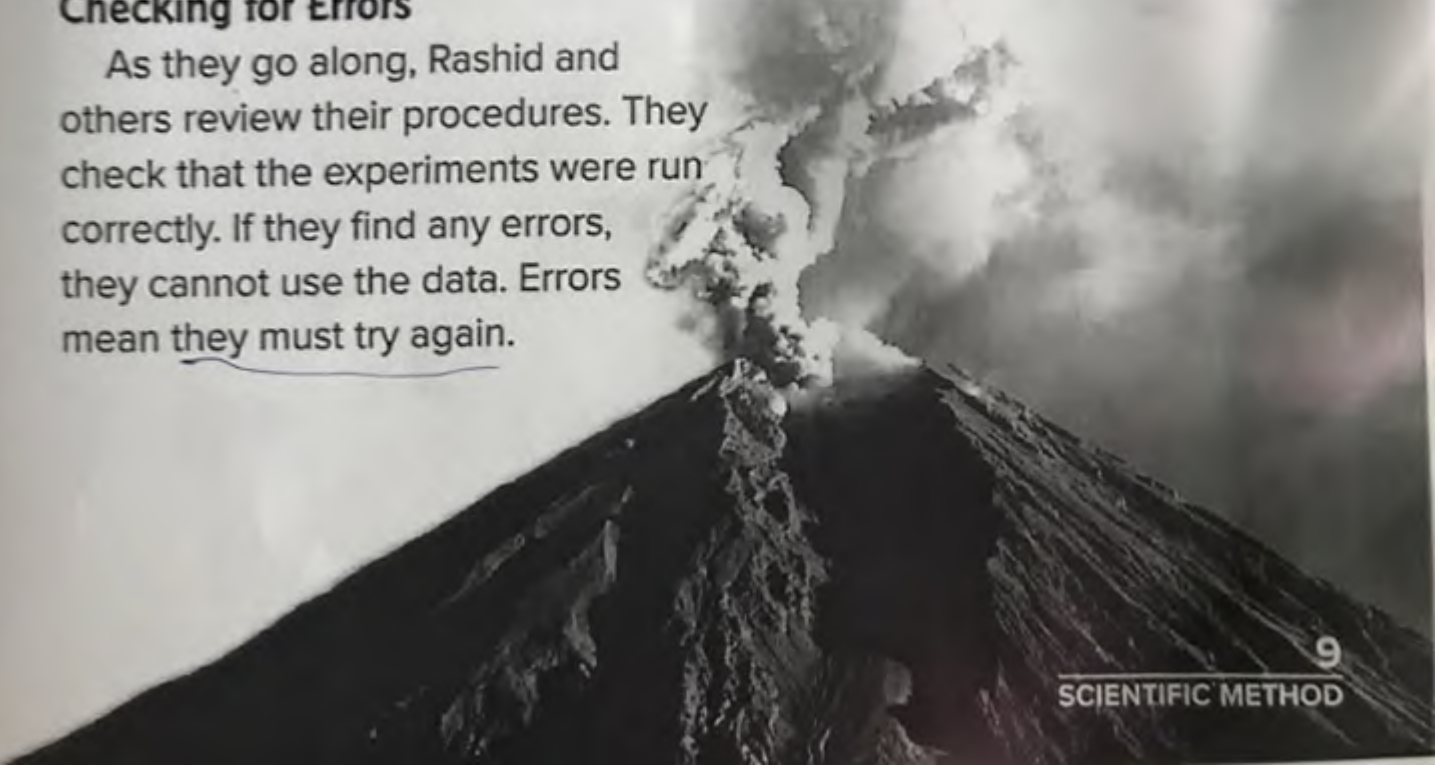
1. Organize the data as a table, graph, diagram, map, or group of pictures.
2. Look for patterns in the data that show connections between important variables in the hypothesis being tested.

▶ **Make sure to check the data by comparing it to data from other sources.**

Quick Check

4. What will Rashid and the others do if they find an error in their experiment?

They must try again.



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How do scientists draw conclusions?

Now Rashid and others must decide whether their data support their hypothesis. They compare their results with lavas from Mount Vesuvius and other explosive volcanoes. This comparison allows them to draw their conclusion.

Does more chlorine in the magma cause a bigger explosion? "Yes, it does!" another geologist exclaims.

The results of an experiment do not always support the tested hypothesis. This can be a useful outcome. When a hypothesis is not supported, scientists ask why. They may decide to test the hypothesis with new experiments using different methods.

Sometimes scientists conclude that a hypothesis is incorrect. When this happens, they often form a new hypothesis. Then they follow the steps of the scientific method once again.

Pumice is rock from an explosive volcano.

Quick Check

5. If the data collected does not support the hypothesis, is the study a failure?

No, they should decide to test the hypothesis with new experiment using different methods.

Mount Saint Augustine volcano, Alaska

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Communicating

Rashid and others report their conclusions. This way, other scientists can do the same experiment and compare their results. Many scientists share their results so people can learn from their work.

Asking New Questions

A scientist's results may lead to new questions. Rashid wants to know if chlorine affects eruptions at other volcanoes too. What other gases affect the size of eruptions? What else happens when a volcano erupts?

Today Rashid studies Mount Saint Augustine volcano in Alaska. Like Mount Vesuvius, Mount Saint Augustine is an active volcano. It makes up its own island in Alaska's Cook Inlet.

Drawing Conclusions

1. Decide whether the data clearly support or do not support the hypothesis.
2. If the results are not clear, rethink the procedure.
3. Write the results to share with others.

▶ **Make sure to ask new questions.**

Quick Check

6. What other questions about volcanoes can you think of? Choose one. Form a hypothesis that could be tested.

If magma is found near to the earth surface, the lava will not form.

Q. What is the temperature helps to form Lava?

7. What could scientists do if their data disproved their hypothesis?

They form new hypothesis and they follow the steps once again.

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Focus On Skills

Scientists use many skills as they apply the scientific method. Inquiry (IN•kwuh•ree) skills help you gather information and answer questions about the world around you. Here are some important inquiry skills that all scientists use:

▲ Scientists first observe ~~observe~~ an object or event to learn more about it.

Observe Use your senses to learn about an object or event.

Form a Hypothesis Make a statement that can be tested to answer a question.

Communicate Share information with others.

Classify Place things with similar properties into groups.

Use Numbers Order, count, add, subtract, multiply, or divide.

Make a Model Assemble something that represents an object, a system, or a process.

Fill in each blank on these two pages with one of the inquiry skills listed.

Before starting an experiment, scientists form a(n) hypothesis ~~hypothesis~~.

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Life Science

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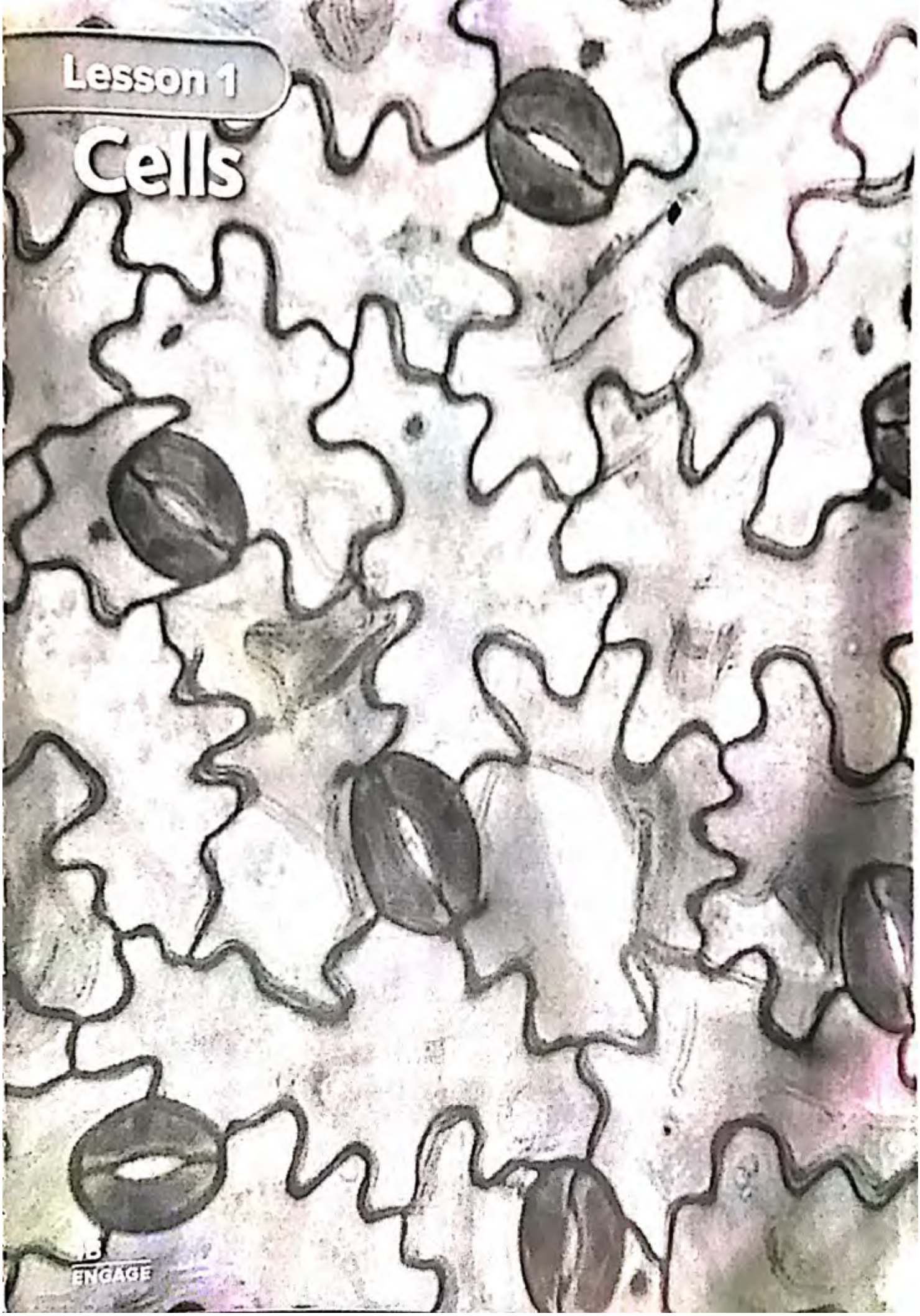
Lesson 1

Cells



ENGAGE

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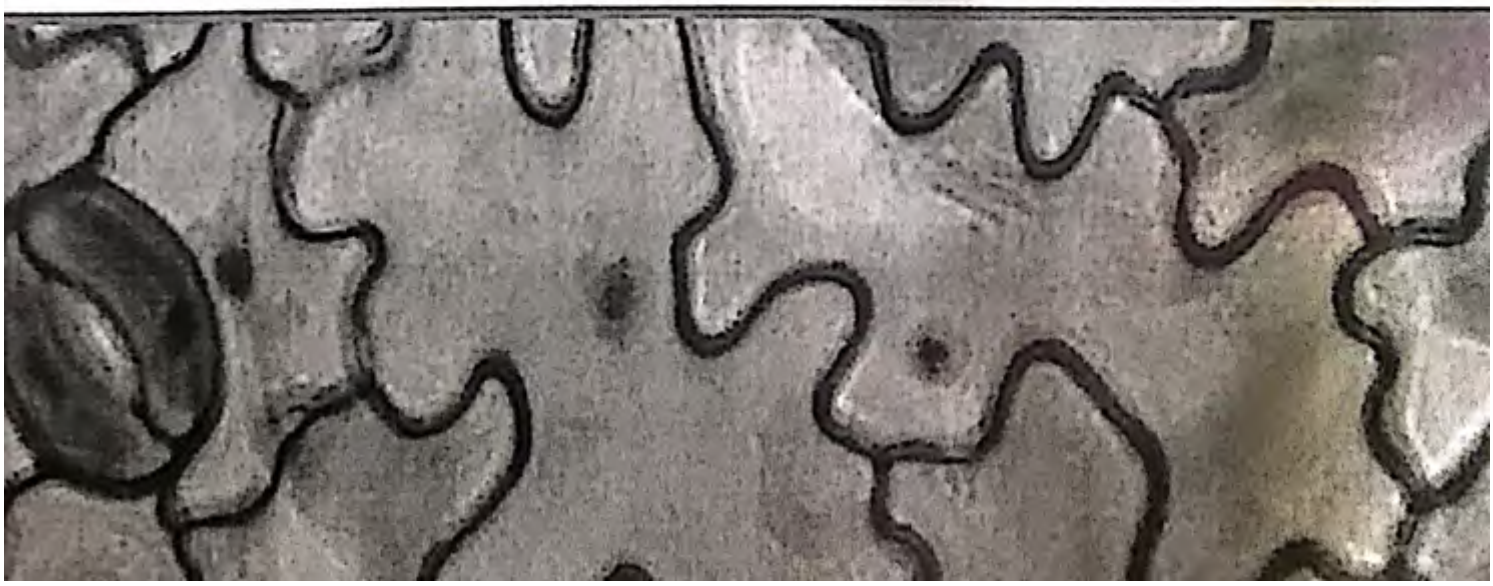
Look and Wonder

What do you see in this picture? Is it something you have seen before? Each one of these boxes is so tiny, you can only see it through a microscope.

I can see the structure of the cell.
No, I haven't seen it before.

Essential Question How are living things organized?

Living things are organized and classified according to the Kingdom.



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Other Life Functions

As a snake grows bigger, it sheds its skin. Not all organisms shed their skin. But they all grow and develop.

How do organisms get energy for growing? They use food! Woodchucks eat flowers. Plants make their own food. After they eat, organisms must get rid of wastes. Owl pellets show what food an owl ate.

Lastly, all organisms respond to changes in their environment. Why are all the sunflowers in the photo below facing the same way? Like all plants, they grow toward the light.

Is It a Living Thing?

Life Function	Lizard	Rock	Car
Does it grow?	✓	✗	✗
Does it use fuel to get energy?	✓	✗	✓
Does it get rid of wastes?	✓	✗	✓
Does it reproduce?	✓	✗	✗
Does it respond to changes in its environment?	✓	✗	✗

Read a Table

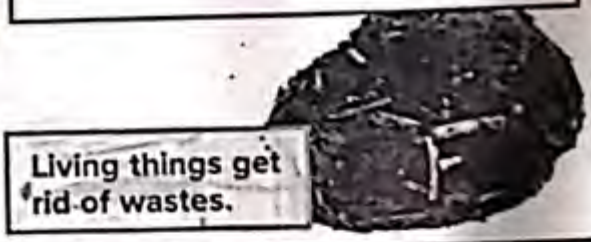
How can you tell if a car is a living thing?

A car is not living thing even it seems that if carries one or more basic life job or function such as movement and get rid of waste.

Quick Check

1. How are plants different from computers?

Plants are organisms that carry out five basic life functions of living things such as growing and reproduction, while Computers are non living things-



Living things get rid of wastes.

Living things use food for energy.

Living things react to changes.

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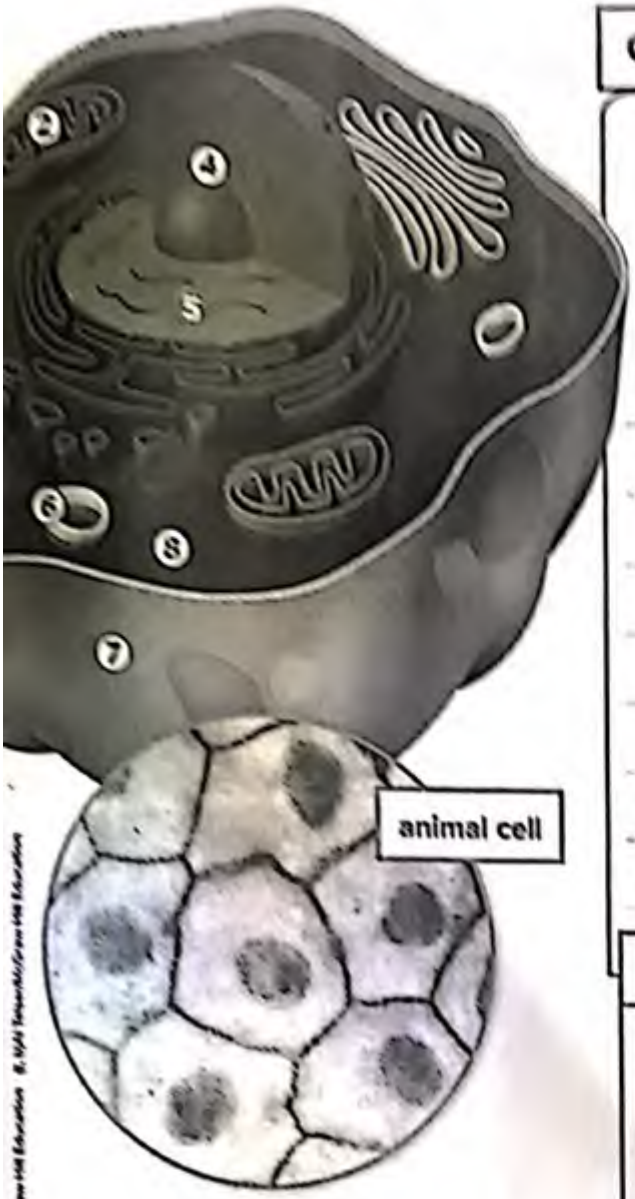

Cell Parts

	Plant Cells	Animal Cells
		
cell wall	✓	✗
mitochondria	✓	✓
chloroplasts	✓	✗
nucleus	✓	✓
chromosomes	✓	✓
vacuole	large	small
cell membrane	✓	✓
cytoplasm	✓	✓

Read a Table

How are a plant cell and an animal cell alike? How are they different?

Plant cell and an animal cell are alike as both they have metochondria, nucles, chromosomes, cell membrance and cytoplasm, while they are different as plant cell is larger than animal cells, as well as animal cells have not cell wall and chloroplasts.

⑥ **vacuole** (VAK•yuh•wol)
This structure stores the cell's food, water, and wastes. Plant cells have one or two vacuoles. Animal cells have many.

⑦ **cell membrane**
This thin covering is found outside the cell. In plants, it is inside the cell wall.

⑧ **cytoplasm** (SI•tuh•pla•zum)
Filling the cell is a substance that is like jelly. It is mostly water. It also has important chemicals.

Quick Check

2. Which part of the cell works just like your brain? Explain your answer.

Nucleas as it controls all cell activities.

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Cells Make Up Tissues

In organisms with many cells, the ones that do the same job are grouped together. These cell groups form tissues (TIH•shewz). A **tissue** is a group of similar cells that work together to perform a job.

Tissues Make Up Organs

Tissues can also group together. When they do, they form an **organ**. The tissues in an organ work together to carry out a job. For example, your heart pumps blood.

Organs Make Up Organ Systems

Organs work together in an **organ system** to perform a life function. Your heart is part of the circulatory system. It moves blood throughout your body.

Quick Lab

To learn more about cells, tissues, and organs, do the Quick Lab in the activity workbook.

Quick Check

3. How is an organ different from a tissue?

Tissues group together to form an organ, while organs work in an organ system together to perform a life function.

4. Why do different living things need different organs?

Because different living things have different cells and ~~perform~~ which form different organs to perform different functions

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Stomach Inside the stomach food is mixed with strong, acidic juices. This causes the food to break down further, making it easier for your body to absorb nutrients from the food.

Small intestine After passing through the stomach, food moves into the small intestine (in •TES• tun). This is where most nutrients are absorbed.

The small intestine is a narrow tube about 7 meters long. As food passes through the small intestine, nutrients are absorbed into the blood. The blood then carries these nutrients to other parts of the body.

Large intestine The large intestine is the last portion of the digestive tract and includes the colon, the rectum, and the appendix. The large intestine removes water from the unused food that is left. Then the unused food is removed from the body as waste. Solid waste is food that cannot be digested.

Digestive System	Main Function	Time
Mouth	Chewing and breaking down food	5–30 seconds
Esophagus	Swallowing and transporting food	10 seconds
Stomach	Acidic juices help break down food further	2–24 hours
Small Intestine	Nutrients are absorbed into the blood	3–4 hours
Large Intestine	Removes water from unused food	18h–2days

Quick Check

6. What happens in the stomach?
Inside the stomach food is mixed with strong acidic juice. This causes the food to break down further making it easier for your body to absorb nutrients from the food.

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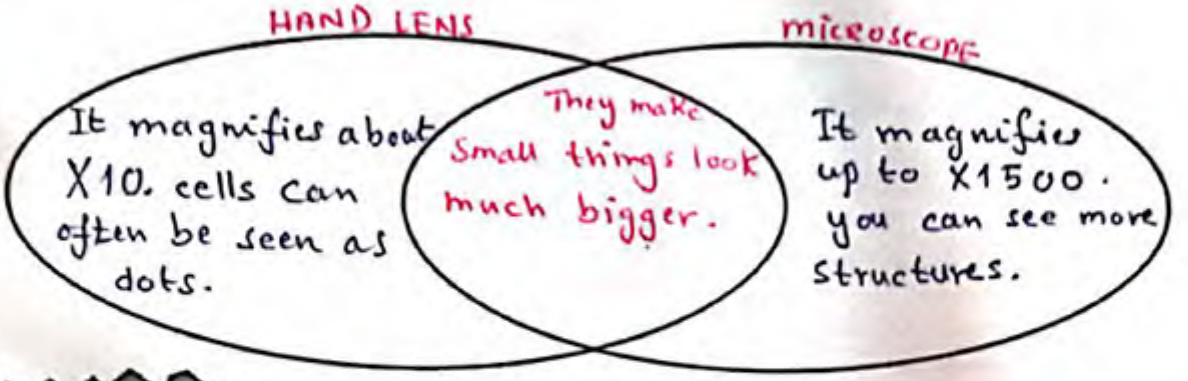
Quick Check

7. How is a hand lens like a microscope? How is it different?



My Notes

* Living things are organisms that carry out five basic life functions such as reproduction and growing.

* A living thing may have millions of cells. A cell is the smallest unit of living matter.

* All living things need water, food and place to live. most of them need oxygen.

~~* They are~~

* There are differences and similiraties between plant cell and animal cell, for example plant cell is larger than animal cell. As for similiraties both of them have mitochondria, nucles, chromosoms, cell membrane and cytoplasm.

* There are levels of organizations regard cells, tissues and organs, Cells make up tissues, tissues make up organs, and organs make up organ systems.

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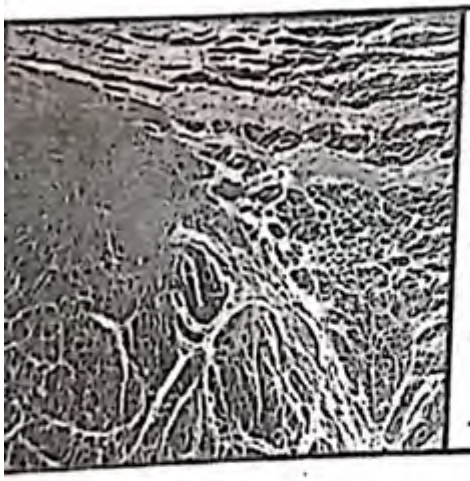
Visual Summary

Complete the lesson summary in your own words.

Living Things Are organisms that have needs, such as water, food and place to live, They are also carry certain basic life functions such as responding to changes in their environment.

Plant Cells and Animal Cells Plants cells and Animal cells: All organisms such as plants cells and animal cell have smaller parts help them stay alive, cells in both have similarties as well as differences.



Tissues, Organs, and Organ Systems Are related to each other and they organized in levels, each one of them grouped together to form in other, For instance, tissues group together to make up organs organism.

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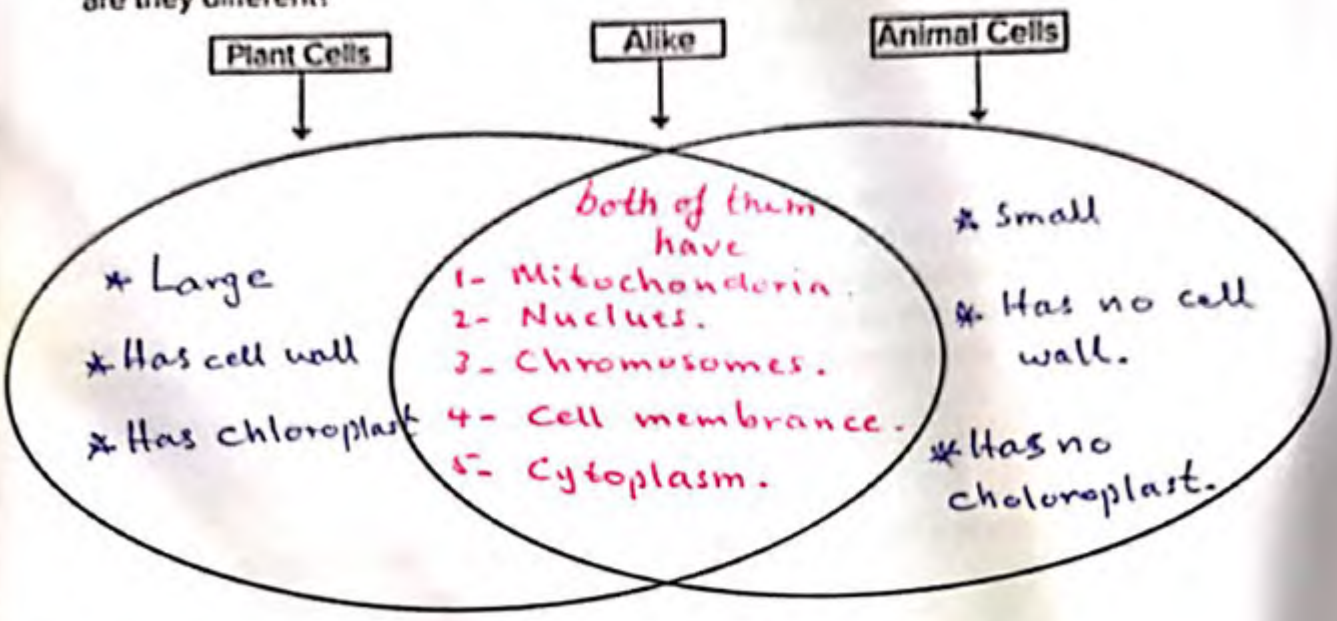
Think, Talk, and Write

1. **Vocabulary** The nucleus controls the activities of the cell.

2. **Compare and Contrast** How are plant and animal cells alike? How are they different?



3. **Critical Thinking** Can one cell be a living thing? Explain why or why not.

Yes, Because it carries the basic functions of life such as respiration and reproduction.

4. **Test Prep** Which of these parts is only in plant cells?

A mitochondrion
B chloroplast
C cell membrane
D chromosome

5. **Test Prep** Most plant cells

A are shaped like boxes.
B have tiny vacuoles.
C do the same job.
D are round.

Essential Question How are living things organized?

Living things organized by genus and species (Kingdoms).

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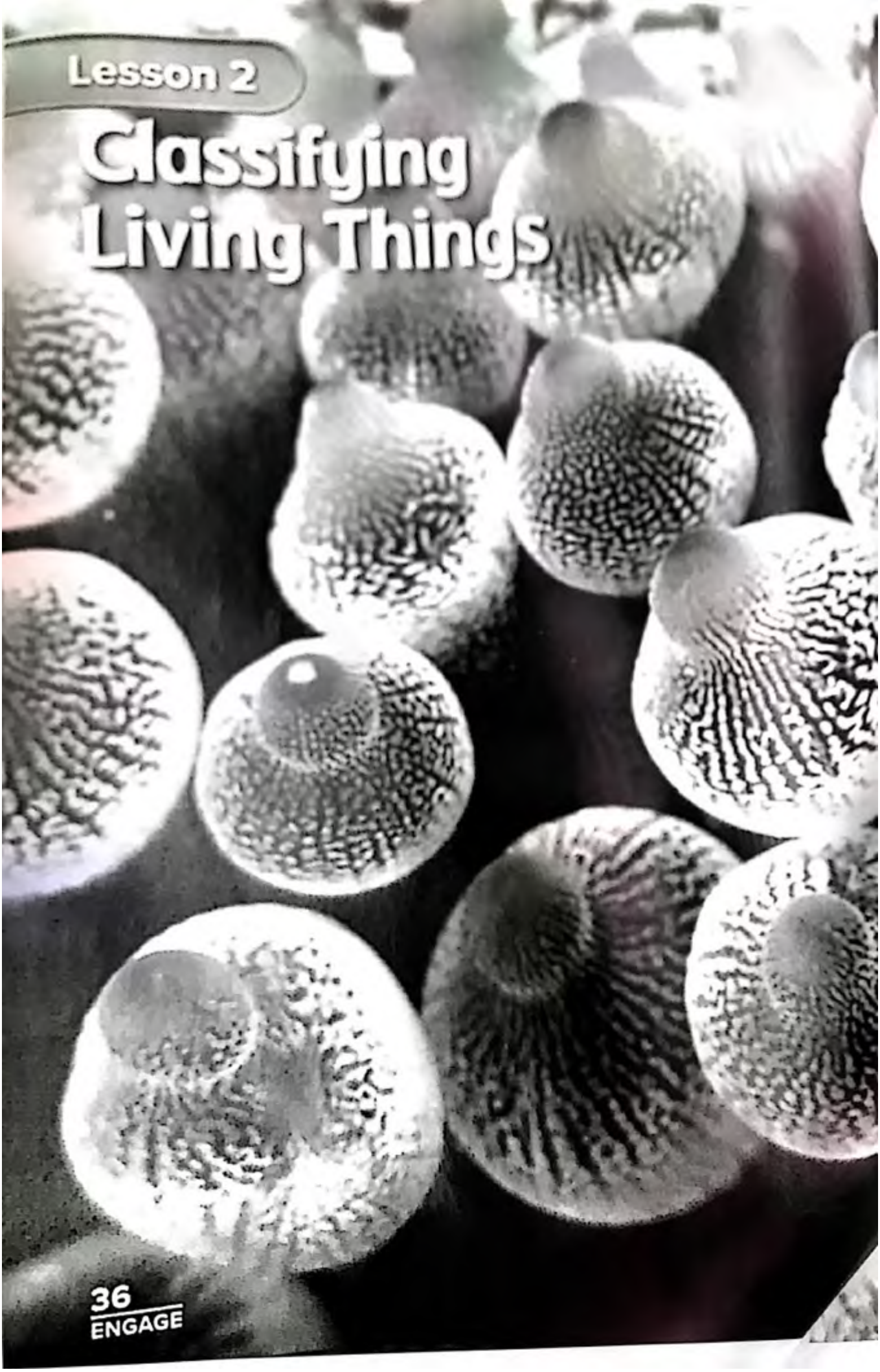

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Look and Wonder

More than two million different kinds of organisms live on Earth. What kind is this? How could you find out?

I Can find out via kindom, group then trait.

Essential Question How can living things be grouped?

Scientists divided things into six kindoms. A kindom is the largest group into which orgaisms can be classified. To classify orgaisms into group, scientists study many traits. A trait is a characteristic of a living thing.

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Kingdom	archaea	bacteria	protists	fungi	plants	animals
Number of Cells	one	one	one or many	one or many	many	many
Nucleus	no	no	yes	yes	yes	yes
Food	make their own or get food from other organisms	make their own or get food from other organisms	make their own or get food from other organisms	get food from other organisms	make their own food	get food from other organisms
Move from Place to Place	yes	yes	yes	no	no	yes

Six Kingdoms

Scientists divide living things into six kingdoms. A **kingdom** is the largest group into which organisms can be classified. All the members of a kingdom share the same basic traits.

Plants have their own kingdom. So do animals. There are two kingdoms of organisms with one cell and no nucleus. These organisms have many other traits that are different too. There is also a kingdom for *protists* (PROH•tists) and one for *fungi* (FUN•ji).

Read a Chart

How are archaea and bacteria different from the other four kingdoms?

Archaea and bacteria have no nucleus.

Quick Check

1. Into which kingdom would you classify an organism that has many cells, does not make its own food, and moves?

Animals -

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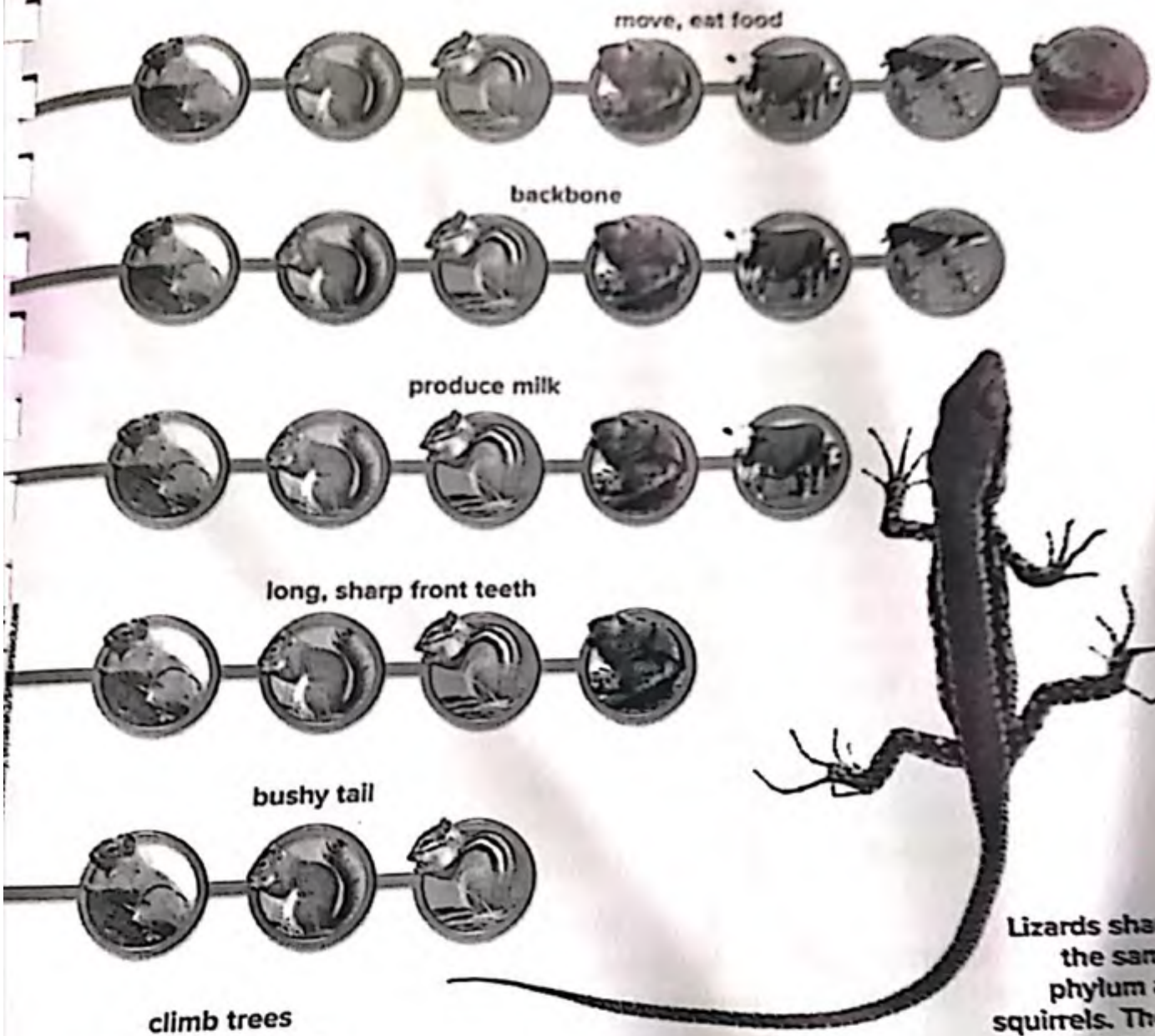

Lizards share the same phylum as squirrels. They both have backbones.

Quick Check

2. Which most likely has more members: a phylum or a class? Explain.

A phylum. Because members of a phylum have at least one major trait.

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Protists

Members of the protist kingdom also have a cell nucleus. Protist cells have different parts that perform different jobs. A *paramecium* (per•uh•MEE•see•um) has a structure that pumps out extra water from inside the cell.

Some protists, such as algae (AL•jee), make their own food. Others get food by eating other organisms.

Like bacteria and fungi, most protists are harmless. Many are even helpful. Protists are a food source for other organisms. However, some protists can cause serious diseases, such as malaria.

A *paramecium* has many kinds of structures inside its cell.

Quick Lab

To learn more about one-celled organisms, do the Quick Lab in the activity workbook.

Quick Check

3. How can you tell the difference between protists and bacteria?

protists have cells, it makes their own food, while bacteria have no cell nucles. some bacteria make their won food.

4. How can observing cells under a microscope be useful when identifying organisms?

You can easily identifing its structure and recognize its parts.

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How are organisms named?

Scientists use a naming system to classify living things. Each kind of organism has its own name. The first part of the organism's name is its genus. The second part is its species. By using these names, scientists can identify and study specific organisms.

Scientists have named about 1.7 million species on Earth. Countless more have yet to be named!

Genus and Species

Wolves and coyotes belong in the genus *Canis* (KAY•nus). Members of the genus *Canis* look similar. They all eat meat. However, the species in this genus have different traits. One trait is color. Red wolves are *Canis rufus*. Gray wolves are *Canis lupus*. Coyotes are *Canis latrans*.

Quick Check

5. How do scientists use names to classify organisms?

Scientists the first part of the organism to name it's genus and the second part for species.

Naming Organisms

Genus *Canis*

Gray wolf
(Canis lupus)

Coyote
(Canis latrans)

Read a Diagram

Does the term *lupus* refer to a genus or a species?

Species

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My Notes

* Living things can be organized into group
* Scientists classify organisms into group by studing many traits. over time, a system of classification came out.
* Traits is a characteristic of a living thing.

Scientists divied living things into six kingdoms

* A kingdom is the largest group into which organisms can be classified.
* Scientists organized organisms within the kingdom. They divide the kingdom into smaller groups. They are : phylum, class, order, family, Genus and species
* Bacteria and Archaea are the smallest microorganisms that have no cell nucleus.
* Microorganisms are living things too small to be seen with just your eyes.
* Protists have cell, it makes their own food, while bacteria have no cell nucles. Some bacteria make their own food

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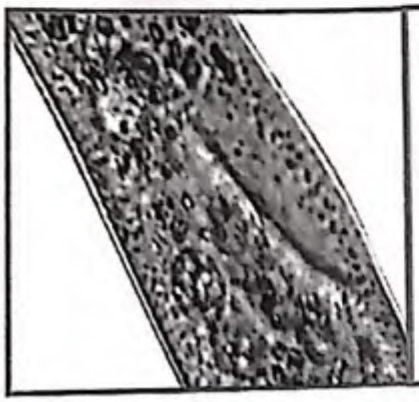
Visual Summary

Complete the lesson summary in your own words.

Grouping Organisms are based up on their characteristic. depending how the organism look or live and they grouped



Single-Celled Organisms such as bacteria and Archaea can be distinguished using microscope since they are so small.

Genus and Species are the 7 things need for naming an organism. where depending on the genus comes the first name and depending on the species comes the second name

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Think, Talk, and Write

1. **Vocabulary** Plants, animals, fungi, and ~~protists~~ are the four kingdoms that have organisms with many cells.

2. **Classify** Many birds eat the seeds of the rose plant, *Rosa rugosa*. What is this plant's genus and species?

Genus	Species
Rosa	~~Birds~~ rugosa

3. **Critical Thinking** How can classification of a poisonous organism help save someone's life?

If the person knew that classification, He/she will not eat organism and save his/her life. Knowledge is very important in this case

4. **Test Prep** Which statement about the number of species is true?
   - (A) Kingdoms contain the most.
   - B A phylum contains the most.
   - C Orders have the fewest.
   - D Kingdoms have the fewest.

5. **Test Prep** All the organisms in this kingdom make their own food.
   - A fungi
   - B protists
   - C bacteria
   - (D) plants

Essential Question How can living things be grouped?

Scientists divided things into six kindoms. A Kingdom is the largest group into which organisms can be classified. To classify organisms into group, scientists study their characteristics.

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CHAPTER 2 Review

Visual Summary

Summarize each lesson in your own words.

Lesson 1 * Living things are organisms that carry out five basic life jobs. * There are differences and similarities between plant cell and animal cell. * There are levels of organization regard cells, tissues and organs - For example, Cells make up tissues, while tissue grouped together to make up or form organ

Lesson 2 Living things can be organized into groups. organisms classified into groups according to their traits. Trait is a characteristic of a living thing. organisms organized within the kingdom by divide the kingdom into smaller group. They are phylum, class, order, family, Genus and species

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Vocabulary

Fill each blank with the best term from the list.

cell

kingdom

organ

organism

tissue

1. The smallest unit of living matter is a Cell.
2. The largest group into which an organism can be classified is a kingdom.
3. Tissues group together to form a(n) organ.
4. A group of similar cells that do a job together is called tissue.
5. Anything that can carry out the five basic life functions is a(n) organisms.

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Skills and Concepts

Answer each of the following.

6. **Critical Thinking** What could you infer if you looked into a microscope and saw a cell with cell walls? Explain your answer.

Either a plant cell or a fungi because they have a cell wall, while animal's cell doesn't have a cell wall.

7. **Personal Narrative** Share an experience you have had with an animal in the genus *Canis*. Explain why the experience was meaningful.

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8. **True or False** *The phylum is larger than the class.* Is this statement true or false? Explain.

True, share at least one major characteristic such as having a backbone.

9. **True or False** *The nucleus of a cell burns food and releases energy.* Is this statement true or false? Explain.

False. Because mitrochondira is the one which provide energy to the cell.

10. **True or False** *Mosses and ferns reproduce using seeds.* Is this statement true or false? Explain.

False. Because only plants reproduce using ~~fott~~ seeds

The Big Idea

11. What are living things and how are they classified?

Living things are any organisms that can carry out the five basic life function. They can be ~~cass~~ clasifed according to their caractarist

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Test Prep

Circle the best answer for each question.

1. Which one is NOT a microorganism?

   A archaea
   B protist
   C fern
   D bacteria

2. In some ways mushrooms are similar to plants.

   What makes mushrooms different from plants?

   A Mushrooms cannot make their own food.
   B Mushrooms cannot reproduce
   C Mushroom cells do not have cell walls.
   D Mushroom cells do not have a nucleus.

3. What is true of <u>all</u> living things?

   A They have tissues.
   B They can move.
   C They use energy.
   D They change shape.

4. Which of these do your cells contain?

   A cell wall
   B chlorophyll
   C chloroplast
   D cytoplasm

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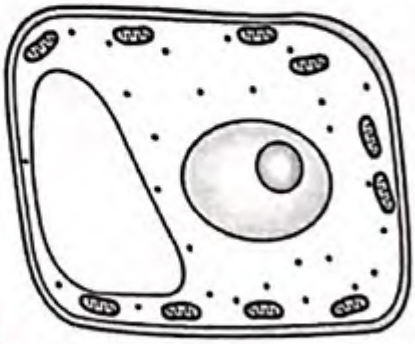
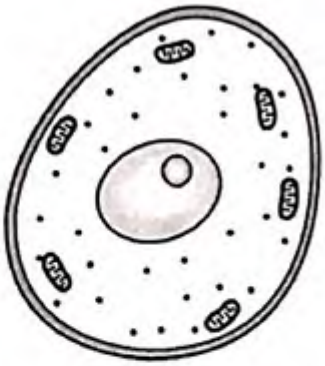
5. Which of these most likely shows a model of a plant cell?

A

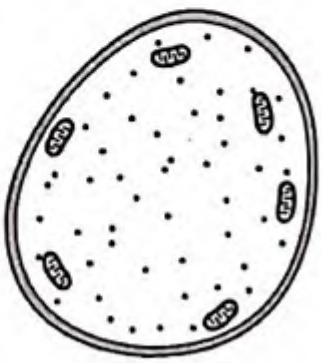


B

C



D



Answer the following questions.

6. The following chart shows how a lion is classified.

Phylum	Chordata
class	Mammalia
Order	Carnivora
Family	Felidae
Genus	Panthera
species	Lion

What words are missing in the chart? What do these words describe?

class and species. They describe ~~a p~~ the binomial name of the ~~or~~ organisms.

An important group used to classify living things is missing from this chart. What is it? How would you classify the lion in this group?

kingdom ~~classify~~ class is missing. Lion is classify as an animal.

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CHAPTER 3

The Animal Kingdom

The Big Idea

How are animals different from one another?

* They are different in shapes
* They are different in Charastericts.
* They are different in food chain.
* They are different in systems.
* They are different in life cycle.

Vocabulary

muscular system the organ system made up of muscles that move bones

digestive system the organ system that breaks down food for energy

heredity the passing of traits from parent to offspring

metamorphosis a life cycle including four stages of growth: egg, larva, pupa, and adult

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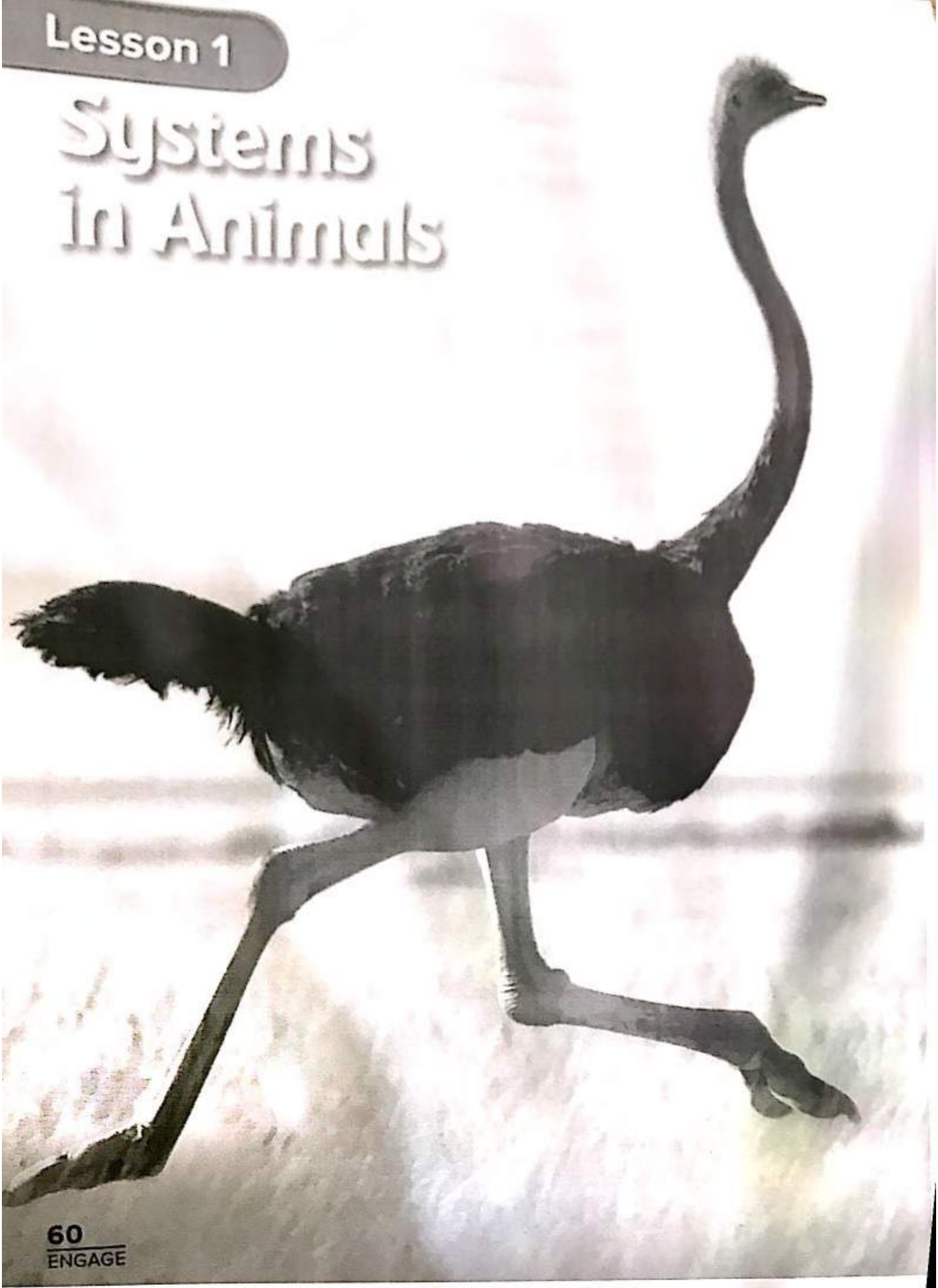
Lesson 1

Systems In Animals



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Look and Wonder

Did you know that birds can run? Ostriches run the fastest—nearly 64 kilometers per hour! They use their powerful leg muscles to escape danger quickly. What other body systems help animals survive?

* Respiratary System helps to store and exchange more oxygen.
* Circulatory System carry oxygen to all body parts effectively.
* Muscular System - provide strong body.
* Digestive System provide food and energy.

Essential Question How do systems help animals survive?

All systems work together to help animal to survive by providing food and energy to the body and provide oxygen to all organs. through ~~air~~ Respiratory & Cirulatory systems.

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Owls have a keen sense of sight. Large eyes help them see at night.

The Nervous System

The master control system of the body is the nervous (NUR•vus) system. The **nervous system** is made of nerve cells.

Invertebrates have simple nervous systems. A sponge, for example, has only a few scattered nerve cells. Vertebrates have complicated nervous systems. In vertebrates, millions of nerve cells work together as *nerves*.

The nervous systems of vertebrates consist of a brain, spinal cord, nerves, and sense organs. These help animals use senses—such as sight, hearing, taste, touch, and smell—to detect changes in their surroundings.

Quick Check

1. How do the skeletal and muscular systems work together?

Skeletal and muscular system work to gether to allow the animal to move

2. How is the nervous system important to the other body systems?

Nervous system ~~carry~~ Carries the messages from the brain to other body systems and organs.

The dolphin's brain sends a message to jump. The message travels through the dolphin's nerves to its muscles. Then the dolphin leaps into action!

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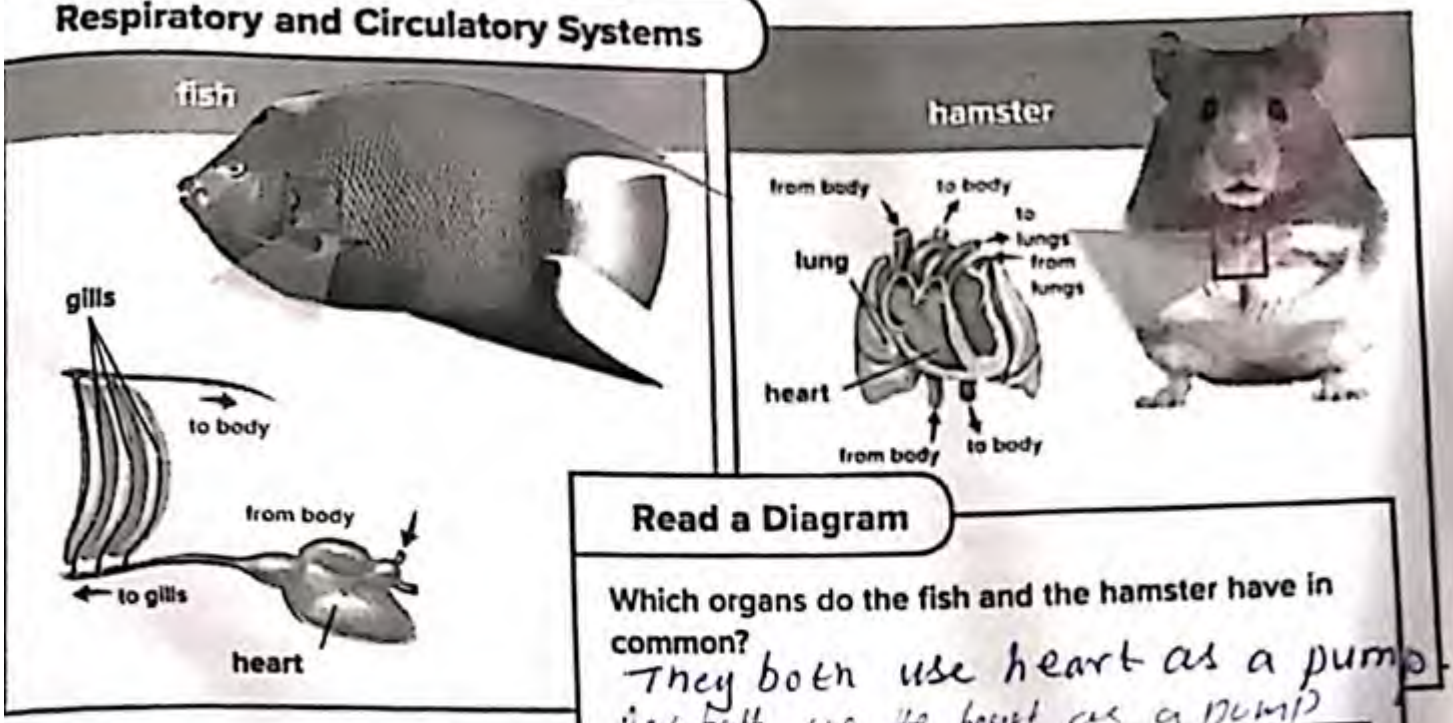
Respiratory and Circulatory Systems



Read a Diagram

Which organs do the fish and the hamster have in common?

They both use heart as a pump
they both use the heart as a pump

The Circulatory System

The heart, blood, and blood vessels make up the circulatory (SUR•kyuh•luh•tor•ee) system. The job of the **circulatory system** is to move blood through the body. The blood carries oxygen, food, and water to the body's cells. It also removes the cells' wastes.

The heart is the main organ of the circulatory system. It has strong muscle tissue to pump lots of blood.

The hearts of most fish have two parts, or chambers. An amphibian heart has three chambers. Mammals and birds have hearts with four chambers. Sponges and cnidarians do not have hearts. In fact, they have no circulatory system at all!

FACT Blood is actually a liquid tissue.

The Excretory System

When cells break down food and other chemicals, they produce wastes. The **excretory** (EK•skruh•tor•ee) **system** removes these wastes.

The liver, kidneys, bladder, skin, and lungs are excretory organs. The liver and kidneys filter wastes from the blood. The bladder stores liquid wastes. The skin sweats to remove excess minerals. Lungs remove waste gases from cells. So do gills.

Quick Check

3. What would happen if blood did not pick up oxygen in the lungs?

Cells will not be able to get oxygen and they will die.

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How is food broken down?

Animals take in food for energy. Until that food is broken down, body cells cannot use that energy. The **digestive** (di·JES·tiv) **system** helps break down food.

In simple animals like sponges, cells along the body walls turn food into small particles. Other simple invertebrates have digestive systems with one opening. Food and wastes enter and exit through that opening.

Segmented worms have digestive systems with two openings. Food enters through the mouth. Wastes exit through the tail end.

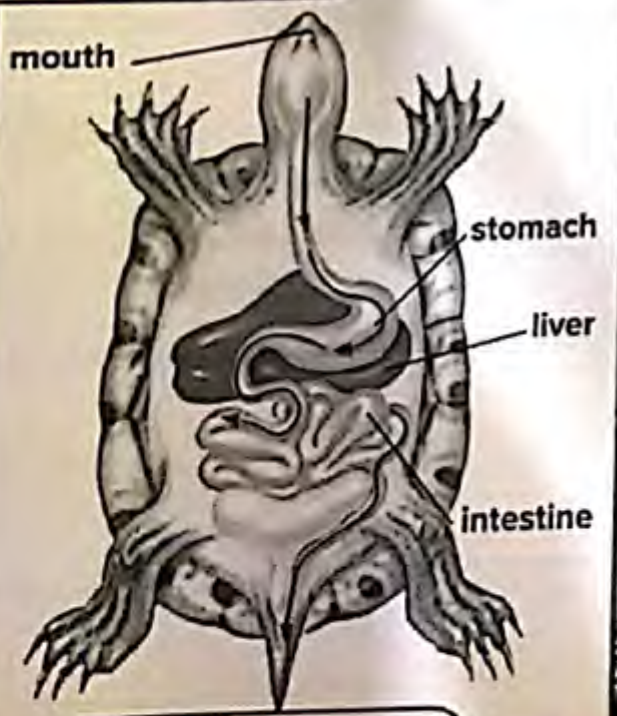
Reptiles and amphibians have a more complex digestive system. Study the diagram below. How many digestive organs are shown?

Mammals have a similar system. The stomach churns and mixes food. Digestive juices break it down. The food's nutrients travel to the small intestine. There they are absorbed by the blood and carried to cells. The food's wastes pass through the intestine and leave the body.

Quick Check

4. What will happen to an animal with a damaged digestive system?
   A. It will find another way to break down food.
   B. It will not absorb all the nutrients it needs.
   C. It will produce more waste.
   D. It will grow a new digestive system.

The Digestive System



Read a Diagram

What is the path of food in the turtle's digestive system?

mouth → stomach → intestine → removed as waste

removed as waste

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My Notes

* A system is a group of parts that work together.
* Skeletal and muscular system work together to allow the animal move, while nervous system carries the messages from the brain to other body systems and organs.
* Respiratory system brings oxygen to the blood and removes wastes, like gas from the blood.
* The heart, blood, and blood vessels make up the circulatory system. The job of the circulatory system is to move blood through the body.
* The job of the excretory system is to- ~~move~~ removes the wastes from the body. The liver, kidneys, bladder skin and lungs are excretory organs.
* The digestive system helps break down food.

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Visual Summary

Complete the lesson summary in your own words.

Nervous, Skeletal, and Muscular Systems work together to able the animal to move.

Circulatory and Respiratory Systems help the animal cells to survive

Digestive and Excretory Systems help the animal cells to get energy - Also. to get ride out of waste.

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Think, Talk, and Write

1. **Vocabulary** The Respiratory system takes in oxygen from air or water.

2. **Cause and Effect** How does the nervous system cause the muscular and skeletal systems to move your arm?

Cause		Effect
See your friend	→	Shake hand.
Touch hot surface	→	Lift-up your hand
Hearing loud voice	→	Cover your ears with your hands.

3. **Critical Thinking** You climb a flight of stairs and find that your heart starts beating faster and you take deeper breaths. Why does physical activity affect you this way?

To climb a flight stairs I need more power, so my cells need more oxygen, my heart beats faster to provide to my muscular cells more oxygen

4. **Test Prep** The stomach is part of which body system?
   - (A) digestive
   - C skeletal
   - B nervous
   - D circulatory

5. **Test Prep** The excretory system
   - A takes in oxygen.
   - B supports the muscular system.
   - C breaks down food.
   - (D) gets rid of wastes.

Essential Question How do systems help animals survive?

Animal systems work together to help the animals to move, get energy, removal of waste) survive.

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Be a Scientist

Materials

- craft sticks

- glue

- contact paper

- scissors

basin of water

Structured Inquiry

How do feet help birds move in water?

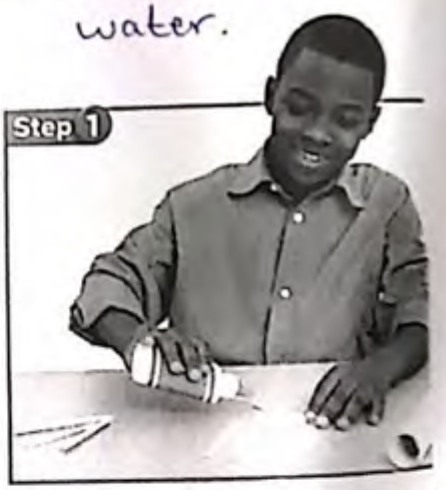
Form a Hypothesis

Birds travel in the air, on the land, and in the water. How does the shape of a bird's feet help it to swim? Write your answer in the form "If a bird has feet that are ... , then it will move better in the water."

If a bird has feet that are in a fan shape, then it will be move better in the water.

Test Your Hypothesis

1. **Make a Model** Spread out three craft sticks in a fan shape. Glue the sticks in place. This is the frame for your bird foot.
2. Follow step 1 to make a second bird foot.
3. Cover the top and bottom of the first bird foot with contact paper. Cut the paper to the correct size around the outside of the foot. Leave the second foot uncovered.



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4 **Observe** Drag each foot through a basin of water several times slowly. Observe the amount of water that gets pushed aside each time. Record your observations.

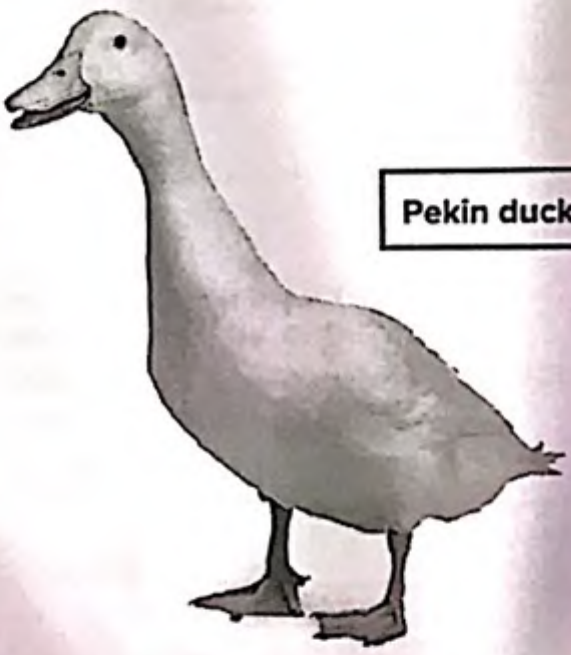
Draw Conclusions

5 **Interpret Data** Which foot moved more water? Which foot is better suited for swimming?

The second foot.

6 **Infer** What kind of feet do your models represent in real life?

Duck's feet.



Pekin duck

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Guided Inquiry

How do teeth help animals eat?

Form a Hypothesis

Many animals have front teeth that are shaped differently from their back teeth. How does the shape of their teeth help animals eat different foods? Write a hypothesis.

Front teeth are used for cutting and tearing while back teeth are used for Grinding food.

Test Your Hypothesis

Make a plan to test how different shapes of teeth are used for eating different kinds of foods. Choose foods that animals might eat, such as carrots, corn, meat, or seeds. Write the steps you will follow. Then conduct your experiment. Record your results and observations.

Carrot = eaten by Rabbit

Corn = eaten by Goat

Meat = eaten by Tiger

Seeds = eaten by Chicken

Draw Conclusions

What can you conclude about the different shapes of teeth? Which ones are better for eating which kinds of foods? Why?

- Rabbit has flat teeth better for eating Carrot
- Tiger has Sharp teeth betta for eating meat
- Chicken has a peack better for eating Seeds.

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Open Inquiry

What other questions do you have about animal structures? Design an investigation to answer one of your questions. Write the steps so that another group can do the experiment by following your procedure.

My question is:

Animal have different shapes of skeletal system, How does the shape of their skeleton help them on movement?

My investigation includes the following steps:

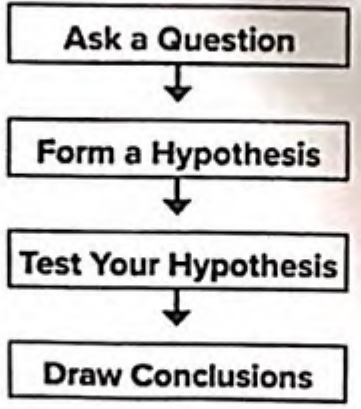
1- Ask the Question?

2- Form a Hypothesis.

3- Test the Hypothesis.

4- Draw the Conclusion.

Remember to follow the steps of the scientific process.



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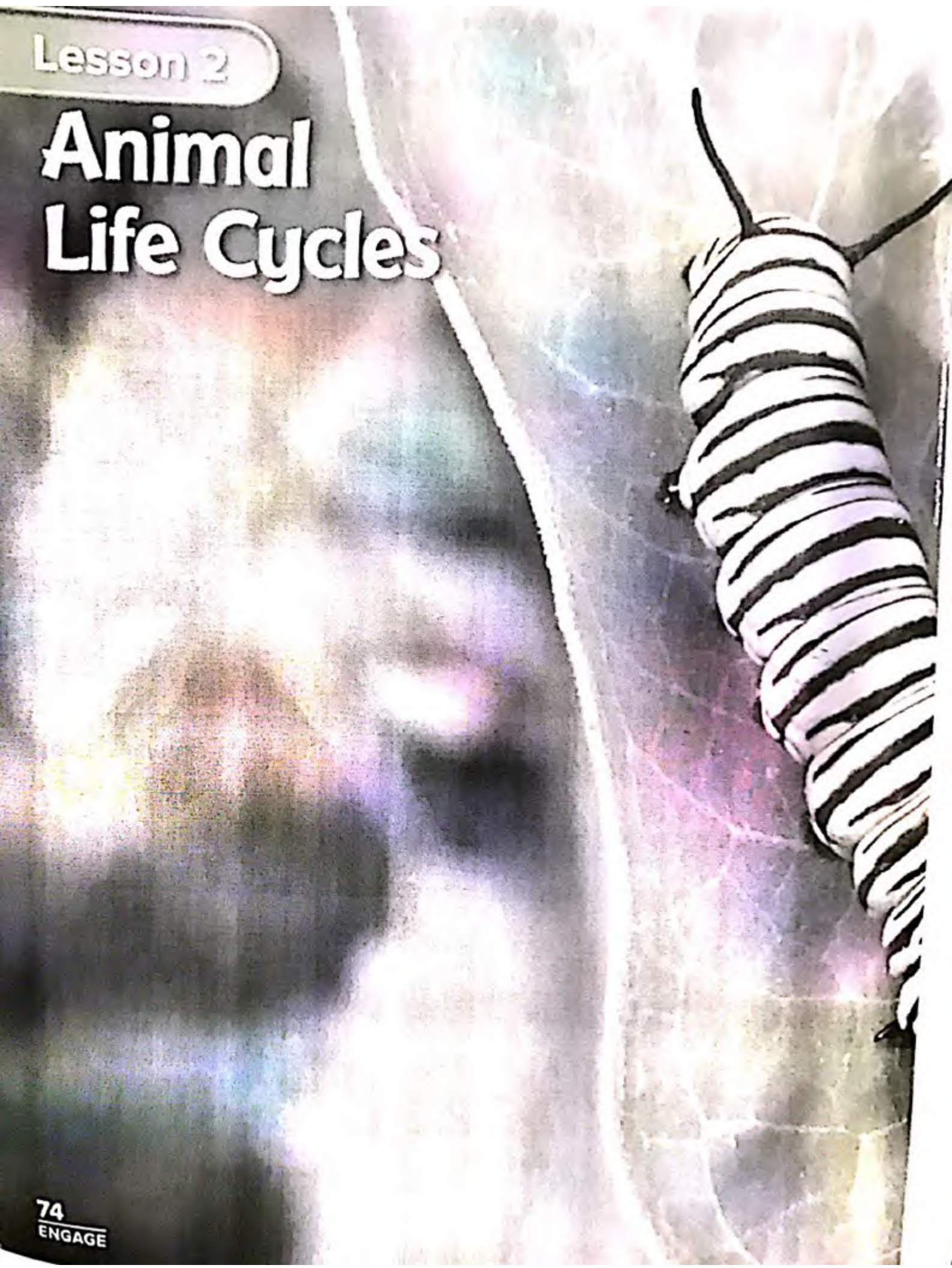
Lesson 2

Animal Life Cycles



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hen this caterpillar is ready, it will spin a cocoon. There will live for a short time. The next time it appears, it will ave wings! How does a caterpillar change to a butterfly?

Essential Question How do animals grow and reproduce?

Through life cycle. Animals go through many changes as they grow. These stages of growth and change make up their life cycle. They follow a pattern of birth, growth, reproduction and death.

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Life Spans

An organism's **life span** is how long it can usually live in the wild. A moth has a life span of about one week. The oldest recorded age for a human is 122 years! Scientists do not know why some animals have longer life spans than others.

A boa constrictor can li
as long as 20 years.

Quick Check

1. What are the main stages of an animal's life?

New born
↓
childhood
↓
Young
↓
old

The life span of a skunk is about three years.

adult penguin

Koi fish can live to be 100 years old!

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Complete Metamorphosis

Egg

① A female butterfly lays eggs on a leaf.

Larva

② A wormlike *larva* hatches from the egg. It begins to eat the leaf.

Pupa

③ The larva becomes a *pupa* (PYEW•puh) and develops adult tissues and organs.

Adult

④ The adult animal is a butterfly. It has six legs, two pairs of wings, and a pair of long antennae. Butterflies can reproduce.

Read a Photo

After which stage does a caterpillar become a butterfly?

After pupa

Complete Metamorphosis

Butterflies go through *complete metamorphosis*. Look at the sequence of photos. Each growth stage looks different. Beetles, flies, and mealworms also go through complete metamorphosis.

Quick Check

2. What are the stages in the complete metamorphosis of a butterfly?

Egg → Larva → pupa → butterfly

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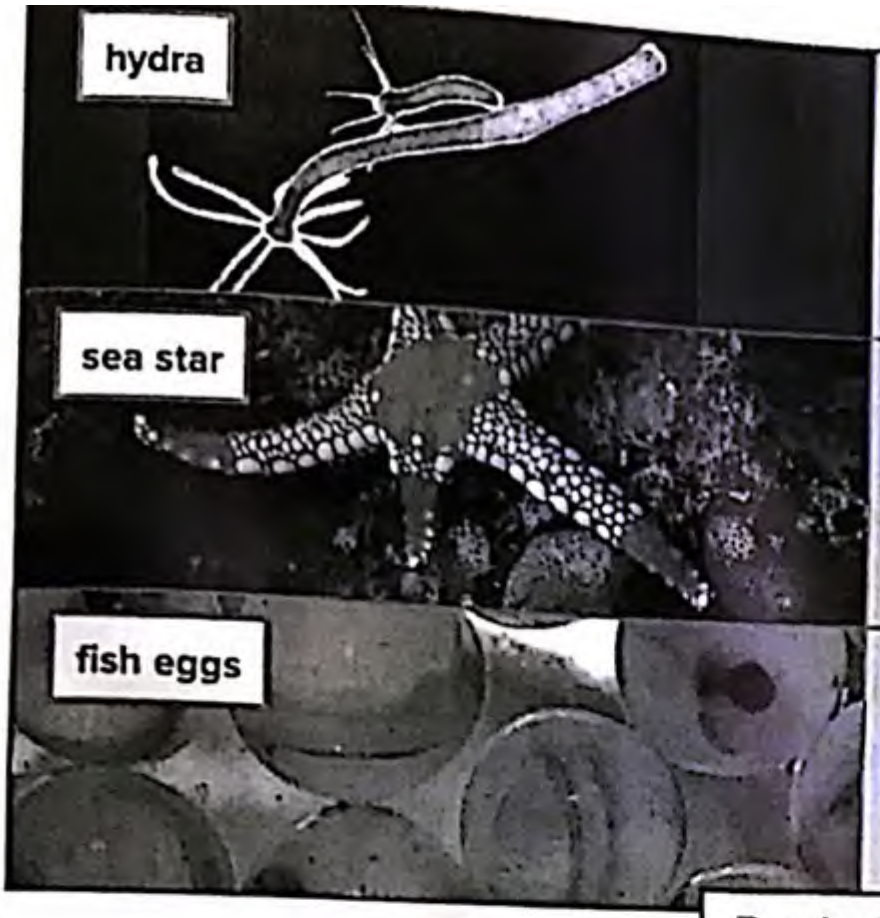

budding	1
regeneration	1
fertilization	2

Read a Table

Which animal reproduces with two parents?

Cows - Dogs - Human.

Two Parents

Another kind of reproduction requires cells from two parents. The female cell is called an *egg*. The male cell is a *sperm*. When an egg and a sperm join, offspring are produced. This joining is called *fertilization* (fur•tuh•luh•ZAY•shun).

As the fertilized egg grows, it is called an *embryo* (EM•bree•oh). An embryo has traits from both its parents. It is not identical to either parent.

Quick Check

3. Describe the steps that take place in the formation of an embryo.

egg and Sperm join

↓

off spring

↓

Fertilization

↓

embryo

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What is inherited?

Look at the cats in the photograph below. Some of their traits, such as color, are determined by heredity. But how are the cats acting, or *behaving*? Is behavior an inherited trait? Perhaps.

An **inherited behavior** is a set of actions that parents pass on to their offspring. The simplest kind is a reflex, like blinking. A less simple example is instinct. **Instinct** is a way of acting that an animal does not have to learn. Birds build nests, and spiders spin webs, by instinct.

Not all behaviors are inherited. Some are learned. Learning can happen when an animal interacts with its environment or with others. A **learned behavior** occurs when an animal changes its behavior through experience. Do you ride a bicycle? Bicycling is a learned behavior.

Quick Lab

To learn more about inherited traits, do the Quick Lab activity workbook.

Quick Check

4. Describe how you could teach a learned behavior.

Learn happen when animal interacts with it's environment and occurs when an animal change its behavior

5. What are other examples of learned behavior?

A Dog or a Cat playing with a ball.

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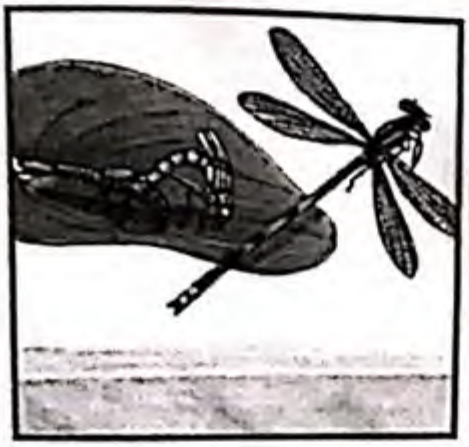
Visual Summary

Complete the lesson summary in your own words.

Life Cycle organisms goes through a lot of changes as it's grow. These change of growth represent the stages that mak up the organism's life cycle. Life cycle includes birth, growth, reproduction and death.



Metamorphosis is a process which has many separate growth stages. There are two kinds of metamorphosis. Incomplete and Complete. In the first kind the difference in growth stages is hard to see.

Reproduction and Inherited Traits Reproduction is when parents make offspring. Some organisms need one parent to reproduce by budding or regeneration. Inherited traits are traits that are passed from parent to offspring.

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Think, Talk, and Write

1 Vocabulary fertilization takes place when a sperm and an egg combine.

2 Sequence Describe what happens during the incomplete metamorphosis of a damselfly.

A female demselfly lays eggs on water plant.
A young demselfly hatches from an egg.
↓
The nymph leaves the water. It sheds its skin and grows small wings
↓
The nymph molts several times. Then it becomes an adult.

3 Critical Thinking Why are some behaviors, such as eating, inherited instead of learned?

Because these depend on the structure of the animal's mouth or beak type so the animal automatcly take the food by this way.

4 Test Prep Which animal's metamorphosis has a pupa stage?

A frog
B damselfly
(C) butterfly
D grasshopper

Essential Question How do animals grow and reproduce?

Through life cycle - Animals go through many changes they grow. These stages of growth and change make up their life cycle. They follow a pattern of birth, growth, reproduction and death.

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CHAPTER 3 Review

Visual Summary

Summarize each lesson in your own words.

Lesson 1 Animals have different organ systems. Some systems work together to perform the function such as skeletal and muscular system. Different animals can have different forms of one system. for example, some animals have digestive system with one opening, others have digestive system with two openings.

Lesson 2 Animals grow and reproduce through life cycle. They go via stages of growth and changes that make up their life cycle. They follow a pattern of birth, growth, reproduction and death.

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Vocabulary

Fill each blank with the best term from the list.

digestive system	metamorphosis
	nervous system
heredity	reptile

1. Food is broken down by the digestive system.
2. Butterflies go through a process of change called metamorphosis.
3. The brain and sense organs are part of an animal's nervous system.
4. Traits are passed from parent to offspring through heredity.
5. A(n) heredity is a behavior that an animal does not have to learn.

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Skills and Concepts

Answer each of the following.

6. **Main Idea and Details** What is the purpose of the circulatory system? Provide details to support your answer.

The job or purpose of the circulatory system is to move blood through the body. The blood carries oxygen, food, and water to the body's cell - It also removes the cells wastes

7. **True or False** *Damselflies go through complete metamorphosis.* Is this statement true or false? Explain.

False. The differences in growth stages is hard to see. As the insect grows and changes, it molts.

8. Which body system carries messages to the other body systems?

A excretory system
(B) nervous system
C respiratory system
D muscular system

The Big Idea

9. How are animals different from one another?

Animals can be different from one another according to their internal or external structure - For example, some animals have digestive system with one opening, while others have the same system but with two openings.

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Test Prep

Circle the best answer for each question.

1. The picture below shows a hydra reproducing.

The hydra's offspring will <u>most likely</u> have

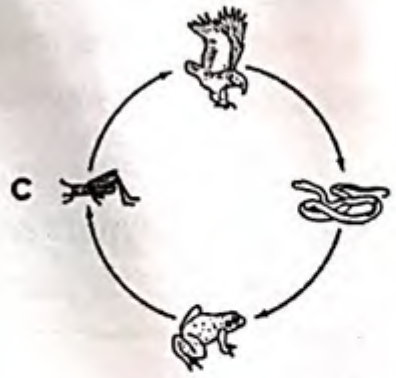
A none of the parent's traits.
B some of the parent's traits.
C half of the parent's traits.
(D) all of the parent's traits.

2. In animals, which system is responsible for communication within the body?

A respiratory system
B digestive system
C skeletal system
(D) nervous system

Answer the following questions.

3. Which shows complete metamorpho



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CHAPTER 4

Adaptations and Survival

The Big Idea

What happens to living things when their environments change?

They have to change their behaviors in order to survir in the new ecosystem They have to adapt

Vocabulary

adaptation a trait or behavior that helps a living thing survive in its environment

tropism the response of a plant to something in its environment

camouflage an adaptation in which an animal can hide by blending in with its surroundings

accommodation an individual organism's response to changes in its ecosystem

mimicry when one kind of living thing has similar traits to another

extinct when the last of a species dies

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Lesson 1

Change Over Time

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Look and Wonder

Animals such as these northern fur seals can look very similar, but they are rarely identical. What are some visible differences? What makes the animals different? Are there advantages to being different?

Essential Question How do organisms adapt to their environments?

organisms must change in order to survive
Traits help organisms meet their needs.
Certain kinds of traits are adaptations.

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Read and Respond

What is natural selection?

Changes have occurred on Earth over time. Climates have changed, forests have become deserts, and seas have dried up. These changes affect the organisms within these environments. Organisms must change, too, in order to survive.

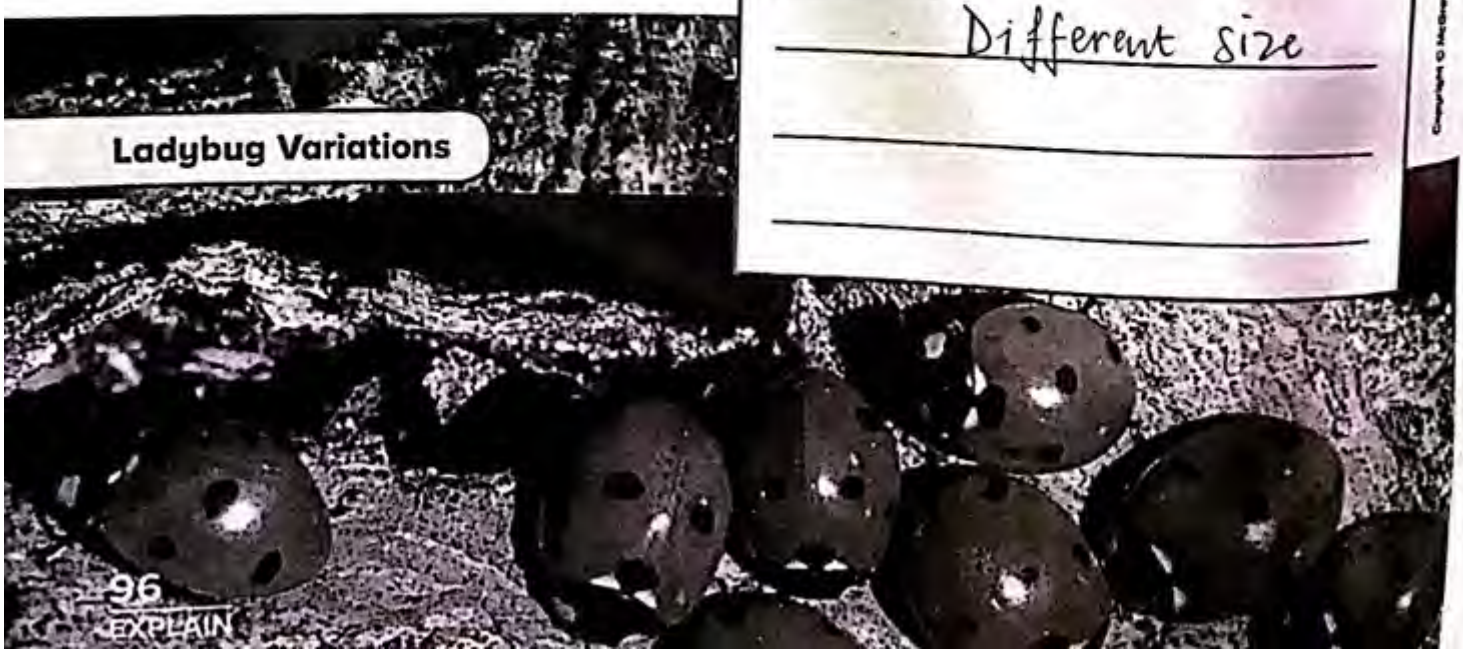
In the 1800s Charles Darwin developed a theory about how organisms change over time. Darwin noticed that within a population there is variation. Variations are differences among members of the same species. Darwin did not understand how variations occur. Scientists now know that variations result from changes in an organism's genetic material.

Darwin's theory is known as **natural selection**. According to the theory, an organism with favorable variations is well suited to its environment. It is more likely to survive and reproduce than other organisms. Its variations will then be passed on to the next generation. Over time, the offspring of individuals with favorable variations make up a large number of a population. Darwin's theory is sometimes called the "survival of the fittest."

Read a Photo

What variations exist in this ladybug population?

Different size



Ladybug Variations

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A horse is an example of an organism that has changed over time. Ancient horses walked on spread-out toes. This probably helped them move through swamps and mud. As the land dried, the horses changed as well. Over time, horses developed single, flat hooves. Those that had hooves were better suited to running on hard ground. These horses could run faster and better escape predators. The modern horse is the result of many small physical changes that occurred over many generations.

Throughout Earth's history, many organisms have become extinct. An **extinct** (ik•STINGT) **species** no longer exists. Species become extinct because they cannot adapt.

Quick Lab

To learn more about adaptation, do the Quick Lab in the back of the book.

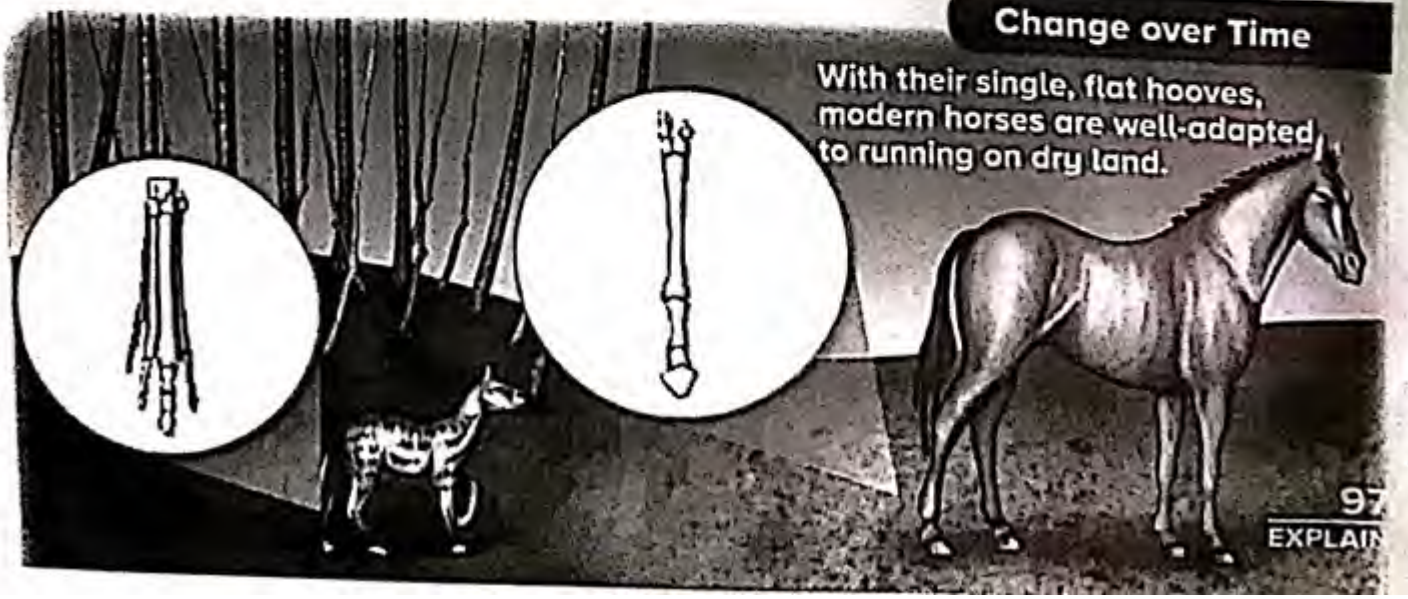
Quick Check

1. A few bacteria in a population are resistant to an antibiotic. Explain how this bacteria population might change over time.

When population used an specific type of antibiotic to fight bacteria by time this bacteria produce new generation that will not be affected by this type of antibiotics.

Change over Time

With their single, flat hooves, modern horses are well-adapted to running on dry land.



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Animal Adaptations

Read a Photo

Which fox is better adapted to live in a desert ecosystem? Why?

fennec fox is better adapted to live in the desert because it has large ears that give off heat and thin fur.

Desert Adaptations

You have learned that deserts are dry environments. Desert animals have adaptations that save water.

A sandgrouse is a desert bird with feathers that soak up water. This allows it to carry water to its young in the nest. A kangaroo rat is a mammal that never needs to drink. It gets water from food.

Many animals have adaptations for staying cool in hot deserts. The fennec fox has large ears that give off heat. Its fur is thinner than the fur of its relatives in cooler climates.

Camels have all kinds of adaptations for desert life. They can close their nostrils to keep out sand. They store fat in humps. The fat gives them energy when there is not much food available. Wide hooves help camels walk on sand.

The kangaroo rat gets water from the seeds it eats. ▶

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What are some other adaptations of animals?

Animals that live in hot climates need to stay cool. Animals in cool climates need to stay warm. You'll find different adaptations depending on the environment you are in.

Behaviors

Some adaptations are behaviors. Northern black bears avoid the cold by hibernating (HI•bur•nayt•ing). When an animal **hibernates**, it lives off its body fat and uses very little energy.

Some animals survive by leaving when the temperature changes. Many birds migrate (MI•grayt) from cooler to warmer places. To *migrate* is to change location periodically.

The dormouse hibernates in its nest.

Camouflage

Some animals blend in with their environment. This adaptation is called **camouflage** (KA•muh•flahj). It helps animals hide. The arctic fox and the arctic hare change color with the seasons. In winter their fur matches the white snow. In summer their fur turns brown and matches the soil.

Camouflage

Read a Photo

What adaptations help this snow leopard survive in its environment?

It has thick fur to keep it warm. Also, it ~~belt~~ blending in with its surrounding.

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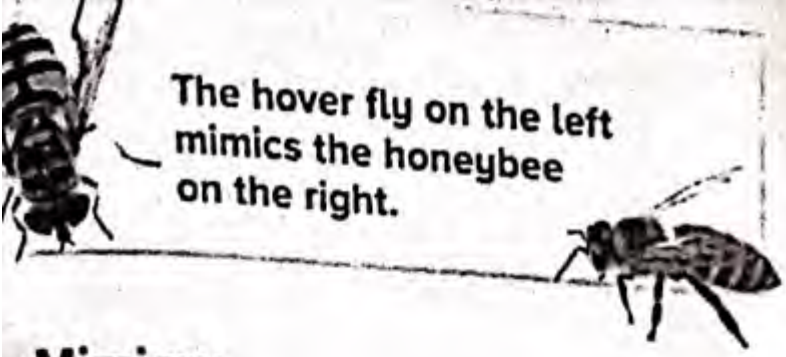

The hover fly on the left mimics the honeybee on the right.

Mimicry

Look closely at the two insects above. On the right is a honeybee. Honeybees defend themselves with stingers. The other insect looks like a honeybee, but it is a hoverfly (HUH•vur•fli). Hoverflies do not have stingers.

By looking like a honeybee, the hover fly avoids predators. A predator might eat a regular insect but not eat a bee. When one kind of living thing looks like another kind, it is called **mimicry** (MIH•mih•kree).

Body Structures

Animals often have body parts that are adaptations. Some snakes and lizards have poison glands in their jaws. Their bite can hurt or kill a predator. Hedgehogs are covered with hard spines. If a predator comes near, they curl into a ball. A predator would not want to eat a spiny ball!

A hedgehog rolls into a ball

Quick Lab

To learn more about mimicry, do the *Quick Lab* activity workbook.

Quick Check

2. Would you find an animal that hibernates in a tropical rain forest? Why or why not?

No, because when an animal hibernates, it lives off its body fat and uses very little energy and animals in a tropical rain forest need to use energy.

3. Why do you think most poisonous animals lack camouflage?

Because they don't need to hide from their predator. They can easily kill them by their poison.

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Visual Summary

Complete the lesson summary in your own words.

Changing Organisms Some organisms adapt through their behaviors. The dormouse life off their body and hibernate in its nest use very little energy

Adaptations Camels have many adaptations enable them to survive in the desert. They have humps that use to stores water and food when food is scarce.

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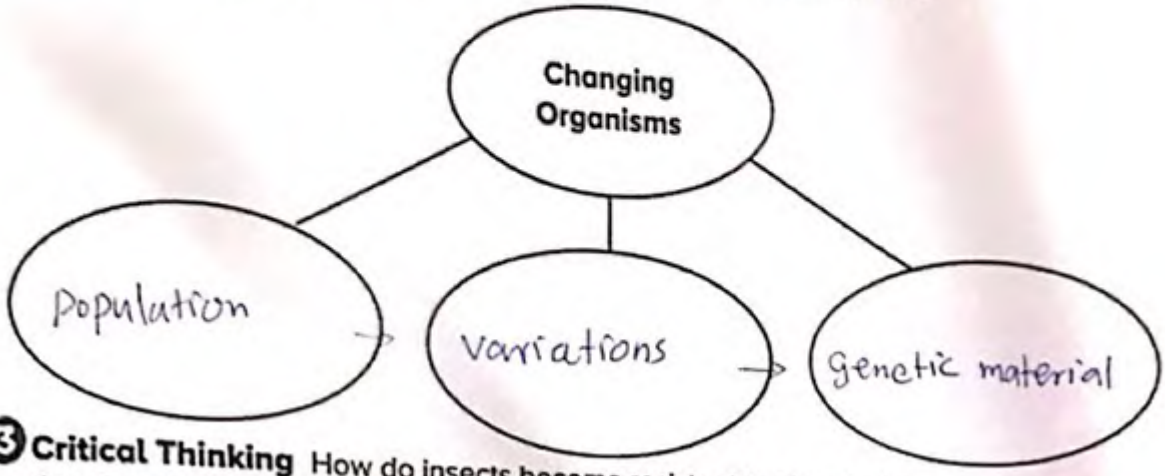
Think, Talk, and Write

1 Vocabulary An adaptation in which one living thing looks similar to another living thing is called mimicry

2 Main Idea and Details How do organisms change over time due to natural selection?



3 Critical Thinking How do insects become resistant to chemicals that farmers use to kill them?

4 Test Prep Which results from organisms changing over time?

A changes in the environment
B diversity of species
C inherited traits
D mutations

Essential Question How do organisms adapt to their environments?

Organisms must change in order to survive. Traits help organisms meet their needs. Certain traits are adaptations and other kind of adaptations are behaviors.

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Lesson 2

Animal Senses

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Look and Wonder

Squids and humans have very similar eyes. How do you think squids use their sense of sight to survive?

Essential Question How do senses help animals survive?

Animals use their senses to learn about the world around them. They depend on their senses to help them stay safe find food, find others of their own kinds, and move around.

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How do animals use their senses?

Animals use their senses to learn about the world around them. They depend on their senses to help them stay safe, find food, find others of their own kind, and move around.

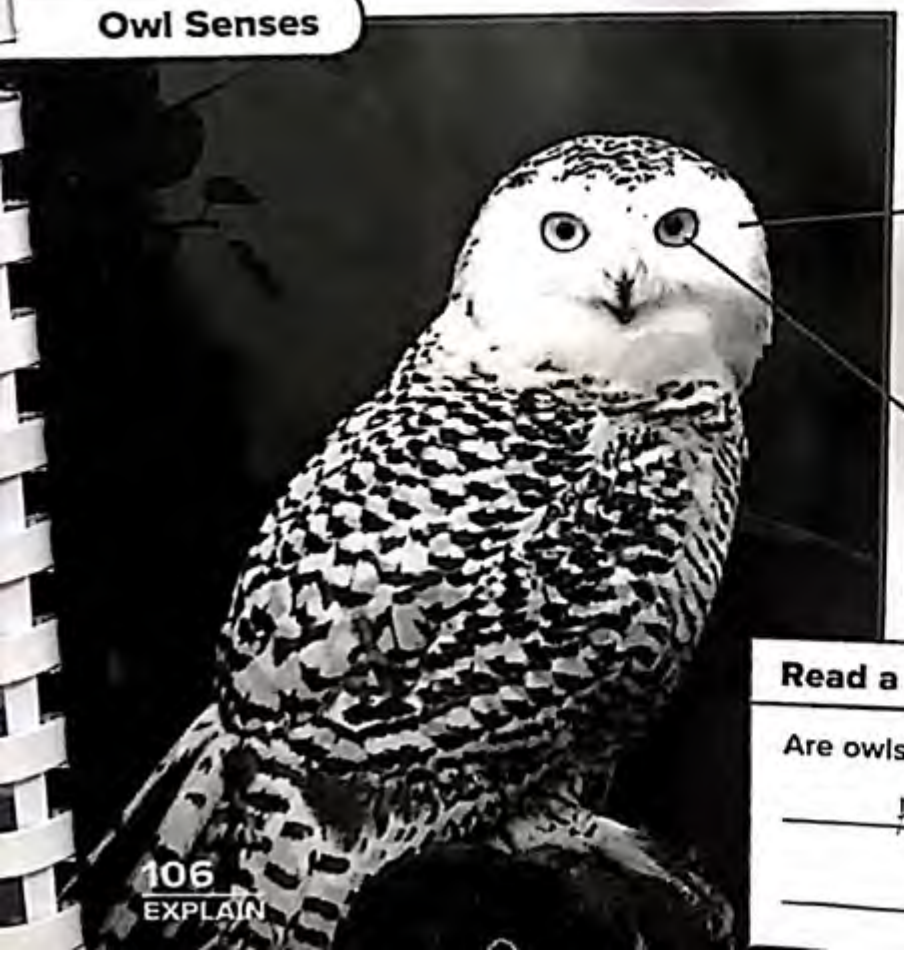
Sight

Seeing well is important to the survival of many. Animals must be able to see other animals. The eyes of many predators are at the front of their head. This helps them focus on their prey. The eyes of prey, such as rabbits, are on the sides of their heads, allowing them to watch for predators on both sides and behind.

Some have special structures in their eyes that help them see in the dark. These animals often have very large eyes. They are only able to see in black and white.

structure

Owl Senses



Owls use their excellent hearing to help them hunt. One of their ears is higher than the other. This helps them tell where a sound is coming from and how far away it is.

Owls have large eyes that help them see prey in the dark. Their eyes are in the front of their head.

Read a Photo

Are owls predators or prey?

Predators.

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Quick Check

1. How does the ability to sense heat help a rattlesnake hunt?

This rattlesnake can "see" the heat given off by its prey. It creates a "thermal image" in its brain that may look like this.

2. Why would the ability to sense electricity be less helpful for land animals?

Because there are some underwater's animals give off small amount of electricity and the water itself can be good conducter of electricity not like land.

My Notes

* Animals use their senses to survive. They use five basic senses.
* Seeing helps animals to see other animals, to find food, to stay safe.
* Hearing helps animals to stay safe from predators and tells some animals where the food is located.
* Smell helps animals to stay away from danger, find food and good places.
* Taste helps animals to taste food and tells some butterflies whether a plant is a good place to lay eggs.
* Touch helps to protect animals. It warns them when predators are near.
* Some animals have senses that human do not have - for example heat sense and electricity sense.

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Visual Summary

Complete the lesson summary in your own words.

Animal Senses Owls have good hearing as they are predators. This helps them hunt Also, They have large eyes help them to see their prey in the dark. They have front eyes.

The Five Basic Senses Animals use their senses to survive. They have five senses: Seeing "to see their prey", hearing "to stay safe", Smell "to help them to find food and good places to lay eggs", Taste "to teste food" and Touch "to tell them when predators are near.

Special Animal Senses There are animals that have special senses. underwater's animals can sense electricity. Some animals can sense heat of other animal and catch their prey. For instance, snakes.

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Think, Talk, and Write

1 Vocabulary Bats use Sight to locate prey in the dark.

2 Cause and Effect How do animals use their senses to stay safe from predators?

Cause	→	Effect
Touch	→	Tell them when predators are near.
Hearing	→	Animals stay safe from predators
Sight	→	The eyes at prey allowing them to watch for predators on both side and behind.

3 Critical Thinking How does a good sense of smell help animals, such as wolves and grizzly bears, survive?

Sense of smell helps animals find food so wolves and grizzly use their smell sense to find prey.

4 Test Prep Animals use their senses to help with

(A) finding food.
B building homes.
C growth.
D using energy.

Essential Question How do senses help animals survive?

Animals use their senses to learn about the world around them. They depend on their senses to stay safe, find food, find other animals, move around and find good places to survive.

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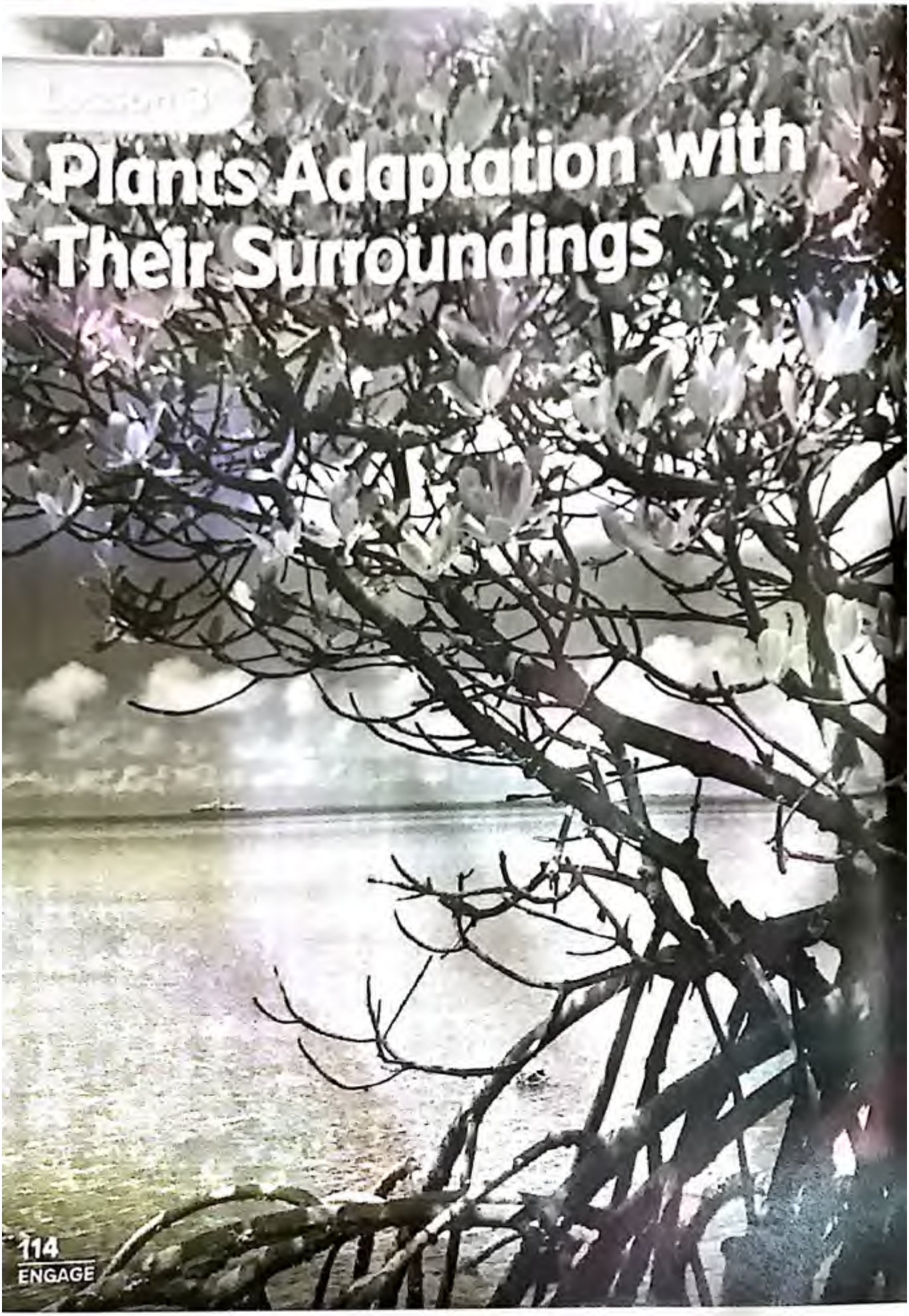
Plants Adaptation with Their Surroundings



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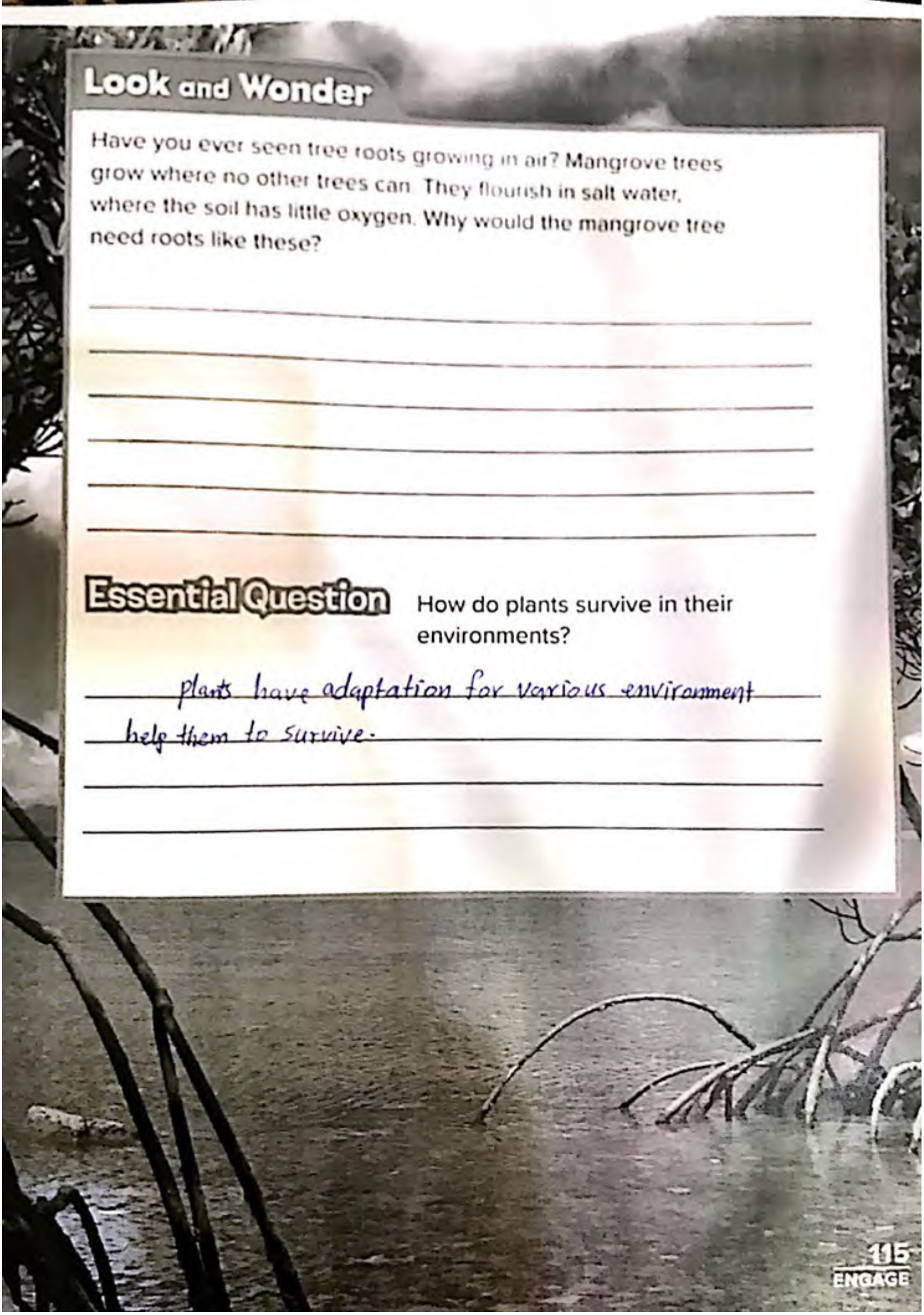

Look and Wonder

Have you ever seen tree roots growing in air? Mangrove trees grow where no other trees can. They flourish in salt water, where the soil has little oxygen. Why would the mangrove tree need roots like these?

Essential Question How do plants survive in their environments?

plants have adaptation for various environment help them to survive.

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Read and Respond

How do plants respond to their environments?

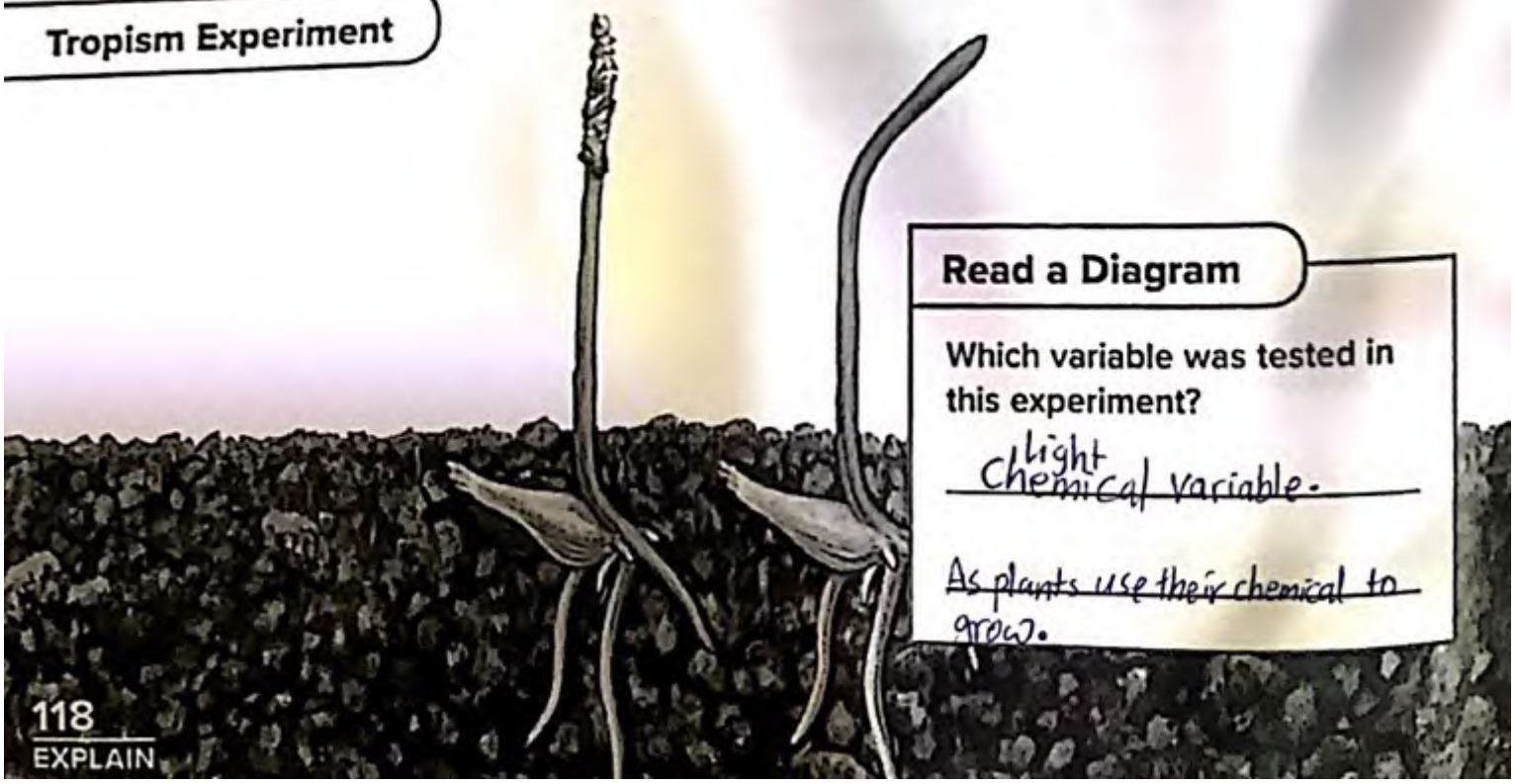
Plants cannot move around the way most animals can. Yet plants can react to changes in their environment. A **stimulus** (STIM•yuh•lus) is something in an environment that causes a living thing to respond.

Stimulus and Response

How does a plant react, or *respond*, to a stimulus? It changes its direction or pattern of growth. Light, water, and gravity can each be a plant stimulus.

Plants respond to light by growing toward the source of the light. Plants respond to water by growing their roots toward the water's source. The roots of most plants grow downward—the same direction as the pull of gravity. The stems of most plants grow upward, away from gravity.

Tropism Experiment



Read a Diagram

Which variable was tested in this experiment?

light
Chemical variable.

As plants use their chemical to grow.

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Tropism

A **tropism** (TROH•pih•zum) is the response of a plant to something in its environment. The responses of plants to light, water, and gravity are tropisms. Plants also show tropisms to chemicals and heat.

What causes a tropism? The British scientist Charles Darwin did an experiment to find out. He took two growing plant shoots. He covered the tip of one shoot with a cap made of tinfoil. He let the other shoot grow normally.

The results were clear. The shoot covered in foil did not bend toward the light. Darwin concluded that there was something in the tip that caused the shoot to bend. Later experiments showed that this "something" was a chemical that all plants have. Plants use this chemical to grow.

Quick Lab

To learn more about plants and sunlight, do the Quick Lab activity workbook.

Quick Check

1. How could you test a plant's response to a chemical such as vinegar?

We Can Cover the tip of its Shoot with a cap made of tinfoil. If the plant ~~didn~~ doesn't bend toward the light that means it doesn't grow and respone to a chemical.

2. Some people think that plants respond to music. How could you test this hypothesis?

we Can keep two plants in different place. Then play music in one place. After that we Can observe in and differences between the two plants. If the answer is yes that is means plants respond to music.

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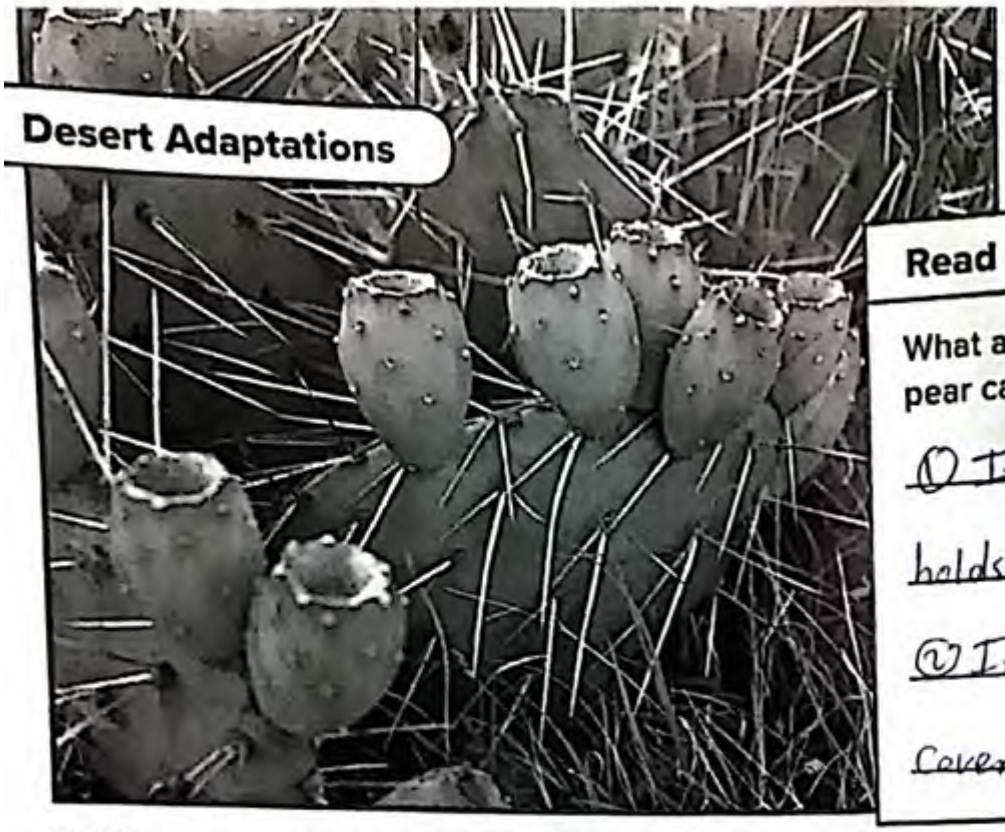

Desert Adaptations

Read a Photo

What adaptations help the prickly pear cactus live in the desert?

① It has soft tissue that holds water.

② It also has a thick, waxy cover to keep the water inside.

What are some plant adaptations?

Like animals, plants have adaptations for various environments. Just as camels and other desert animals need to conserve water, so do desert plants. A cactus is a good example. It has soft tissue that holds water just like a sponge. It also has a thick, waxy cover to keep the water inside.

Plants in temperate forests have different adaptations. Cold winter air can damage leaves. There is less liquid water in the environment during winter. Most trees here lose their leaves in winter. This protects them from drying out. Without leaves, a tree cannot make food. Instead, the tree uses stored food. In spring the tree grows new leaves and begins storing food for the next winter.

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Quick Check

3. How is it possible for plants to live in many different environments?

plants can have adaptaions for various environment. For instance, forests plants lose their leaves in winter to survive as cold winter air can damage leaves.

The bright red color of the Peruvian lily is an adaptation that attracts pollinators.

Read a Photo

What adaptation helps lily flowers reproduce?

The bright red color of the peruvian is their adaptation that attracts pollinators such as insects.

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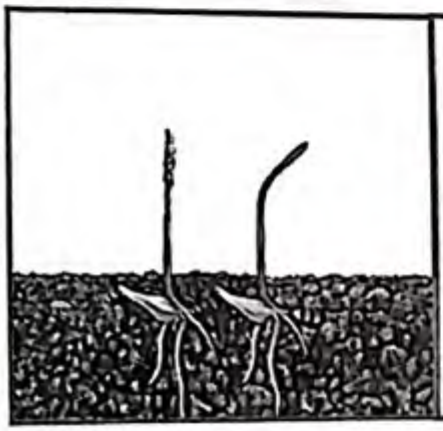
Visual Summary

Complete the lesson summary in your own words.

Stimuli is something in an environment that causes a living thing to respond or react. For example, some animals change their color to the environment's color to protect theirself from enimes.



Tropisms When a plant response to any variable in its environment. For instance, in the picture one plant grow and respose to the light, while the orther plant doesn't response to the light. It is not use its chemical to grow.

Plant Adaptations Plants have different adaptation in order to survive in various environment. A cactus is a good exumple. It has soft tissue that holds water. It also has a thick, waxy cover to keep the water inside.

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Think, Talk, and Write

1 Vocabulary What is a stimulus?

A stimulus is something in an environment that causes a living thing to respond.

2 Problem and Solution How could you show that plants respond to changing temperatures?

Cold winter air (can damage leaves of some plants).

↓

Less liquid water in the environment during winter

↓

Plants in temperate forests lose their leaves in winter and growing them again in spring.

3 Critical Thinking How are the adaptations of a desert plant different from those of a rain forest plant?

A desert plant has soft tissue that holds water and waxy cover to keep the water inside, while a rain forest plant lose their leaves in winter.

4 Test Prep Which word describes a plant's response to its environment?

A tropical
B tropism
C gravity
D stimulus

Essential Question How do plants survive in their environments?

Plants have adaptation for various environment help them to survive.

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Solve It

1. Which diagram shows an acute angle? Which shows an obtuse angle?

* Diagram one shows an obtuse angle.

* Diagram two shows an acute angle.

Classifying Angles

- A right angle has a square corner where the lines meet.
- An obtuse angle has a wider opening than a right angle.
- An acute angle has a smaller opening than a right angle.

2. Are there any right angles shown in the diagrams? How do you know?

No, ther is no right angles show in the two diagram.

A right angle has a square corner where the lines meet. In the two diagram there is no right angle form.

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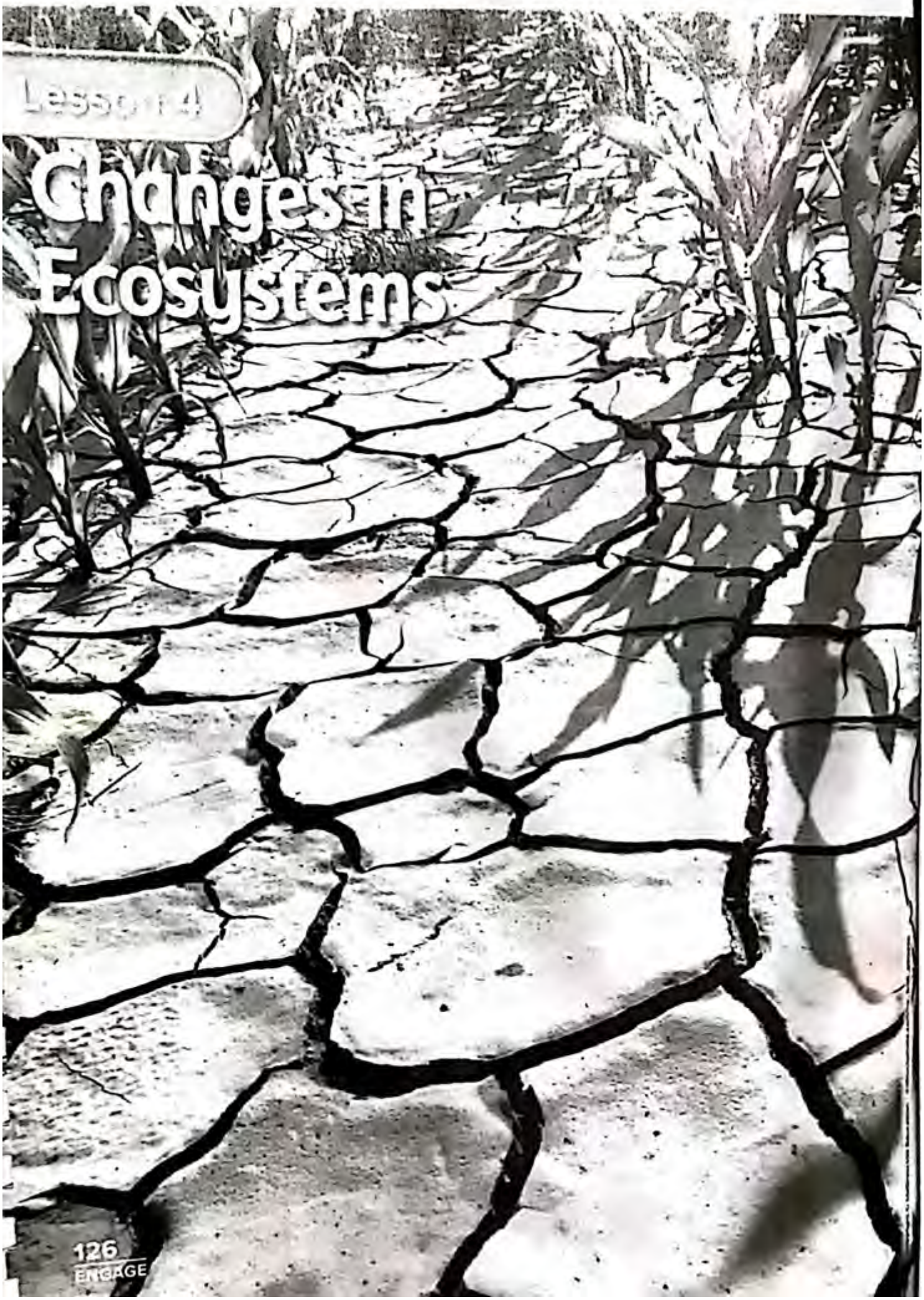
Lesson 4

Changes in Ecosystems



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Look and Wonder

These seedlings are growing in dry, cracked mud. Was the soil always this dry?

Essential Question How can changes in an environment affect the organisms that live there?

Changes in an evironment can change the behaviors and habits of some living things. For example, some animals like deer, can change their diet. Some organisms cannot accomdate ecosystem change so they must find new places to live or will die.

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What causes an ecosystem to change?

It may be hard to notice, but ecosystems are always changing. Some changes make it difficult for living things to survive.

Natural Events

In most ecosystems, change is part of a natural pattern. Volcanoes can fill a valley with ash. Hurricanes can destroy coastal wetlands. A lot of rain can cause landslides, turning hills into rivers of mud. Too little rain can cause a *drought* (DROWT). During droughts, the soil can dry up.

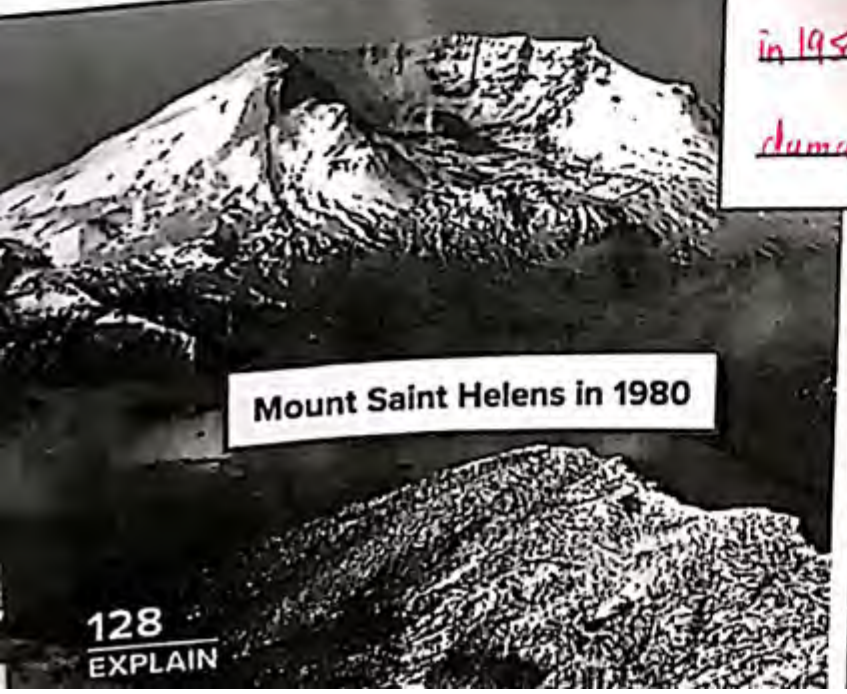
It can take a long time for an ecosystem to recover from such changes. Mount Saint Helens is a volcano in North America. In 1980, it erupted. Ash and lava killed nearby plants. The ecosystem needed many years to recover.

Read a Photo

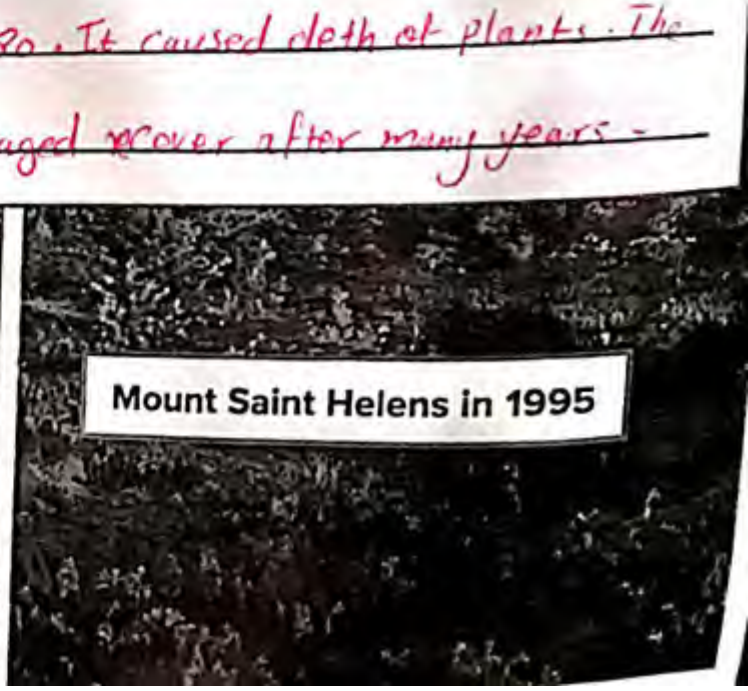
How do the two photos show a cause and effect?

In 1980 the natural event (volcano) makes great change and damage in the ecosystem.
Mount Saint Helens was a volcano erupted in 1980. It caused deth of plants. The damaged recover after many years.

Natural Change in Ecosystems



Mount Saint Helens in 1980



Mount Saint Helens in 1995

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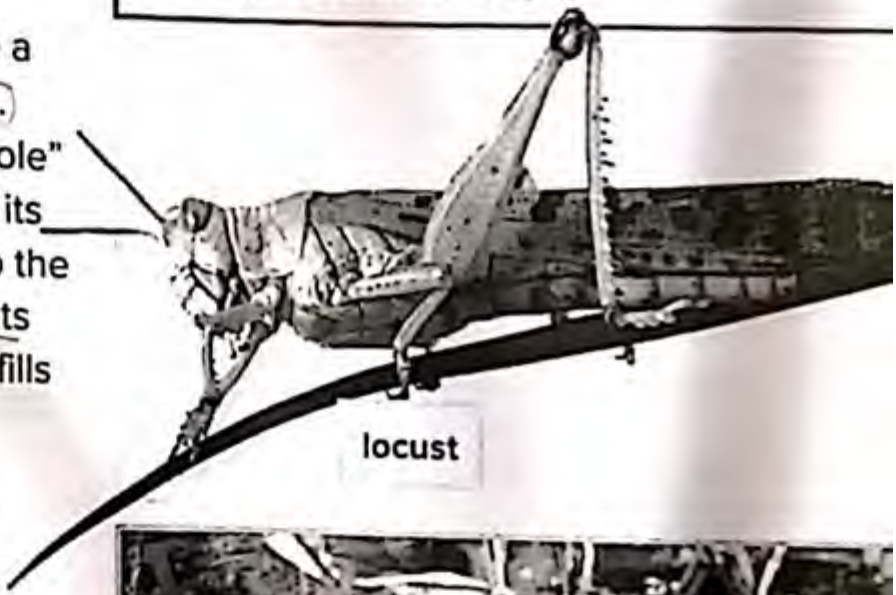
Living Things

Ecosystems can be changed by living things, such as locusts. A locust is a kind of grasshopper. In small numbers, locusts pose little danger. But in some places, giant swarms of locusts can gather in search of food. A swarm can have 50 million locusts in it! The locusts eat any plants along their path. They can leave a whole community without food.

In large numbers, locusts can cause a lot of damage to farmers' crops.

Some living things can have a helpful effect on an ecosystem. Have you ever seen a "gator hole" in a wetland? An alligator uses its feet, tail, and snout to churn up the muddy water. These movements create a hole. Slowly, the hole fills with water.



locust

Gator holes help alligators survive during droughts. The effect does not stop there. Birds and other animals move to gator holes when their own habitats get too dry. There they find food, water, and shelter.

Quick Check

1. What might happen to a wetland that is hit by a hurricane?

It might completely damage.

alligator

Gator holes help many animals survive periods of drought.

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How do people change ecosystems?

Like other living things, people change their surroundings. Some changes are helpful. Other changes can harm an ecosystem.

Deforestation

Often trees are removed to build houses and other buildings. When people cut down forests, it is called *deforestation*. This destroys many forest habitats. Living things lose their homes and sources of food.

Overpopulation

People need places to live and work. The more people there are, the more they use and consume. Water and space become harder to find. When too many individuals live in an area, it is called *overpopulation*. This can happen with any species, not just humans.

Quick Lab

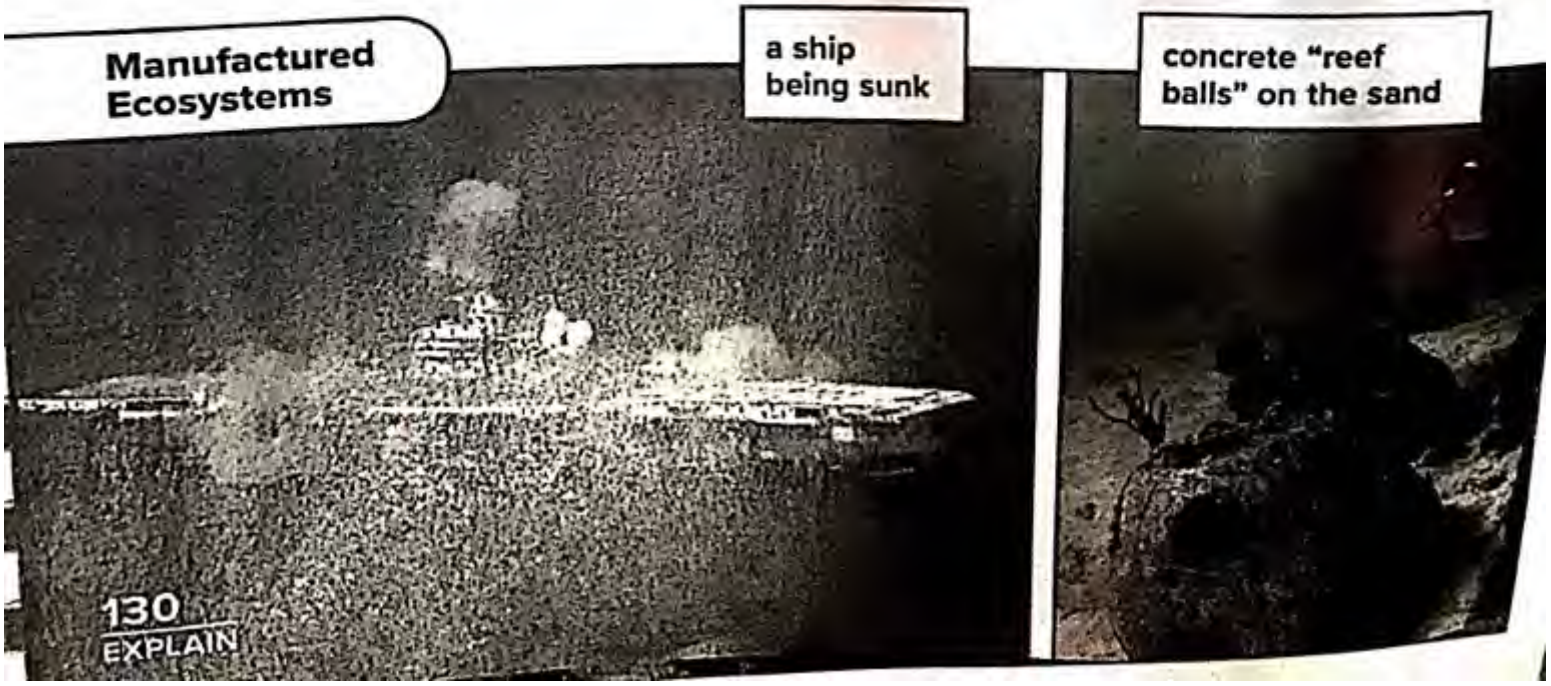
To learn more about plants and soil, do the Quick Lab activity workbook.

Quick Check

2. What happens to populations of plants and animals when a forest is cleared?

They lose their place where they live as well as they lose the sources of food mainly animals.

Manufactured Ecosystems



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Pollution

Cars, trucks, and power plants give off gases. These gases can harm the air we breathe. Adding harmful things to the air, water, or land is **pollution**. Litter is a form of pollution too. Pollution can kill plants and animals in an ecosystem.

Protection

People may cause problems to ecosystems, but they can also be helpful. People are driving less and using hybrid cars. They treat wastes to remove harmful substances.

You can help too. You can plant new trees. You can recycle paper, glass, and plastic. You can turn off the water when brushing your teeth. Can you think of other ways to help ecosystems?

The green liquid flowing out of this pipe is pollution

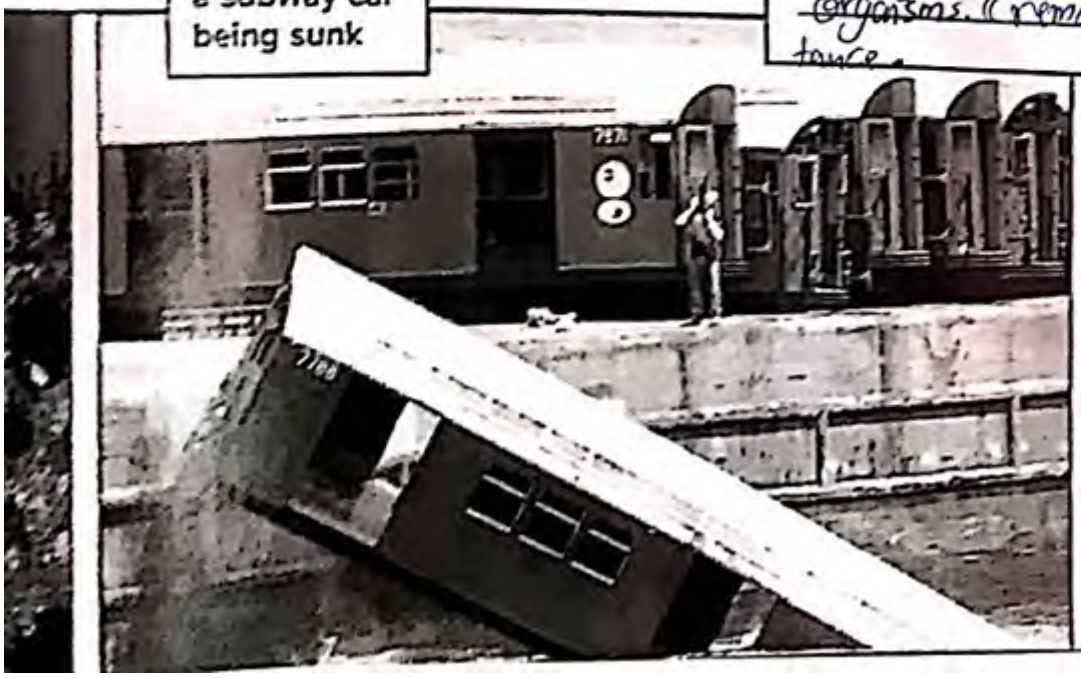
Read a Photo

In what ways do people help rebuild underwater ecosystems?

① They can prevent water pollution.

② They can treate water to be better for underwater organisms. (remove harmful substance.

a subway car being sunk



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The passenger pigeon was hunted into extinction in 1914.

The Tasmanian tiger was declared extinct in 1936.

Extinction

Some living things cannot accommodate an ecosystem change. If an organism does not meet its needs after a change, it will die. Sometimes an entire species can slowly disappear.

A living thing that has few of its kind left is **endangered** (in•DAYN•jurd). Some endangered plants and animals can become extinct. Recall that a species is extinct when the last of its kind dies.

Seed ferns became extinct millions of years ago.

Quick Check

3. What happens to the plants and animals in an ecosystem after a fire?

Trees burn but young trees and smaller shrubs replace them. Some animals like deer change their diet - others will use new plant as shelter -

T. rex fossils date back to about 65 million years ago.

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Quick Check

4. Why do living things become extinct? What happens when they do?

Because they can't accomodate an ecosystem change. So they will die. Sometimes an entire species can slowly disapper.

My Notes

*There some natural events such as Volcanoes, Hurricanes and alot of rain cause the change in the ecosystem. Sometimes ecosystems can be changed by living things themself.

* people also can change ecosystems such as removing trees and causing deforestation

* overpopulation is when too many individuals live in an aera.

* pollution is adding humful things to the air, water or land.

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LESSON 4
Lesson Review

Visual Summary

Complete the lesson summary in your own words.

Causes of Change In large numbers, locusts can cause alot of damage to farmers' crops. They gather in search of food so they eat any plants along their path. They can leave the whole community without food

Changes by Humans people can affect ecosystems postively or negatively. When people harmful things to the environment they make pollution. When people treate wastes, they remove harmful substances and affect the ecosystem positively.

What People Can Do They can plant new trees as the habitats of animals destroyed and lose their homes and sources of food. "Animals are endangered".

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Think, Talk, and Write

1 Vocabulary When a species no longer exists, it is extinct

2 Cause and Effect What happens when a forest is cut down to build a power plant?

Cause	→	Effect
To build new houses	→	organisms loss their habitat
To build other building "power plant"	→	ecosystem's damage
To use wood for different purpose	→	cut trees

3 Critical Thinking Today, people ship goods around the world. Sometimes they move plants and animals by accident. How can such accidents cause changes in an ecosystem?

Such accidents can destroy the whole underground ecosystem.

4 Test Prep Which of these are natural events that change ecosystems?

A flood, pollution, deforestation
B earthquake, overpopulation, fire
C hurricane, flood, landslide
D farming, recycling, overpopulation

Essential Question How can changes in an environment affect the organisms that live there?

Some living things change their behaviors and habits - organisms that can't accommodate an ecosystem change it will die or slowly disappear.

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CHAPTER 4 Review

Visual Summary

Summarize each lesson in your own words.

Lesson 2 ~~organisms must change in order to~~ survive. Traits help them meet their needs. ~~Certain kinds of traits are adaptations.~~

Lesson 3 Animals use their senses to learn about the world around them. They depend on their senses to ~~help~~ stay safe, find food, find others and move aroun

Lesson 4 ~~ecosystem~~ can change due to natural events like volcanoes or people practices such as ~~defor~~estation. organisms need to accomodate the new ecosystem or will die.

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Vocabulary

Fill each blank with the best term from the list.

camouflage	echolation
extinct	hibernate
stimulus	variations
tropism	

1. The process of finding an object by using echos is echolation.
2. When all the individuals of a species have died, the species is extinct.
3. To survive cold winters, some animals hibernate.
4. An animal that blends in with its surroundings uses Camouflage.
5. Something in the environment that causes an organism to respond is called a(n) Stimulus.
6. Differences among members of the same species are called variation.
7. The response of a plant to light, water, or gravity is a(n) Tropism.

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CHAPTER 4 Review

Skills and Concepts

Answer each of the following in complete sentences.

8. **Predict** Your class plants tulip bulbs inside and outside a greenhouse. Will all the tulips bloom at the same time? Explain why or why not.

No, not all tulips bloom at the same time Because the response of the tulips to the environment's variables will be differ

9. **Form a Hypothesis** Species can become endangered when their habitats change. Choose an animal species to research. Form a hypothesis about what might happen to the ecosystem if the species became extinct.

natural change(event) of weather in a certain desert. ecosystem certain kind of foxes will be endangered due the change of weather foxes couldn't adapt the change so they become extinct.

10. **Critical Thinking** Suppose scientists discovered a new species of animal living in the desert. What adaptations might the animal have?

Animal like fox in the desert have large ears that give off heat to adate the hot in the desert as well as thin fur.

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11. **Descriptive Writing** Describe three ways in which people change ecosystems.

people can chang ecosystem positively as well as negatively. on one hand, peop has postive effect or change. firstly, they can driving less and using hybrid cars. Also, can ~~create~~ waste to remove harmful substance. on the other hand, people can change the ecosystem negatively. They add harmfull things to the environment and cause differente typs of pollution.

The Big Idea

12. What happens to living things when their environments change?

Some living things change their behaviors and habits. Some must find new places to live, to get water and food. ether animals or not all animals can accommodate ecosystem change. If so they donn't meet their needs after the change so they will ~~dei~~ die or slowly disappear.

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Test Prep

Circle the best answer for each question.

1. In a northern region, the population of a type of goose varies in the course of a year. What most likely explains this variation?

   A extinction
   B hibernation
   C accommodation
   D migration

2. Porcupines have long sharp hairs called quills. What is the main function of the quills on the porcupine?

   A to find shelter
   B to stay cool
   C to find food
   D to protect itself

3. Which of the following is an example of camouflage?

   A A desert fox has large ears.
   B A bird's color matches its surroundings.
   C A camel closes its nostrils to keep out sand.
   D A chipmunk sleeps for most of the winter.

4. A squirrel is born with white fur instead of the normal gray fur color. How would environmental conditions have to change to increase this squirrel's chance of survival?

   A A city dump is built nearby.
   B Volcanic ash covers the forests.
   C The climate gets cold enough to snow.
   D An earthquake causes a landslide.

5. An environment suddenly becomes colder. Which adaptation would most likely give some animals a better chance of survival than others?

   A long tails
   B long ears
   C small eyes
   D thick fur coats

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6. Which human activity most likely has a negative impact on the environment?

A recycling notebook paper
B conserving resources
C releasing waste into a river
D creating compost piles

7. The data table below shows the population of four different species of snails.

Snail Population Sizes			
	Year 1995	Year 2005	Year 2015
Species 1	2,000	2,500	2,300
Species 2	2,000	300	1,200
Species 3	2,000	2,700	3,400
Species 4	2,000	700	100

Which species will most likely go extinct?

A Species 1
B Species 2
C Species 3
D Species 4

8. A law is passed to protect endangered species. What is the law expected to do?

A make organisms extinct
B make organisms endangered
C allow more pollution
D prevent organisms from becoming extinct

Answer the following questions.

A student made this table for her science class.

?	
monarch butterfly	migration
Northern black bear	hibernation
A honeybee	mimicry
cactus	B Save water

9. What would be a good heading for her table?

Adaptation

10. Complete A and B in the table above.

11. If there were another row, what two items could you place in the table? Explain.

arctic hare — Camouflage - It blend in with their environment to hide from predators.

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CHAPTER 5

The Health of Living Things

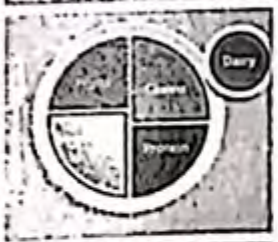
The Big Idea

How does nutrition and exercise affect our health?

Nutrition and exercise are very important to our health. They affect it posetively as nutrition provide our body with all needs to grow better and protect us from illness, while exercise strength our body and muscles and help us to be healthy and active.

Vocabulary

nutrient substance in foods that your body needs for growth, repair, and for energy



balanced diet meals and snacks that provide the proper amounts of foods from each food group daily

carbohydrate a nutrient your body uses as a main source of energy

protein a nutrient needed for growth and repair of body tissues

hygiene the practice of keeping clean

physical fitness the heart, lungs, muscles, and other body parts are all working at their best

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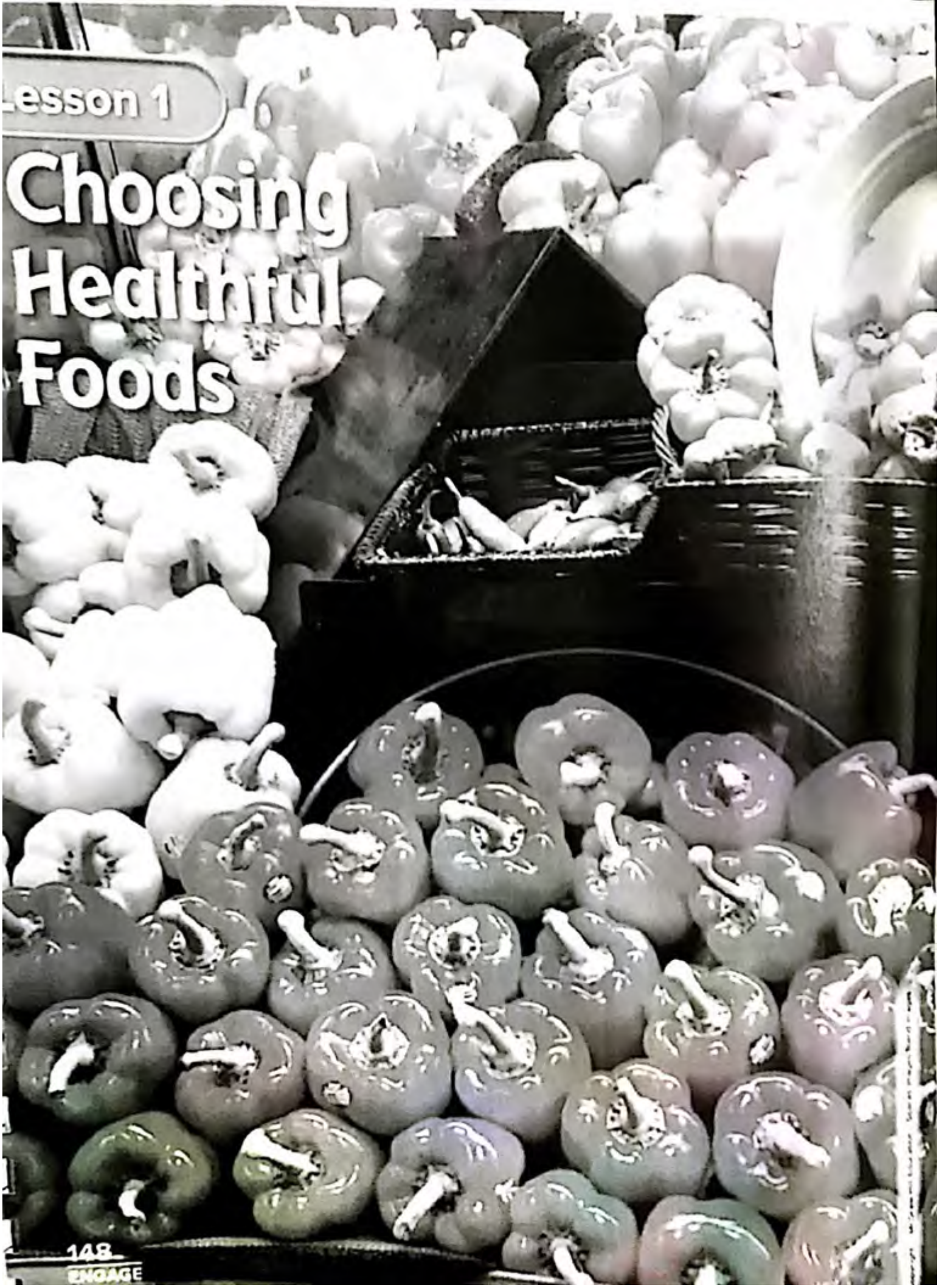

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Look and Wonder

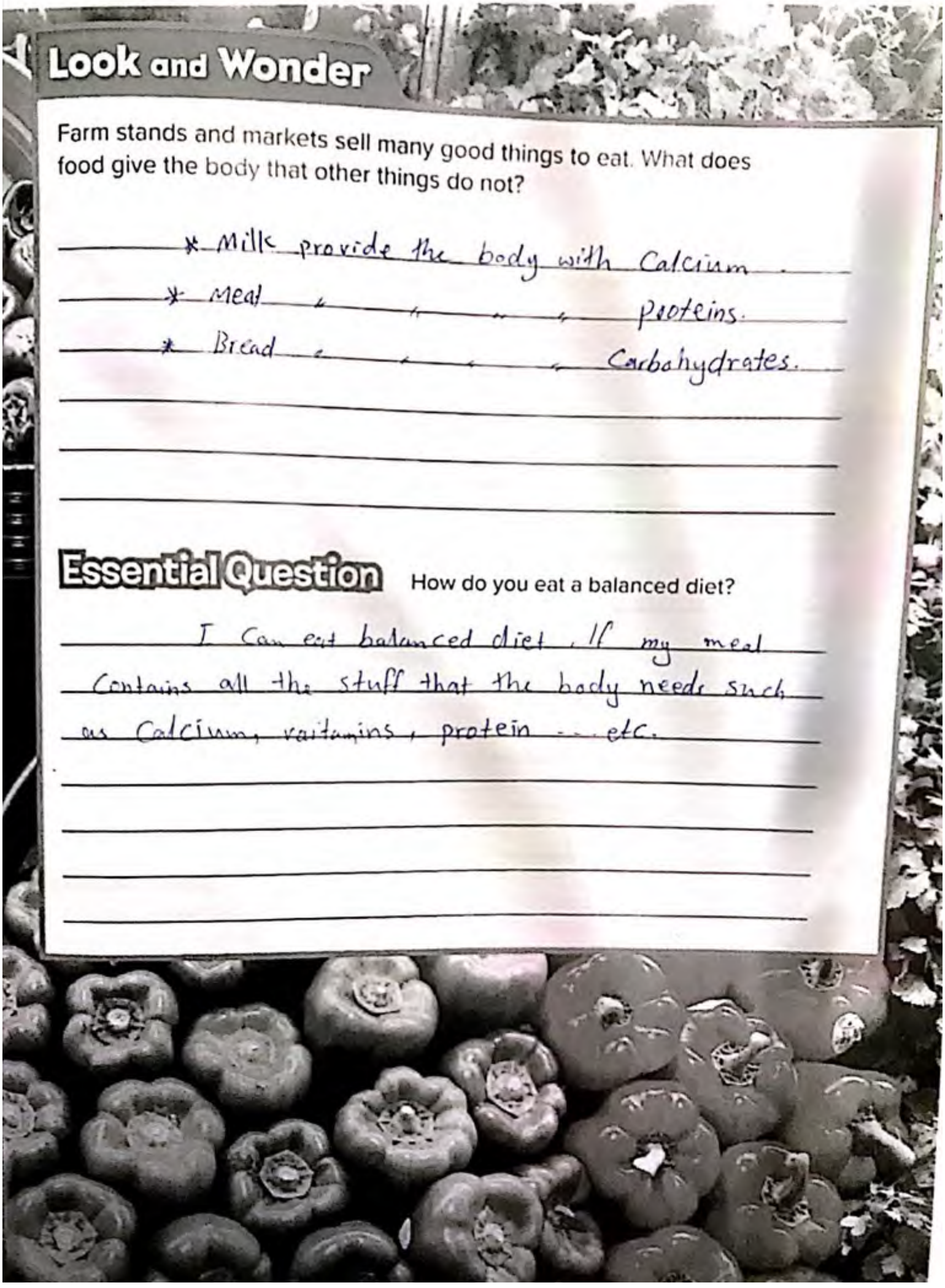
Farm stands and markets sell many good things to eat. What does food give the body that other things do not?

* Milk provide the body with Calcium.
* Meat " " " proteins.
* Bread " " " Carbohydrates.

Essential Question

How do you eat a balanced diet?

I can eat balanced diet, if my meal contains all the stuff that the body needs such as Calcium, vaitamins, protein ... etc.



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Explore

What is food?

Purpose

To show that food is different from other things we take into our bodies.

Procedure

1. Use the table below to record your data.

Picture	Food or Not Food?	Reason
1	food	from plate soup.
2	not food	giving by a doctor a medication
3	not food	water
4	not food	use to clean teeth
	food	
	not food	

2. **Classify** Look at the photographs below and on the next page. For each photo, classify what it shows as *food* or *not food*. Record your answers and reasons in the table.

1

2

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3 Think of three other things that the body might take in. Add them to the table and classify them. Record the reason for each of your classifications.

Draw Conclusions

4 **Infer** What kinds of things does the body take in? Are all of them food? Discuss why or why not.

Not all of them food, Because not all taken by the body or body utilize from. Such as toothpaste.

Explore More

Research the contents of your favorite foods. What do these foods contain that makes them different from other substances you may consume?

It contains Calcium which is not found in most of other substances that I consume

Open Inquiry

Explore how the content of food differs from other materials.

My question is: _____

_____

How I can test it: _____

_____

My results are: _____

_____

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Read and Respond

What are healthful foods to eat?

What foods do you eat when you enjoy meals and snacks? Foods are classified into different groups. A *food group* is made up of foods that provide similar nutrients. **Nutrients** are substances in foods that your body needs for growth, repair, and for energy.

Healthful nutrition means eating a balanced diet. A **balanced diet** is made up of meals and snacks that provide the proper daily amounts of foods from each food group. Look closely at the diagram below. It shows the five food groups that are the building blocks for a healthy diet.

You might notice that the plate looks like a pie chart. It shows the proper proportions of each food group you should include in your meals. For example, half of your meal should consist of fruits and vegetables.

When choosing a snack, think about what you ate for breakfast and lunch or what you might eat for dinner. Choose a snack that gives you more of the foods you might not get enough of during the rest of the day.

Quick Check

1. List healthful foods to eat for breakfast, lunch, and dinner.

An apple

meat and rice

Bread and Cheese

2. What are some things you could do to make sure you are eating a balanced diet?

I have to do a list which contains all the body's needs and follow. You can support your meal with snack that contains nutrien which is missed in the mai meals.

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Water is not a food. However, it is one of the most important nutrients taken into your body. In fact, your body is made mostly of water.

Water carries nutrients and waste throughout your body. It also helps to keep your body temperature stable. To stay healthy, most people need to drink six to eight glasses of water each day.

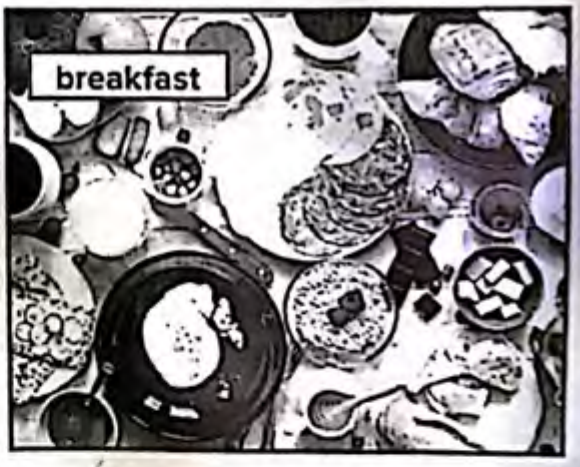
Read a Photo

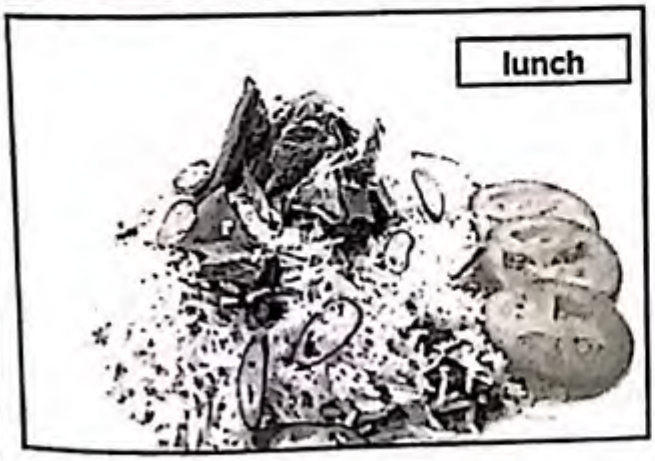
How do these meals make up a balanced diet?

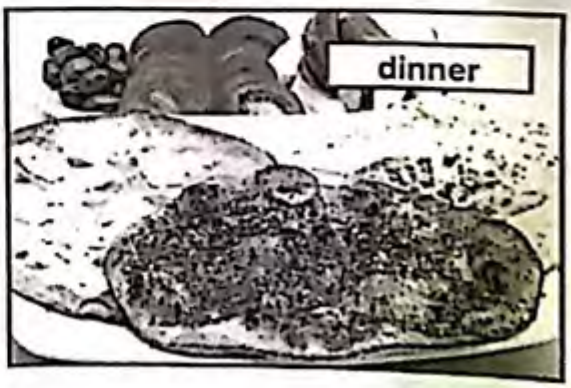
Clue: Look at the food groups shown in each photo.

They contain a lot of different nutrients.

A Balanced Diet







Eating healthful meals each day provides nutrients the body needs.

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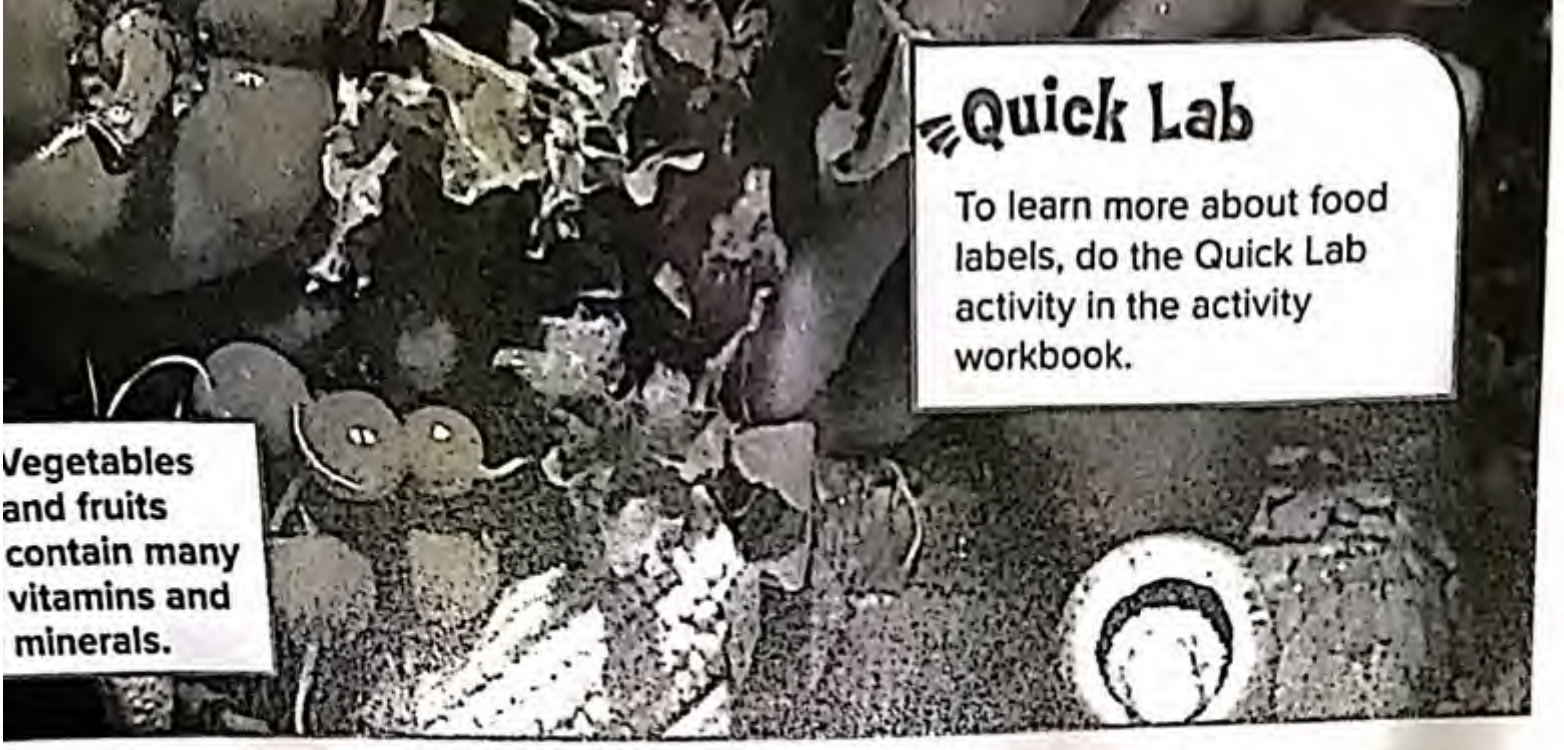

Vegetables and fruits contain many vitamins and minerals.

Quick Lab

To learn more about food labels, do the Quick Lab activity in the activity workbook.

Vitamins and Minerals

Food is mostly made of carbohydrates, proteins, and fats. However, your body needs other nutrients, too.

Vitamins are nutrients that help your body grow and carry out certain functions. Some vitamins help your body use other nutrients. There are several different types. Many are named after letters. Vitamin A helps keep your eyes, gums, and skin healthy. It can be found in carrots, pumpkins, and leafy vegetables. Vitamin C helps keep your blood, bones, teeth, and gums healthy. You will find high levels of vitamin C in citrus fruits.

Minerals are another type of nutrient that help your body grow and function properly. Calcium is a mineral that is used to build strong teeth and bones. Milk is a good source of calcium. Iron is a mineral that keeps red blood cells working properly. Meats and leafy vegetables contain iron.

Quick Check

3. How could people know which nutrients make up their favorite foods?

Depending on how it affect their body. Also, depending upon the consuming of that food.

4. Why do you think the meat group makes up a large portion of a bodybuilder's meals?

They help make up muscles and other tissues.

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My Notes

* Nutrients are substances in food that the body needs for growth, repair and energy.

* A balanced diet is made up of meals and snacks that provide the proper daily amount of food from the five food group that are the building blocks for a healthy diet.

* Carbohydrates are the main source of the body's energy. Starches and sugars are the two most common types of carbohydrates.

* proteins are nutrients needed for growth and repair of body tissues. meat, beans, fish and milk are rich in proteins.

* Fats are nutrients that provide a lot of energy. Fats are found in meat, cheese, and butter.

* Vitamins are nutrients that help the body grow.

* Minerals are nutrients that help the body grow and function properly.

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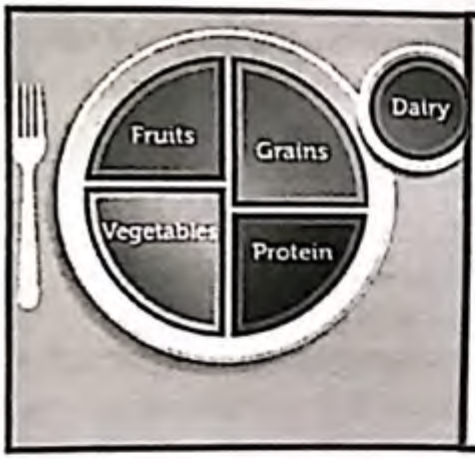
LESSON 1
Lesson Review

Visual Summary

Complete the lesson summary in your own words.

Balanced Diet is the meals and snacks that we take per day. It contains all of our body needs.



Healthy Foods are the different types of food that we should take daily for health body.

Nutrients are what our body need to grow, repair and function properly. Nutrients also very important for energy.

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Think, Talk, and Write

1 Vocabulary The body uses materials in food called nutrients

2 Classify Name a food or dish that belongs to two or more food groups. Chicken and rice and +

Classify its parts into the food groups.

Protein	vegetables
Chicken	Carrot

3 Critical Thinking A family member finds spoiled food in your kitchen. What do you think should be done with the food? Explain.

Throw it away as it's not healthy any more and may be caused disease.

4 Test Prep Foods in the grains group are made mostly of

A proteins.
C fats and oils.
(B) starches.
D vitamins and minerals.

5 Test Prep A balanced diet includes foods from

A milk and meat groups only.
B milk and grain groups only.
C any three food groups.
(D) all food groups.

Essential Question How do you eat a balanced diet?

Make sure to take all nutrients that your body need per day.

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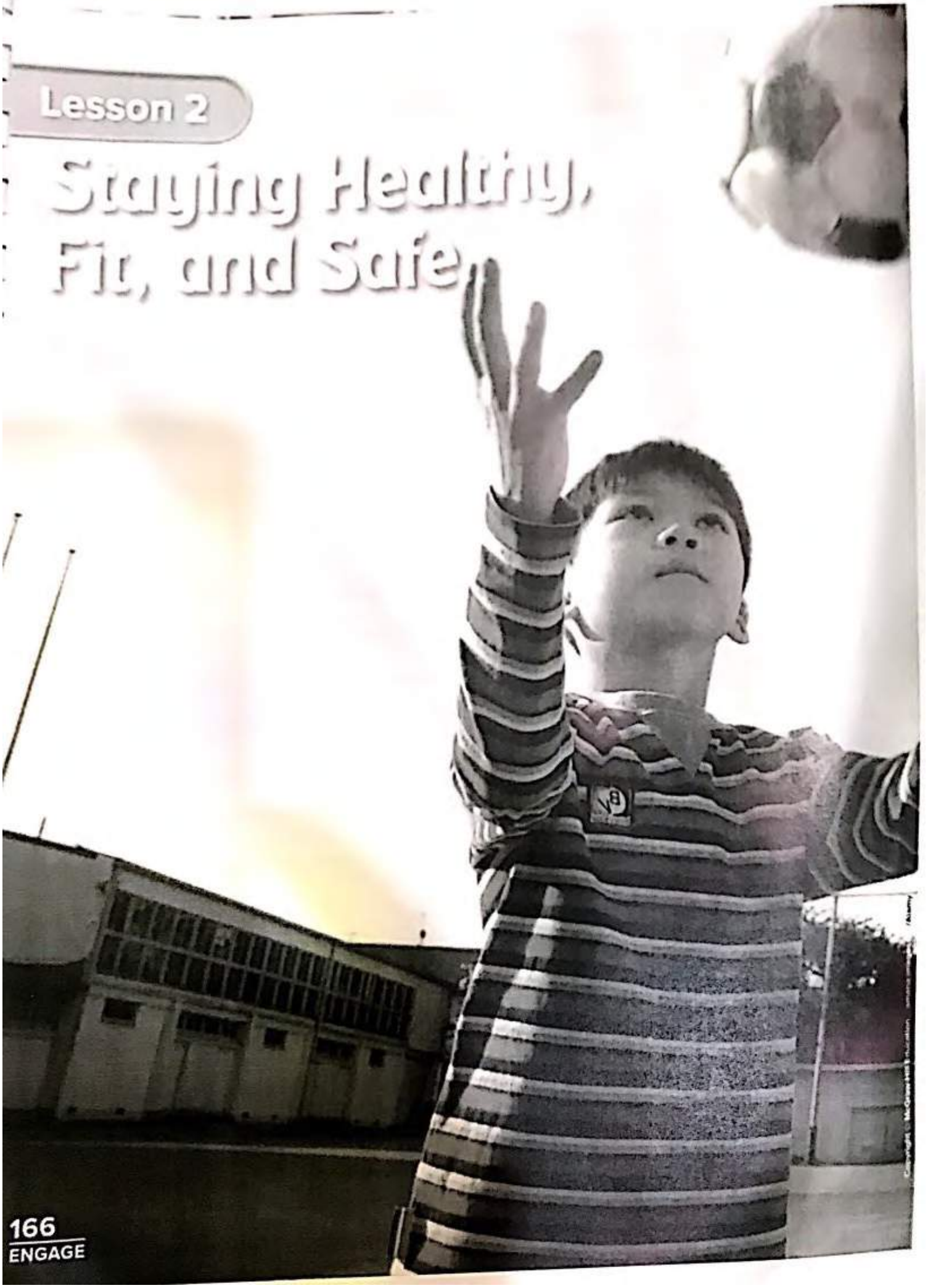
Lesson 2

Staying Healthy, Fit, and Safe



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Look and Wonder

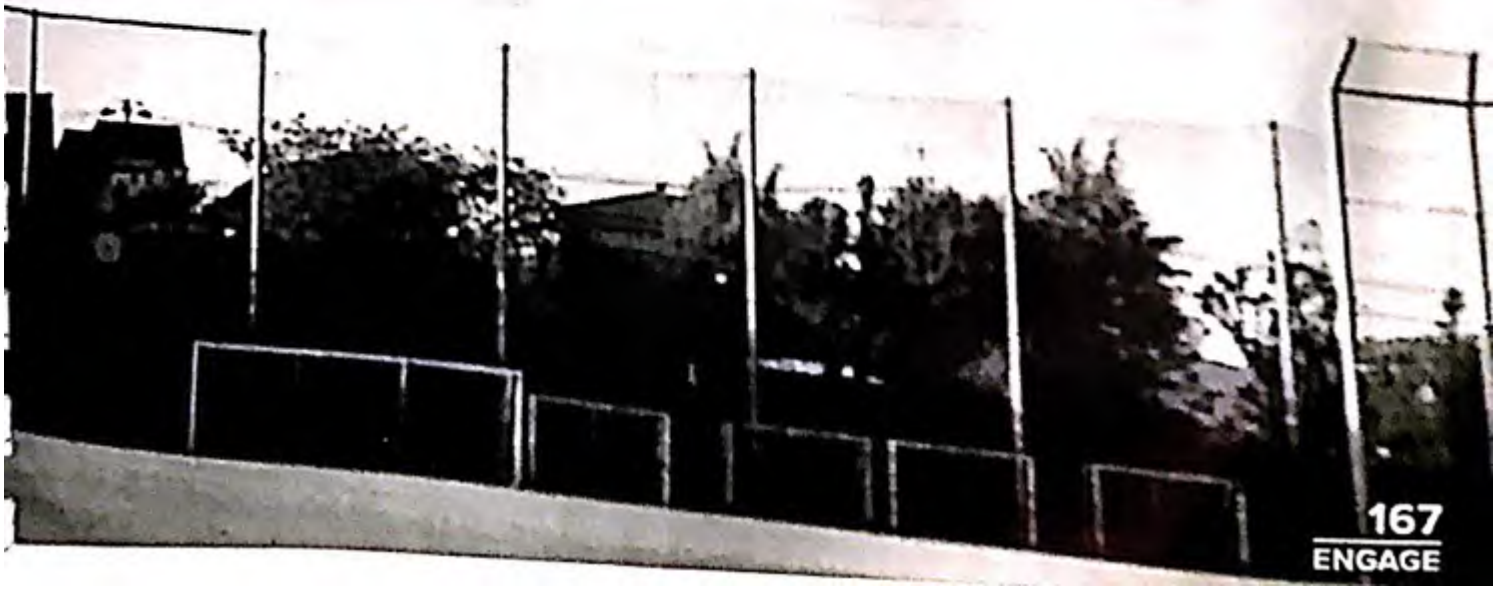
Your skin picks up dirt and germs when you play outdoors. Do you think this happens indoors, too?

Yes, since germs are every where around us they can also be found indoors but not as much as outdoors.

Essential Question

What are the benefits of good hygiene and regular exercise?

They are keep the body health and fit. Both protect the body from different types of illness.



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Read and Respond

What are good health habits?

Habits are actions that you do over and over again. Good health habits help the body stay healthy.

Many good health habits involve personal cleanliness. **Hygiene** is the practice of keeping clean. Washing hands and taking baths or showers are all a part of good hygiene. Wearing clean clothes is, too. Good hygiene also involves taking care of your skin, keeping your fingernails and toenails cleaned and trimmed, and your hair brushed or combed. Be sure to brush your teeth several times a day. Flossing once a day also helps keep your gums healthy.

Quick Check

1. Why should everyone practice good hygiene?

Because it helps the body stay healthy. also protect from illness.

Habits for Good Hygiene

▲ Wash hands with soap and warm water.

Comb or brush hair each day.

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Practicing good hygiene helps you feel good about yourself and the way you look. It also helps people stay healthy because it stops germs from spreading.

The pictures below show five habits that are a part of good hygiene. Once you begin to practice good hygiene, it is easy to continue.

Another good habit is to never share hygiene products. Combs, hair brushes, and toothbrushes can all carry germs or other living things. Dentists recommend that you replace your toothbrush regularly. This is also a good habit.

Doctors, nurses, and dentists are health care experts. Visiting them regularly is a good health habit, too. They can check for health problems and can answer questions you may have about staying healthy.

Read a Photo

How are these people maintaining good hygiene?

Clue: Look at what each person is doing.

* Brushing teeth twice daily
* Cleaning and triming nails on fingers and toes

Brush teeth at least twice a day. Floss every night. ▼

Clean and trim nails on fingers and toes. ▼

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Even changing some of your habits can help keep you fit. For example, ride your bicycle instead of riding in a car. You might also walk up the stairs instead of taking an escalator.

During exercise, muscles may begin to ache or hurt. This means that the body needs to rest. Exercising for too long can cause injuries and other kinds of damage. Be sure to tell an adult if you ever feel pain when you exercise.

Sleep

At the end of the day, your body needs sleep. The amount of sleep your body needs depends on your age. Children between age 5 and 12 need about nine to eleven hours of sleep every night. Babies need much more sleep, while adults need less.

Sleeping allows the brain and other body parts to recover and rest. Rest gives your body time to repair damaged cells and tissues. After a good night's sleep, the body is ready for another active day.

Quick Lab

To learn more about creating an exercise plan, do the Quick Lab activity in the activity workbook.

Quick Check

2. List two activities you can do to stay physically fit.

* playing football
* swimming

3. Think about your daily routine. What are some things you can change to help you be more physically fit?

* Sleep early.
* Do more exercises.

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Visual Summary

Complete the lesson summary in your own words.

Hygiene is very important habit which persons should consider as it affect their health posetively. such as brushing teeth regularly and washing hands before and after the meals.

Physical Fitness is something that extremely necessary as it contributes and help us to gain health. we can reach to physical fitness via different kinds of exercises such as swimming, running and playing football.

Disease. is very serious issue that can affect ~~out~~ our health negatively. There are two types of diseases. Infectious and non infectious diseases. Infection diseases are caused by germs and can be spread quickly, while non-infection diseases are not cased by germs.

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Think, Talk, and Write

Fill in the following sentences with the appropriate word.

VOCABULARY **immunity** **virus** **infectious disease**

1. A disease transmitted from one person to another is called (an) infectious disease.

2. immunity is considered the ability to resist an infectious disease and to recover

3. A virus is a non-living particle that depends on and infects the cell of the organism.

4. What do you expect to happen in the following cases?

   A- A physician treats patients without wearing gloves.

   He might transfer germ or infection to the patients.

   B- A person is infected with measles during childhood.

   It may affect his/her health in the future when becomes an adult.

Essential Question

What are the causes of infectious diseases?

The germs and unhealthy habits.

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My Notes

* A disease is caused by an abnormal condition in our body.

* A disease transmitted from one person to another is called an infectious disease.

* Disease like cancer is non-infectious disease because it cannot be transmitted.

* There are three types of germs (virus, bacteria fungi).

* Hygiene is the practice of keeping clean - such as washing hands regularly "hands hygiene".

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CHAPTER 5 Review

Visual Summary

Summarize each lesson in your own words.

Lesson 1 Choosing healthy food is very impo-rtant to our body. our meals per day sho-uld be balanced. They should provide us with the proper daily amount of food from the five food groups that are building blocks for a healthy diet.

Lesson 2 Hygiene and regular exercises are very essential in our life. We can physically stay fit by doing regular sports such as jumping a rope, and swimming. Also, for good health we need to practice hygiene and keep ourself clean. For example, washing our hands before and after the meal.

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Vocabulary

Fill in each blank with the best term from the list.

Vitamin	carbohydrates	nutrient	protein
balanced diet	endurance	physical fitness	resource
communicable disease	pathogen		

1. When you eat meals and snacks that provide the proper amounts of foods from each food group, you follow a(n) balanced diet.
2. A substance in food that your body needs for growth, repair, and energy is a(n) endurance.
3. Your body's main source of energy comes from nutrients called Protein.
4. The ability to perform an activity without becoming tired is Physical fitness.
5. The nutrient needed for growth and repair of body tissues is Carbohydrates.
6. When your heart, lungs, muscles, and other body parts are all working at their best, you have good nutrient.
7. Minerals and ~~nutrient~~ Vaitamin are nutrients that help your body grow and carry out certain functions.
8. The practice of keeping clean is called hygeine.
9. A Communicable disease is one that is spread from person to person or from objects in the environment.
10. A Pathogen is a germ that causes disease.

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CHAPTER 5 Review

Skills and Concepts

Answer each of the following.

11. **Problem and Solution** How can you help stop germs from spreading?

vacination , treatement , prevention

12. **Cause and Effect** What are the possible effects of an unbalanced diet?

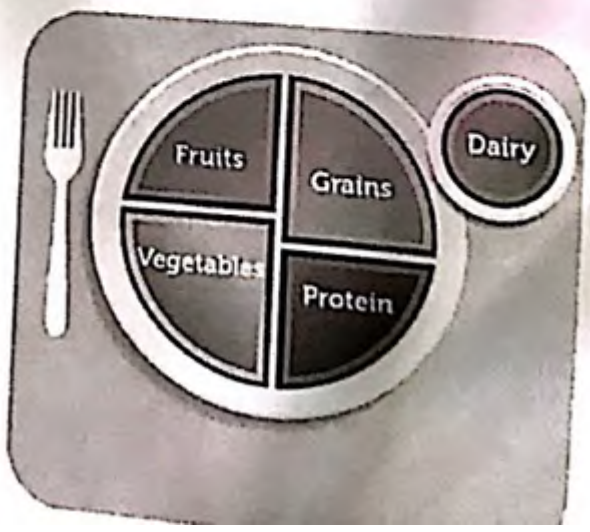
dibtes, unhealthy body , overwigh

13. How could you increase your physical fitness?

A eat foods high in sugar
B practice good hygiene
C eat a balanced diet
D exercise daily

14. Which two foods should make up most of a sample meal based on the diagram?

A pasta and broccoli
B chicken and eggs
C milk and apples
D chips and cookies



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15. Persuasive Writing Write a speech to persuade your community to adopt better health habits. Explain the benefits and importance of at least three good health habits.

Our health is very important so we should take care of it. every person in the community should follow good habits as they will keep him/her well. To have healthier lifestyle you should avoid junk food, ~~exer exer~~ exercise regularly and sleep early.

16. How does nutrition and exercise affect our health?

They help us to stay healthy. Nutrition provide our body with all need and protect it from illness, while exercise strength our body, ~~out~~ muscles and give us good shape.

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Circle the best answer for each question.

1. Look at the table below. Circle the row that shows the most balanced diet.

	Breakfast	Lunch	Dinner
A	eggs and hash browns	beef sandwich, potato chips	beef burger and cake
(B)	oatmeal, eggs, melon	beef sandwich carrots, milk	chicken and noodles, peas
C	cereal and donut	pizza	pizza
D	fruit cup	carrots, banana, green beans	salad and apple

2. How does good hygiene help keep you healthy?
   - **A** It helps you feel good about yourself.
   - **B** It improves your appearance.
   - (C) It stops germs from spreading.
   - **D** It is part of a balanced diet.

3. Nasser wants to lose weight and become more physically fit. Which is the best plan for him to follow?
   - **A** Stop eating proteins, fats, and oils.
   - (B) Eat a balanced diet that is low in fat and exercise regularly.
   - **C** Exercise several times per day and eat more fats.
   - **D** Eat only fruits and vegetables and exercise regularly.

4. How do healthful foods affect your body?
   - (A) They make your body stronger.
   - **B** They make you sick.
   - **C** They help you lose weight.
   - **D** They spread germs.

5. Why is sleep important to good health?
   - **A** It helps your body digest food.
   - **B** It strengthens your muscles.
   - **C** It stops germs from spreading.
   - (D) It gives your body time to repair.

6. Rashid wants to strengthen his muscles for the city track and field competition. Which should he eat to help with muscle growth?
   - **A** foods rich in fats
   - (B) food rich in proteins
   - **C** foods rich in carbohydrates
   - **D** foods rich in calcium

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7. Why is regular exercise an important health habit?

A It helps your body repair itself.
(B) It keeps the body working at its best.
C It helps your body digest food.
D It gives you more energy.

8. The table below shows Maryam's plan to improve her health habits.

Health Habit	Way to Improve
avoiding harmful substances	continue to avoid harmful substances
personal cleanliness	wash hands more often
balanced diet	eat more fruits and vegetables
regular exercise	
rest	get at least 9 hours of sleep per night

Which should she add to the blank space to complete her list?

A brush hair daily
B brush teeth twice a day
(C) exercise every day
D exercise once a week

9. Look at the table below.

Vitamin or Mineral	Function
vitamin A	maintains eye, gum, and skin health
vitamin C	maintains blood, bone, teeth, and gum health
calcium	builds teeth and bones
iron	keeps red blood cells functioning

What might happen if your diet does not include enough calcium?

(A) Your bones and teeth will become weak.
B Your body will function normally.
C Your vision will decline.
D Your energy will decline.

10. Which is a part of good hygiene?

A eating a balanced diet
(B) washing hands after using the restroom
C getting plenty of rest
D exercising daily

11. Summarize five good health habits you practice regularly. Name one way you could improve your health habits.

Brush teeth twice daily -
Cut nails regularly -
wash hands before and after
meals - bath daily - exercise regularly
* sleep early.

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