CALIFORNIA
Science

Reading and Writing in Science

Macmillan
McGraw-Hill

Contents

Life Science

Earth Science

Physical Science

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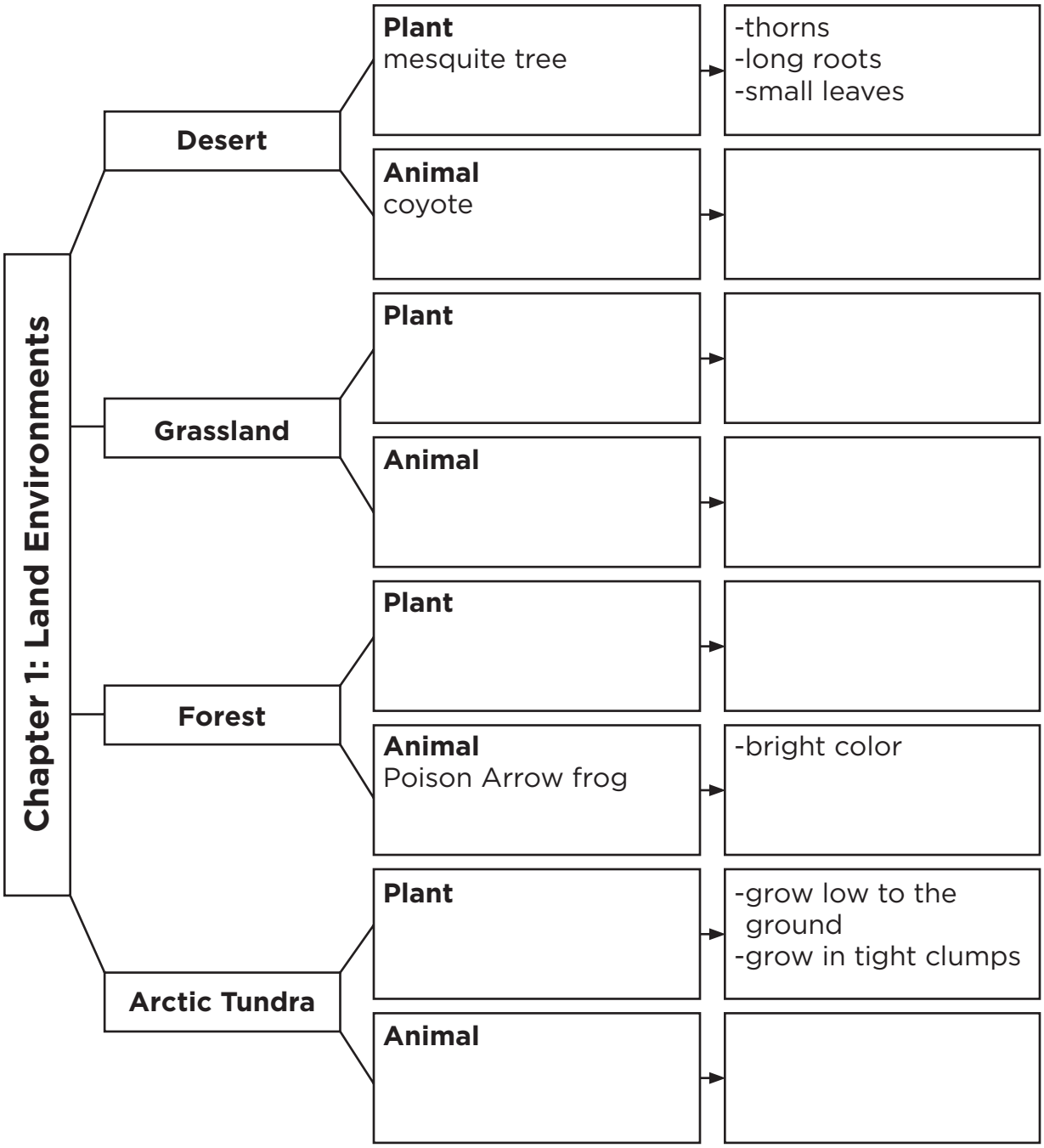
Name _____ Date _____

CHAPTER LEVEL
Concept Map

Adaptations in Land Environments

The chart below divides land environments into biomes, biomes into the plants and animals that live in each, and the adaptations they have to survive in each biome. Try to fill in the blanks with more plants and animals and more of their adaptations.



Name _____ Date _____

Giant Sequoias

Read the Literature feature in your textbook.

Write About It

Response to Literature This poem tells us that sequoia trees can survive forest fires. What else have you learned about them from this poem? What conclusions can you make about their age and size? Write a paragraph about sequoia trees. Support your conclusions with what you already know about trees and details from the poem.

Name _____ Date _____ **Outline**

Living Things and Their Needs

Use your textbook to help you fill in the blanks.

Where do living things live?

1. Living things live in an _____ where they can meet their needs.
2. Plants and animals are _____ .
3. Water, air, and sunlight are _____ .

Biomes

4. Scientists group similar environments into _____ .
5. The _____ of a biome affects which living things can survive there.

How do plants get what they need?

6. All plants need water, sunlight, _____ , and carbon dioxide.
7. _____ carry food and water throughout a plant.
8. The leaves of a plant use energy from the Sun to change _____ and water into food.
9. A plant's roots take in _____ and nutrients from soil.

Name _____ Date _____

How do animals get what they need?

10. Animals need water, energy from food, and

_____ .

11. Animals cannot make their own _____ .

12. Legs, wings, and other body parts are examples of

_____ .

13. Birds build nests as _____ for their young.

14. A porcupine's sharp quills keep it _____ from other animals.

What helps living things survive in their environment?

15. _____ help living things survive in their environments.

Summarize the Main Idea

16. What two things do both plants and animals need to survive?

_____

_____

_____

_____

_____

_____

_____

_____

Name _____ Date _____ **Vocabulary**

Living Things and Their Needs

a. adaptation	**d.** environment	**g.** shelter
b. biome	**e.** humus	**h.** stem
c. climate	**f.** oxygen	**i.** structure

Match the correct letter with the description.

1. _____ A substance made up of broken-down plant and animal material.

2. _____ An area of land or water that has certain kinds of living and nonliving things.

3. _____ Everything that surrounds a living thing.

4. _____ A specific part of a living thing.

5. _____ A structure that helps living things survive in their environment.

6. _____ The typical weather conditions for a place over time.

7. _____ A substance that animals must breathe to stay alive.

8. _____ A plant part that carries food and water throughout a plant.

9. _____ A place in which animals can stay safe.

Cloze Test

Name _____ Date _____

Living Things and Their Needs

nonliving	climate	fish	shelters
biome	roots	quills	structures

Fill in the blanks.

Where living things can meet their needs is their environment. You can also find water, air, and sunlight, which are _____ things. An area of land or water, called a _____ is made up of certain kinds of living and nonliving things. These areas have a _____ , or typical weather conditions over time. Living things have special parts, or _____ , so they can survive in their environment. Plants have leaves that take in carbon dioxide and _____ that take in water from soil. Some animals, such as _____ , have gills to help them breathe. Animals have parts to keep them safe. A porcupine has sharp _____ . Animals also build _____ to keep them safe.

Name _____ Date _____ **Outline**

Life in the Desert

Use your textbook to help you fill in the blanks.

What is a desert?

1. A desert is a biome that has a _____ climate.
2. It is hot during the _____ and cold at _____ in a desert.
3. Desert soil is mostly made up of _____ .
4. The sandy soil has very little _____ to soak up rainwater.

What adaptations help desert plants?

5. Plants that grow in deserts have _____ that help them survive with little water.
6. Mesquite trees have long roots that grow _____ to find water.
7. The saguaro cactus has thick _____ to help store water.
8. Spines on a prickly pear cactus _____ it from thirsty animals.

Name _____ Date _____

What adaptations help animals?

9. Rattlesnakes are _____ ; they sleep during the day.

10. The jackrabbit has long ears to help it stay _____ in the desert.

11. Some animals have _____ to help them blend in with their environment.

Summarize the Main Idea

12. What adaptations help plants and animals survive in the desert?

Name _____ Date _____

Vocabulary

Life in the Desert

Read each clue. Write the answer in the blanks and fill in the crossword puzzle.

Across

4. Many desert animals _____ during the day to avoid the heat.

5. The soil in the desert is mostly _____ .

6. A desert animal with large ears that help it lose excess body heat is the _____ .

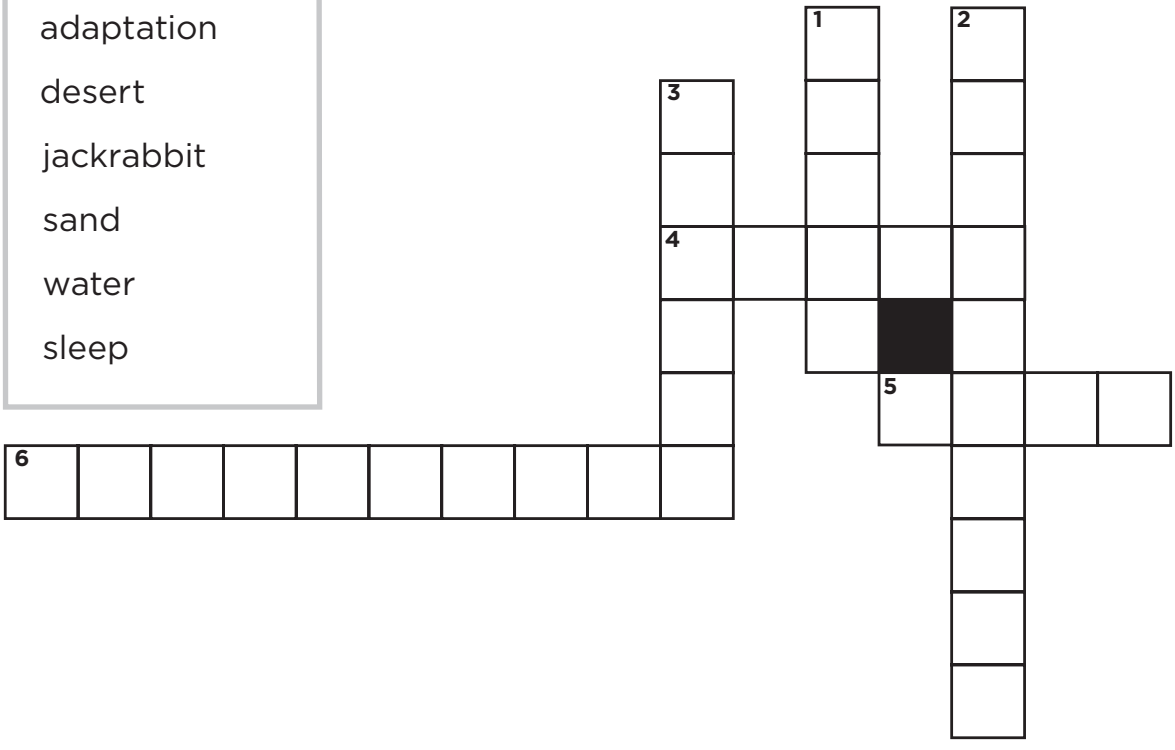
Down

1. Because of their adaptations, desert plants can survive with little _____ .

2. A special feature that helps an organism survive in a particular place is an _____ .

3. A _____ is a hot, dry biome with very little rain.

adaptation
desert
jackrabbit
sand
water
sleep



Cloze Test

Name _____ Date _____

Life in the Desert

rain	temperature	deep	roots	nocturnal
Sun	humus	adaptations	water	

Fill in the blanks.

A desert is a biome that has a dry climate. Less than 25 centimeters of _____ falls each year in the desert. During the day it is hot and the _____ warms land and air. At night the _____ drops and it is much cooler. Desert soil is mostly sand. There is very little _____ in desert soil. Rainwater trickles down through sand and goes very _____ .

In order for plants to survive in the desert, they must have _____ . So that they can reach the water that is deep underground, some plants have long _____ . Many desert plants also have thick stems and waxy leaves in order to store _____ .

Animals have adapted to deserts, too. Some animals are _____ and sleep during the day.

Name _____ Date _____ **Outline**

Life in the Grassland

Use your textbook to help you fill in the blanks.

What is a grassland?

1. A biome that is covered with grass is a _____ .
2. Some _____ eat grass as food.
3. Grass can provide _____ from the cold and wind.
4. Grasslands that are cold in the winter and warm in the summer are _____ grasslands.
5. Grasslands that are warm all year are _____ grasslands.
6. The Serengeti Plain in Africa is a _____ .

What adaptations help grassland plants survive?

7. All grasses in grasslands grow well in _____ conditions.
8. The grasses have deep roots that work like a _____ .
9. If a grassland fire burns the grass above the soil, the _____ survive.
10. The baobab loses its leaves during the _____ season.

Outline Name _____ Date _____

What adaptations help animals survive in grasslands?

11. Grassland animals have _____ that help them survive.

12. Some animals have special teeth for eating _____ .

13. Zebras eat the _____ of grasses, and antelopes eat the _____ closest to the ground.

14. Some animals dig _____ in the ground to hide from enemies.

Summarize the Main Idea

15. How have the teeth of some animals adapted so they have something to eat in the grassland?

Name _____ Date _____

Vocabulary

Life in the Grassland

burrows	North America	Serengeti Plain	tropical
herds	savanna	temperate	

Fill in the blanks.

1. The prairies of North America are _____ grasslands.
2. The _____ is a tropical grassland.
3. In a tropical _____ , grasses may grow up to six feet tall.
4. Prairie dogs dig _____ in the ground to hide from enemies.
5. Gazelles and zebras travel in large _____ .

Answer each question.

6. Why do fires form regularly in grasslands?

_____

_____

_____

7. How do grasses survive after being eaten by plants?

_____

_____

Cloze Test

Name _____ Date _____

Life in the Grassland

biomes	teeth	sponges	roots	soil
climate	tops	seasons	flat	survive

Fill in the blanks.

Grasslands are _____ that are covered with grass. There are different kinds of grasslands. Temperate grasslands have four _____ . Tropical grasslands have a _____ that is warm all year round.

Because grasslands are dry, the roots of many grasses work like _____ , soaking up water. They also store nutrients in their roots. When a fire burns the grasses above the ground, the roots below _____ . The dead grass on top becomes part of the _____ and a stalk grows from the _____ .

Many animals eat grasses. Zebras have special _____ that are _____ . This allows them to bite off the _____ of grasses.

Name _____ Date _____

Reading

Tinamous

Ana studies the birds of the Pampas. Some of the birds she studies are called tinamous. Their brown and gray feathers help them blend in with the tall grass and other shrubs and bushes. This camouflage helps them hide from predators like foxes and hawks that eat the birds or their eggs.

Compare and Contrast

- Look for similarities and differences
- Use your own experiences to apply to the situation

How does Ana find tinamous if they are so well hidden? She listens for their songs. Each species of tinamou has a different song. Sometimes she has to sing or play a recording of their song to get the birds to answer back. It takes time, patience, and a little luck.

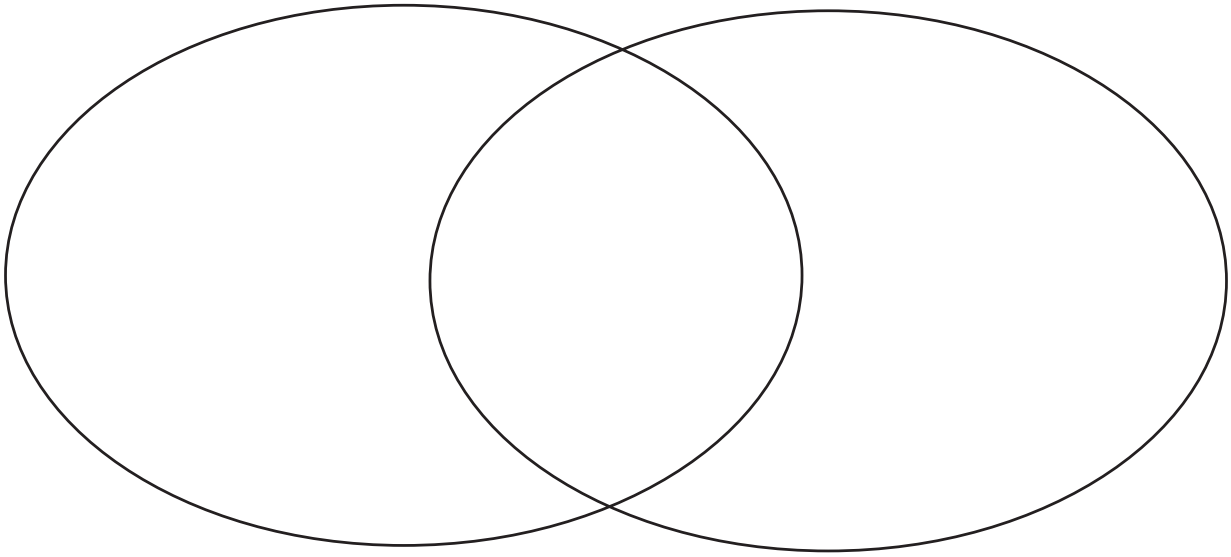
The tinamous are hard to see, but their shiny green, turquoise, and purple eggs really stand out. Ana wants to know why the eggs are so colorful.

How do you think colorful eggs help the tinamous?

Name _____ Date _____

Write About It

Compare and Contrast Ana Luz Porzecanski studies tinamous and their eggs. Work with a partner to compare and contrast the tinamou with its eggs. Then compare and contrast the tinamou with another animal you have read about in this chapter. List ways the animals are alike and different in a Venn diagram. Then use your diagram to write a compare and contrast essay.



Name _____ Date _____ **Outline**

Life in the Forest

Use your textbook to help you fill in the blanks.

What is a forest?

1. A forest is a biome with many _____ .
2. A tropical rain forest is found near the _____ .
3. The climate of a tropical rain forest is _____ and _____ .
4. The soil in a tropical rain forest is not very rich in plant _____ .
5. A temperate forest has four _____ .
6. The soil in a temperate forest is rich in _____ .

What adaptations help forest plants survive?

7. Plants are adapted to grow toward _____ .
8. Many tall trees in a tropical rain forest have _____ roots.
9. Tall trees are supported by _____ .
10. Smaller plants that grow under tall trees have _____ that allow them to lose extra water.
11. Plants on the forest floor have very large leaves to soak in _____ .

Name _____ Date _____

How do animals survive in a tropical rain forest?

12. The bright colors of a poison arrow frog tell its enemies that it is _____ .

13. When a living thing imitates another living thing it is called _____ .

How do animals survive in a temperate forest?

14. Some animals eat extra food in the fall so they can store _____ for the winter.

15. Some animals_____ or go into a deep sleep that lasts all winter.

Summarize the Main Idea

16. How have some animals adapted so they can survive in the forest?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Name _____ Date _____

Vocabulary

Life in the Forest

a. buttresses	**d.** deciduous	**g.** large leaves
b. camouflage	**e.** drip tips	**h.** mimicry
c. conifer	**f.** hibernate	

Match the description with the correct letter for the adaptation.

1. _____ This allows an animal to blend in with its environment.

2. _____ These help a plant to soak up more sunlight.

3. _____ This type of tree has tough needles that help it to conserve water during the winter.

4. _____ These support a tall tree with shallow roots.

5. _____ This is when a mantis is able to look like an orchid flower.

6. _____ This is what squirrels do when they sleep all winter to store energy.

7. _____ This type of tree loses its leaves in the fall so it can conserve energy in the winter.

8. _____ These help leaves to lose extra rainwater.

Name _____ Date _____

Life in the Forest

equator	year	adapted	hot	seasons	leaves

Fill in the blanks.

A biome that has many trees is a forest. Tropical rain forests are found near the _____ . The temperature in a tropical rain forest is usually _____ all year. It also gets about 200 to 460 centimeters of rain each _____ . Temperate forests have four _____ and rainfall and temperature change from season to season.

In the tropical rain forest, there are many tall trees that block a lot of the sunlight down below. Plants on the forest floor have _____ in order to get as much sunlight as they can. Many of these plants have large _____ to get more sunlight.

Name _____ Date _____ **Outline**

Life in the Arctic Tundra

Use your textbook to help you fill in the blanks.

What is an Arctic tundra?

1. The arctic tundra is a _____ biome.
2. The arctic tundra is located above the _____ .
3. In the middle of _____ the Sun never rises.
4. During _____ the Sun never sets.
5. A layer of frozen soil called _____ prevents melted snow from soaking into the ground.

What adaptations help arctic plants?

6. All plants living in the Arctic tundra have _____ or _____ roots.
7. Having these types of roots allow plants to survive in soil that is mostly _____ .
8. Most Arctic plants grow _____ the ground.
9. Many plants grow in tight clumps to _____ them from the cold and wind.
10. Plants that have dark colors can absorb _____ more easily.

Name _____ Date _____

What adaptations help Arctic animals?

11. Polar bears and musk oxen have a layer of _____ or fat.

12. Arctic animals usually have _____ bodies and _____ fur than their relatives in other biomes.

13. Many Arctic animals have wide feet that keep them from _____ .

14. Long, sharp _____ keep Arctic animals from slipping and sliding on ice.

15. Canada geese and caribou _____ when seasons change.

16. Arctic animals that eat plants _____ where they can find food more easily.

17. The fur of the Arctic fox changes color from _____ so it can blend in with its environment year round.

Summarize the Main Idea

18. Explain how Arctic plants and animals have adaptations to help them survive in the arctic tundra.

_____

_____

_____

Name _____ Date _____ Vocabulary

Life in the Arctic Tundra

Arctic tundra	hibernate	soggy
migrate	temperatures	permafrost

Fill in the blanks.

1. The cold biome of the far north is called the _____ .
2. Animals that move south to warmer environments in winter _____ .
3. When animals go into a very deep sleep in the winter that helps them conserve energy, they _____ .
4. By growing in tight clumps and close to the ground, the plants are protected from wind and freezing _____ .
5. In the summer the ground becomes _____ because a layer of _____ prevents melted snow from soaking into the ground.

Cloze Test

Name _____ Date _____

Life in the Arctic Tundra

cold	melts	roots	migrate
summer	permafrost	clumps	blubber

Fill in the blanks.

The arctic tundra is located above the Arctic Circle. It is a _____ biome. Winters are long and dark. The Arctic tundra has about six to ten weeks of _____ . When temperatures get warm enough, snow _____ . Puddles form on the land because the _____ layer prevents water from soaking into the ground.

About 17,000 different kinds of plants live in the Arctic tundra. Many have shallow or no _____. Plants often grow in tight _____ . This protects them from the wind and cold temperatures.

Arctic animals have also adapted to the climate. Some animals _____ to warmer places during the Arctic winter. Other animals have thick fur or a layer of _____ . This keeps them warm when the temperatures are freezing.

Name _____ Date _____

Life in the Arctic Tundra

Read the Writing in Science feature in your textbook.

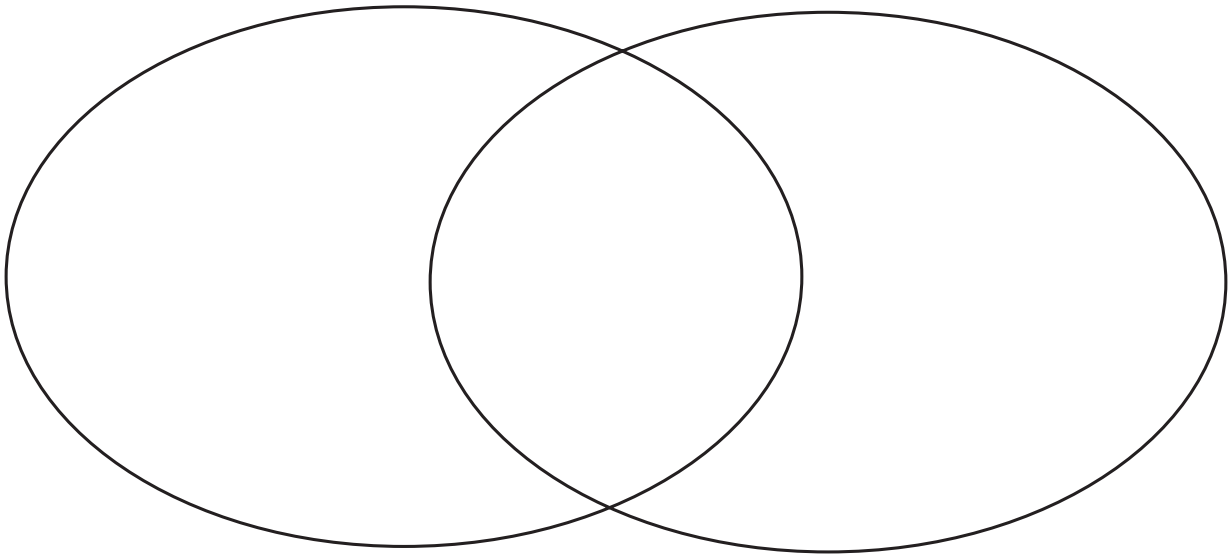
Write About It

Choose two animals that live in the tundra. Write a paragraph in which you compare and contrast them. Use words such as like and unlike to show how they are similar, yet different.

Getting Ideas

Choose two arctic animals. Write their names above the circles. Write details that show how they are different in the outer part of the circles. Write details that show how they are the same in the part that overlaps.

Animal _____ Animal _____



Name _____ Date _____

Drafting

Now write the first draft of your paragraph. Begin with a topic sentence. Write sentences that compare and contrast the two animals. Use details that create a vivid picture.

_____

_____

_____

_____

_____

Now revise and proofread your paragraph. Ask yourself:

- Did I begin with a topic sentence?
- Did I use details that help my readers picture the animals?
- Did I show how the animals are alike and different?
- Did I use words that compare and contrast, such as like and unlike?
- Did I correct all grammar errors?
- Did I correct all spelling, punctuation, and capitalization errors?

Name _____ Date _____

Land Environments

Choose the letter of the best answer.

1. What is another name for the temperate grassland of North America?
   - **a.** arctic tundra
   - **b.** prairie
   - **c.** savanna
   - **d.** temperate forest

2. An area with certain kinds of living and nonliving things is a(n)
   - **a.** animal.
   - **b.** biome.
   - **c.** climate.
   - **d.** environment.

3. Permafrost is a layer of
   - **a.** frozen soil.
   - **b.** snow.
   - **c.** frost on trees.
   - **d.** ice on the ocean.

4. Broken down plant and animal matter is
   - **a.** environment.
   - **b.** humus.
   - **c.** structure.
   - **d.** sand.

5. Savanna is found in Africa, and is another name for
   - **a.** deciduous forest.
   - **b.** desert.
   - **c.** tropical grassland.
   - **d.** tropical rain forest.

6. A nocturnal animal is an animal that is active during
   - **a.** day.
   - **b.** night.
   - **c.** summer.
   - **d.** winter.

Name _____ Date _____

Choose the letter of the best answer.

7. A mixture of broken down rocks, plant, and animal material is also called

a. carbon dioxide.
b. environment.
c. forest.
d. soil.

8. If most of the trees in a forest lose their leaves during the winter, it is a(n)

a. arctic tundra.
b. coniferous forest.
c. deciduous forest.
d. rain forest.

9. What does the word mimicry describe?

a. a poisonous species
b. a species with an adaptation
c. one species eats another species
d. one species looks like another species

10. An animal that hibernates is adapted to

a. deserts.
b. cold winters.
c. tropical rain forest.
d. mimicry.

11. In which biome do you find the greatest numbers of plants and animals?

a. coniferous forest
b. savanna
c. temperate forest
d. tropical rain forest

12. Arctic tundra is a biome

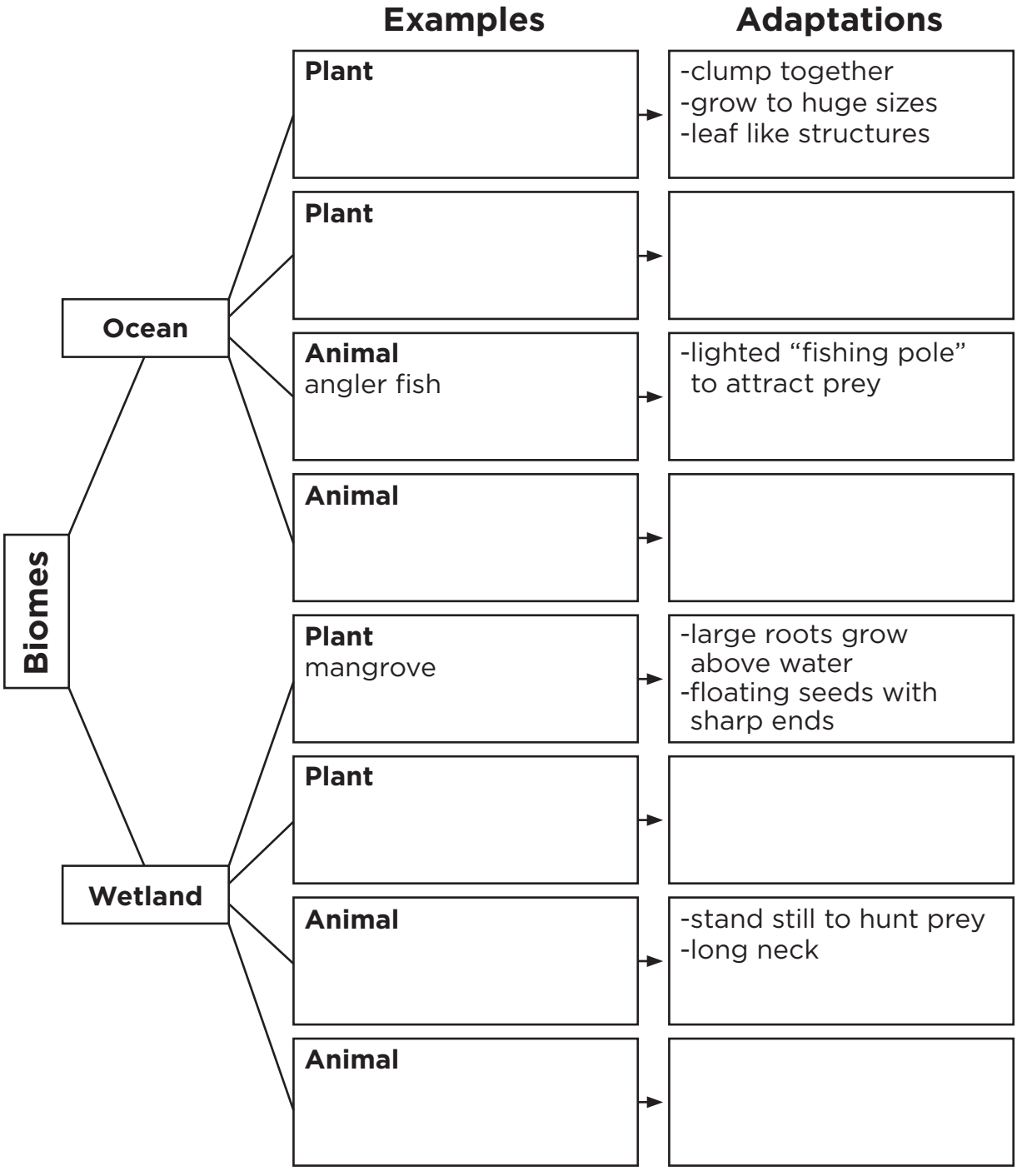
a. near the equator.
b. above the Arctic Circle.
c. with trees.
d. without living things.

Name _____ Date _____

CHAPTER LEVEL
Concept Map

Water Environments

Complete the concept map with the information you learned about adaptations of living things in oceans and wetlands. Some answers have been written for you.



Name _____ Date _____

Dragons of the Sea

Read the Literature feature in your textbook.

Write About It

Response to Literature Looking like seaweed keeps leafy sea dragons safe in their environment. Why is safety important? Do special structures help keep you safe? Write a paragraph about ways you keep safe.

Name _____ Date _____ **Outline**

The Water Planet

Use your textbook to help you fill in the blanks.

What is a water environment?

1. Earth is divided into land and _____ environments that are filled with different types of living things.
2. Earth's water environments are oceans, lakes, ponds, rivers, streams, and _____ .
3. Earth's water environments are divided into two groups called _____ and freshwater environments.
4. A saltwater environment that is filled with plants and animals is called a _____ .
5. A _____ such as a river, pond, or lake has water with almost no salt.
6. A mixture of fresh and salt water, which occurs where rivers meet the ocean, is called a _____ environment.

How are water environments different from each other?

7. Besides the amount of salt, water environments vary in _____ .
8. Some water environments such as _____ can be thousands of feet deep.
9. Plants cannot grow in deep water because the _____ doesn't reach them.
10. Water _____ varies with depth and nearness to the equator.

Name _____ Date _____

11. Water temperatures near the _____ are warmer.

12. Plants and animals _____ to the type of water environment they live in.

What plants and animals live in water environments?

13. Most plants and animals live near the _____ since deep water is cold and dark.

14. Water lilies live in fresh, shallow waters. The air spaces in their leaves help them _____ .

15. _____ fish live in the warm salt water of oceans near the equator.

Summarize the Main Idea

16. How do saltwater environments differ from freshwater environments?

_____

_____

_____

Name _____ Date _____

Vocabulary

The Water Planet

a. depth	**c.** saltwater environment
b. marine environment	**d.** freshwater environment

Match the vocabulary word with its correct description. Each vocabulary word will be used twice.

_____ I have water with almost no salt.

_____ I have water that is very salty.

_____ I am another name for a saltwater environment.

_____ I describe how deep something is.

_____ I am an ocean.

_____ I am a body of water with algae and fish.

Name _____ Date _____

The Water Planet

brackish	freshwater	plants	warmer
deep	marine environment	saltwater	
ocean	temperature	two	

Fill in the blanks.

Three quarters of Earth is covered by water. Earth has _____ types of water environments. _____ environments have salty water. A _____ is also salty. An _____ is an example of a marine environment. A lake is an example of a _____ environment because it has very little salt.

Water that is a mixture of both salt and fresh water is called _____ . The water depth, amount of sunlight, and _____ are differences in water environments. For instance, shallow water that gets a lot of sunlight is _____ than deep, dark water. _____ and animals must adapt to life in fresh water or salt water. Only a few plants and animals can live in _____ water because it is dark and cold.

Name _____ Date _____ **Outline**

Life in an Ocean

Use your textbook to help you fill in the blanks.

What is an ocean like?

1. The ocean is home to _____ of living things.
2. Most ocean life forms live in _____ water.

How do plants survive in the ocean?

3. Some plants attach _____ while others drift with water.
4. Plants with roots usually live in shallow water because the plants need _____ .
5. _____ such as kelp is one of the types of algae.
6. Algae give off _____ when they make food.
7. Algae that grow very large and clump together are _____ .
8. To catch sunlight, kelp uses _____ , and its roots attach to the ocean floor.
9. Kelp also has balloon-like balls that keep its vines _____ .
10. _____ of animals live and feed on kelp.

How do animals survive under water?

11. Animals that live under water _____ and move differently than land animals.

Name _____ Date _____

12. Fish use _____ to breathe underwater.

13. Some animals use _____ to hide and stay safe in the ocean.

Staying Safe

14. The sting ray has a sharp and _____ tail.

15. _____ is another way animals stay safe under water.

How do creatures survive in the very deep ocean?

16. The angler fish and the _____ are examples of sea creatures who have adapted to a deep-sea environment.

Summarize the Main Idea

17. How do plants and animals adapt to life in the ocean?

_____

_____

_____

_____

Name _____ Date _____

Vocabulary

Life In An Ocean

adaptation	camouflage	roots
biome	kelp	squid

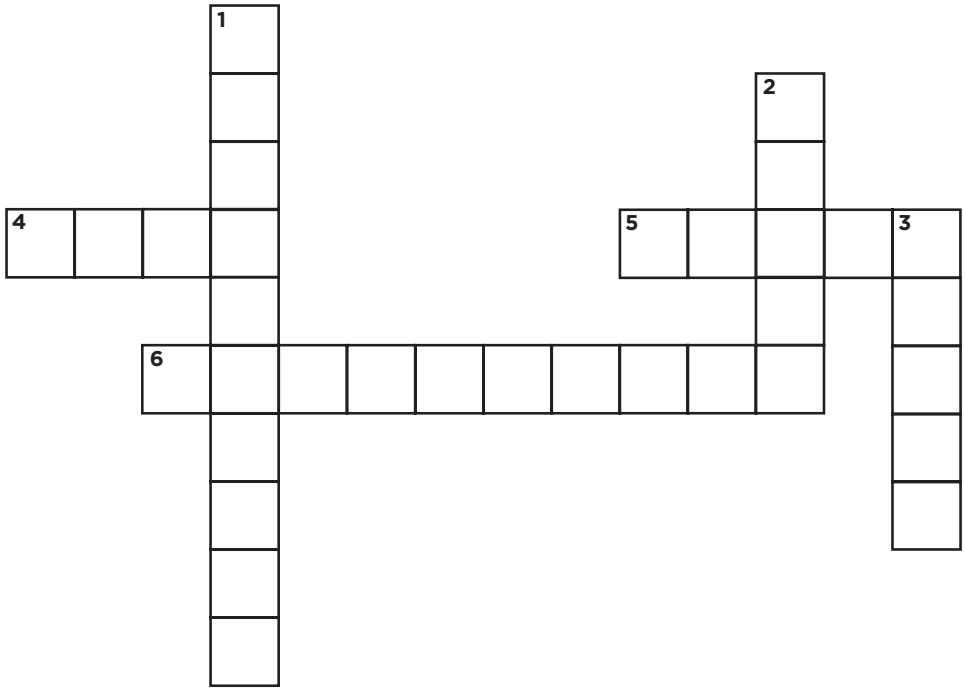
Use the clues to fill in the crossword puzzle.

Down

1. Special structures that enable plants and animals to survive _____
2. The largest _____ is an ocean.
3. A sea creature that moves by squirting water _____

Across

4. Hundreds of ocean animals live and feed in forests of _____ .
5. Plants attach themselves to the ocean floor with _____ .
6. Some animals use _____ to stay safe.



Name _____ Date _____

Life in an Ocean

adapt	floating	move	shallow
algae	gills	oceans	
breathe	kelp forests	roots	

Fill in the blanks.

The world's largest biome is the ocean. Billions of living things are found in Earth's _____ . Since the bottom of the ocean is dark and cold, most ocean life lives in _____ water. Plants adapt to ocean life by attaching _____ to the ocean floor or drifting with the water. _____ are plants living in the ocean. In shallow, warm waters, algae grow large and create _____ . Kelp have adapted to living in water by using leaf-like structures to catch sunlight and balloon-like balls to keep their vines _____ . Animals have to _____ to live in the ocean, too. They have special parts to enable them to eat, stay safe, move, and _____ underwater. For example, fish have _____ that help them breathe underwater. Fish also have fins and tails to help them _____ through the water.

Name _____ Date _____ **Outline**

Life in the Wetlands

Use your textbook to help you fill in the blanks.

What are wetlands?

1. _____ are areas where water covers the land much of the year.
2. There are coastal and _____ wetlands.
3. Wetlands vary based on the _____ living in it.
4. Marshes, swamps, and _____ are types of wetlands.
5. Wetlands help prevent _____ by holding extra water.
6. In _____ , wetlands become a source of water because they hold extra water.

What kinds of plants live in wetlands?

7. Wetland plants create special ways to get _____ .
8. Some plants such as _____ have a special pumping system to get oxygen to their roots.
9. Swamp trees such as _____ have woody roots that grow above the water and absorb oxygen from the air.

What kinds of animals live in a wetland habitat?

10. Animals need the wetlands for food, water, and _____ .
11. Some birds would become _____ without the wetlands.

Name _____ Date _____

12. Many _____ live in the wetlands.

13. Walking catfish, herons, and _____ are types of animals that live in the wetlands.

14. These animals have _____ to life in a very wet environment.

Summarize the Main Idea

15. How have wetland plants and animals adapted to the unique wetland environment?

_____

_____

_____

_____

_____

Name _____ Date _____

Vocabulary

Life in the Wetlands

a. amphibian	**d.** extinct	**g.** swamp
b. bog	**e.** marsh	**h.** wetland
c. drought	**f.** peat	

Match the correct letter with its description.

1. _____ A wetland with soft-stemmed plants such as reeds and grasses
2. _____ An area of very wet land
3. _____ A long period with little or no rainfall
4. _____ A freshwater wetland filled with spongy moss and rich soil
5. _____ A species that no longer exists
6. _____ A wetland with woody plants such as cypress trees and royal palms
7. _____ An animal that can live on both land and water
8. _____ Rich soil found in bogs

Cloze Test

Name _____ Date _____

Life in the Wetlands

adapted	droughts	freshwater	plants	swamps
Antarctica	flooding	marsh	reproducing	woody

Fill in the blanks.

Wetlands are areas of very wet land. Wetlands are found on every continent except _____ . Wetlands help prevent _____ by holding extra water. They also store extra water during _____ . Marshes, _____ , and bogs are types of wetlands. A _____ is mostly reeds and grasses. Swamps have _____ plants such as trees and palms. A bog is a _____ wetland filled with moss and peat. Each wetland contains different types of _____ . Plants living in wetlands have special ways of getting oxygen and _____ . Animals have also _____ to life in the wetlands. These adaptations allow plants and animals to survive in a very wet environment.

Name _____ Date _____

Reading

Mail Call

Scientists at the American Museum of Natural History work to protect endangered habitats around the world. They collect stories from people around the world to learn about these environments.

TO: American Museum of Natural History
FROM: Tommy
SUBJECT: Save the Mangroves!

Dear Museum Scientists,

My name is Tommy and I'm writing to you because I'm worried about what's happening near my home.

I live on the coast of Florida, near a mangrove forest. It's full of beautiful, tropical evergreen trees that have roots and branches all tangled together. The mangroves are home to many animals, including manatees, storks, butterflies, snakes, and tree crabs. Mangrove roots provide shelter for fish and shrimp. The mangroves also protect the coast from wind, waves, and floods. My mom is a tour guide who shows people the amazing creatures that live in the mangroves.

Lately many new neighborhoods are being built, and this construction has replaced many mangroves with stores and homes, marinas, airports, and parking lots.

What will happen to the animals that call the mangroves home? I know there's a way for us and the mangroves and animals to live together.

Tommy

Name _____ Date _____

Wetland Plants

Write About It

Predict What do you think will happen to the wetland plants and animals near Tommy's home if people continue to fill in wetlands and build new neighborhoods?

Write a letter back to Tommy explaining why it is important to save wetlands. Tell ways you think we can help protect wetlands.

Name _____ Date _____

A Wetlands Story

Write About It

Write a story that takes place in the wetlands. First decide on your characters. What happens because they live in the wetlands? What problem do they have? How do they solve it? Make sure your story has a beginning, middle, and an end. Include details to develop the action, or plot. Add dialogue to bring your characters to life.

Write a sentence describing the setting to begin your story.

_____

_____

Now write your story. Start by describing the setting. Then introduce the characters and show their problem. Tell the events in order. Show how the problem is solved at the end.

_____

_____

_____

_____

_____

Name _____ Date _____

Revising and Proofreading

Here are some sentences from another student's story. Proofread it. Add quotation marks where they are needed.

Look at the egrets in that willow tree! shouted Ray. There's a heron standing in the water, and it looks like it's fishing.

Shh! Be quiet, whispered Jesse. I want to get close so that I can get a picture. He started to hunt in his backpack for his camera.

Now revise and proofread your story. Ask yourself:

- Did I begin by describing the setting?
- Did I use details to create a vivid picture of the wetlands?
- Did I create a problem that fits this setting?
- Did I create interesting characters?
- Did I tell events in order?
- Did I show how the problem is solved?
- Did I correct all grammar errors?
- Did I correct all spelling, punctuation, and capitalization errors?

Name _____ Date _____

CHAPTER LEVEL
Vocabulary

Water Environments

Choose the letter of the best answer.

1. A freshwater environment

a. never freezes.
b. has flowing water.
c. has very little salt.
d. is shallow.

2. A wetland that contains large amounts of moss and peat is a

a. bog.
b. marsh.
c. swamp.
d. mangrove.

3. A plant-like organism that lives in water and makes its own food from sunlight is

a. algae.
b. coral.
c. eel grass.
d. sea urchins.

4. A wetland with mostly soft-stemmed plants is called a

a. mangrove.
b. marsh.
c. pond.
d. swamp.

5. A special structure used by underwater organisms to breathe is a

a. fin.
b. gill.
c. shell.
d. tail.

Name _____ Date _____

Choose the letter of the best answer.

6. An animal that can live both in and out of water is a(n)

a. amphibian. **c.** mammal.

b. bird. **d.** reptile.

7. A body of water with very salty water is a

a. freshwater environment. **c.** saltwater environment.

b. lake environment. **d.** swampy environment.

8. The distance from the surface to the bottom of a body of water is its

a. area. **c.** height.

b. depth. **d.** volume.

9. A wetland with woody plants in it is called a

a. bog. **c.** pond.

b. marsh. **d.** swamp.

10. A marine environment is a

a. deep water environment. **c.** saltwater environment.

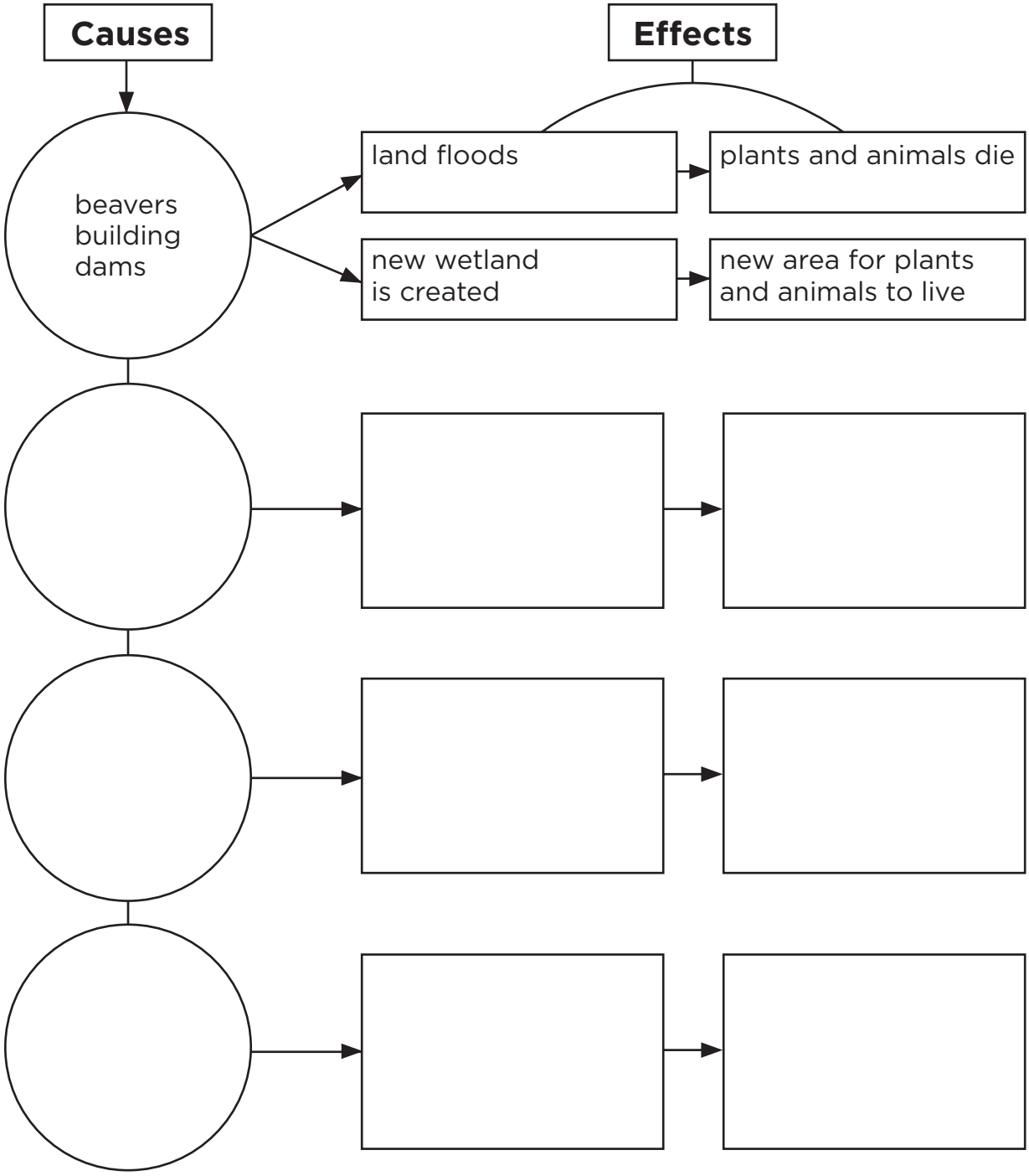
b. freshwater environment. **d.** swamp water environment.

Name _____ Date _____

CHAPTER LEVEL
Concept Map

Environments Change

Write some causes of change and the effects they have on the environment. An example has been done for you.



Name _____ Date _____

Can We Save the Peregrine Falcon?

Read the Literature feature in your textbook

Write About It

Response to Literature This book tells us that peregrine falcons almost died out. What is the author trying to tell us about environmental changes? Write a paragraph about environmental changes. Include what we can do to protect the environment.

Name _____ Date _____ **Outline**

Living Things Change Their Environment

Use your textbook to help you fill in the blanks.

How do living things change their environment?

1. All living things affect the _____ .
2. Living things must _____ for food, water, and other things they need to survive.
3. An example of competition is when _____ grow in ways to receive the most sunlight.

How does a beaver change its environment?

4. Beavers build dams for better access to food and for _____ .
5. Dams can be _____ to the environment when they create new wetlands.
6. _____ attract other animals including fish and birds.
7. Dams can _____ the environment when they cause flooding.

How do people change their environment?

8. Of all living things, _____ have the greatest effect on the environment.
9. The process of burning oil, coal, and gas produces small particles that _____ our air and water.

Name _____ Date _____

10. One way to reduce the amount of trash we produce is to _____ items such as paper and plastic.

11. Another way to reduce our trash is to use fewer materials or to _____ .

What happens to our trash?

12. In the United States, _____ of our trash is reused in some way.

13. Over half of the trash in the United States is put into _____ .

14. 14% of the trash in the United States is _____ .

Summarize the Main Idea

15. How do living things affect the environment? Give examples.

_____

_____

_____

_____

_____

_____

Name _____ Date _____

Vocabulary

Day and Night

a. competition	**d.** landfill	**g.** resources
b. conserve	**e.** pollution	
c. dam	**f.** recycle	

Match the correct letter with the description.

1. _____ An area where trash collected from people's homes is taken

2. _____ A structure that blocks the flow of water

3. _____ Items living things need to survive including water

4. _____ When animals struggle for the same resources

5. _____ When people use as little of an item as possible

6. _____ When unwanted substances are found in water air, or land

7. _____ To use an item more than once

Cloze Test

Name _____ Date _____

Living Things Change Their Environment

lessen	positive	reduce	trash
landfills	pollute	recycle	resources

Fill in the blanks.

All living things affect the environment in some way. When trees drop their leaves, worms and other living things break down those leaves, making the soil richer. This change is _____ for the environment. When humans burn resources to make energy, they _____ the environment, and this is a harmful change to the environment. When living things compete for _____ , such as water and sunlight, they change the environment as well. People can _____ the amount of harm they bring to the environment by conserving resources such as oil and coal. People can also _____ items such as plastic and metal cans. Today, the United States only reuses 30% of our _____ . Over half of our trash winds up in _____ . By reusing and recycling, we can _____ the amount of trash so that less land will be used for landfills and less pollution will be produced.

Name _____ Date _____ **Outline**

Changes Affect Living Things

Use your textbook to help you fill in the blanks.

What are some ways environments change?

1. Heavy rains and other forms of _____ can change the environment.
2. Some changes, such as earthquakes and volcanic eruptions, can affect the environment for _____ .
3. _____ also cause changes to the environment through actions such as logging and pollution.

How do changes affect plants and animals?

4. Living things have _____ that enable them to survive in their environment.
5. When the environment changes, some living things are able to adapt, while others must _____ to a new location.
6. If an animal is not able to adapt to changes in the environment or move, it may _____ .
7. Some animals adapt by changing their _____ .

How do living things depend on each other?

8. An ecosystem is made up of all the _____ and nonliving things in an area.
9. A _____ is made up of one type of living thing, for instance, all the roses in a garden.

Name _____ Date _____

What happens when new living things move in?

10. A new living thing introduced into an ecosystem may _____ for resources in the area.

11. A new living thing can upset the _____ among the living things in an ecosystem.

12. Introducing new living things to an ecosystem can result in other members of the community _____ .

13. In California, _____ , planted to prevent erosion, are causing the decline of native trees.

Summarize the Main Idea

14. How do living things respond to changes in the environment?

_____

_____

_____

_____

_____

_____

Name _____ Date _____ **Vocabulary**

What Happens When Environments Change?

a. adaptations	**d.** ecosystem	**g.** population
b. community	**e.** environment	
c. drought	**f.** habitat	

Match the correct letter with the description.

1. _____ A group of the same type of living things living in an area
2. _____ A long time without rain
3. _____ Everything that surrounds you
4. _____ The home of a living thing
5. _____ All the living things living in an area
6. _____ Special structures that help a living thing survive
7. _____ All the living and nonliving things in an area

Cloze Test Name _____ Date _____

What Happens When Environments Change?

adaptations	environment	move	short-term
competition	living things	people	

Fill in the blanks.

There are many different reasons an environment can change. Some changes to an environment are _____ , for instance muddy land caused by rain. Other changes have more lasting affects on the _____ . These changes affect the _____ that live there. Often, an ecosystem can recover from such changes. However, other changes, such as those caused by _____ , may take centuries to recover from. Many living things have _____ that allow them to survive more usual changes in the environment, such as drought. If a living thing can not adapt, it must _____ to a new location or it may die. When new living things are brought in to an environment, they often disturb the natural balance that exists. They may create more _____ for resources.

Name _____ Date _____ Outline

Living Things of the Past

Use your textbook to help you fill in the blanks.

What happens if the environment suddenly changes?

1. When the climate of an environment changes, some living things may die out, and become _____ .
2. Some animals are able to survive changes in the environment by _____ to it, others may move to another area.

How can we learn about things that lived long ago?

3. Fossils are the _____ of plants and animals that lived long ago.
4. Scientists study _____ to understand more about an animal's diet, size, shape, and movement.
5. By looking at the fossils of an animal's _____ , scientists can tell what type of food the animal ate.
6. Fossils can also provide clues about the _____ , for instance, if the animal lived near a body of water.

Name _____ Date _____

How are living things today similar to those that lived long ago?

7. Scientists studying _____ have found that many plants and animals alive today look like those that were alive long ago.

8. After looking at the fossils of the _____ , scientists concluded that they are related to the horseshoe crab.

Have some animals stayed the same over time?

9. Fossil crocodiles look _____ to crocodiles alive today.

Summarize the Main Idea

10. What happens to those living things that can not survive in a changing environment? How can we study these living things?

_____

_____

_____

Name _____ Date _____

Vocabulary

Records from the Past

a. adapt	**d.** extinct	**g.** trilobite
b. ancient	**e.** fossil	
c. climate	**f.** mammoth	

Match the correct letter with the description.

1. _____ An extinct animal similar to an elephant

2. _____ To change in order to survive in an environment

3. _____ Something that is very old

4. _____ An extinct marine animal that had a hard outer shell

5. _____ Something that no longer exists

6. _____ The average weather conditions for an area

7. _____ The remains of a living thing that lived long ago

Name _____ Date _____

Records from the Past

adapt	environment	fossils	humans
climate	extinct	what it ate	

Fill in the blanks.

Many different things can cause change in an environment. If the _____ changes, for example, it becomes colder for a long period of time, the things that live in the area may be harmed. Some living things are able to move, others _____ to the changes. Some animals can not survive, and they die out or become _____ . _____ also change the environment through activities such as farming and hunting. We are able to study animals that lived long ago using _____ . Fossils also provide information about a plant or animal's _____ . Using fossils, scientists are able to learn about the structures of an ancient living thing, as well as where it lived, _____ , and how it moved.

Name _____ Date _____

Reading

Looking at Dinosaurs

Read the Reading in Science feature in your textbook.

Scientists compare the structures of living animals with fossils and remains from the past. Dinosaurs were once the dominant land animals. New evidence is helping scientists find out how dinosaurs lived and why they might have disappeared. Take a look at how our views of dinosaurs have changed based on new evidence.

1842 Dinosaurs Are Named

British scientist Richard Owen names the group of large, extinct reptiles "dinosauria," from Greek words meaning "fearfully great lizard." Before that, people thought these strange bones came from dragons or giants!

1923 Dinosaur Nests Are Found

American scientists Roy Chapman Andrews and Walter Granger find dinosaur nests in the Gobi desert in China. The nests prove that dinosaurs laid eggs and did not give birth to live babies.

1995 Dinosaurs Don't Drag Their Tails

The T. rex skeleton at the American Museum of Natural History is changed to show the predator standing on two feet with its head low and tail off the ground. This is based on studies of fossils, dinosaur tracks, and how different animals move.

2000 Dinosaurs Have Feathers

A team of Chinese and American scientists finds a 130-million-year-old fossil dinosaur covered from head to tail with primitive feathers. Now most scientists agree that birds are living dinosaurs!

Name _____ Date _____

Cause and Effect

- The *cause* tells why something happened.
- The *effect* is what happened because of the cause.
- Clue words such as *because*, *if*, *then*, and *in order* describe a cause and effect relationship.

Write About It

Cause and Effect What caused scientists to change some of their ideas about dinosaurs? For each sentence, describe how scientists have changed their ideas and, using "because," list the new evidence that supports their new ideas.

Name _____ Date _____

Writing

Fossil Footprints

Read the Writing in Science feature in your textbook.

Write About It

Write a paragraph. Tell what scientists can learn from looking at footprints of animals that lived long ago. Include facts and details. Use words such as because and so to go from one idea to the next. At the end of your paragraph, tell what conclusions scientists can draw from looking at fossil footprints.

Getting Ideas

Do some print and online research. Find facts and details about fossil footprints.

Planning and Organizing

Here is some information that Chua found. Write Yes if it backs up the idea that scientists can learn a lot from fossil footprints. Write No if it does not.

1. Footprints show how many toes the animal had. _____
2. Scientists can tell from the footprints whether it walked on four legs or two legs. _____
3. I saw some interesting fossils at the Natural History Museum. _____

Name _____ Date _____

Drafting

A good topic sentence tells the main idea of the paragraph. Write your own topic sentence.

_____

_____

Now write your paragraph on a separate piece of paper. Begin with your topic sentence. Include facts and details that back up your main idea. End with a conclusion about learning from fossil footprints.

Revising and Proofreading

Here are some sentences that Chua wrote. Use the word because to combine each pair.

1. Scientists know that dinosaurs roamed North America. They found dinosaur footprints there.

   _____

   _____

2. There are many more fossil footprints than skeletons. Each animal made many tracks.

   _____

   _____

Now revise and proofread your paragraph. Ask yourself:

- Did I begin with a topic sentence that states my main idea about fossil footprints?
- Did I include supporting facts and details?

Name _____ Date _____

Environments Change

Choose the letter of the best answer.

1. All the living things in an ecosystem are called a(n)
   - **a.** community.
   - **b.** environment.
   - **c.** habitat.
   - **d.** population.

2. Sending glass bottles to be melted and turned into new bottles is a way to
   - **a.** compete.
   - **b.** conserve.
   - **c.** recycle.
   - **d.** pollute.

3. All the living and nonliving things in an area are a(n)
   - **a.** community.
   - **b.** ecosystem.
   - **c.** habitat.
   - **d.** population.

4. All the individuals of one kind of living thing in an area are a(n)
   - **a.** community.
   - **b.** ecosystem.
   - **c.** environment.
   - **d.** population.

5. The preserved remains of a plant or animal is a
   - **a.** community.
   - **b.** fossil.
   - **c.** habitat.
   - **d.** population.

6. If there are no more of a living thing alive on Earth, it is
   - **a.** adapted.
   - **b.** conserved.
   - **c.** extinct.
   - **d.** preserved.

Name _____ Date _____

Choose the letter of the best answer.

7. Dangerous chemicals or materials in the environment cause

a. flooding.
c. competition.
b. conservation.
d. pollution.

8. To use less of a resource is a way to

a. compete.
c. recycle.
b. conserve.
d. pollute.

9. What word describes the living and nonliving surroundings of a living thing?

a. adaptation
c. environment
b. climate
d. structure

10. What happens when two living things require the same resources?

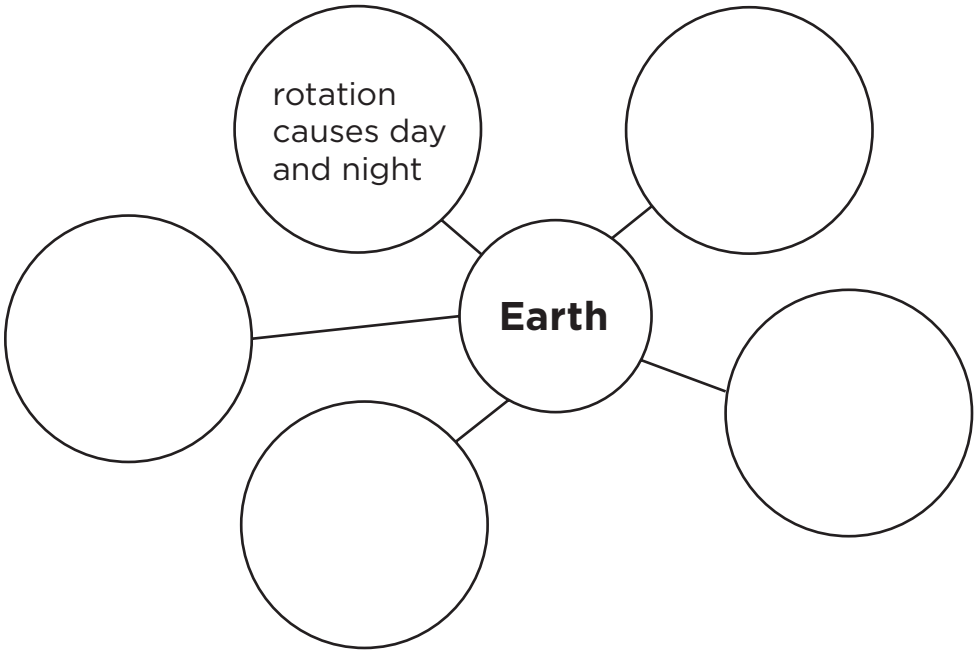
a. competition
c. pollution
b. conservation
d. protection

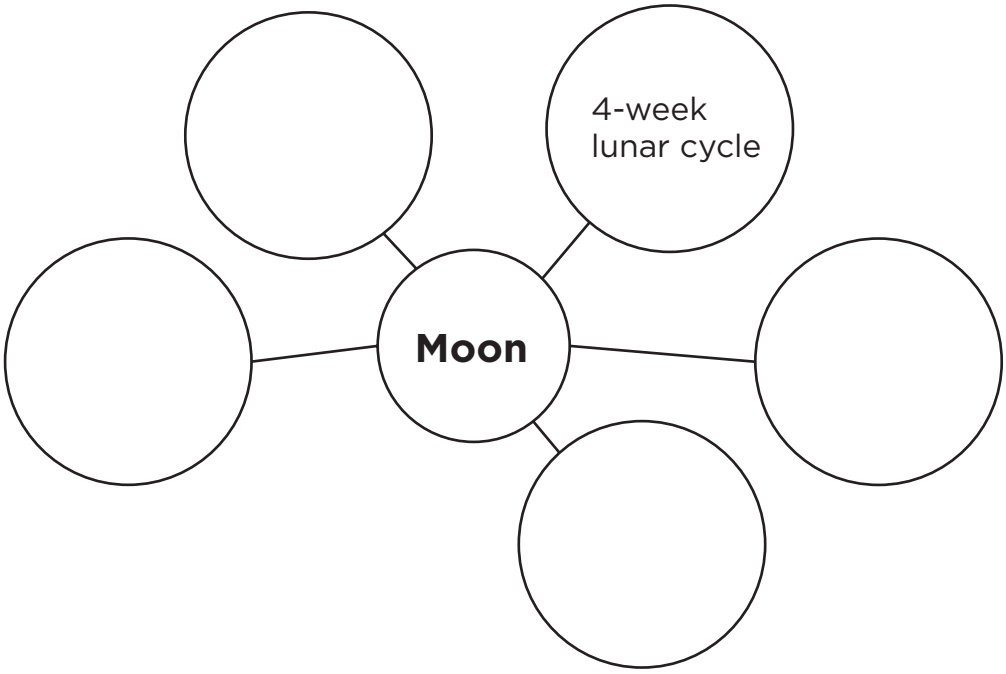
Name _____ Date _____

CHAPTER LEVEL
Concept Map

Our Earth, Sun, and Moon

Complete the concept map about the movement of the Earth and Moon. Some examples have been done for you.





Name _____ Date _____

The Sun and the Moon

Read the Literature feature in your textbook.

Write About It

Response to Literature The poet uses rhyme, rhythm, and vivid words to tell how she feels about the Sun and Moon. Write a poem about the Sun and Moon. Show how they are different. Use words that create a strong impression and show how you feel.

Name _____ Date _____ **Outline**

Day and Night

Use your textbook to help you fill in the blanks.

How does the Sun's position in the sky seem to change?

1. The _____ is highest in the sky at the middle of the day.
2. The Sun is _____ in the sky in the evening.
3. The Sun _____ in the east.
4. The Sun _____ in the west.
5. Shadows change as _____ changes.
6. Shadows are shortest at _____ .
7. In the evening, shadows are longer because the _____ is smaller than at midday.

What causes night and day?

8. Earth is always _____ , or spinning.
9. Daylight occurs in those areas of the Earth that are _____ .
10. When an area of Earth faces away from the Sun, it is _____ there.
11. The Sun rises in the east because Earth rotates from _____ .
12. It takes Earth _____ hours to complete one rotation.

Name _____ Date _____

What is an axis?

13. Earth's axis is an imaginary line _____ .

14. Earth spins around its _____ .

15. Earth's axis is _____ , not straight.

16. The _____ is found at the south end of Earth's axis.

17. The _____ is found at the north end of Earth's axis.

Summarize the Main Idea

18. What causes day and night?

_____

_____

_____

_____

_____

_____

_____

Name _____ Date _____

Vocabulary

Day and Night

a. axis	**d.** North Pole	**g.** west
b. day	**e.** rotate	
c. east	**f.** shadow	

Match the correct letter with the description.

1. _____ The time it takes Earth to completely rotate one time.

2. _____ The line around which Earth rotates.

3. _____ A dark area made when rays of light are blocked by a person or thing, and which changes when the angle of the Sun changes.

4. _____ This is where we see the Sun set.

5. _____ When things spin around their center, they do this.

6. _____ This is found at the north end of Earth's axis.

7. _____ Earth rotates toward this direction.

Name _____ Date _____

Day and Night

axis	goes down	overhead	shorter
day and night	longer	rises	west
daytime	nighttime	rotates	

Fill in the blanks.

Every day, we experience day and night. The Sun _____ in the east, and sets in the _____ . Early in the day, when the Sun is low in the sky, our shadows appear _____ . As the day goes on and the angle of the Sun increases, our shadows become _____ . At noon, the Sun is directly _____ . As the afternoon becomes evening, our shadows become longer again as the Sun _____ .

Earth _____ in space. The imaginary line around which the Earth spins is called its _____. Earth's rotation causes _____ . When your town faces away from the sun, it is _____ . When your town faces the sun, it is _____ . It takes Earth twenty-four hours to rotate one time.

Name _____ Date _____ **Outline**

The Seasons

Use your textbook to help you fill in the blanks.

Why do seasons change?

1. Earth _____ around the Sun.
2. The path Earth travels around the Sun is called its _____ .
3. It takes Earth one year, about 365 days, to _____ .
4. Because Earth's axis is _____ , part of the Earth will tilt toward the Sun, depending on where Earth is in its orbit.
5. The northern half of the Earth experiences summer when it is tilted _____ .
6. When the northern half of Earth is tilted away from the Sun, it is _____ there.

How does the Sun's path change from season to season?

7. In the spring, the Sun's path across the sky _____ as the days grow longer.

What are the seasons like in other places?

8. The imaginary line that separates the Northern and Southern Hemispheres is the _____ .
9. Because the Sun strikes the equator at the same angle all year, the temperatures _____ .

Name _____ Date _____

10. Areas _____ do not have different seasons.

11. Areas farthest from the equator, at the poles, have _____ weather for most of the year.

Summarize the Main Idea

12. What causes the seasons?

_____

_____

_____

_____

_____

_____

_____

_____

Name _____ Date _____

Vocabulary

The Seasons

a. equator	**d.** revolves	**g.** winter
b. Northern Hemisphere	**e.** Southern Hemisphere	
c. orbit	**f.** summer	

Match the correct letter with the description.

1. _____ The top half of Earth

2. _____ The imaginary line that circles the middle of Earth

3. _____ During this time of year, the Earth is tilted away from the Sun

4. _____ The area of Earth below the equator

5. _____ The path Earth travels as it goes around the Sun

6. _____ What Earth does around the Sun

7. _____ The time of year when the Sun's rays are the strongest

Name _____ Date _____

The Seasons

revolves	winter	toward the Sun	one year	warm
colder	higher	Earth	shorter	

Fill in the blanks.

In most parts of the world, people experience all four seasons. The seasons are caused by Earth's tilt and because it _____ around the Sun. It takes Earth _____ to orbit the Sun. As _____ travels around the Sun, it is tilted on its axis toward or away from the Sun. When your town is tilted away from the Sun, you experience _____ . During this season, the temperatures are _____ , and the days are _____ .

In the summer, your town is tilted _____ . The Sun is _____ in the sky and the temperatures are warm. Areas near the equator have _____ weather all year, because they receive the same amount of sunlight throughout the year.

Name _____ Date _____

Writing

Seasons Where You Live

Read the Writing in Science feature in your textbook.

Write About It

Choose a season. Tell a true story about something you did during that season that you couldn't do at another time of the year. Explain why you still remember the event. How did it make you feel? Include strong details that describe what the weather was like. Use time-order words to show the sequence of events. Remember to tell your story by using the I point of view.

Write five sentences you could use in your personal narrative. Put them in time order.

1. _____
2. _____
3. _____
4. _____
5. _____

Name _____ Date _____

Drafting

Try to grab your reader's interest right away. Here are two sentences that Anthony wrote to begin his personal narrative. Circle the one he should use.

One winter day in the mountain, I learned that weather can be a mighty foe.

My parents and I went cross-country skiing one winter day.

Now write your personal narrative. Describe what the weather was like and tell the events in time order.

_____

_____

_____

_____

_____

Revising and Proofreading

Now revise and proofread your personal narrative. Ask yourself:

- Did I use the I point of view?
- Did I tell the events in order and use time words?

Name _____ Date _____ **Outline**

The Moon

Use your textbook to help you fill in the blanks.

What are the phases of the Moon?

1. The different shapes of the Moon that we see are called _____ .
2. If the Moon appears to be getting _____ over several days, it is said to be waxing.
3. If the Moon appears to be getting _____ over several days, it is said to be a waning Moon.
4. The phase during which you cannot see the Moon is called the _____ .
5. When you are able to see the whole Moon, it is at the _____ phase.
6. When only a small amount of the Moon can be seen, it is called a _____ .
7. When almost the entire Moon can be seen, it is called a _____ .

Why does the Moon seem to change shape?

8. _____ of the Moon is always facing the Sun.
9. We see different phases of the Moon because of its _____ around Earth.
10. The light we see coming from the Moon is a reflection of the _____ light.

Name _____ Date _____

What is a lunar eclipse?

11. When Earth comes between the Sun and Moon, preventing sunlight from reaching the Moon, it is called a _____ .

12. During a lunar eclipse, the Moon is in _____ .

Summarize the Main Idea

13. Why does the Moon have different phases?

Name _____ Date _____

Vocabulary

The Moon

a. Crescent Moon	**d.** lunar cycle	**g.** phases
b. Full Moon	**e.** lunar eclipse	**h.** waning
c. Gibbous Moon	**f.** New Moon	**i.** waxing

Match the correct letter with the description.

1. _____ This is when the entire side of the Moon is visible.

2. _____ This occurs when the Earth blocks sunlight from reaching the Moon.

3. _____ This is when the Moon appears to be getting smaller.

4. _____ These are the different shapes of the Moon we see on Earth.

5. _____ This is when the Moon looks thin and curved.

6. _____ This is when the Moon is more than half visible.

7. _____ The 29-day period in which the Moon goes through all of its phases.

8. _____ This is when the Moon appears to be getting bigger.

9. _____ This is when you cannot see any surface of the Moon.

Name _____ Date _____

The Moon

Crescent Moon	half	New Moon	smaller
Full Moon	lunar cycle	phases	waxing

Fill in the blanks.

As you look at the Moon over the course of several weeks, you will notice that the Moon appears to change its shape. The different shapes of the Moon are called its _____ . The period of time in which the Moon goes through all of its phases is called the _____ . In the first phase, you cannot see the lighted surface of the Moon; this is called the _____ . Within a few days, you can see a small piece of the Moon; this is called a _____ . As the Moon becomes more visible, it is said to be _____ . Halfway through the cycle, you see the _____ phase. After this phase, the Moon wanes, or appears to be getting _____ . When more than _____ of the moon is still visible, it is in the Gibbous Moon phase. Then, the Moon shrinks to a crescent, disappears, and the cycle begins again.

Name _____ Date _____

Reading

To the Moon!

Do you ever wonder about the Moon? How do we learn what the Moon is actually like? First, people used their eyes to observe the Moon. Then they developed tools such as telescopes. Then astronauts (and robots) went up to the Moon to study it up close.

1957 The Soviet Sputnik ("fellow traveler") becomes the first artificial satellite to orbit Earth.

1959 Luna 1, 2, & 3 are the first spacecrafts to land on the Moon. They send pictures back to Earth. This is the first time anyone can see what the dark side of the Moon looks like.

1969 Apollo 11 mission is the first to land a man on the Moon. Neil Armstrong and Buzz Aldrin are the first astronauts to walk on the Moon and collect Moon samples.

1972 Apollo 17 is the last manned mission to the Moon. The crew spends 75 hours there. Astronauts Gene Cernan and Harrison Schmitt drive a Lunar Roving Vehicle around the surface of the Moon to collect samples.

Name _____ Date _____

A Sequence

- gives events in order
- tells what happens first, next, and last
- uses time-order words, such as *early on* and *later*, or *first* and *last*, to tell the order of events

Write About It

Sequence of Events Would you like to travel to the Moon? Write about an expedition to the Moon. Be sure your story tells what happens first, next, and last.

Name _____ Date _____

Our Earth, Sun, and Moon

Choose the letter of the best answer.

1. What occurs when Earth's shadow falls on the Moon?

   a. lunar cycle
   b. lunar eclipse
   c. phase
   d. orbit

2. A real or imaginary line through the center of an object is a(n)

   a. axis.
   b. cycle.
   c. equator.
   d. phase.

3. The sequence of shapes the Moon goes through in a month is called a(n)

   a. lunar cycle.
   b. lunar eclipse.
   c. orbit.
   d. phase.

4. The path an object takes when revolving around another object is called a(n)

   a. axis.
   b. cycle.
   c. eclipse.
   d. orbit.

Name _____ Date _____

Choose the letter of the best answer.

5. An object moving around another object is said to

a. axis. **c.** eclipse.

b. cycle. **d.** revolve.

6. A phase of the Moon is its

a. shape. **c.** equator.

b. cycle. **d.** axis.

7. An object that turns around its axis is said to

a. cycle. **c.** orbit.

b. eclipse. **d.** rotate.

8. An imaginary line around the middle of Earth is a(n)

a. axis. **c.** equator.

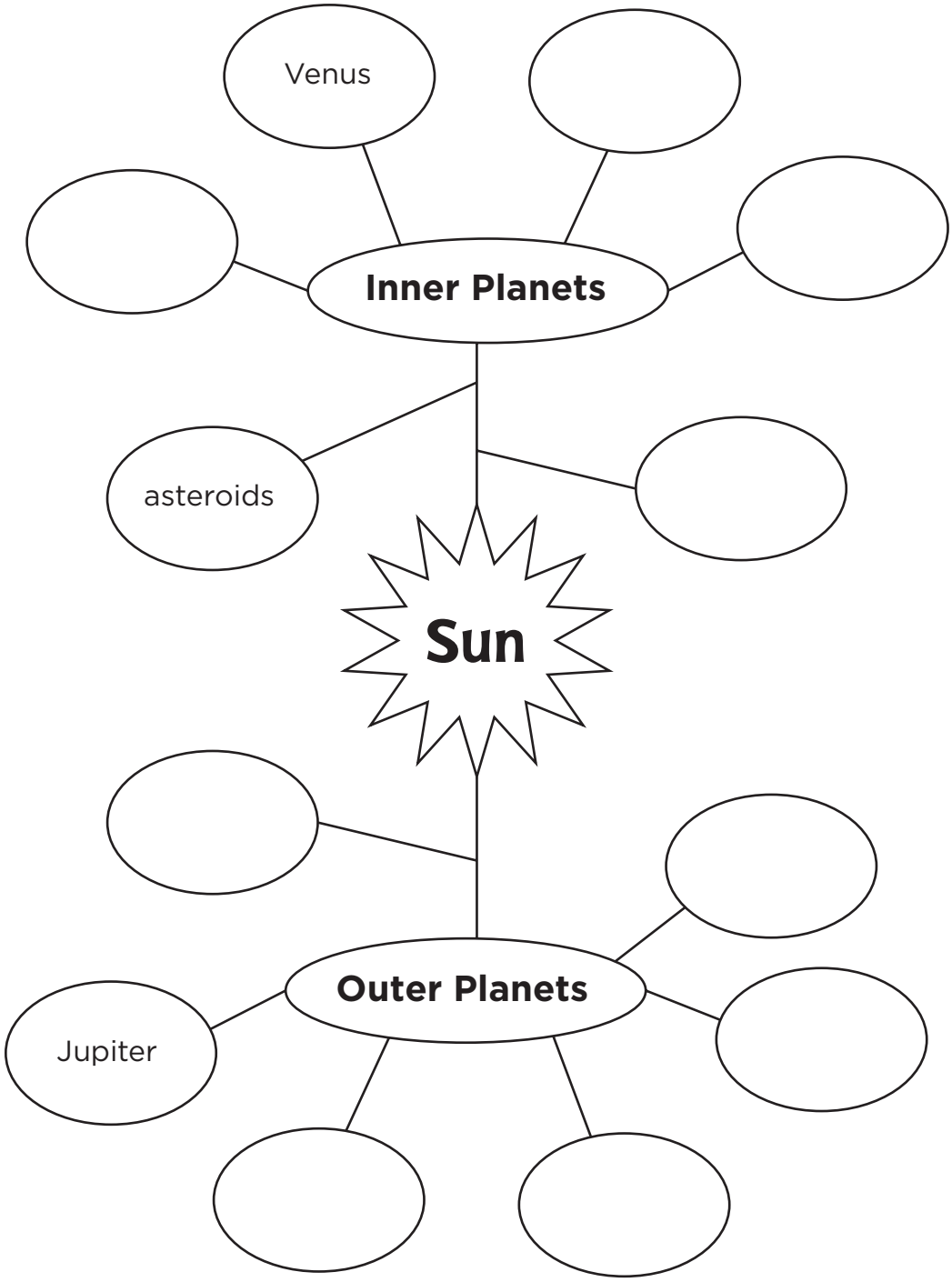
b. cycle. **d.** phase.

Name _____ Date _____

CHAPTER LEVEL
Concept Map

A Closer Look at the Solar System

Complete the concept map about our solar system. Some examples have been done for you.



Name _____ Date _____

To Space and Back

Read the Literature feature in your textbook.

Write About It

Response to Literature Sally Ride tells about her experiences when the shuttle blasted off. How would such a trip make you feel? Write a fictional narrative about a trip in space. Create a character and tell what things this character sees and does in space.

Name _____ Date _____ **Outline**

Our Solar System

Use your textbook to help you fill in the blanks.

What is the solar system?

1. The Sun and the objects that orbit around it are called the _____ .
2. A large ball that orbits the Sun is called a _____ .
3. Our solar system contains nine _____ including Earth.
4. Many of these planets have one or more _____ that orbit them.
5. Each planet _____ around the Sun.
6. Some of the planets are smaller or larger than the planet _____ .

What are the planets like?

7. Four planets closest to the Sun are Mercury, Venus, Earth, and _____ .
8. These four planets are called _____ planets.
9. These planets are warmer than the other planets because they are _____ .

Name _____ Date _____

What else is in our solar system?

10. Also part of our solar system are _____ , _____ , and _____ .

11. Thousands of asteroids are found in the asteroid belt between the _____ planets.

12. Comets are mostly _____ mixed with _____ .

13. Meteors are small pieces of broken-off _____ or _____ .

14. Meteors are made up of _____ , _____ , or _____ .

15. Meteors usually burn up in _____ atmosphere.

16. Earth's atmosphere is a layer of _____ that surrounds our _____ .

Summarize the Main Idea

17. What makes up our solar system?

_____

_____

_____

Name _____ Date _____

Vocabulary

Our Solar System

a. asteroid	**d.** meteor	**g.** solar system
b. comet	**e.** meteorite	**h.** star
c. inner planets	**f.** planet	**i.** outer planets

Match the correct letter with the description.

1. _____ It is a hot, glowing ball of gases.

2. _____ It is a large ball in space that orbits the Sun.

3. _____ It flies through the sky and hits Earth.

4. _____ It moves around the Sun in long, narrow orbits.

5. _____ It is made up of the Sun, planets, their moons, and meteors.

6. _____ It is found between the inner and outer planets.

Choose a word from the word box above that describes the words in each group.

_____	_____	_____
Mercury	Jupiter	asteroid
Venus	Saturn	comet
Earth	Uranus	meteorite
Mars	Neptune	
	Pluto	

Cloze Test

Name _____ Date _____

Our Solar System

Earth	Sun	Mars	solar system	farthest
Mercury	Venus	asteroids	star	comets
moons	planets	meteors	solid	

Fill in the blanks.

Earth is one of many planets that are part of our solar system. Large balls that orbit the Sun are _____ . They change positions in the sky because they revolve around the _____ . You can also find one or more _____ that orbit each planet. Planets closest to the Sun are _____ , _____ , _____ , and _____ . These small planets are made up of _____ rock-like material. Planets that are _____ from the Sun are Jupiter, Saturn, Uranus, Neptune, and Pluto. Besides planets and their moons, our solar system has _____ , _____ , and _____ . The Sun is at the center of our _____ . It is actually a _____ . It is a hot, glowing ball of gases.

Name _____ Date _____ Outline

Telescopes: Discovering the Solar System

Use your textbook to help you fill in the blanks.

What is a telescope?

1. One tool scientists use to study objects and places in space is a(n) _____ .
2. A telescope gathers light to make faraway objects appear _____ , _____ , and _____ .
3. A telescope has _____ that gather light.
4. A curved piece of glass is called a(n) _____ .
5. One of the best places for a telescope is in _____ .
6. One telescope that travels around Earth is the _____ telescope.
7. The Hubble telescope takes pictures of our solar system and sends them back to _____ .
8. As the Hubble telescope travels around Earth, it can see objects _____ than telescopes on Earth.
9. Special telescopes can detect _____ , _____ , or _____ from space.

Name _____ Date _____

How did we learn about space?

10. At first, people believed that the _____ circled _____ .

11. In 1543, Copernicus said that the _____ , not _____ , was the center of the solar system.

12. In 1609, _____ used his telescope to discover evidence that _____ .

13. Since 1609, scientists have seen the planets _____ , _____ , and _____ .

14. Scientists have also learned that there are _____ in the sky.

Summarize the Main Idea

15. How have telescopes helped scientists learn about our solar system?

_____

_____

_____

Name _____ Date _____

Vocabulary

Telescopes: Discovering the Solar System

a. Copernicus	**d.** lens	**g.** telescope
b. Galileo	**e.** Neptune	**h.** Uranus
c. Hubble	**f.** Pluto	

Who am I? What am I?

Choose a word from the word box above that answers each question.

1. I am a large planet that rotates on its side. Scientists saw me through telescopes. Who am I? _____
2. I am a curved piece of glass. What am I? _____
3. I am the person who said the Sun was the center of the solar system. Who am I? _____
4. I travel around Earth taking pictures of our solar system. What am I? _____
5. I have a Green Dark Spot on me. Scientists saw me through telescopes. Who am I? _____
6. I used a telescope to discover evidence that Earth orbits the Sun. Who am I? _____
7. I am a tool scientists use to make objects appear closer, clearer, and larger. What am I? _____
8. I am a planet so far away that very little is known about me. Scientists see me through telescopes. Who am I? _____

Name _____ Date _____

Telescopes: Discovering the Solar System

closer	Hubble telescope	Earth	Sun
larger	clearer	Uranus	Neptune
telescope	Pluto	glass	X-rays
lenses	radio waves	billions	infrared waves

Fill in the blanks.

Scientists study space with many kinds of telescopes. These special tools allow scientists to see distant objects _____ , _____ , and _____ . Telescopes gather light with _____ . Each lens is a curved piece of _____ . Back in 1609, Galileo used his _____ to discover evidence that _____ orbits the _____ . Scientists have used pictures from the _____ to learn more about our solar system. They have learned that there are _____ of stars. They also have learned the existence of three planets: _____ , _____ , and _____ . Besides light, telescopes can gather other information from space such as _____ , _____ , or _____ .

Name _____ Date _____ **Outline**

The Stars

Use your textbook to help you fill in the blanks.

What are stars?

1. An example of a medium-sized star is _____ .
2. The Sun looks larger than most stars because _____ .
3. Star-like objects that move in the night sky are _____ .
4. Because planets, including Earth, move in their orbits, the positions of the planets _____ .
5. You can see more stars through a _____ than you can see with _____ .

What is a constellation?

6. Groups of stars that form a pattern or picture are called a _____ .
7. To many people, star patterns looked like _____ or _____ .
8. You can see constellations move in the sky throughout the night because _____ .
9. Scientists use the names of _____ constellations to group the stars.

Name _____ Date _____

Why do we see different stars during different seasons?

10. As Earth travels around the Sun, different constellations of _____ appear each month.

11. Summer and winter skies are _____ .

12. You can see the constellation Orion only in the _____ .

13. If you look out into space at night, you are looking _____ .

14. If you look out into space at daytime, you are looking _____ .

Summarize the Main Idea

15. What are two reasons why people gave names to constellations?

_____

_____

_____

_____

_____

_____

Name _____ Date _____

Vocabulary

The Stars

a. binoculars	**d.** Orion	**g.** star
b. constellation	**e.** planet	**h.** Sun
c. magnify	**f.** rotate	**i.** telescope

Match the correct letter with the description.

1. _____ A hot, glowing ball of gases

2. _____ A name of a constellation

3. _____ A medium-sized star

4. _____ A pattern or picture outlined by stars

5. _____ A tool to magnify the stars

6. _____ To turn or to revolve

7. _____ A tool to magnify scenery

8. _____ A large ball in space that orbits the Sun

9. _____ To make larger

Cloze Test

Name _____ Date _____

The Stars

animals	direction	night sky	seasons	time
constellations	during	people	telescope	to move

Fill in the blanks. You will use one of the words twice.

Every night the stars come out. The stars are always in the sky, even _____ the day. Different stars appear during different _____ . Because Earth rotates on its axis, stars appear _____ but actually do not. You can see more stars through a _____ than with your eyes. Long ago, people thought that groups of stars reminded them of _____ or _____ . They gave names to groups of stars to make sense of the _____ . Orion, the Big Dipper, and the Little Dipper are names of _____ . People used constellations to help them tell _____ , _____ , and _____ . Today, scientists still use the names of 88 constellations.

Name _____ Date _____

Reading

Meet Orsola De Marco

When you look at a star, do you ever wonder about its life? Orsola de Marco does. She's a scientist at the American Museum of Natural History in New York. Orsola studies stars that are found together in pairs. As far as we know, our Sun is a star that stands alone. But most stars in the universe have a partner. They are called binary stars.

Of course Orsola can't go to the stars. So, she travels to Arizona, Hawaii, and Chile to use large telescopes. She gazes billions of miles into space to get a good look at binary stars. She watches how the stars influence each other. When a star gets old, it becomes larger. If there is another star nearby, it might get eaten up, or absorbed, by the expanding old star. No one is sure what will happen after that. Will the smaller star just disappear? Orsola is working to find out.

Name _____ Date _____

A Summary

- identifies the subject
- states the main idea
- gives the important details

Write About It

Summarize What would you study if you were an astrophysicist? Choose something you would like to study in space and write about it. Summarize some things you would like to learn. Tell why this interests you.

Stars to Freedom

Write About It

Write a paragraph that summarizes "Stars to Freedom." Include a topic sentence that states the main idea about the piece. Then in your own words, tell the most important facts and details from "Stars to Freedom." Be brief, but explain how people used the Big Dipper to travel to freedom.

Getting Ideas

Make sure you know what a summary is before you begin to write. Read each sentence below. Write True or False.

1. A summary is shorter than the article. _____
2. A summary is longer than the article. _____
3. A summary uses your own words. _____
4. A summary uses the exact words from the article.

   _____
5. A summary contains both important and unimportant details.

   _____
6. A summary contains only important information.

   _____

Name _____ Date _____

Drafting

Write the main idea of "Stars to Freedom" on the lines below.

_____

_____

Now write your summary. Begin with a topic sentence that tells your main idea. Include only important facts and details. End with a conclusion based on these facts.

_____

_____

_____

Revising and Proofreading

Here are some sentences from one student's summary. Find nine places where there should be a capital letter. Correct these errors.

"Stars to Freedom" shows how enslaved African americans used the stars to find freedom in the north. The handle of the big dipper points to the north star. They used the folk song "follow the drinking gourd" as a code.

Now revise and proofread your summary. Ask yourself:

- Did I include only important facts and details?
- Did I draw a conclusion at the end?
- Did I correct all grammar errors?

Name _____ Date _____

A Closer Look at the Solar System

Choose the letter of the best answer.

1. What is a small piece of ice and rock orbiting the Sun?

a. comet
c. meteor
b. constellation
d. planet

2. A pattern outlined by stars is a(n)

a. asteroid.
c. meteor.
b. constellation.
d. solar system.

3. A star and all the objects orbiting around it is a(n)

a. asteroid.
c. meteor.
b. constellation.
d. solar system.

4. A lens is a(n)

a. constellation.
b. curved piece of glass.
c. kind of telescope.
d. light in space.

5. What is a smaller piece of rock or metal orbiting the Sun?

a. asteroid
c. meteor
b. constellation
d. planet

Name _____ Date _____

Choose the letter of the best answer.

6. A small piece of rock burning up in Earth's atmosphere is a(n)

a. asteroid.
c. constellation.
b. comet.
d. meteor.

7. A large ball of rock in space orbiting the Sun is a(n)

a. comet.
c. planet.
b. constellation.
d. star.

8. A tool that gathers light to make objects appear larger is a(n)

a. constellation.
c. radio wave.
b. microscope.
d. telescope.

9. A very hot, glowing ball of gases in space is a(n)

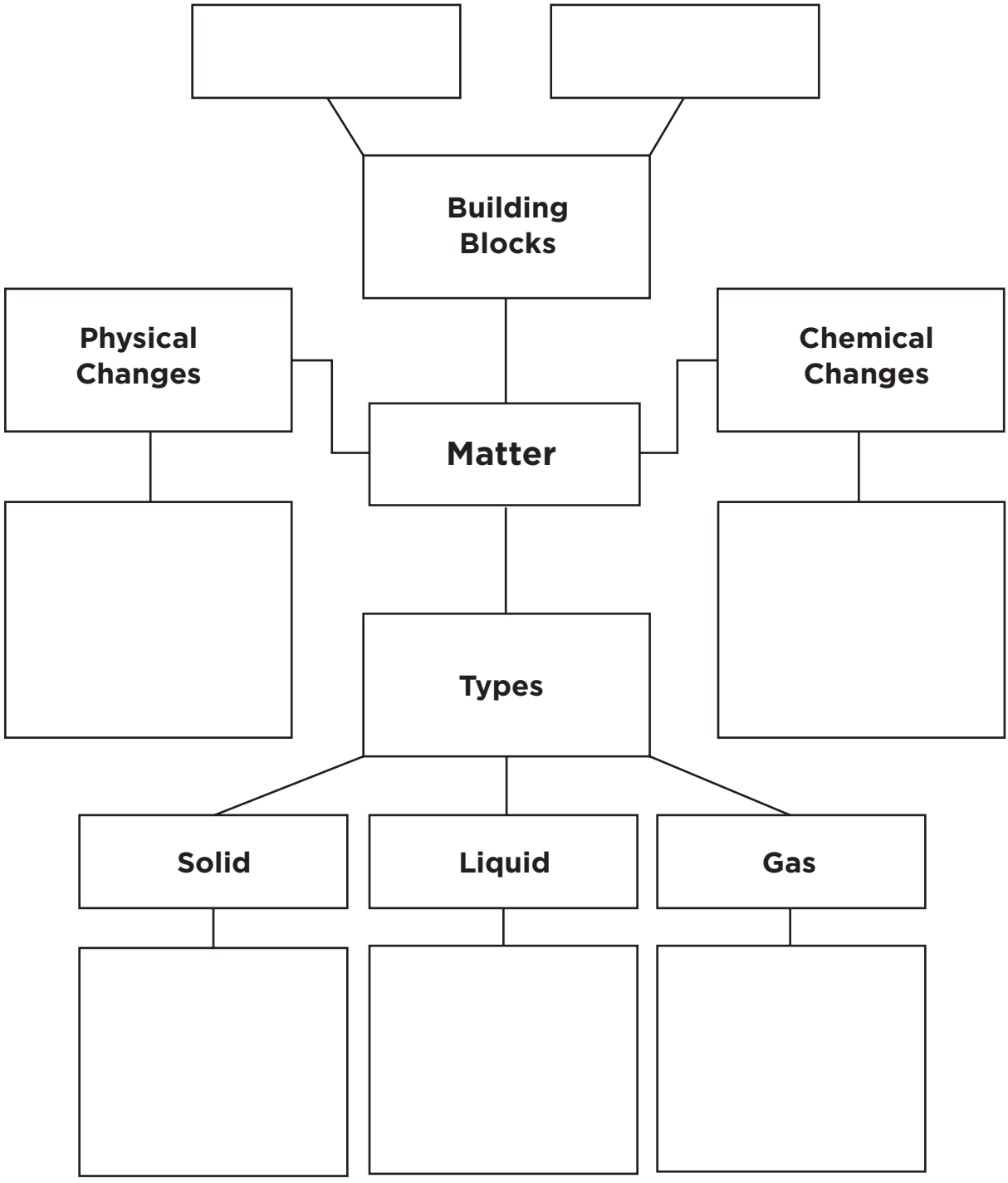
a. asteroid.
c. meteor.
b. comet.
d. star.

Name _____ Date _____

CHAPTER LEVEL
Concept Map

Matter

Complete the concept map with the information you learned about matter in Chapter 6.



Name _____ Date _____

Freezing Rain

Read the Literature feature in your textbook.

Write About It

Response to Literature During the winter, rain freezes into ice. What word does the author use in the poem to describe ice? What are some words that describe things around you? Choose an object to write about. Use as many words as you can to describe the object.

Name _____ Date _____ Outline

Solids, Liquids, and Gases

Use your textbook to help you fill in the blanks.

What is Matter?

1. Matter is anything that has mass and _____ .
2. Mass is the amount of _____ an object has.
3. If two objects are the same size and shape, but one has more matter, it has more _____ .
4. An object's _____ are ways to describe it, including color and texture.
5. Mass, one of many properties that can be measured, can be measured with a _____ .

How do we classify matter?

6. Three states that matter can be grouped into are _____ .
7. Solids have a definite _____ and shape.
8. Volume is the amount of _____ an object takes up.
9. Liquids have a definite volume, and _____ shape.
10. Gases have no definite _____ .

Name _____ Date _____

What happens when heat is added to matter?

11. When heat is added to matter, it gains _____ .

12. When a substance gains energy, its _____ increases.

13. When heat energy is added to a solid, it will _____ , becoming a liquid.

14. When heat is added to a liquid, it will _____ , becoming a gas.

15. When heat is taken away from matter, it loses _____ and its temperature decreases.

16. When a liquid loses heat energy, it freezes, and becomes a _____ .

17. When gases lose heat energy, they become liquids by _____ .

Summarize the Main Idea

18. What are the three states of matter and how does heat affect a substance's state of matter?

_____

_____

_____

_____

_____

_____

Name _____ Date _____

Vocabulary

Solids, Liquids, and Gases

a. condense	**d.** liquid	**g.** melt
b. evaporate	**e.** mass	**h.** solid
c. gas	**f.** matter	

Match the correct letter with the description.

1. _____ The amount of matter in an object

2. _____ When a gas becomes a liquid

3. _____ Carbon dioxide is one, because it takes the shape and volume of its container.

4. _____ When a liquid becomes a gas

5. _____ Your pen is one, because it has a definite volume and shape

6. _____ A glass of lemonade is one, because it takes the shape of its container, but has a definite volume

7. _____ When a solid becomes a liquid

8. _____ Anything that has mass and takes up space

Name _____ Date _____

Solids, Liquids, and Gases

condense	heat	mass	solid
gas	liquid	matter	

Fill in the blanks. Some answers may be used more than once.

Everything that you are able to see, touch, smell, and feel is matter. Matter is anything that has _____ and takes up space. _____ can be classified according to its state. A _____ piece of matter has definite volume and shape. A _____ has no definite shape, but a definite volume.

A _____ , such as oxygen, has neither a definite volume nor shape. When _____ energy is added to matter, changes to its state may occur. For instance, when a solid piece of ice is heated, it may melt, becoming a liquid. When heat is added to a liquid, it can evaporate, becoming a _____ . When heat is taken away, a liquid can freeze, becoming a _____ . When heat is taken away from a gas, it can _____ , becoming a liquid.

Name _____ Date _____ **Outline**

Building Blocks of Matter

Use your textbook to help you fill in the blanks.

What are elements?

1. Everything is made up of _____ .
2. _____ make up matter.
3. Matter can be made up of _____ elements.
4. When elements combine to form new substances, the resulting substances have _____ properties.

What are atoms?

5. No matter how small you divide an element into pieces you are able to see, it will have _____ properties.
6. Scientists must use special microscopes called _____ in to order to see the atom.
7. The smallest part of matter that keeps its properties is an _____ .
8. All of an element's atoms have the same _____ as the element.

How do we arrange elements?

9. A periodic table shows all of the _____ .
10. Each element in the _____ is represented by a symbol.
11. Other information in the periodic table includes an element's _____ .
12. Elements in the same column of the periodic table share common _____ .

Name _____ Date _____

13. Elements on the left side of the periodic table are usually _____ .

14. Hydrogen can be found on the left side of the periodic table, but it is a _____ .

Summarize the Main Idea

15. What are elements and how do scientists organize them?

_____

_____

_____

_____

_____

_____

Name _____ Date _____

Vocabulary

Building Blocks of Matter

a. atom	**d.** matter	**g.** periodic table
b. electron microscope	**e.** metals	
c. elements	**f.** non-metals	

Match the correct letter with the description.

1. _____ A device that allows scientists to see the smallest parts of matter
2. _____ Everything we can see, touch, and feel.
3. _____ The smallest part of an element that has all of the element's properties.
4. _____ All matter is made up of these.
5. _____ A chart containing information for every element known.
6. _____ These elements are found on the right side of the periodic table.
7. _____ These elements, including iron, are found on the left side of the periodic table.

Name _____ Date _____

Building Blocks of Matter

atoms	metals	smallest
elements	periodic table	properties

Fill in the blanks.

Everything that we know of is made up of matter. All matter is made up of _____ . Some matter, such as oxygen, is made up of only one element. Other matter is made up of more than one element joined together. Water is made up of the elements hydrogen and oxygen. The _____ part of an element that still keeps the element's properties is an atom. Because they are too small to see with the human eye, scientists study _____ using tools like the electron microscope.

Scientists group all of the elements in a chart called the _____ . The periodic table also contains information about groups of elements. On the periodic table, a column of elements have similar _____ . For instance, _____ are found on the left side of the periodic table and nonmetals are found on the right side. The periodic table is a tool where you find out many properties of elements.

Name _____ Date _____ Reading

Meet a Scientist

Meet Neil deGrasse Tyson

Did you know that you are "star dust"? Neil deGrasse Tyson can tell you what that means. He's a scientist at the American Museum of Natural History in New York.

Your body is full of hydrogen, carbon, calcium and many other atoms. All these atoms were first formed in the stars a long time ago. So were the silicon, iron, and oxygen atoms that form most of the Earth's inside.

How did these elements make their way from the stars to your body?

Most elements form inside the fiery and dense centers of stars. Hydrogen, the simplest of the elements, combines to form helium, carbon, and all the other elements in these conditions. Throughout their lives, stars scatter elements into space. Over millions of years, these elements combine to form new stars, or planets, or even living things, like you!

Neil deGrasse Tyson is an astrophysicist, a scientist who studies how the universe works.

Name _____ Date _____

Main Idea and Details

The Main Idea

- tells the most important message of the text.
- is supported by details, facts, and examples.

Write About It

Main Idea Think of a question you would like to ask scientist Neil deGrasse Tyson. Research and write about the tools that scientists use to discover facts about elements in the universe.

Name _____ Date _____ Writing

Building Blocks of Matter

Read the Writing in Science feature in your textbook.

Write About It

Write a paragraph telling about the building blocks of matter. Begin your paragraph with a topic sentence. This sentence should state the main idea. Then include facts and details that support the main idea or add more information about it. End with a conclusion based on your facts and details.

Getting Ideas

Do some online and print research. Find facts about the building blocks of matter.

Planning and Organizing

Write two sentences that tell about the building blocks of matter.

1. _____

_____

2. _____

_____

Name _____ Date _____

Drafting

Write a topic sentence for your paragraph.

_____

_____

Now write the first draft of your paragraph on a separate sheet of paper. Begin with your topic sentence. Tell facts and details about the building blocks of matter. Draw a conclusion at the end.

Revising and Proofreading

Proofread these sentences that Carlos wrote. Each sentence has a grammar error. Find the error and correct it. Write the correct sentence on the line.

1. All the atoms in an element is alike.

   _____

2. Two atoms of hydrogen and one atom of oxygen combines to form water.

   _____

   _____

Now revise and proofread your paragraph. Ask yourself:

- Did I begin with a topic sentence that tells my main idea?
- Did I include facts and details to back up my main idea?
- Did I draw a conclusion at the end?
- Did I correct all grammar errors?

Name _____ Date _____ Outline

Changing Matter

Use your textbook to help you fill in the blanks.

What are physical changes?

1. When matter changes only in ways that you can see, such as getting smaller, it has gone through a _____ .
2. When something goes through a physical change, its properties _____ .
3. When a solid becomes a liquid, it goes through a _____ change.
4. When water boils, becoming steam, this is a _____ change.
5. When you mix different types of matter together and their properties do not change, you have created a _____ .
6. Mixing oil and vinegar together to make salad dressing is an example of a _____ change.
7. When someone pours milk into their coffee, they have created a _____ .
8. Stirring an egg is an example of a _____ change.

What are chemical changes?

9. When substance goes through a change where new matter is created, it is a _____ change.

Name _____ Date _____

What are the signs of a chemical change?

10. Light and heat may be produced during a _____ .

11. When a substance changes _____ , for example, when iron rusts and turns brownish-red, this is a sign that a chemical change has occurred.

12. If you see bubbles form when two substances are combined, this indicates that a _____ has formed, another sign that a chemical change has occurred.

13. When fireworks explode, _____ and heat indicate a chemical change has occurred.

14. Cooking an egg is an example of a _____ change.

Summarize the Main Idea

15. Describe the two ways that matter can change. How can you tell which type of change has occurred?

_____

_____

_____

_____

_____

_____

Name _____ Date _____

Vocabulary

Changing Matter

a. burning	**d.** mixture	**g.** spoils
b. chemical change	**e.** physical change	
c. elements	**f.** rust	

Match the correct letter with the description.

1. _____ Matter changes, but its makeup does not change.

2. _____ This chemical change results in the formation of light and heat.

3. _____ When fruit does this, it is a chemical change of the matter.

4. _____ Matter changes, and its properties and makeup also change.

5. _____ A combination of matter, such as salt water, in which the makeup remains the same

6. _____ The building blocks of matter

7. _____ This occurs when iron materials are left outside and undergo a chemical change.

Name _____ Date _____

Changing Matter

chemical change	light	matter	new
gas	makeup	melts	physical change

Fill in the blanks.

Every day, we see matter change. For example, if you tear a piece of paper, the paper undergoes a _____ . The _____ and properties of the matter do not change.

Another physical change that we can see is when an ice cube _____ . A _____ causes a _____ substance to be made. When a log burns, the ashes that are formed are a different type of _____ than the original wood. There are many ways to observe that a chemical change has occurred in matter. For example, when we see a piece of paper burning, we see _____ and feel heat.

Color change is another observation. Finally, if you see a _____ released, you know that a chemical change has occurred. These changes in the matter indicate that the substance is now a new type of matter.

Name _____ Date _____

CHAPTER LEVEL
Vocabulary

Matter

1. Your body, desk, and the air you breathe are all
   - **a.** gases.
   - **b.** liquids.
   - **c.** matter.
   - **d.** solids.

2. An atom
   - **a.** is very large.
   - **b.** is always a liquid or a solid.
   - **c.** is the smallest unit of an element.
   - **d.** only experiences physical changes.

3. The building blocks of matter are **best** described as
   - **a.** elements.
   - **b.** gases.
   - **c.** mass.
   - **d.** solids.

4. Which of the following shows that a chemical change has happened?
   - **a.** a torn sheet of paper
   - **b.** a piece of spoiled fruit
   - **c.** water freezing into ice
   - **d.** a mixture of tea and water

5. When ice melts, water becomes
   - **a.** a gas.
   - **b.** a liquid.
   - **c.** a solid.
   - **d.** a powder.

6. What is the measure of matter in an object?
   - **a.** mass
   - **b.** shape
   - **c.** size
   - **d.** weight

Name _____ Date _____

7. A liquid has

a. definite shape and volume.

b. no definite shape or volume.

c. definite shape.

d. definite volume.

8. When a liquid gains heat energy it can

a. condense.

b. evaporate.

c. freeze.

d. melt.

9. Which of the following is NOT a physical change in matter?

a. A new substance was formed after a reaction.

b. Matter changed from a liquid to a solid.

c. Matter formed a gas when heat energy was added.

d. Substances have the same properties after they are mixed.

10. What has happened when condensing occurs?

a. Heat was added to a solid.

b. Heat was added to a liquid.

c. A gas has lost heat energy.

d. A solid has lost heat energy.

11. The periodic table is a chart that shows a list of

a. atoms.

b. elements.

c. only gases.

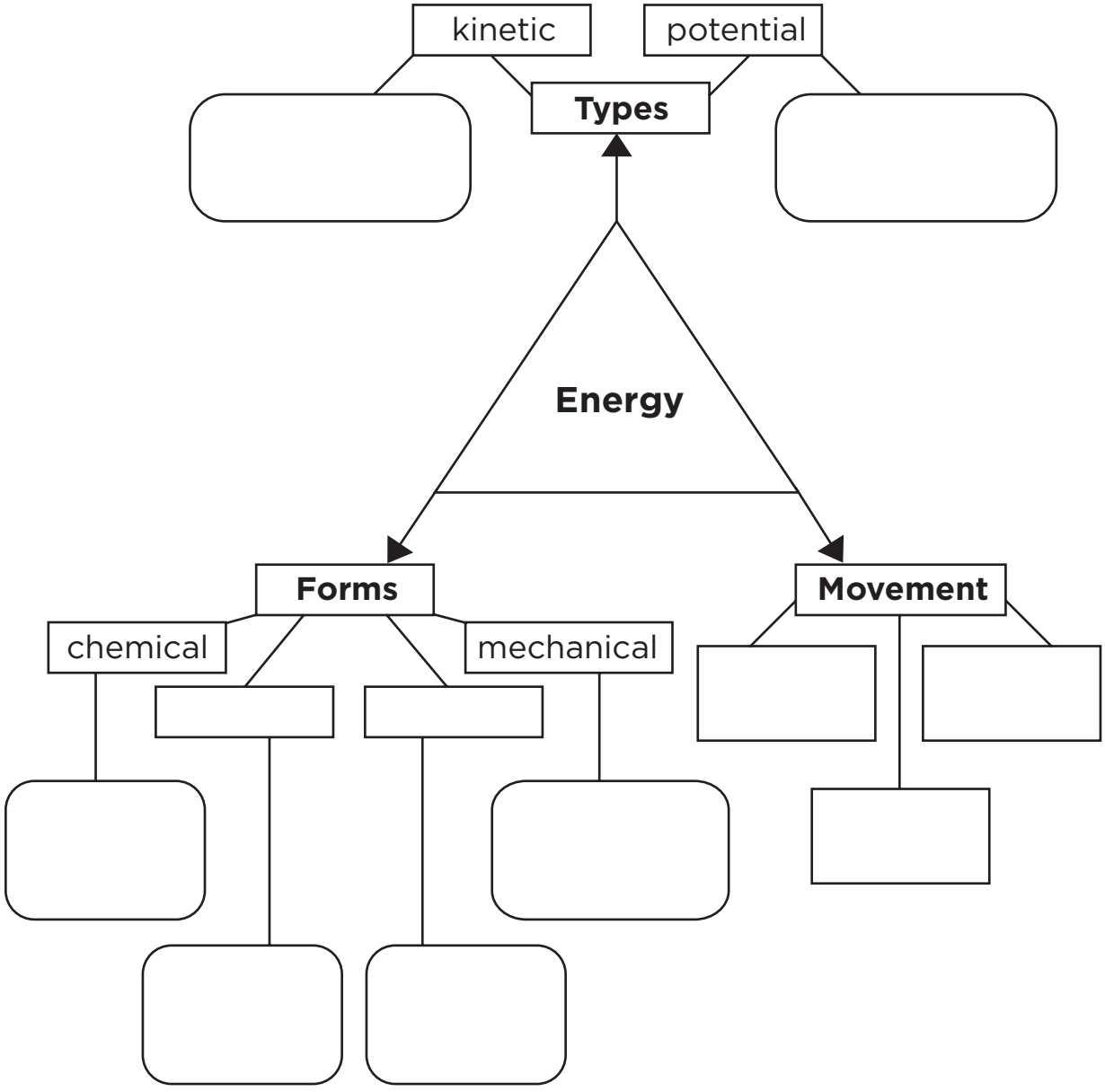
d. only solids.

Name _____ Date _____

CHAPTER LEVEL
Concept Map

Energy

Complete the concept map with the information you learned about energy. Some answers have been written for you.



Name _____ Date _____

Wind Power

Read the Literature feature in your textbook.

Write About It

Response to Literature

This article tells about wind farms that create electricity. What do you think people do with the energy that is produced? Write a letter to a friend. Describe the ways that you use energy.

Name _____ Date _____ **Outline**

Energy All Around

Use your textbook to help you fill in the blanks.

What is energy?

1. Energy is the ability to do _____ .
2. All living things need energy to _____ .
3. _____ enables things to move and grow.
4. When a solid block of ice gains energy, it melts, which is a _____ change.
5. Burning a piece of paper is an example of energy causing matter to undergo a(n) _____ change.

What are some forms of energy?

6. Gasoline, batteries, and food all contain _____ .
7. Computer printers use _____ energy.
8. The hotter something becomes, the more _____ it has.
9. Moving objects contain _____ .
10. Energy can be converted from one form to another. For instance, when a fire burns, chemical energy in wood is converted to _____ and heat energy.

What is Earth's main source of energy?

11. Earth's main source of energy is the _____ .
12. Different areas of Earth receive more direct sunlight because of Earth's _____ .
13. We see the Sun's energy in the form of _____ .

Name _____ Date _____

14. We feel the Sun's energy in the form of _____ .

15. Plants use light energy from the Sun to make _____ .

How does the Sun's energy change matter?

16. _____ energy from the Sun causes matter to gain thermal energy.

17. When ice gains heat energy, it melts and becomes a _____ .

18. When liquid water such as a puddle gains heat energy, it _____ and becomes a gas.

Summarize the Main Idea

19. What is energy? What is the main source of Earth's energy?

_____

_____

Name _____ Date _____

Vocabulary

Energy All Around

a. chemical energy	**d.** friction	**g.** thermal energy
b. electrical energy	**e.** light energy	
c. energy	**f.** mechanical energy	

Match the correct letter with the description.

1. _____ The more of this an object has, the warmer it becomes.

2. _____ This energy is stored in matter.

3. _____ This energy is found in running water.

4. _____ This energy is seen coming from a lamp that is switched on.

5. _____ This is the ability to do work.

6. _____ This energy occurs in plugged-in items such as a vacuum.

7. _____ This force opposes motion when two objects are touching.

Name _____ Date _____

Energy all Around

chemical	light	physical
electrical	matter	Sun
heat or thermal	mechanical	work

Fill in the blanks.

When you feel tired, you may feel like you have no energy. Energy is the ability to do _____ . Energy can make _____ undergo both physical and chemical changes. When heat energy is added to a block of ice, for instance, it melts. Melting is a _____ change. When a piece of paper burns because it gains energy from a fire, it undergoes a _____ change. _____ energy enables us to watch television. When we are cold, we have less _____ energy than when we are warm. When things are moving, they have _____ energy. The main source of Earth's energy is the _____ . We see the Sun's energy as _____ and feel it as heat. The Sun's energy can cause other changes in matter as well.

Name _____ Date _____ **Outline**

Using Energy

Use your textbook to help you fill in the blanks.

What are potential energy and kinetic energy?

1. The energy stored in objects is called _____ .
2. The higher up a resting object is, the _____ potential energy it has.
3. The energy that moving objects have is called _____ .
4. A rolling bowling ball contains _____ .
5. An object sitting on top of a hill has more _____ than an object sitting at the bottom of the hill.
6. A chair has _____ energy.

What are some sources of stored energy?

7. A battery contains stored _____ energy.
8. When a battery-operated lantern is turned on, the stored chemical energy is first converted to _____ energy.
9. Electrical energy in a lamp is converted into light _____ energy.
10. A match also has stored _____ energy.
11. When its potential energy is used up, a match _____ .

Name _____ Date _____

12. The food we eat has _____ .

13. We use the energy in _____ to do all the things that keep us alive.

How is stored energy changed?

14. A gas stove converts the energy stored in natural gas to _____ energy.

15. An automobile engine changes the chemical energy stored in gasoline into _____ energy.

16. We also convert stored energy into _____ when we break down the food we eat and are able to walk around the room.

Summarize the Main Idea

17. What is the difference between potential energy and kinetic energy?

_____

_____

Name _____ Date _____

Vocabulary

Using Energy

a. battery	**d.** heat energy	**g.** potential energy
b. chemical energy	**e.** kinetic energy	
c. energy	**f.** motion	

Match the correct letter with the description.

1. _____ An object that has a lot of this feels hot.

2. _____ This type of energy is found in food.

3. _____ Chemical energy is found here.

4. _____ This is the movement of an object.

5. _____ This is the ability to do work.

6. _____ A moving object has this energy.

7. _____ This is stored energy.

Name _____ Date _____

Using Energy

chemical	electricity	kinetic energy
chemical energy	food	potential
convert or change	kinetic	stored or potential

Fill in the blanks.

All objects can be considered to contain energy. Objects that are not moving, such as a ball resting on the floor, contain stored energy called _____ energy. When a ball rolls across the floor, it is an object in motion, so it has _____ energy. There are many sources of _____ energy. A battery also contains stored _____ energy. This stored energy can be released to provide _____ that is then converted to light, sound, or other forms of energy. Automobiles are able to _____ stored energy into energy that enables them to drive down the street. People use the energy stored in _____ to walk, run, and jump. When we move, we are using _____ . That kinetic energy comes from the food we eat, which has _____ .

Name _____ Date _____

Reading

Turning the Power On

People use a lot of energy. We need it to power our cars, heat our homes, and run the many machines we use each day. Energy sources like coal or oil are limited. When they're used, they are gone forever. But other sources are renewable. Renewable means they can be used again and again. Here's a look at how people have used these alternative energy sources over time.

1882 Hydropower Energy

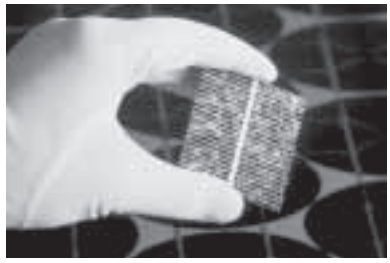
The river current turns the mill wheel, which turns a machine called a turbine. The turbine transforms the river's energy into electricity.

1890 Wind Energy

Wind turbines are invented in Denmark. These machines use the energy of the wind to create electricity.

1904 Geothermal Energy

Heat energy from Earth is harnessed from geysers in Italy. Steam from the geysers turns turbines, which produce electricity.



1904 Solar Energy

Russell Ohl invents a device that transforms light from the Sun into electricity.

1904 Biomass Energy

Biomass consists of dead trees, tree branches, yard clippings, and leftover crops, as well as wood chips, bark, and sawdust from lumber mills. It can even include used tires and livestock manure. These materials are burned to produce heat, steam, or electricity.

Name _____ Date _____

To draw a conclusion you must

- read the story completely
- understand the story details
- make connections among story details

Renewable energy sources can be replenished in a short period of time. The five renewable sources used most often are hydropower (water), wind, geothermal, solar, and biomass. No matter what energy source you use, it's important to conserve electricity. That means turning off the light when you leave a room.

Write About It

Draw Conclusions **What do you think is the author's purpose for writing this article? In the last paragraph, the author tells us we must all do our part in saving electricity. What are some ways you can reduce the amount of electricity you use? Write about ways you can use less electricity.**

Name _____ Date _____ Writing

Conserving Energy

Write About It

Write a persuasive letter to a community leader. Tell your opinion about why it is important to save gas. Give strong reasons, facts, and examples that will convince your reader. Save your best reason for last. Be sure to follow the form of a formal letter.

Getting Ideas

Brainstorm ideas about why it is important to save gas. Write them on a separate sheet of paper.

Planning and Organizing

Here are some sentences Armando wrote to support the opinion that we must save gas. Write Yes by each sentence that supports this opinion. Write No by each sentence that does not.

1. Taking buses and trains instead of cars will help us save gas. _____
2. There will be more and more gas shortages if we don't start conserving gas. _____
3. Gas is a renewable resource. _____

Write two sentences giving facts, reasons, and details for saving gas.

1. _____

   _____

2. _____

   _____

Name _____ Date _____

Use the guidelines below to write your letter.

1. This is the heading. Write your address and the date.
2. This is the inside address. Write the name of the person to whom you are writing, the organization, and the address.
3. This is the salutation, or greeting. Write "Dear" and the name of the person. Put a colon after the name.
4. Explain why you are writing. State your position.
5. Give facts, reasons, and details that back up your opinion.
6. Tell what you want the reader to do.
7. This is the closing. Use special words like "Sincerely" or "Yours truly." Put a comma after these words.
8. Sign your name. If you are writing on computer, type your name under your signature.

[1] _____
_____
_____

[2] _____
_____
_____
_____

[3] _____

[4] _____
_____
_____

[5] _____
_____
_____

[6] _____
_____
_____

[7] _____

[8] _____

Now revise and proofread your letter. Ask yourself:

- Did I follow the form of a formal letter?
- Did I tell my opinion about saving gas?
- Did I include facts, details, and reasons to back up my opinion?
- Did I end by saying what I want the reader to do?
- Did I correct all grammar errors?
- Did I correct all spelling, punctuation, and capitalization errors?

Name _____ Date _____ **Outline**

Energy on the Move

Use your textbook to help you fill in the blanks.

How can energy move through objects?

1. Moving objects have _____ energy.
2. Objects in motion are able to _____ their energy to another object.
3. If a rolling ball hits a block of wood, some of its kinetic energy is transferred to _____ .
4. If an object gains kinetic energy from another object, it may _____ .
5. In basketball, _____ energy from your arm is transferred to the ball when you throw it to another player.

How is energy transferred by waves?

6. A _____ is a disturbance that moves through a substance such as water or air.
7. Waves carry _____ , which they can transfer to objects.
8. Ocean waves are _____ waves; they move up and down.
9. Ocean waves cause floating objects to move _____ .

How does sound energy move?

10. Sound is a type of _____ energy.
11. When objects move back and forth very quickly, they _____ .

Name _____ Date _____

12. Vibrating objects produce _____ energy.

13. Sound waves are called _____ waves because they compress or squeeze and then release the air they move through.

14. Sound waves move _____ .

15. When sound waves strike an object, they may cause it to _____ .

16. The faster the sound waves travel, the _____ pitch of sound you will hear.

How does electrical energy move?

17. Electrical energy moves through _____ .

18. When you plug in a hair dryer, you are connecting the wire in the cord with the wire in the outlet, allowing the _____ energy to flow into your hair dryer.

19. The electrical energy traveling into your hair dryer is converted to the mechanical and _____ energy you use to dry your hair.

Summarize the Main Idea

20. Describe three ways energy can be carried from one location to another.

_____

_____

_____

_____

_____

Name _____ Date _____

Vocabulary

Energy on the Move

a. compression wave	**d.** seismic wave	**g.** wave
b. electrical energy	**e.** sound energy	
c. mechanical energy	**f.** transverse wave	

Match the correct letter with the description.

1. _____ A disturbance that moves horizontally as the matter in the disturbance moves up and down

2. _____ A disturbance that moves through a substance

3. _____ A wave that moves matter back and forth in the same direction that the wave is traveling

4. _____ The energy of moving objects

5. _____ The energy of vibrating objects

6. _____ A wave that travels from an earthquake

7. _____ The energy of electric currents

Name _____ Date _____

Energy on the Move

energy	same	up an down	wire
hear	sound	vibrating	
move	transfer	waves	

Fill in the blanks.

There are several ways in which energy can be moved from one location to another. Moving objects _____ energy to the objects they come into contact with. For example, a moving hockey stick transfers some of its kinetic energy to a hockey puck, causing it to _____ . _____ are disturbances that move in a regular pattern through matter or space. When you float in the ocean, you move _____ as a wave passes you. The wave has transferred some its energy to you, causing you to move in the _____ direction as the wave. Sound waves also transfer _____ . Sound waves are produced by _____ objects. When _____ waves strike a person's eardrum, they cause it to vibrate. This transfer of energy enables us to _____ . Electrical energy can also carry energy as it moves through a _____ .

Energy

Choose the letter of the best answer.

1. Objects that vibrate produce
   - **a.** electrical energy.
   - **b.** potential energy.
   - **c.** sound energy.
   - **d.** work energy.

2. What kind of energy is potential energy?
   - **a.** motion
   - **b.** sound
   - **c.** stored
   - **d.** work

3. Moving charges are
   - **a.** electrical energy.
   - **b.** potential energy.
   - **c.** sound energy.
   - **d.** work energy.

Name _____ Date _____

Choose the letter of the best answer.

4. Energy is

a. a change in matter.

b. a flash of light.

c. the ability to do work.

d. motion in space.

5. A disturbance that moves through matter or space is a(n)

a. energy.

b. force.

c. sound.

d. wave.

6. The energy of motion is

a. kinetic energy.

b. work energy.

c. potential energy.

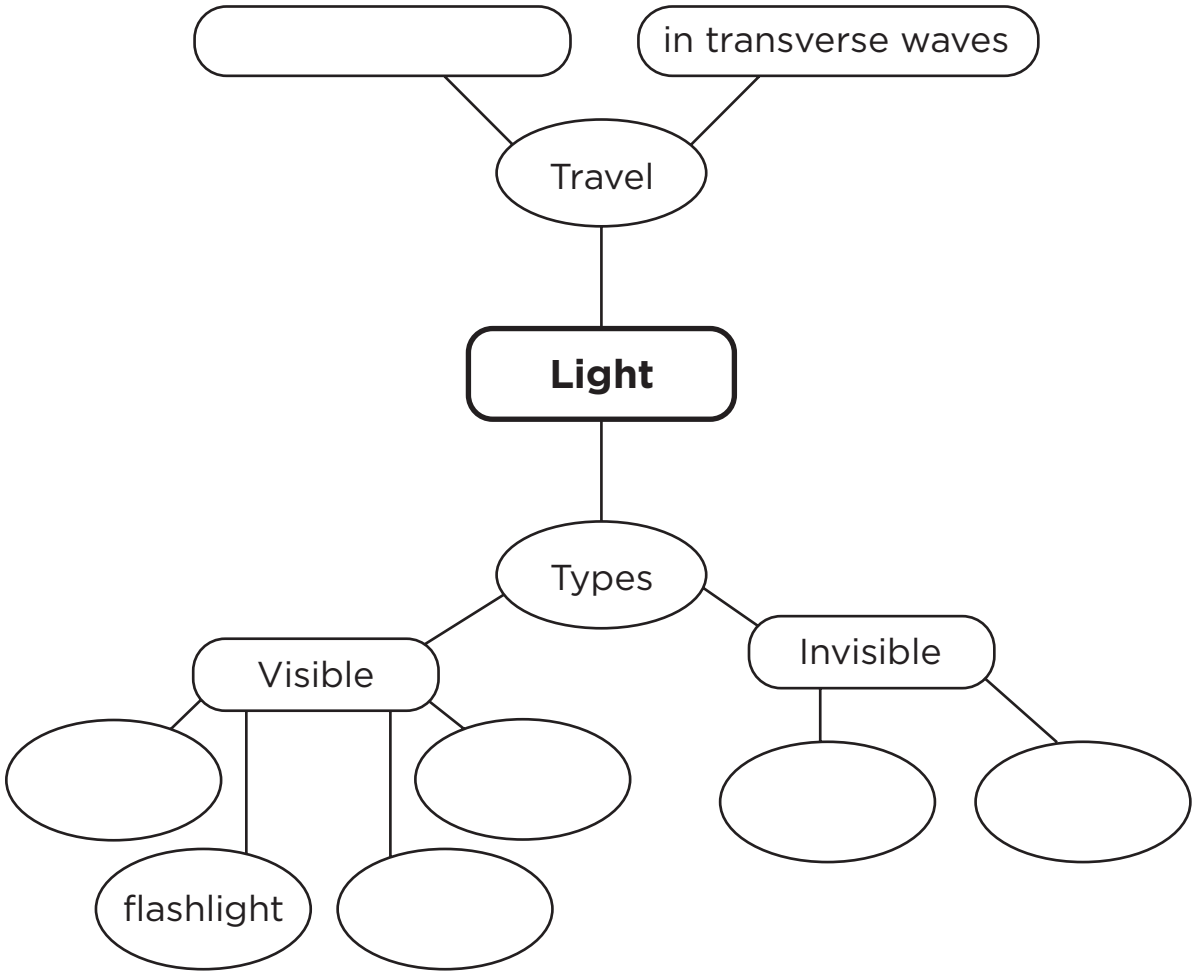
d. electrical energy.

Name _____ Date _____

CHAPTER LEVEL
Concept Map

Light

Complete the concept map about the types of light and how light travels. Some answers have been written for you.



Name _____ Date _____

Crystal Vision

Read the Literature feature in your textbook

Write About It

Response to Literature The poet tells about an experience he had with light. How did the experience make him feel? Write a personal narrative about an experience you have had with light. It might be a rainbow, a sunrise, or a sunset. Tell how you felt about the experience and why it is memorable.

Name _____ Date _____

Outline

How Light Moves

Use your textbook to help you fill in the blanks.

What is light?

1. Light is a form of _____ .
2. Waves can transfer energy from one place to another. Both _____ and _____ transfer energy in a wave-like motion.

What is the electromagnetic spectrum?

3. Radio waves transmit signals for _____ , _____ , and _____ .
4. Microwaves can _____ food and forecast _____ .
5. Infrared waves produce _____ that we feel from sunlight, fire, radiators, and warm sidewalks.
6. _____ waves can tan and burn your skin.
7. Doctors take pictures of bones with _____ .
8. _____ use dangerous radioactive materials that have high-energy gamma waves.

What is visible light?

9. The beam of a flashlight, the flash of a camera, the glow from a lightbulb, and the flame of a candle are all examples of visible light, or light we can _____ .

Outline Name _____ Date _____

What is invisible light?

10. Your eyes cannot see _____ or _____ , but they can see the effects of these waves.

How does light travel?

11. All light energy is alike because it always _____ .

12. Even light energy from the Sun travels _____ through space in _____ .

What is reflection?

13. Reflection is the light that _____ .

14. A mirror reflects all light striking it because it has a _____ , _____ surface.

What happens when light hits a rough surface?

15. When light hits a rough surface, it bounces back and scatters in _____ , and then a clear _____ or picture does not form.

Summarize the Main Idea

16. Briefly explain what light is, how light travels, and how light can form an image.

_____

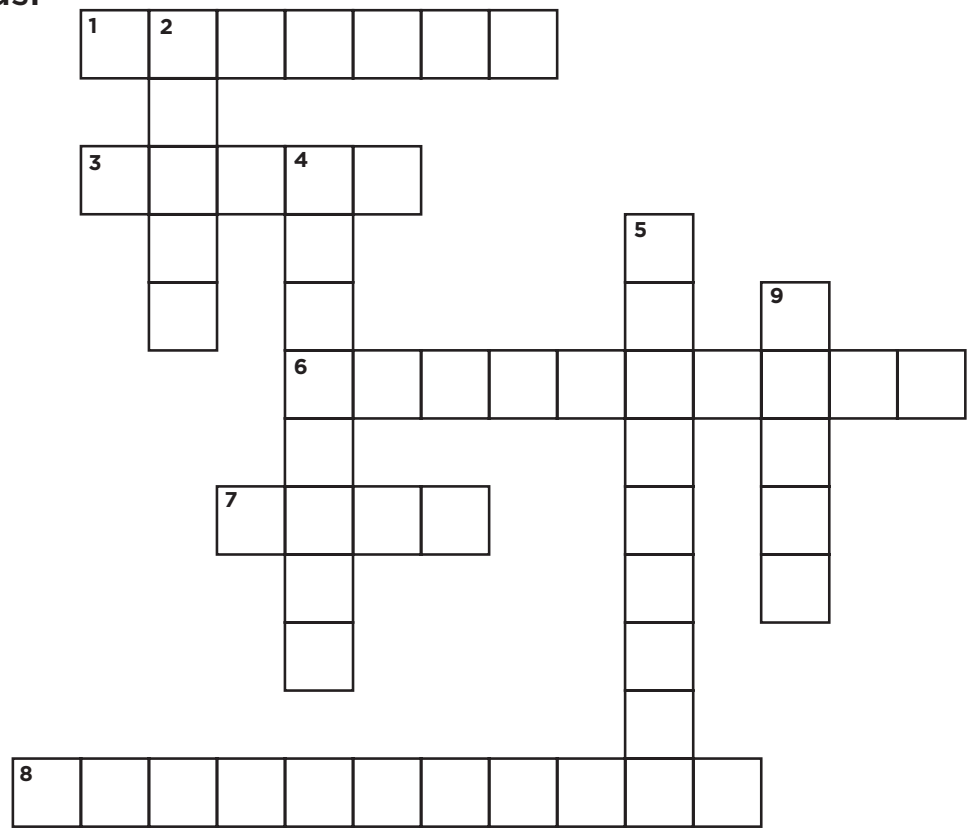
_____

_____

_____

How Light Moves

Use the clues below to help you fill in the puzzle with the correct words.



Across

1. Light from the beam of a flashlight, the flash of a camera, etc.

3. Waves that transmit signals for cellular phones, radios, and televisions

6. The light that bounces off objects

7. Invisible light energy that can take pictures of bones

8. Light waves that can tan or burn skin

Down

2. The picture that can form from reflected light

4. Waves that we feel as heat

5. Light energy that forecasts weather and cooks food

9. Visible or invisible form of energy that travels by waves in straight lines

Cloze Test Name _____ Date _____

How Light Moves

image	nuclear power plants	scatters	waves
mirror	radio	straight	X ray
microwaves	reflection	ultraviolet	

Fill in the blanks.

Light is a form of energy. Visible or invisible, light travels by _____ in _____ lines . A _____ occurs when light bounces off an object. Light bouncing off a smooth, shiny _____ , forms a picture called an _____ . However, when light bounces off a rough surface, it _____ , and a clear image does not form. The various types of electromagnetic light waves behave differently. High-energy gamma waves are found in hazardous radioactive materials used in _____ . After time in the sun, _____ waves may tan or burn our skin. _____ waves transmit signals for cell phones, radios, and TVs. _____ can forecast weather and cook food. A dentist might make a(n) _____ of our teeth.

Name _____ Date _____ **Outline**

Seeing Light and Color

Use your textbook to help you fill in the blanks.

How do you see?

1. When reflected light enters your eyes, you see an _____ .
2. The _____ is the clear outer covering of the eye.
3. Light passes through the _____ and enters the _____ an opening into the eye.
4. When there is a lot of light, pupils become _____ , but they grow _____ as the amount of light _____ .
5. Located _____ the pupil and the iris, the _____ focuses incoming light on the back of the eyeball.

Why can you see colors?

6. When white light separates, _____ of color appear.
7. White light is made up of _____ different colors: _____ , _____ , _____ , _____ , _____ , _____ , and _____ .
8. When white light strikes an object, some colors of light are _____ or taken in, while others are _____ .

Name _____ Date _____

9. The light reflected from an object enters the pupil so that when you look at the object, you see the object as the color of the _____ .

10. When _____ light strikes a leaf, the leaf _____ all of the colors except for green.

11. The green light bounces off the leaf and is _____ to your eyes so that you see the leaf as green.

Why do objects appear black or white?

12. A tar road appears black because all the colors from the white light are _____ and almost _____ is reflected.

13. A snowman, on the other hand, appears white because when white light strikes a snowman, _____ are reflected, and _____ is absorbed.

Summarize the Main Idea

14. Briefly explain how we see light and color.

_____

_____

_____

_____

_____

_____

Name _____ Date _____

Vocabulary

Seeing Light and Color

Use the clues below to help you find the words hidden in the puzzle.

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

1. What happens to colors and light that have been taken in _____
2. The clear outer covering of the eye _____
3. The colored circle that surrounds the pupil _____
4. The part of the eye that focuses incoming light _____
5. An opening into the eye _____
6. To bounce light off an object _____
7. Light that is made up of seven different colors _____

Name _____ Date _____

Seeing Light and Color

absorbed	lens	seven	white light
cornea	pupil	size	
iris	reflected	white	

Fill in the blanks.

Light strikes an object, and then some of that light is reflected. If reflected light enters your eyes, you will see an image and color. _____ is made up of _____ different colors. When white light hits an object, some colors making up white light are _____ , and others are reflected, or sent back. Black objects, such as a tar road, absorb all the colors of light so that almost no light is _____ . That is why the road will look black. _____ objects cause all colors to be reflected so that no light is absorbed. The eye works by first taking in reflected light through the _____ , which is an opening to the eye. The _____ is the colored circle surrounding the pupil, and it changes the _____ of the pupil by determining how much light it allows in. The _____ focuses light at the back of the eyeball to form an image. The _____ is the clear outer covering of the eye.

Name _____ Date _____

Reading

A Beam of Light

Surgeons are doctors who perform operations to fix injuries or treat diseases. They use scalpels, special tools with sharp blades, to cut through tissues such as skin, muscles, and organs. Today, they have another tool they can use to do operations that were impossible in the past. That tool is a beam of light!

This beam of light is called a laser. Not many people know that LASER stands for Light Amplification by Stimulated Emission of Radiation. Lasers are very powerful and precise. Lasers can cut though tissue without causing a lot of blood loss.

First, lasers were used to fix marks on children's skin. Today, surgeons also use lasers to treat injuries to the brain, the heart, and many other places in the human body. Lasers are even used to help people see better.

Doctors perform laser eye surgery on people who have vision problems. The laser is tapped, or "pulsed," on the surface of the eye to change its shape. After the surgery, the patient's vision is improved and they usually won't have to wear glasses or contact lenses.

Name _____ Date _____

A problem and solution involves

- identifying the problem
- isolating the causes
- proposing solutions

Write About It

Problem and Solution Lasers can currently be found in many fields of study. Research and write about different ways lasers are being used.

Name _____ Date _____ **Outline**

Shadows

Use your textbook to help you fill in the blanks.

How are shadows formed?

1. _____ objects block the movement of light.
2. If light energy is blocked, a _____ or dark space forms.
3. Shadows form on the side of the object facing _____ from the light source.
4. To see an object, _____ light must enter your eyes. Opaque materials can stop you from seeing objects because they _____ light, so you do not see the object.

How are shapes and sizes of shadows formed?

5. A shadow is the darker area that forms when an opaque object blocks _____ .
6. If you play outside on a sunny day, your _____ will block sunlight.
7. Shadows forming on that sunny day would have an outline _____ to the shape of your body or other opaque objects that are present.
8. The size of a shadow depends on _____ .
9. The _____ an object is to a light source, the _____ the shadow.

 Name _____ Date _____

10. Light coming from above an object creates a _____ shadow.

11. Light coming from the side of an object creates a _____ shadow.

12. Sundials tell _____ according to the position of the dial's _____ .

13. Earth rotates on its axis, and the Sun moves across the sky. The Sun casts its _____ shadow at noon when it would be directly overhead in the sky. Its longest shadows would occur at _____ and _____ .

What are transparent and translucent materials?

14. Most light passes through _____ materials because they do not _____ or _____ much light energy.

15. Translucent materials do let some light energy pass through them, but they also _____ some light energy. _____ is translucent.

Summarize the Main Idea

16. Briefly explain how different materials affect light.

_____

_____

_____

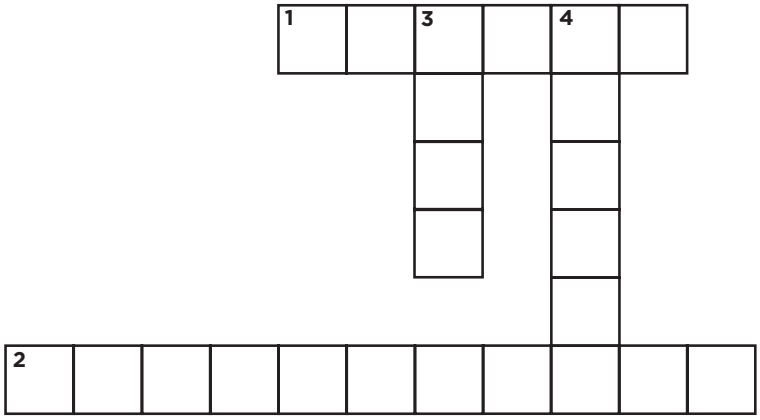
_____

Name _____ Date _____

Vocabulary

Shadows

Use the descriptions listed below to find the right word and fill in the puzzle.



Across

1. The darker area that forms when an opaque object blocks light energy _____
2. Materials such as glass windowpanes that do not absorb or reflect much of the light energy so that most light passes through _____

Down

3. The imaginary line through the center of Earth on which Earth spins _____
4. Materials such as a dog or a brick wall that block the movement of light energy and allow a shadow to form _____

Name _____ Date _____

Shadows

away	noon	shadows	transparent
bigger	opaque	sunrise	
dark spaces	reflect	sunset	

Fill in the blanks.

Different materials affect light energy differently. Shadows are _____ that form when an _____ object blocks the movement of light energy. All opaque materials cast _____ . Shadows form on the side of an object facing _____ from the light source. The closer an object is to a light source, the _____ the shadow. The Sun casts its shortest shadow when it is directly overhead, which would be _____ . The longest shadows occur at _____ and _____ . If you and a friend stand outside in the sunshine, your bodies would block the sunlight. Your friend would not be able to see through your body because bodies are opaque. However, you could see through _____ materials such as glass because they do not absorb or _____ much of the light energy.

Name _____ Date _____

Using Lasers

Write About It

Write a paragraph about another way that lasers are used to help people. Organize the steps in time order, from first to last. Use information from the chapter and from online resources.

Getting Ideas

Do some print and online research. Find five ways we use lasers to help us. Write them on a separate sheet of paper.

Planning and Organizing

Gloria wants to write about using a laser level to hang two pictures. Here are some steps that she wrote. Write 1 by the step that should come first. Number the last step 4.

A. Next, have a friend use a pencil to mark two points along the line. These points show where to hang your pictures. _____

B. Push the "on" button. This shoots a laser beam to the opposite wall. _____

C. First, decide how high you want the pictures to be. Place the laser level at this height at one corner of the wall. _____

D. Finally, attach two picture hangers to the wall at these points. Hang your pictures. _____

Now think about the object you chose. Write five steps showing how to use it.

_____

_____

_____

Name _____ Date _____

Drafting

Here are two sentences Gloria wrote to begin her paragraph. Circle the one she should use.

We use lasers in many different ways.

A laser level can help you solve a simple, everyday problem.

Write a topic sentence for your paragraph.

_____

_____

Now write your paragraph on a separate piece of paper. Begin with a topic sentence. Write the steps in time order.

Revising and Proofreading

Proofread these sentences that Gloria wrote. Find five errors and correct them.

Have you ever tried to hang too pictures side-by-side. No matter how hard you try, one picture is usally higher than the other. A laser level can help you solve this problem. It is easy to use and it doesnt cost alot of money.

Now revise and proofread your paragraph. Ask yourself:

- Did I begin with a topic sentence?
- Did I put the steps in time order?
- Did I use sequence words such as first, next, and finally?
- Did I correct all grammar errors?
- Did I correct all spelling, punctuation, and capitalization errors?

Name _____ Date _____

Light

Choose the letter of the best answer.

1. The part of the eye that focuses incoming light is the
   - **a.** clear outer covering.
   - **b.** iris.
   - **c.** lens.
   - **d.** pupil.

2. When white light strikes an object, some colors of light are
   - **a.** absorbed.
   - **b.** bright.
   - **c.** destroyed.
   - **d.** directed.

3. These materials do not absorb or reflect much of the light energy.
   - **a.** corneas
   - **b.** translucent
   - **c.** opaque
   - **d.** transparent

4. The colored circle that surrounds the pupil is the
   - **a.** cornea.
   - **b.** direction.
   - **c.** iris.
   - **d.** lens.

5. Materials that absorb some light energy and let some light energy pass through are
   - **a.** absorbed.
   - **b.** shadows.
   - **c.** translucent.
   - **d.** transparent.

6. The light that bounces off an object is called a(n)
   - **a.** invisible light.
   - **b.** mirror.
   - **c.** path.
   - **d.** reflection.

Name _____ Date _____

Choose the letter of the best answer.

7. Light is another form of energy transferred by

a. currents. **c.** reflection.

b. direction. **d.** waves.

8. Materials that absorb some of the light energy are

a. blocked. **c.** opaque.

b. clear. **d.** transparent.

9. When light energy is blocked, this forms

a. an image. **c.** a shape.

b. a reflection. **d.** a shadow.

10. The clear outer covering of the eye is the

a. cornea. **c.** object.

b. eyelid. **d.** pupil.

11. An opening into the eye is the

a. cornea. **c.** pupil.

b. iris. **d.** reflection.