

# I Have, Who Has?

SCIENCE

3–5

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**I HAVE, WHO HAS** is a series of books that provides reinforcement for essential academic skills through group activities. These activities consist of game cards that students read and interactively answer. Each game also features an active listening enrichment activity. This component gives students additional practice in active listening and extends their learning to the application level.

## Introduction

*I Have, Who Has? Science 3–5* provides a fun, interactive way for students to test their science knowledge. It includes 14 card games that will help improve students' auditory discrimination and reinforce standards-based science content. The topics addressed in this resource include the following:

- Plants and Animals
- Habitats, Interdependence, and Adaptation
- Ecosystems and Biomes
- Living Things Change Their Environment
- Weather
- The Earth, Moon, and Sun
- The Solar System
- Rocks, Minerals, and Soil
- Bodies of Water, Landforms, and Forces That Change the Earth
- Matter and Its Changing States
- Heat and Light
- Energy: Forms, Sources, and States
- Electricity and Magnetism
- Forces, Motion, and Simple Machines

The ease and simplicity of preparing these games for your class will allow you to begin using *I Have, Who Has?* today! These engaging games are sure to keep students involved as they learn and reinforce valuable science skills.

# Getting Started

## ORGANIZATION

Each card game consists of 40 question and answer cards. The cards are arranged in columns (top to bottom) in the order in which they will be read by the class. A reproducible active listening enrichment page follows every set of game cards. Play the interactive card games alone or in conjunction with the reproducible pages to reinforce students' active listening, increase active participation, provide enrichment, and extend the learning and accountability of each student.

## INSTRUCTIONS FOR I HAVE, WHO HAS? GAME CARDS

- 1) Photocopy two sets of the game cards. Keep one copy as your reference to the correct order of questions and answers.
- 2) Cut apart the second set of game cards. Mix up the cards and pass them out to the students. Every student should have at least one card. Depending on your class size, students may have more than one card.
- 3) Have the student with the first card begin the game by saying *I have the first card.* *Who has . . . ?* As each student reads a card, monitor your copy to make sure students are reading the cards in the correct order. (Because of the interrelationship between concepts, more than one answer may *seem* correct. Acknowledge each "almost" answer and ask for a more specific answer.) If students correctly matched each card, then the last card read will "loop" back to the first card and read *I have . . . Who has the first card?*

<p>I have the <b>first card</b>.</p> <p>Who has the term for a living thing that starts out small, develops as it grows, and reproduces?</p>	<p>I have <b>flowering plant</b>.</p> <p>Who has the kind of plant that reproduces by making seeds in cones?</p>
<p>I have <b>organism</b>.</p> <p>Who has the world's largest organisms, which make the oxygen that people need to breathe?</p>	<p>I have <b>conifer</b>.</p> <p>Who has the part of the plant that takes in water and minerals from the soil and grows toward water?</p>
<p>I have <b>trees</b>.</p> <p>Who has the stages of an organism's life?</p>	<p>I have <b>roots</b>.</p> <p>Who has the part of the plant that supports the plant and carries the minerals and water from the roots to the leaves?</p>
<p>I have <b>life cycle</b>.</p> <p>Who has the kind of plant that reproduces by making seeds in flowers?</p>	<p>I have <b>stem</b>.</p> <p>Who has the part of the plant that takes in the gas called carbon dioxide and makes most of the plant's food?</p>

## INSTRUCTIONS FOR ACTIVE LISTENING ENRICHMENT PAGE

- 1) Copy one page for each child or pair of children.
- 2) Make sure each child has a light-colored crayon or highlighter (not a marker or pencil) to color over the correct boxes as they are read. Provide time for children to lightly color or highlight the correct box.

- 3) Have students answer the extension questions at the bottom of the page. Use the answer key on pages 90–96 to check students’ answers.

### WHAT TO OBSERVE

- 1) Students who have difficulty locating the correct boxes on the active listening enrichment page once familiarity with the format has been established may have difficulties with visual discrimination.
- 2) Students who have difficulty reading their cards at the correct time may have difficulties with attention, hearing, active listening, or the concepts being reinforced.

### VARIATIONS

(To be played without the active listening enrichment page)

#### Timed Version

Have students play the game twice. Encourage them to beat their time in the second round. Have students play the same game again the next day. Can they beat their time again? Remember to mix up the cards before distributing them for each new game.

#### Small Groups

Give each group a set of game cards. Encourage groups to pay close attention, read quickly, and stay on task to determine which group is the fastest. Playing in smaller groups allows students to have more cards. This raises the opportunities for individual accountability, active participation, time on task, and reinforcement per student.

#### Card Reduction

If your class is not ready to play with multiple cards, you can reduce the number to fit your class needs. Photocopy the set of the game cards you want to play. Determine the appropriate number of cards needed. Following the existing order of the game, begin with the first card and count the number of cards you need. Delete the *Who has . . . ?* clue from the last card counted and replace with the sentence *Who has the first card?* Photocopy and cut apart the revised game for class play.



# Plants and Animals



<p>I have the <b>first card</b>.</p> <p>Who has the term for a living thing that starts out small, develops as it grows, and reproduces?</p>	<p>I have <b>flowering plant</b>.</p> <p>Who has the kind of plant that reproduces by making seeds in cones?</p>
<p>I have <b>organism</b>.</p> <p>Who has the world's largest organisms, which make the oxygen that people need to breathe?</p>	<p>I have <b>conifer</b>.</p> <p>Who has the part of the plant that takes in water and minerals from the soil and grows toward water?</p>
<p>I have <b>trees</b>.</p> <p>Who has the stages of an organism's life?</p>	<p>I have <b>roots</b>.</p> <p>Who has the part of the plant that supports the plant and carries the minerals and water from the roots to the leaves?</p>
<p>I have <b>life cycle</b>.</p> <p>Who has the kind of plant that reproduces by making seeds in flowers?</p>	<p>I have <b>stem</b>.</p> <p>Who has the part of the plant that takes in the gas called carbon dioxide and makes most of the plant's food?</p>



# Plants and Animals



I have **leaves**.

Who has the gas given off by plants that allows people and animals to survive?



I have **chlorophyll**.

Who has the term for when a seed becomes a sprout?



I have **oxygen**.

Who has the process in plants in which energy is used from sunlight to make food and oxygen?



I have **germination**.

Who has the term for the process by which leaves give off water?



I have **photosynthesis**.

Who has the term for the transfer of a flower's pollen from the anther to the pistil?



I have **transpiration**.

Who has the basic unit of structure for all living things?



I have **pollination**.

Who has the green substance in plant cells that help the plant make food by trapping the sun's energy?



I have **cell**.

Who has the term for the "brain" of the plant or animal cell?



# Plants and Animals



I have **nucleus**.

Who has the term for a change in body form that some animals go through as they develop?



I have **tissue**.

Who has the term for a group of tissues that work together to do a job?



I have **metamorphosis**.

Who has two examples of animals that go through the metamorphosis process?



I have **organ**.

Who has two examples of organs in the bodies of animals and people?



I have **frogs and butterflies**.

Who has what all animals need in order to live and grow besides food, water, and shelter?



I have **heart and brain**.

Who has the term for a group of organs that work together to do a job?



I have **air**.

Who has the term for a group of cells that are alike?



I have **system**.

Who has an example of a system?





# Plants and Animals



I have **digestive system**.

Who has the first part of the digestive system?



I have **water and soil**.

Who has the term for a group of animals with backbones?



I have **mouth**.

Who has the term for a group of animals without backbones?



I have **vertebrates**.

Who has two examples of vertebrates?



I have **invertebrates**.

Who has two examples of invertebrates?



I have **dogs and people**.

Who has the type of animal that is cold-blooded, lives in water, has scales, and gets oxygen from water through its gills?



I have **worm and octopus**.

Who has the locations in which 95% of invertebrates live?



I have **fish**.

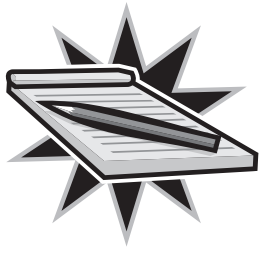
Who has the type of animal that is cold-blooded and lives partly on land and partly in the water?



# Plants and Animals



<p>I have <b>amphibian</b>.</p> <p>Who has two examples of amphibians?</p>	<p>I have <b>bird</b>.</p> <p>Who has the type of animal that is warm-blooded, has fur or hair, is born live, has a constant body temperature, and drinks milk from its mother?</p>
<p>I have <b>frogs and salamanders</b>.</p> <p>Who has the type of animal that is cold-blooded, has a backbone, breathes with lungs, and lives on land?</p>	<p>I have <b>mammal</b>.</p> <p>Who has an example of a mammal?</p>
<p>I have <b>reptile</b>.</p> <p>Who has two examples of reptiles?</p>	<p>I have <b>ape</b>.</p> <p>Who has two examples of environmental changes in which living things may need to respond?</p>
<p>I have <b>turtles and alligators</b>.</p> <p>Who has the type of animal that has a beak, two wings, two legs, and feathers?</p>	<p>I have <b>seasons and weather</b>.</p> <p>Who has the first card?</p>



# Plants and Animals

Draw a line from word to word to complete the maze as your classmates read the clues.

START	ORGANISM	ROOTS	STEM
AMPHIBIAN	TREES	CONIFER	LEAVES
ROOTS	LIFE CYCLE	FLOWERING PLANT	OXYGEN
METAMORPHOSIS	NUCLEUS	INVERTEBRATES	PHOTOSYNTHESIS
FROGS AND BUTTERFLIES	CELL	TRANSPIRATION	POLLINATION
AIR	OXYGEN	GERMINATION	CHLOROPHYLL
TISSUE	SYSTEM	DIGESTIVE SYSTEM	LIFE CYCLE
ORGAN	HEART AND BRAIN	MOUTH	INVERTEBRATES
AMPHIBIAN	FISH	DOGS AND PEOPLE	WORM AND OCTOPUS
FROGS AND SALAMANDERS	PHOTOSYNTHESIS	VERTEBRATES	WATER AND SOIL
REPTILE	MAMMAL	APE	METAMORPHOSIS
TURTLES AND ALLIGATORS	BIRD	SEASONS AND WEATHER	FINISH

Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ the stages of an organism's life
- \_\_\_\_\_ the process in plants in which energy is used from sunlight to make food and oxygen
- \_\_\_\_\_ the change in body form that some animals go through as they develop
- \_\_\_\_\_ animals without backbones
- \_\_\_\_\_ the gas given off by plants that allows people and animals to survive
- \_\_\_\_\_ a cold-blooded animal that lives partly on land and partly in water
- \_\_\_\_\_ the part of the plant that takes in water and minerals from the soil and grows toward water



# Habitats, Interdependence, and Adaptation











<p>I have the <b>first card</b>.</p> <p>Who has the term for what is passed from one organism to the next in a food chain?</p>	<p>I have <b>omnivore</b>.</p> <p>Who has two examples of omnivores?</p>
<p>I have <b>energy</b>.</p> <p>Who has the source of energy for all food chains?</p>	<p>I have <b>pigs and red foxes</b>.</p> <p>Who has the term for an organism that eats only plants?</p>
<p>I have <b>the sun</b>.</p> <p>Who has the term for food chains that are connected?</p>	<p>I have <b>herbivore</b>.</p> <p>Who has two examples of herbivores?</p>
<p>I have <b>food web</b>.</p> <p>Who has the term for an organism that eats both plants and animals?</p>	<p>I have <b>rabbits and horses</b>.</p> <p>Who has the term for an organism that eats only meat?</p>



# Habitats, Interdependence, and Adaptation



 <p>I have <b>carnivore</b>.</p> <p>Who has two examples of carnivores?</p>	 <p>I have <b>fungi and mold</b>.</p> <p>Who has the term for an organism that makes food?</p>
 <p>I have <b>cheetahs and crocodiles</b>.</p> <p>Who has the three types of living things in every food chain?</p>	 <p>I have <b>producer</b>.</p> <p>Who has two examples of producers?</p>
 <p>I have <b>producers, consumers, and decomposers</b>.</p> <p>Who has the term for an organism that helps with the rotting process?</p>	 <p>I have <b>plants and trees</b>.</p> <p>Who has the term for an organism that needs to eat food?</p>
 <p>I have <b>decomposer</b>.</p> <p>Who has two examples of decomposers?</p>	 <p>I have <b>consumer</b>.</p> <p>Who has the term for an animal that feeds on waste and decaying flesh?</p>



# Habitats, Interdependence, and Adaptation



I have **scavenger**.



Who has the term for a place where plant and animal populations live together and depend on one another for survival?

I have **mimicry**.



Who has the natural behaviors that some animals are born with and need in order to survive in their environment?

I have **community**.



Who has the term for what animals do when they travel from one area to another and back each year?

I have **instincts**.



Who has the behaviors that need to be taught in order for an animal to survive?

I have **migrate**.



Who has the term for the coloring, shape, or pattern that helps an animal blend in with its surroundings?

I have **learned behaviors**.



Who has the term for any traits that help an organism survive in its surroundings?

I have **camouflage**.



Who has the term for what an animal is doing when it looks like or acts like another animal to avoid being eaten?

I have **adaptations**.



Who has the term for an animal's long, deep sleep that allows it to survive in the winter?



# Habitats, Interdependence, and Adaptation



I have **hibernation**.

Who has what happens to an animal's heartbeat and breathing while it is hibernating?

I have **it changes**.

Who has two examples of water habitats?

I have **they slow down**.

Who has the source of energy animals use while hibernating?

I have **swamps and rivers**.

Who has two examples of land habitats?

I have **stored fat**.

Who has the place where an animal lives and gets food and shelter?

I have **grasslands and deserts**.

Who has the term for what an animal must do in response to its environment in order to survive?

I have **habitat**.

Who has what happens to an animal's habitat from season to season?

I have **adapt**.

Who has the adaptation that the polar bear has that allows it to blend in with its snowy environment?



# Habitats, Interdependence, and Adaptation



<p>I have <b>white fur</b>.</p> <p>Who has the type of adaptation characterized by the way the polar bear's white fur serves as camouflage?</p>	<p>I have <b>predator</b>.</p> <p>Who has two examples of predators?</p>
<p>I have <b>physical adaptation</b>.</p> <p>Who has the type of adaptation characterized by migration?</p>	<p>I have <b>hawks and tigers</b>.</p> <p>Who has the term for animals that are hunted?</p>
<p>I have <b>behavioral adaptation</b>.</p> <p>Who has the term for how plants stay alive but not active during winter?</p>	<p>I have <b>prey</b>.</p> <p>Who has two examples of animals that are often prey for predators?</p>
<p>I have <b>dormancy</b>.</p> <p>Who has the term for an animal that hunts another animal for food?</p>	<p>I have <b>deer and mice</b>.</p> <p>Who has the first card?</p>





# Habitats, Interdependence, and Adaptation

Draw a line from word to word to complete the maze as your classmates read the clues.

<b>START</b>	<b>PRODUCER</b>	<b>CARNIVORE</b>	<b>CHEETAHS AND CROCODILES</b>
<b>ENERGY</b>	<b>HERBIVORE</b>	<b>RABBITS AND HORSES</b>	<b>PRODUCERS, CONSUMERS, AND DECOMPOSERS</b>
<b>THE SUN</b>	<b>PIGS AND RED FOXES</b>	<b>PREDATOR</b>	<b>DECOMPOSER</b>
<b>FOOD WEB</b>	<b>OMNIVORE</b>	<b>PRODUCER</b>	<b>FUNGI AND MOLD</b>
<b>SCAVENGER</b>	<b>CONSUMER</b>	<b>PLANTS AND TREES</b>	<b>ADAPT</b>
<b>COMMUNITY</b>	<b>PREY</b>	<b>INSTINCTS</b>	<b>LEARNED BEHAVIORS</b>
<b>MIGRATE</b>	<b>CAMOUFLAGE</b>	<b>MIMICRY</b>	<b>ADAPTATIONS</b>
<b>SWAMPS AND RIVERS</b>	<b>IT CHANGES</b>	<b>THEY SLOW DOWN</b>	<b>HIBERNATION</b>
<b>GRASSLANDS AND DESERTS</b>	<b>HABITAT</b>	<b>STORED FAT</b>	<b>OMNIVORE</b>
<b>ADAPT</b>	<b>ENERGY</b>	<b>HAWKS AND TIGERS</b>	<b>PREY</b>
<b>WHITE FUR</b>	<b>DORMANCY</b>	<b>PREDATOR</b>	<b>DEER AND MICE</b>
<b>PHYSICAL ADAPTATION</b>	<b>BEHAVIORAL ADAPTATION</b>	<b>DECOMPOSERS</b>	<b>FINISH</b>

Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ what is passed from one organism to the next in a food chain
- \_\_\_\_\_ an organism that eats both plants and animals
- \_\_\_\_\_ the organism in the food chain that makes the food
- \_\_\_\_\_ an animal that hunts other animals for food
- \_\_\_\_\_ what an animal must do in order to survive in a changing environment
- \_\_\_\_\_ animals that are hunted
- \_\_\_\_\_ the organisms in the food chain that help with the rotting process

# Ecosystems and Biomes

<p>I have the <b>first card</b>.</p> <p>Who has the term for all of one type of animal or plant in an ecosystem?</p>	<p>I have <b>environment</b>.</p> <p>Who has the term for all living and nonliving things that make up the community and the environment?</p>
<p>I have <b>population</b>.</p> <p>Who has the term for a place that meets the basic needs of an animal or plant that lives or grows there?</p>	<p>I have <b>ecosystem</b>.</p> <p>Who has the term for the average temperature and rainfall of an area over a long period of time?</p>
<p>I have <b>habitat</b>.</p> <p>Who has the term for a group of plants and animals that live in an ecosystem and depend on each other for their survival?</p>	<p>I have <b>climate</b>.</p> <p>Who has two events that can change an ecosystem?</p>
<p>I have <b>community</b>.</p> <p>Who has the term for all the nonliving things (soil, air, water) that surround a living plant or animal?</p>	<p>I have <b>floods and fires</b>.</p> <p>Who has the three options an animal has in responding to a change in the ecosystem?</p>

# Ecosystems and Biomes

I have **move, adapt, or die**.

Who has the term for when only a few of an organism exist?

I have **ocean**.

Who has two habitats that could be found in the ocean?

I have **endangered**.

Who has the term for identifying organisms that no longer exist?

I have **coral reef and shipwreck**.

Who has the term for the type of water community found in lakes, rivers, and streams?

I have **extinct**.

Who has the hot and wet ecosystem that has the largest population of plants and animals?

I have **freshwater**.

Who has the term for the type of water community found in oceans, seas, and bays?

I have **rain forest**.

Who has the largest ecosystem in size, which is also the largest body of salt water on earth?

I have **saltwater**.

Who has the word that best describes the relationship between an ecosystem and the members of the community?

# Ecosystems and Biomes

<p>I have <b>fragile</b>.</p> <p>Who has a description of what can happen if one animal or plant group dies within an ecosystem?</p>	<p>I have <b>destruction of habitats</b>.</p> <p>Who has the term for habitats of similar climate and vegetation?</p>
<p>I have the <b>balance can be disrupted</b>.</p> <p>Who has the type of effect humans can have upon ecosystems?</p>	<p>I have <b>biomes</b>.</p> <p>Who has the biome that matches these facts?:</p> <ul style="list-style-type: none"> <li>• one of the world's largest biomes</li> <li>• found in the high mountains of the Northern Hemisphere</li> <li>• cold climate and low rate of precipitation</li> <li>• home to elks and wolverines</li> </ul>
<p>I have <b>positive, negative, or neutral</b>.</p> <p>Who has an example of a positive influence of humans upon an ecosystem?</p>	<p>I have <b>taiga or boreal forest</b>.</p> <p>Who has the biome that matches these facts?:</p> <ul style="list-style-type: none"> <li>• one-third of the world's land</li> <li>• some of the hottest places in the world</li> <li>• arid conditions with very little rain</li> <li>• home to snakes, scorpions, and lizards</li> </ul>
<p>I have <b>conservation of habitats</b>.</p> <p>Who has an example of a negative influence of humans upon an ecosystem?</p>	<p>I have <b>deserts</b>.</p> <p>Who has the biome that matches these facts?:</p> <ul style="list-style-type: none"> <li>• each can have a distinct climate</li> <li>• air gets colder with height</li> <li>• lack of oxygen in high altitudes</li> <li>• home to llamas</li> </ul>

# Ecosystems and Biomes

<p>I have <b>mountains</b>.</p> <p>Who has the biome that matches these facts?:</p> <ul style="list-style-type: none"> <li>• number of species decreases as the distance from the equator increases</li> <li>• the sea floor is at the bottom</li> <li>• predators have reduced muscle mass and long, thin bodies to conserve energy</li> <li>• home to sharks, whales, and fish</li> </ul>	<p>I have <b>temperate forest</b>.</p> <p>Who has the biome that matches these facts?:</p> <ul style="list-style-type: none"> <li>• the richest and most diverse biome in the world</li> <li>• warm, damp climate and wet conditions</li> <li>• layers with different animals in each</li> <li>• home to ocelots, toucans, and sloths</li> </ul>
<p>I have <b>oceans</b>.</p> <p>Who has the biome that matches these facts?:</p> <ul style="list-style-type: none"> <li>• a treeless plain</li> <li>• found at tropical latitudes with high temperatures</li> <li>• low rainfall</li> <li>• home to giraffes, elephants, and zebras</li> </ul>	<p>I have <b>tropical rain forest</b>.</p> <p>Who has the biome that matches these facts?:</p> <ul style="list-style-type: none"> <li>• short summers and long, dark winters</li> <li>• far north and south of the planet</li> <li>• harsh winter winds</li> <li>• home to polar bears, penguins, and snowy owls</li> </ul>
<p>I have <b>savanna</b>.</p> <p>Who has the biome that matches these facts?:</p> <ul style="list-style-type: none"> <li>• in North America they are called prairies</li> <li>• grasses, streams, and marshes can be found here</li> <li>• home to coyotes, eagles, and pronghorn sheep</li> </ul>	<p>I have <b>tundra</b>.</p> <p>Who has the study of organisms and the environments in which they live?</p>
<p>I have <b>temperate grasslands</b>.</p> <p>Who has the biome that matches these facts?:</p> <ul style="list-style-type: none"> <li>• tree habitats that support many animals</li> <li>• many have been destroyed by human activity</li> <li>• home to deer, woodpeckers, and deadwood beetles</li> </ul>	<p>I have <b>ecology</b>.</p> <p>Who has the words that describe an ecosystem with a wide range of species?</p>

# Ecosystems and Biomes

<p>I have <b>balanced and healthy</b>.</p> <p>Who has the term for the close relationship between different species that benefit from each other?</p>	<p>I have <b>tide pools and salt marshes</b>.</p> <p>Who has the amount of the earth's surface that is covered by the temperate oceans?</p>
<p>I have <b>symbiosis</b>.</p> <p>Who has the freshwater habitats that are found all over the world in lowland areas or along rivers, lakes, and streams?</p>	<p>I have <b>three-quarters</b>.</p> <p>Who has the largest creature on earth, which lives in the temperate oceans?</p>
<p>I have <b>wetlands</b>.</p> <p>Who has two examples of marine ecosystems?</p>	<p>I have <b>blue whale</b>.</p> <p>Who has the name of a forest that can be found in the temperate oceans?</p>
<p>I have <b>shorelines and tropical oceans</b>.</p> <p>Who has two examples of habitats found in the shoreline ecosystem?</p>	<p>I have <b>kelp forest</b>.</p> <p>Who has the first card?</p>



# Ecosystems and Biomes

Draw a line from word to word to complete the maze as your classmates read the clues.

<b>START</b>	<b>POPULATION</b>	<b>POSITIVE, NEGATIVE, OR NEUTRAL</b>	<b>CONSERVATION OF HABITATS</b>
<b>COMMUNITY</b>	<b>HABITAT</b>	<b>BALANCE CAN BE DISRUPTED</b>	<b>DESTRUCTION OF HABITATS</b>
<b>ENVIRONMENT</b>	<b>OCEANS</b>	<b>FRAGILE</b>	<b>BIOMES</b>
<b>ECOSYSTEM</b>	<b>CLIMATE</b>	<b>SALTWATER</b>	<b>TAIGA OR BOREAL FOREST</b>
<b>RAIN FOREST</b>	<b>FLOODS AND FIRES</b>	<b>FRESHWATER</b>	<b>DESERTS</b>
<b>ENDANGERED</b>	<b>MOVE, ADAPT, OR DIE</b>	<b>CORAL REEF AND SHIPWRECK</b>	<b>MOUNTAINS</b>
<b>EXTINCT</b>	<b>RAIN FOREST</b>	<b>OCEAN</b>	<b>OCEANS</b>
<b>SYMBIOSIS</b>	<b>BALANCED AND HEALTHY</b>	<b>BIOMES</b>	<b>SAVANNA</b>
<b>WETLANDS</b>	<b>ECOLOGY</b>	<b>TEMPERATE FOREST</b>	<b>TEMPERATE GRASSLANDS</b>
<b>SHORELINES AND TROPICAL OCEANS</b>	<b>TUNDRA</b>	<b>TROPICAL RAIN FOREST</b>	<b>ENDANGERED</b>
<b>TIDE POOLS AND SALT MARSHES</b>	<b>THREE-QUARTERS</b>	<b>ECOSYSTEM</b>	<b>MOVE, ADAPT, OR DIE</b>
<b>EXTINCT</b>	<b>BLUE WHALE</b>	<b>KELP FOREST</b>	<b>FINISH</b>

Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ all living and nonliving things that make up the community and the environment
- \_\_\_\_\_ habitats of similar climate and vegetation
- \_\_\_\_\_ a term that describes a species in which there are only a few that still exist
- \_\_\_\_\_ the largest ecosystem in size and the largest body of salt water on earth
- \_\_\_\_\_ a term that describes a species that no longer exists
- \_\_\_\_\_ what an animal must do when an ecosystem changes
- \_\_\_\_\_ the hot and wet ecosystem that has the largest population of plants and animals



# Living Things Change Their Environment



I have the **first card**.

Who has an example of when a bird changes the environment?

I have by **chopping down a tree**.

Who has an example of an environmental change that is too slow to notice?

I have when it **builds a nest**.

Who has an example of when a rabbit changes the environment?

I have **bacteria or fungi breaking down leaves**.

Who has one cause of change defined as the struggle among living things for food, water, and other needs within an environment?

I have when it **digs a hole**.

Who has an example of when a spider changes the environment?

I have **competition**.

Who has an example of competition?

I have when it **spins a web**.

Who has an example of how a human can change the environment?

I have when **trees and plants grow and compete for space, light, and water**.

Who has the term for the basic needs of space, light, and water?





# Living Things Change Their Environment



I have **resources**.

Who has what happens to environments as living things compete for these resources?

I have **land could flood**.

Who has one possible result of the land flooding that changes the environment?

I have **environments change**.

Who has how often the environments change?

I have **plants can die**.

Who has one possible result of plants dying?

I have **every second of every day**.

Who has the types of changes to the environment caused by living things?

I have **homes of other plants or animals could be washed away**.

Who has one possible helpful change that can occur when beavers build dams?

I have **helpful, harmful, and neutral**.

Who has one possible harmful change that can occur when a beaver builds a dam?

I have they **make space for smaller plants to grow when they cut down trees**.

Who has one new helpful habitat that can be formed when beavers build dams?



# Living Things Change Their Environment



I have **wetland**.

Who has one helpful result of a wetland being formed?

I have it is **collected in landfills**.

Who has the harmful result of adding trash to the landfills?

I have it **provides new homes for plants and animals**.

Who has the living things that cause more changes to the environment than any others?

I have **harmful materials get into the air, water, or soil**.

Who has the term for all of these harmful materials?

I have **humans**.

Who has an example of something humans do that has a harmful effect on the environment?

I have **pollution**.

Who has the letters that represent what people do to help the environment?

I have they **produce tons of trash each year**.

Who has the result of producing so much trash?

I have **three Rs**.

Who has what the three Rs stand for?



# Living Things Change Their Environment



I have **reduce, reuse,  
and recycle.**

Who has the term for using smaller  
amounts of wasteful materials?

I have a **person who  
uses zippered plastic bags  
over and over again.**

Who has the way in which using  
zippered plastic bags more than  
once helps the environment?

I have **reduce.**

Who has an example of a person  
reducing the use of materials that  
are harmful to the environment?

I have there is **less trash  
in the landfills.**

Who has the reason why adding  
less trash to the landfills is helpful  
to the environment?

I have a **person walking  
instead of driving.**

Who has the way in which walking  
instead of driving reduces  
something harmful?

I have there is **less pollution.**

Who has an example of a person  
recycling something to help  
the environment?

I have it **prevents the  
burning of gasoline, which  
causes air pollution.**

Who has an example of a person  
reusing something to help  
the environment?

I have a **person who saves  
aluminum cans to recycle.**

Who has a reason for why saving  
aluminum cans to recycle helps  
the environment?



# Living Things Change Their Environment



I have it **saves space  
in landfills.**

Who has the way in which plants  
and animals survive when their  
environments are changed?

I have **woolly mammoth.**

Who has the result of this sudden  
change upon the woolly mammoth  
population when these animals  
could not move or adapt?

I have they **adapt.**

Who has the reason why animals  
have adaptations?

I have they **became extinct.**

Who has an example of an animal  
that has stayed the same and  
survived changes to its environment  
for many years?

I have **for survival.**

Who has what could happen to  
plants or animals if an environment  
is suddenly changed?

I have **crocodile.**

Who has how scientists know that  
crocodiles were the same long ago  
as they are today?

I have they **could  
become endangered or extinct.**

Who has an example of an animal  
that could not move or adapt when  
faced with a sudden change to  
its environment?

I have **fossils of crocodiles  
look the same as today's  
crocodiles.**

Who has the first card?



# Living Things Change Their Environment

Draw a line from word to word to complete the maze as your classmates read the clues.

<b>START</b>	BUILDS A NEST	DIGS A HOLE	HUMANS
HELPFUL, HARMFUL, AND NEUTRAL	EVERY SECOND OF EVERY DAY	SPINS A WEB	CHOPPING DOWN A TREE
LAND COULD FLOOD	ENVIRONMENTS CHANGE	RESOURCES	BACTERIA OR FUNGI BREAKING DOWN LEAVES
PLANTS CAN DIE	REDUCING	TREES AND PLANTS GROW AND COMPETE FOR SPACE, LIGHT, AND WATER	COMPETITION
HOMES OF OTHER PLANTS OR ANIMALS COULD BE WASHED AWAY	MAKE SPACE FOR SMALLER PLANTS TO GROW WHEN THEY CUT DOWN TREES	WETLAND	PROVIDES NEW HOMES FOR PLANTS AND ANIMALS
REDUCE	REDUCE, REUSE, AND RECYCLE	ADAPT	HUMANS
PERSON WALKING INSTEAD OF DRIVING	THREE RS	POLLUTION	PRODUCE TONS OF TRASH EACH YEAR
PREVENTS THE BURNING OF GASOLINE, WHICH CAUSES AIR POLLUTION	HELPFUL, HARMFUL, AND NEUTRAL	HARMFUL MATERIALS GET INTO THE AIR, WATER, OR SOIL	COLLECTED IN LANDFILLS
PERSON WHO USES ZIPPERED PLASTIC BAGS OVER AND OVER AGAIN	COMPETITION	WOOLLY MAMMOTH	BECAME EXTINCT
LESS TRASH IN THE LANDFILLS	LESS POLLUTION	COULD BECOME ENDANGERED OR EXTINCT	CROCODILE
ENVIRONMENTS CHANGE	PERSON WHO SAVES ALUMINUM CANS TO RECYCLE	FOR SURVIVAL	FOSSILS OF CROCODILES LOOK THE SAME AS TODAY'S CROCODILES
POLLUTION	SAVES SPACE IN LANDFILLS	ADAPT	<b>FINISH</b>

Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ the struggle among living things for resources
- \_\_\_\_\_ what happens to environments as living things compete for resources
- \_\_\_\_\_ types of changes to the environment caused by living things
- \_\_\_\_\_ the living things that cause the most change to environments
- \_\_\_\_\_ harmful materials that get into the air, water, or soil
- \_\_\_\_\_ using less of something to help the environment
- \_\_\_\_\_ how living things survive changes to their environment



# Weather



<p>I have the <b>first card</b>.</p> <p>Who has the term for the daily condition of the lowest atmosphere in a particular place?</p>	<p>I have <b>atmosphere</b>.</p> <p>Who has the materials that make up the atmosphere?</p>
<p>I have <b>weather</b>.</p> <p>Who has the person who makes weather predictions or reports on the weather?</p>	<p>I have <b>gases and dust</b>.</p> <p>Who has the lowest layer of the atmosphere in which weather occurs?</p>
<p>I have <b>weather forecaster</b>.</p> <p>Who has the person who studies weather?</p>	<p>I have <b>troposphere</b>.</p> <p>Who has the second layer of the atmosphere, which contains the ozone layer?</p>
<p>I have <b>meteorologist</b>.</p> <p>Who has the term for the air that surrounds the earth?</p>	<p>I have <b>stratosphere</b>.</p> <p>Who has the third layer of the atmosphere in which air is the coldest?</p>



# Weather



I have **mesosphere**.

Who has the fourth layer of the atmosphere, which is important to radio communications?



I have **thermometer**.

Who has the term for the pressing down force of the air on the earth?



I have **thermosphere**.

Who has the outermost layer of the atmosphere?



I have **air pressure**.

Who has the type of air pressure in which air moves downward and creates good weather and clear skies?



I have **exosphere**.

Who has the force that holds the atmosphere in place?



I have **high pressure**.

Who has the type of air pressure in which air moves upward and creates bad weather conditions?



I have **gravity**.

Who has the tool used to measure the temperature of the air?



I have **low pressure**.

Who has the tool used to measure air pressure?



# Weather



<p>I have <b>barometer</b>.</p> <p>Who has the type of weather conditions expected if a barometer is rising?</p>	<p>I have <b>anemometer</b>.</p> <p>Who has the tool used to measure wind direction?</p>
<p>I have <b>fair weather</b>.</p> <p>Who has the type of weather conditions expected if a barometer is falling?</p>	<p>I have <b>weather vane</b>.</p> <p>Who has the term for a mass of tiny water droplets that are too small to fall from the sky?</p>
<p>I have <b>rain</b>.</p> <p>Who has the term for air moving from high pressure to low pressure?</p>	<p>I have <b>cloud</b>.</p> <p>Who has the type of clouds that are feathery, thin, and often mean rain or snow will fall within several hours?</p>
<p>I have <b>wind</b>.</p> <p>Who has the tool used to measure how fast wind is moving?</p>	<p>I have <b>cirrus clouds</b>.</p> <p>Who has the type of clouds that are fluffy, white with flat bottoms, and usually bring fair weather?</p>





# Weather



I have **cumulus clouds**.

Who has the type of clouds that are smooth and gray, cover the whole sky, and usually bring light rain and drizzle?

I have **rain gauge**.

Who has the term for a large body of air that has nearly the same temperature and moisture?

I have **stratus clouds**.

Who has the type of clouds that have dark, flat bottoms and produce rain or thunderstorms?

I have **air mass**.

Who has the areas in which most air masses form?

I have **cumulonimbus clouds**.

Who has the cloud droplets that grow and fall as rain, snow, sleet, or hail?

I have **tropics and polar regions**.

Who has the area where air masses meet?

I have **precipitation**.

Who has the tool that measures the amount of precipitation?

I have **front**.

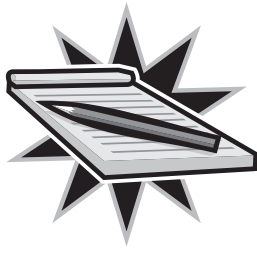
Who has the type of front that results from cold air pushing under warm air and often brings thunderstorms and cooler weather?



# Weather



<p>I have <b>cold front</b>.</p> <p>Who has the type of front that results from warm air pushing into cold air and often brings long, steady rain and warmer temperatures?</p>	<p>I have <b>tropical zone</b>.</p> <p>Who has the cold, snowy climate zone near the North Pole and the South Pole?</p>
<p>I have <b>warm front</b>.</p> <p>Who has the term for how much water vapor is in the air?</p>	<p>I have <b>polar zone</b>.</p> <p>Who has the climate zone between the polar and tropical zones that has warm summers and cold winters?</p>
<p>I have <b>humidity</b>.</p> <p>Who has the tool used to measure humidity?</p>	<p>I have <b>temperate zone</b>.</p> <p>Who has the device created to take pictures of the earth and collect information about the weather?</p>
<p>I have <b>hygrometer</b>.</p> <p>Who has the climate zone near the equator that has warm weather all year?</p>	<p>I have <b>weather satellite</b>.</p> <p>Who has the first card?</p>



# Weather

Draw a line from word to word to complete the maze as your classmates read the clues.

START	WEATHER	WEATHER FORECASTER	METEOROLOGIST
AIR PRESSURE	THERMOMETER	STRATUS CLOUDS	ATMOSPHERE
HIGH PRESSURE	GRAVITY	EXOSPHERE	GASES AND DUST
LOW PRESSURE	CIRRUS CLOUDS	THERMOSPHERE	TROPOSPHERE
BAROMETER	HUMIDITY	MESOSPHERE	STRATOSPHERE
FAIR WEATHER	RAIN	WEATHER	BAROMETER
ANEMOMETER	WIND	CUMULUS CLOUDS	STRATUS CLOUDS
WEATHER VANE	CLOUD	CIRRUS CLOUDS	CUMULONIMBUS CLOUDS
TROPICAL ZONE	HYGROMETER	HUMIDITY	PRECIPITATION
POLAR ZONE	ATMOSPHERE	WARM FRONT	RAIN GAUGE
TEMPERATE ZONE	WEATHER SATELLITE	COLD FRONT	AIR MASS
CUMULUS CLOUDS	<b>FINISH</b>	FRONT	TROPICS AND POLAR REGIONS

Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ the air that surrounds the earth
- \_\_\_\_\_ a tool used to measure air pressure
- \_\_\_\_\_ a mass of tiny water droplets that are too small to fall from the sky
- \_\_\_\_\_ the amount of water vapor in the air
- \_\_\_\_\_ smooth, gray clouds that usually bring light rain and drizzle
- \_\_\_\_\_ thin, feathery clouds that often mean rain or snow will fall within hours
- \_\_\_\_\_ fluffy, white clouds that usually bring fair weather



# The Earth, Moon, and Sun



<p>I have the <b>first card</b>.</p> <p>Who has the shape that describes the earth?</p>	<p>I have <b>darkness</b>.</p> <p>Who has the imaginary line drawn through the center of the earth from the North Pole to the South Pole?</p>
<p>I have <b>sphere</b>.</p> <p>Who has the term for the movement of the earth that creates day and night?</p>	<p>I have <b>axis</b>.</p> <p>Who has the reason why the sun's rays strike differently in different regions?</p>
<p>I have <b>rotation</b>.</p> <p>Who has the effect on a region when that part of the earth faces the sun?</p>	<p>I have the <b>earth's axis is tilted</b>.</p> <p>Who has the length of time it takes the earth to turn once on its axis?</p>
<p>I have <b>daylight</b>.</p> <p>Who has the result when a region is turned away from the sun?</p>	<p>I have <b>one day</b>.</p> <p>Who has the term for one object moving around another object?</p>



# The Earth, Moon, and Sun



I have **revolve**.

Who has the star around which the earth revolves?



I have **summer**.

Who has how a region's daily high temperature would be all year long if the earth's axis was not tilted?



I have **the sun**.

Who has the length of time it takes the earth to make one revolution around the sun?



I have **the same**.

Who has the type of energy that comes directly from the sun?



I have **one year**.

Who has the season a region experiences when the earth's axis is tilted away from the sun?



I have **solar energy**.

Who has the very large rock in space that has no water or atmosphere and revolves around the earth?



I have **winter**.

Who has the season a region experiences when the earth's axis is tilted toward the sun?



I have **the moon**.

Who has the approximate length of time it takes the moon to make one full revolution around the earth?



# The Earth, Moon, and Sun



I have **29 days**.

Who has the number of phases the moon will completely cycle through in these 29 days?



I have **first quarter**.

Who has the phase of the moon cycle in which most of the moon's face is visible and it remains in the sky most of the night?



I have **eight**.

Who has the phase of the moon cycle in which the moon is not visible in the sky?



I have **waxing gibbous**.

Who has the phase of the moon cycle in which we can see the entire face of the moon?



I have **new moon**.

Who has the phase of the moon cycle in which part of the moon begins to show and the moon appears larger in the sky each night?



I have **full moon**.

Who has the phase of the moon cycle in which we can see most of the moon's face but a little less each night?



I have **waxing crescent**.

Who has the phase of the moon cycle in which the right half of the moon's face is visible in the Northern Hemisphere?



I have **waning gibbous**.

Who has the phase of the moon cycle in which the left half of the moon's face is visible in the Northern Hemisphere?



# The Earth, Moon, and Sun



I have **last quarter**.



Who has the phase of the moon cycle in which we see only a small sliver of the moon just before morning and less each night?

I have **the sun's rays**.



Who has two ways in which the earth and the moon are similar?

I have **waning crescent**.



Who has the direction in which the moon appears to rise (just like the sun) because the earth is rotating?

I have they **both rotate and revolve**.



Who has two ways in which the moon is different from the earth?

I have **east**.



Who has the direction in which the moon appears to set (just like the sun) because the earth is rotating?

I have it has **no air and no liquid water**.



Who has the term for something related to the moon?

I have **west**.



Who has the beams of light that light up the moon?

I have **lunar**.



Who has the term for one object passing into the shadow of another object?



# The Earth, Moon, and Sun



I have **eclipse**.

Who has the result when the full moon is in earth's shadow?



I have **Neil Armstrong and Edwin "Buzz" Aldrin**.

Who has the changes in water levels at shorelines around the world?



I have **lunar eclipse**.

Who has the result when the earth is in the shadow of a new moon?



I have **tides**.

Who has the term for how the moon and the sun affect the tides on the earth?



I have **solar eclipse**.

Who has the term for a person who is trained for space flight?



I have **gravitational attraction**.

Who has the type of tides that result in the highest high tides and lowest low tides of the month?



I have **astronaut**.

Who has the first astronauts to walk on the moon?



I have **spring tides**.

Who has the first card?





# The Earth, Moon, and Sun

Draw a line from word to word to complete the maze as your classmates read the clues.

START	SPHERE	DARKNESS	AXIS
THE SUN	ROTATION	DAYLIGHT	EARTH'S AXIS IS TILTED
EAST	WINTER	ONE YEAR	ONE DAY
THE SAME	SUMMER	THE SUN	REVOLVE
SOLAR ENERGY	BOTH ROTATE AND REVOLVE	FIRST QUARTER	WAXING GIBBOUS
THE MOON	NEW MOON	WAXING CRESCENT	FULL MOON
29 DAYS	EIGHT	ROTATION	WANING GIBBOUS
TIDES	NEIL ARMSTRONG AND EDWIN "BUZZ" ALDRIN	WANING CRESCENT	LAST QUARTER
GRAVITATIONAL ATTRACTION	ASTRONAUT	EAST	WEST
SPRING TIDES	SOLAR ECLIPSE	SUMMER	THE SUN'S RAYS
FINISH	LUNAR ECLIPSE	29 DAYS	BOTH ROTATE AND REVOLVE
FULL MOON	ECLIPSE	LUNAR	NO AIR AND NO LIQUID WATER

Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ the movement of the earth that creates day and night
- \_\_\_\_\_ the star around which the earth revolves
- \_\_\_\_\_ the approximate length of time it takes the moon to make one full revolution around the earth
- \_\_\_\_\_ the direction in which the sun rises
- \_\_\_\_\_ the phase of the moon cycle when we can see the entire face of the moon
- \_\_\_\_\_ the season of a region when the earth's axis is tilted toward the sun
- \_\_\_\_\_ two ways in which the earth and the moon are similar



# The Solar System



<p>I have the <b>first card</b>.</p> <p>Who has the term for the sun and all the objects that move around it?</p>	<p>I have <b>solar</b>.</p> <p>Who has the term for a large object that orbits a star?</p>
<p>I have <b>solar system</b>.</p> <p>Who has the term for an object in space that produces its own light and heat?</p>	<p>I have <b>planet</b>.</p> <p>Who has the first planet from the sun?</p>
<p>I have <b>star</b>.</p> <p>Who has the star closest to Earth?</p>	<p>I have <b>Mercury</b>.</p> <p>Who has the second planet from the sun, known as Earth's "twin sister" because of their similar size, mass, density, and volume?</p>
<p>I have <b>the sun</b>.</p> <p>Who has the term for something related to the sun?</p>	<p>I have <b>Venus</b>.</p> <p>Who has the only planet known to support life?</p>



# The Solar System



I have **Earth**.

Who has the fourth planet from the sun, which is known as the “Red Planet” because of its color?

I have **Uranus**.

Who has the eighth planet from the sun, which has the strongest winds in the solar system?

I have **Mars**.

Who has the fifth planet from the sun, which has the largest mass of all the planets and the most moons?

I have **Neptune**.

Who has the dwarf planet that was once considered to be the ninth planet?

I have **Jupiter**.

Who has the sixth planet from the sun, which is famous for its system of rings that are the brightest in the solar system?

I have **Pluto**.

Who has the materials that make up the first four planets, also known as the inner planets?

I have **Saturn**.

Who has the seventh planet from the sun, which rotates on its side?

I have **solid, rocklike materials**.

Who has the materials that make up the four outer planets?



# The Solar System



<p>I have <b>gases</b>.</p> <p>Who has the materials that make up Pluto?</p>	<p>I have <b>telescope</b>.</p> <p>Who has the term for an object that revolves around a planet?</p>
<p>I have <b>mixture of rock and ice</b>.</p> <p>Who has what happens to planet temperatures as you go farther from the sun?</p>	<p>I have <b>satellite</b>.</p> <p>Who has an example of a natural satellite?</p>
<p>I have <b>they get colder</b>.</p> <p>Who has what Venus does not have, since it does not tilt as it goes around the sun?</p>	<p>I have <b>moon</b>.</p> <p>Who has the term for a spacecraft that explores the solar system and carries instruments but does not transport astronauts?</p>
<p>I have <b>seasons</b>.</p> <p>Who has the tool used to observe and learn about the solar system?</p>	<p>I have <b>space probe</b>.</p> <p>Who has the purpose of space probes?</p>



# The Solar System



I have to **collect observations and data.**

Who has the term for the path a space object follows when it travels around another object?

I have **meteors.**

Who has the term for a meteor that strikes the earth?

I have **orbit.**

Who has the chunks of rock or metal that orbit the sun, usually between Mars and Jupiter?

I have **meteorite.**

Who has the term for small mixtures of dust, rock, ice, and some frozen gases that orbit the sun?

I have **asteroids.**

Who has the small pieces of rock, metal, or ice that break off when asteroids are traveling through space?

I have **comets.**

Who has the term for a group of stars that forms a pattern in the night sky?

I have **meteoroids.**

Who has the meteoroids that burn up in the earth's atmosphere and are often called "shooting stars"?

I have **constellation.**

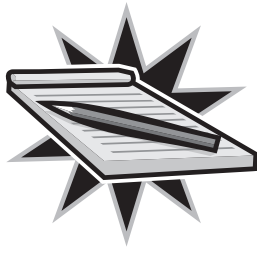
Who has the term for an enormous group of stars, gases, and dust particles held together by the forces of gravity?



# The Solar System



<p>I have <b>galaxy</b>.</p> <p>Who has the group of stars to which our solar system belongs?</p>	<p>I have <b>craters and dust</b>.</p> <p>Who has the organization in the United States that sends astronauts into space?</p>
<p>I have the <b>Milky Way</b>.</p> <p>Who has the term for the dark spots on the sun?</p>	<p>I have <b>NASA, the National Aeronautics and Space Administration</b>.</p> <p>Who has the world's first space-based optical telescope that was launched in April 1990?</p>
<p>I have <b>sunspots</b>.</p> <p>Who has the term used to measure the distance that a light ray would travel in one year?</p>	<p>I have <b>Hubble Space Telescope</b>.</p> <p>Who has the shape of the orbit in which all planets in our solar system, many satellites, and most moons travel?</p>
<p>I have <b>light-year</b>.</p> <p>Who has the objects that cover the surface of the moon?</p>	<p>I have <b>elliptical or oval</b>.</p> <p>Who has the first card?</p>



# The Solar System

Draw a line from word to word to complete the maze as your classmates read the clues.

VENUS	EARTH	MARS	SOLID, ROCKLIKE MATERIALS
MERCURY	SATURN	JUPITER	STAR
PLANET	URANUS	NEPTUNE	PLUTO
SOLAR	THE SUN	GASES	SOLID, ROCKLIKE MATERIALS
TELESCOPE	STAR	MIXTURE OF ROCK AND ICE	THEY GET COLDER
<b>START</b>	SOLAR SYSTEM	ELLIPTICAL OR OVAL	SEASONS
ORBIT	COLLECT OBSERVATIONS AND DATA	SPACE PROBE	TELESCOPE
ASTEROIDS	GASES	MOON	SATELLITE
METEORIDS	SUNSPOTS	LIGHT-YEAR	CRATERS AND DUST
METEORS	MILKY WAY	HUBBLE SPACE TELESCOPE	NASA
METEORITE	GALAXY	ELLIPTICAL OR OVAL	SOLAR SYSTEM
COMETS	CONSTELLATION	<b>FINISH</b>	MILKY WAY

Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ the sun and all the objects that move around it
- \_\_\_\_\_ an object in space that produces its own heat and light
- \_\_\_\_\_ materials that make up the first four inner planets
- \_\_\_\_\_ materials that make up the four outer planets
- \_\_\_\_\_ a tool used to observe and learn about the solar system
- \_\_\_\_\_ the shape of the orbit in which all planets in our solar system and most moons travel
- \_\_\_\_\_ the name of the group of stars to which our solar system belongs



# The Changing Earth— Rocks, Minerals, and Soil



<p>I have the <b>first card</b>.</p> <p>Who has the term for materials made from dead plants or animals?</p>	<p>I have <b>nutrients</b>.</p> <p>Who has the first layer of soil, which has the nutrients that plants need to grow?</p>
<p>I have <b>organic</b>.</p> <p>Who has the term for materials that have never been living, such as rocks, sand, and clay?</p>	<p>I have <b>topsoil</b>.</p> <p>Who has the second layer of soil?</p>
<p>I have <b>inorganic</b>.</p> <p>Who has the thin, loose top covering of the earth's surface made up of organic and inorganic materials?</p>	<p>I have <b>subsoil</b>.</p> <p>Who has the third layer of soil, which is solid, unbroken rock?</p>
<p>I have <b>soil</b>.</p> <p>Who has the materials from the soil that plants need to grow?</p>	<p>I have <b>bedrock</b>.</p> <p>Who has the process by which topsoil is lost, especially when plants have been removed?</p>





# The Changing Earth— Rocks, Minerals, and Soil



<p>I have <b>erosion</b>.</p> <p>Who has a method of controlling erosion?</p>	<p>I have <b>earth's crust</b>.</p> <p>Who has the result of the shaking or sliding of the earth's crust?</p>
<p>I have <b>planting grass or trees</b>.</p> <p>Who has the natural process of wearing down or breaking apart rocks to make soil?</p>	<p>I have <b>earthquake</b>.</p> <p>Who has the middle layer of the earth?</p>
<p>I have <b>weathering</b>.</p> <p>Who has the major causes of weathering?</p>	<p>I have <b>mantle</b>.</p> <p>Who has the center part of the earth?</p>
<p>I have <b>water, wind, and plants</b>.</p> <p>Who has the layer of the earth made up of rocks and soil?</p>	<p>I have <b>core</b>.</p> <p>Who has the name of a mountain with an opening from which lava, ash, rocks, and other materials escape?</p>



# The Changing Earth— Rocks, Minerals, and Soil



<p>I have <b>volcano</b>.</p> <p>Who has the type of rock that forms from melted rock that comes from deep within the earth?</p>	<p>I have <b>sedimentary rock</b>.</p> <p>Who has two examples of sedimentary rocks that have layers or bands across them?</p>
<p>I have <b>igneous rock</b>.</p> <p>Who has the factor that provides the easiest way to identify igneous rocks?</p>	<p>I have <b>sandstone and limestone</b>.</p> <p>Who has the type of rock that forms when igneous or sedimentary rock is changed by heat or pressure?</p>
<p>I have <b>crystals</b>.</p> <p>Who has two examples of igneous rocks?</p>	<p>I have <b>metamorphic rock</b>.</p> <p>Who has two examples of metamorphic rocks?</p>
<p>I have <b>granite and basalt</b>.</p> <p>Who has the type of rock that forms when sediments are pressed or cemented together?</p>	<p>I have <b>marble and slate</b>.</p> <p>Who has the materials that make up rocks?</p>



# The Changing Earth— Rocks, Minerals, and Soil



I have **minerals**.

Who has the property that identifies minerals by the way in which they reflect light?

I have **amber**.

Who has the term for an imprint or remains of something that lived long ago, usually found in sedimentary rocks or amber?

I have **luster**.

Who has the property that identifies minerals by the way in which they break?

I have **fossils**.

Who has the term for a material burned for its energy?

I have **fracture**.

Who has the property that identifies minerals by how much they can resist being scratched?

I have **fuel**.

Who has the remains of plants and animals from the past that can be used as sources of energy such as coal, natural gas, and gasoline?

I have **hardness**.

Who has the term for hardened tree sap?

I have **fossil fuels**.

Who has what is produced when fossil fuels are burned to make them useful?



# The Changing Earth— Rocks, Minerals, and Soil



<p>I have <b>heat</b>.</p> <p>Who has the term for a useful mineral or other material that people take from the earth?</p>	<p>I have <b>nonrenewable resources</b>.</p> <p>Who has two examples of nonrenewable resources?</p>
<p>I have <b>natural resource</b>.</p> <p>Who has the resources that can be replaced almost as quickly as they are used?</p>	<p>I have <b>minerals and fossil fuels</b>.</p> <p>Who has two examples of slow changes to land?</p>
<p>I have <b>renewable resources</b>.</p> <p>Who has two examples of things usually thought to be renewable resources?</p>	<p>I have <b>weathering and erosion</b>.</p> <p>Who has two examples of fast changes to land?</p>
<p>I have <b>trees and soil</b>.</p> <p>Who has the resources that cannot be replaced after they are used?</p>	<p>I have <b>hurricanes and tornadoes</b>.</p> <p>Who has the first card?</p>



# The Changing Earth— Rocks, Minerals, and Soil

Draw a line from word to word to complete the maze as your classmates read the clues.

SOIL	EROSION	EARTHQUAKE	<b>FINISH</b>
MANTLE	CORE	IGNEOUS ROCK	HURRICANES AND TORNADOES
EARTHQUAKE	VOLCANO	MINERALS	WEATHERING AND EROSION
EARTH'S CRUST	IGNEOUS ROCK	CRYSTALS	MINERALS AND FOSSIL FUELS
WATER, WIND, AND PLANTS	WEATHERING	GRANITE AND BASALT	NONRENEWABLE RESOURCES
<b>START</b>	PLANTING GRASS OR TREES	SEDIMENTARY ROCK	TREES AND SOIL
ORGANIC	EROSION	SANDSTONE AND LIMESTONE	RENEWABLE RESOURCES
INORGANIC	BEDROCK	METAMORPHIC ROCK	NATURAL RESOURCE
SOIL	SUBSOIL	MARBLE AND SLATE	HEAT
NUTRIENTS	TOPSOIL	MINERALS	FOSSIL FUELS
WEATHERING	FRACTURE	LUSTER	FUEL
RENEWABLE RESOURCES	HARDNESS	AMBER	FOSSILS

Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ the type of rock formed from melted rock that comes from deep within the earth
- \_\_\_\_\_ the thin, loose top covering of the earth's surface made up of organic and inorganic materials
- \_\_\_\_\_ the resources that can be replaced almost as quickly as they are used
- \_\_\_\_\_ the process in which the topsoil is lost, especially when plants have been removed
- \_\_\_\_\_ the natural process of wearing down or breaking apart rocks to make soil
- \_\_\_\_\_ the shaking or sliding of the earth's crust
- \_\_\_\_\_ the materials that make up rocks



# Bodies of Water, Landforms, and Forces That Change the Earth



<p>I have the <b>first card</b>.</p> <p>Who has a long, flowing body of water that runs across land?</p>	<p>I have <b>coast</b>.</p> <p>Who has a body of water that is smaller than a gulf and is surrounded by land on all sides but one?</p>
<p>I have <b>river</b>.</p> <p>Who has a body of water completely surrounded by land?</p>	<p>I have <b>bay</b>.</p> <p>Who has a large body of water, larger than a bay, surrounded by land on all sides but one?</p>
<p>I have <b>lake</b>.</p> <p>Who has the large bodies of water that cover nearly three-fourths of the earth's surface?</p>	<p>I have <b>gulf</b>.</p> <p>Who has a body of land that is completely surrounded by water?</p>
<p>I have <b>oceans</b>.</p> <p>Who has the land near a sea or ocean?</p>	<p>I have <b>island</b>.</p> <p>Who has the term for land that is surrounded by water on three sides?</p>



# Bodies of Water, Landforms, and Forces That Change the Earth



I have **peninsula**.

Who has huge amounts of ice that move across land?

I have **mountains**.

Who has a high flat area of land with steep sides that looks like a mountain with the top cut off?

I have **glaciers**.

Who has the term for the natural features of a land surface?

I have **plateau**.

Who has the lowlands between hills or mountains?

I have **landforms**.

Who has the large seven pieces of land rising above the surface of the oceans on earth?

I have **valleys**.

Who has a deep, narrow valley with steep sides?

I have **continents**.

Who has the highest landforms with steep sides and pointed tops?

I have **canyon**.

Who has wide, flat areas of land?



# Bodies of Water, Landforms, and Forces That Change the Earth



I have **plains**.

Who has an example of what a person would most likely find in the plains areas?

I have **flood**.

Who has a sudden movement of rocks in the earth's crust resulting in shaking and rolling of the ground that can change land quickly?

I have **farmland**.

Who has a large, violent storm with heavy rains and strong winds that starts over the ocean and can change land quickly?

I have **earthquake**.

Who has what is released during an earthquake?

I have **hurricane**.

Who has a powerful, funnel-shaped windstorm with swirling winds that starts over wide, flat areas of land and can change land quickly?

I have **energy**.

Who has the point on the earth's surface directly above where the energy was released within the earth in an earthquake?

I have **tornado**.

Who has an overflow of water over land that can change land quickly?

I have **epicenter**.

Who has the information we get about an earthquake from the Richter scale that tells us the amount of energy released in an earthquake?





# Bodies of Water, Landforms, and Forces That Change the Earth



<p>I have <b>magnitude</b>.</p> <p>Who has the way that the energy flows during an earthquake?</p>	<p>I have <b>vent</b>.</p> <p>Who has the hot, flowing substance that lies deep in the mantle of the earth?</p>
<p>I have <b>in waves</b>.</p> <p>Who has the tool used to record the earthquake waves?</p>	<p>I have <b>magma</b>.</p> <p>Who has the passageway through which the magma rises to the surface?</p>
<p>I have <b>seismograph</b>.</p> <p>Who has an explosion of rocks, gases, and dust from an opening in the earth's surface through a volcano?</p>	<p>I have <b>pipe</b>.</p> <p>Who has the molten rock, or magma, that flows out at the surface of the volcano during an eruption?</p>
<p>I have <b>eruption</b>.</p> <p>Who has the opening of a volcano at the earth's surface?</p>	<p>I have <b>lava</b>.</p> <p>Who has the bowl-shaped area at the top of a volcano where volcanic materials like ash, lava, and other materials are released?</p>



# Bodies of Water, Landforms, and Forces That Change the Earth



<p>I have <b>crater</b>.</p> <p>Who has what builds up deep within the earth to cause an eruption to occur?</p>	<p>I have <b>tsunamis and flash floods</b>.</p> <p>Who has a benefit of volcanic ash?</p>
<p>I have <b>pressure</b>.</p> <p>Who has the dangerous, invisible, and toxic gas that forms part of the magma?</p>	<p>I have <b>useful minerals</b>.</p> <p>Who has a benefit to the land around a volcano after an eruption?</p>
<p>I have <b>carbon dioxide</b>.</p> <p>Who has the region that encircles the Pacific Ocean and is home to more than 500 active volcanoes?</p>	<p>I have <b>fertile soil</b>.</p> <p>Who has the type of energy that is provided by volcanoes?</p>
<p>I have <b>Ring of Fire</b>.</p> <p>Who has two examples of destructive changes to the earth that can be triggered by volcanoes?</p>	<p>I have <b>heat energy</b>.</p> <p>Who has the first card?</p>



# Bodies of Water, Landforms, and Forces That Change the Earth

Draw a line from word to word to complete the maze as your classmates read the clues.

ISLAND	PENINSULA	GLACIERS	LANDFORMS
GULF	TORNADO	MOUNTAINS	CONTINENTS
BAY	COAST	PLATEAU	PRESSURE
LAKE	OCEANS	VALLEYS	CANYON
RIVER	FLOOD	TORNADO	PLAINS
<b>START</b>	EARTHQUAKE	HURRICANE	FARMLAND
EPICENTER	ENERGY	LANDFORMS	OCEANS
MAGNITUDE	ERUPTION	VENT	MAGMA
IN WAVES	SEISMOGRAPH	CONTINENTS	PIPE
PENINSULA	RING OF FIRE	CARBON DIOXIDE	LAVA
USEFUL MINERALS	TSUNAMIS AND FLASH FLOODS	PRESSURE	CRATER
FERTILE SOIL	HEAT ENERGY	<b>FINISH</b>	CANYON

Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ the natural features of a land surface
- \_\_\_\_\_ the seven large pieces of land rising above the surface of the oceans
- \_\_\_\_\_ a deep, narrow valley with steep sides
- \_\_\_\_\_ what builds up deep within the earth to cause an eruption to occur
- \_\_\_\_\_ the largest bodies of water that cover nearly three-fourths of the earth
- \_\_\_\_\_ land that is surrounded by water on three sides
- \_\_\_\_\_ a powerful, funnel-shaped windstorm with swirling winds that usually forms over wide, flat areas



# Matter and Its Changing States



<p>I have the <b>first card</b>.</p> <p>Who has the term for anything that takes up space and has weight?</p>	<p>I have <b>balance</b>.</p> <p>Who has the property used to describe how an object feels when you touch it?</p>
<p>I have <b>matter</b>.</p> <p>Who has the term for how much matter is in an object?</p>	<p>I have <b>texture</b>.</p> <p>Who has the property used to describe how an object shines in the light?</p>
<p>I have <b>mass</b>.</p> <p>Who has a unit used to measure mass?</p>	<p>I have <b>luster</b>.</p> <p>Who has the property of an object that makes it attract iron?</p>
<p>I have <b>gram</b>.</p> <p>Who has the tool that is used to measure an object's mass in grams?</p>	<p>I have <b>magnetism</b>.</p> <p>Who has the term for the amount of space taken up by an object?</p>



# Matter and Its Changing States



<p>I have <b>volume</b>.</p> <p>Who has a unit used to measure volume?</p>	<p>I have <b>it will float</b>.</p> <p>Who has the state of matter that has a definite size and shape with particles packed closely together?</p>
<p>I have <b>liter</b>.</p> <p>Who has the general description of what makes up matter?</p>	<p>I have <b>solid</b>.</p> <p>Who has the state of matter that has a definite volume and takes up the shape of its container?</p>
<p>I have <b>tiny particles</b>.</p> <p>Who has what will happen in water to an object with tiny particles that are close together?</p>	<p>I have <b>liquid</b>.</p> <p>Who has the state of matter that has no definite volume or shape?</p>
<p>I have <b>it will sink</b>.</p> <p>Who has what will happen in water to an object with tiny particles that are loosely packed and farther apart?</p>	<p>I have <b>gas</b>.</p> <p>Who has two examples of gases?</p>



# Matter and Its Changing States



<p>I have <b>hydrogen and oxygen</b>.</p> <p>Who has what happens to matter as it changes from a solid to a liquid?</p>	<p>I have <b>condensation</b>.</p> <p>Who has the change in the state of water from a liquid to water vapor?</p>
<p>I have <b>it melts</b>.</p> <p>Who has the solid state of water?</p>	<p>I have <b>evaporation</b>.</p> <p>Who has two factors that affect how quickly water evaporates or condenses?</p>
<p>I have <b>ice</b>.</p> <p>Who has the gas state of water?</p>	<p>I have <b>temperature and air movement</b>.</p> <p>Who has the temperature at which water freezes?</p>
<p>I have <b>water vapor</b>.</p> <p>Who has the change in the state of water from water vapor to a liquid?</p>	<p>I have <b>0° Celsius (32° Fahrenheit)</b>.</p> <p>Who has what happens to water as it freezes?</p>



# Matter and Its Changing States



I have **it expands**.

Who has the temperature at which water boils?



I have **folding paper and melting ice**.

Who has a change that produces new matter?



I have **100° Celsius (212° Fahrenheit)**.

Who has the term for different types of matter mixed together?



I have **chemical change**.

Who has two examples of chemical changes?



I have **mixture**.

Who has a change that begins and ends with the same type of matter?



I have **burnt sugar and rusted iron**.

Who has the tiny particles that make up matter?



I have **physical change**.

Who has two examples of physical changes?



I have **atoms**.

Who has what atoms are constantly doing?



# Matter and Its Changing States



<p>I have <b>moving</b>.</p> <p>Who has the measure of how fast the atoms in an object are moving?</p>	<p>I have <b>element</b>.</p> <p>Who has the term for substances made up of two or more elements that are chemically combined?</p>
<p>I have <b>temperature</b>.</p> <p>Who has what happens to the temperature as the atoms speed up?</p>	<p>I have <b>compound</b>.</p> <p>Who has an example of a compound?</p>
<p>I have <b>it increases</b>.</p> <p>Who has what happens to the temperature as the atoms slow down?</p>	<p>I have <b>table salt</b>.</p> <p>Who has the type of matter made up of two or more substances that are physically combined?</p>
<p>I have <b>it decreases</b>.</p> <p>Who has the type of matter that contains only one kind of atom?</p>	<p>I have <b>mixture</b>.</p> <p>Who has the first card?</p>





# Matter and Its Changing States

Draw a line from word to word to complete the maze as your classmates read the clues.

ATOMS	BURNT SUGAR AND RUSTED IRON	100° CELSIUS	IT EXPANDS
MOVING	CHEMICAL CHANGE	MIXTURE	0° CELSIUS
TEMPERATURE	FOLDING PAPER AND MELTING ICE	PHYSICAL CHANGE	TEMPERATURE AND AIR MOVEMENT
IT INCREASES	IT DECREASES	CONDENSATION	EVAPORATION
MATTER	ELEMENT	WATER VAPOR	ICE
SOLID	COMPOUND	GAS	IT MELTS
MIXTURE	TABLE SALT	MASS	HYDROGEN AND OXYGEN
<b>FINISH</b>	EVAPORATION	LIQUID	GAS
IT WILL SINK	IT WILL FLOAT	SOLID	CONDENSATION
TINY PARTICLES	PHYSICAL CHANGE	LUSTER	TEXTURE
LITER	VOLUME	MAGNETISM	BALANCE
<b>START</b>	MATTER	MASS	GRAM

Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ anything that takes up space and has weight
- \_\_\_\_\_ how much matter is in an object as measured in grams
- \_\_\_\_\_ a state of matter that has a definite size and shape with particles packed closely together
- \_\_\_\_\_ a state of matter that has no definite shape or volume
- \_\_\_\_\_ a change in state from water vapor to liquid
- \_\_\_\_\_ a change in state from liquid to water vapor
- \_\_\_\_\_ a change that begins and ends with the same type of matter



# Heat and Light



<p>I have the <b>first card</b>.</p> <p>Who has the term for the ability to do work or cause a change?</p>	<p>I have <b>heat energy</b>.</p> <p>Who has another term for heat energy?</p>
<p>I have <b>energy</b>.</p> <p>Who has the temperature at which a substance changes from a liquid to a gas?</p>	<p>I have <b>thermal energy</b>.</p> <p>Who has the source of the earth's greatest amount of heat and thermal energy?</p>
<p>I have <b>boiling point</b>.</p> <p>Who has what happens to the particles within a substance as they are heated?</p>	<p>I have <b>the sun</b>.</p> <p>Who has two common uses of heat energy?</p>
<p>I have they <b>move faster</b>.</p> <p>Who has the type of energy caused by the motion of the particles in matter?</p>	<p>I have <b>warming our homes and cooking</b>.</p> <p>Who has the way that heat travels?</p>



# Heat and Light



I have **from hot things to cold things**.

Who has the movement of heat energy directly from one object to another?

I have **so the heat can travel quickly to the food**.

Who has one example of a material that is a poor conductor of heat?

I have **conduction**.

Who has an example of conduction?

I have **plastic**.

Who has the term for materials that are poor conductors of heat?

I have **putting a cool spoon in a mug of hot water, which will warm the spoon**.

Who has an example of a material that is a good conductor of heat?

I have **insulators**.

Who has two other examples of materials that are good insulators?

I have **metal**.

Who has the reason why cooking pans are made of metal?

I have **fur and wool**.

Who has one way humans, bears, and other warm-blooded animals maintain a constant body temperature?



# Heat and Light



<p>I have <b>body insulation</b>.</p> <p>Who has what happens to matter when it is heated?</p>	<p>I have <b>wind</b>.</p> <p>Who has the third form of heat energy movement, which involves the sun's rays traveling in straight lines called heat rays?</p>
<p>I have <b>it expands</b>.</p> <p>Who has an example of matter expanding when heated?</p>	<p>I have <b>radiation</b>.</p> <p>Who has what happens to the radiation when the sunlight hits the earth?</p>
<p>I have a <b>hot air balloon</b>.</p> <p>Who has the term for the movement of gases or liquids from a cooler spot to a warmer spot?</p>	<p>I have it is <b>absorbed or reflected</b>.</p> <p>Who has the type of surfaces that absorb more of the sun's radiation?</p>
<p>I have <b>convection</b>.</p> <p>Who has a common example of convection currents that we may feel outside?</p>	<p>I have <b>darker surfaces</b>.</p> <p>Who has the reason why people wear lighter colors instead of darker colors in the summer?</p>



# Heat and Light



I have they **reflect more radiation to keep you cooler.**

Who has the way in which light travels?

I have **mirror.**

Who has the road safety clothing people wear so they can be seen at night?

I have **in straight lines or rays.**

Who has what happens when light rays hit a shiny surface?

I have **reflective clothing.**

Who has the term for objects that let light pass through them?

I have they **bounce back.**

Who has the term for “bouncing back”?

I have **transparent.**

Who has two examples of transparent materials?

I have **reflect.**

Who has an example of an excellent reflector?

I have **glass and water.**

Who has the term for objects that block light from going through?



# Heat and Light



<p>I have <b>opaque</b>.</p> <p>Who has two examples of opaque materials?</p>	<p>I have <b>refraction</b>.</p> <p>Who has what a spoon will look like, due to refraction, when placed in water?</p>
<p>I have <b>walls and people</b>.</p> <p>Who has what is created when a person or object blocks the sun's light?</p>	<p>I have <b>broken</b>.</p> <p>Who has two examples of objects with lenses that refract light?</p>
<p>I have <b>shadow</b>.</p> <p>Who has the term for objects that let some light pass through, such as a frosted window?</p>	<p>I have <b>camera and eyeglasses</b>.</p> <p>Who has an example of a tool that uses light energy?</p>
<p>I have <b>translucent</b>.</p> <p>Who has the term for the bending of light as it passes from one material to another?</p>	<p>I have <b>laser</b>.</p> <p>Who has the first card?</p>



# Heat and Light

Draw a line from word to word to complete the maze as your classmates read the clues.

START	WARMING OUR HOMES AND COOKING	FROM HOT THINGS TO COLD THINGS	CONDUCTION
ENERGY	THE SUN	METAL	PUTTING A COOL SPOON IN A MUG OF HOT WATER, WHICH WILL WARM THE SPOON
BOILING POINT	THERMAL ENERGY	SO THE HEAT CAN TRAVEL QUICKLY TO THE FOOD	PLASTIC
MOVE FASTER	HEAT ENERGY	REFRACTION	INSULATORS
CONDUCTION	CONVECTION	HOT AIR BALLOON	FUR AND WOOL
TRANSPARENT	WIND	IT EXPANDS	BODY INSULATION
ABSORBED OR REFLECTED	RADIATION	REFLECT	CONVECTION
DARKER SURFACES	SHADOW	BROKEN	CAMERA AND EYEGLASSES
REFLECT MORE RADIATION TO KEEP YOU COOLER	IN STRAIGHT LINES OR RAYS	REFRACTION	LASER
HEAT ENERGY	BOUNCE BACK	TRANSLUCENT	FINISH
MIRROR	REFLECT	SHADOW	WALLS AND PEOPLE
REFLECTIVE CLOTHING	TRANSPARENT	GLASS AND WATER	OPAQUE

Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ the type of energy caused by the motion of the particles in matter
- \_\_\_\_\_ the movement of heat energy directly from one object to another
- \_\_\_\_\_ the movement of gases or liquids from a cooler spot to a warmer spot
- \_\_\_\_\_ what light rays do when they hit a shiny object
- \_\_\_\_\_ a term that describes objects that let light pass through them, such as glass
- \_\_\_\_\_ what is created when an object blocks the sun's light
- \_\_\_\_\_ the bending of light as it passes from one material to another



# Energy: Forms, Sources, and States



<p>I have the <b>first card</b>.</p> <p>Who has the term for the ability to do work resulting in making an object move or changing matter?</p>	<p>I have <b>solar energy</b>.</p> <p>Who has the type of energy that can be used or made again and again, such as solar energy?</p>
<p>I have <b>energy</b>.</p> <p>Who has the source of almost all the energy on earth?</p>	<p>I have <b>renewable energy</b>.</p> <p>Who has another form of renewable natural energy that can be used to turn turbines to make electricity?</p>
<p>I have <b>the sun</b>.</p> <p>Who has the two types of energy provided by the sun?</p>	<p>I have <b>wind energy</b>.</p> <p>Who has the type of natural resources that can be made or used again, such as forests, water, or land?</p>
<p>I have <b>heat and light</b>.</p> <p>Who has the term for energy from the sun?</p>	<p>I have <b>renewable resources</b>.</p> <p>Who has the type of resources that cannot be made again, because they took millions of years to make?</p>





# Energy: Forms, Sources, and States



I have **nonrenewable resources**.



Who has the term for nonrenewable resources made from fuels found deep in the earth, such as coal, oil, and natural gas?

I have **speed**.



Who has the term for an object's direction and speed?

I have **fossil fuels**.



Who has what fossil fuels are most commonly used to make?

I have **motion**.



Who has the state of energy defined as “energy in motion”?

I have **electricity**.



Who has the type of energy carried by electricity?

I have **kinetic energy**.



Who has two types of energy that fit in the kinetic energy category?

I have **electrical energy**.



Who has the term for how fast an object is moving?

I have **heat energy and sound energy**.



Who has the examples of objects that have kinetic energy?



# Energy: Forms, Sources, and States



<p>I have <b>all moving objects</b>.</p> <p>Who has the term for a push or pull that causes an object to move, stop, or change speed or direction?</p>	<p>I have <b>heat energy</b>.</p> <p>Who has another term for heat energy?</p>
<p>I have <b>force</b>.</p> <p>Who has the cause of a greater change in motion?</p>	<p>I have <b>thermal energy</b>.</p> <p>Who has the state of energy defined as stored energy or energy that an object has due to its position?</p>
<p>I have <b>greater force</b>.</p> <p>Who has the force between surfaces that resists the motion of one surface past another surface?</p>	<p>I have <b>potential energy</b>.</p> <p>Who has two types of energy that fit in the potential energy category?</p>
<p>I have <b>friction</b>.</p> <p>Who has the type of energy created by friction?</p>	<p>I have <b>chemical energy and stored mechanical energy</b>.</p> <p>Who has an example of chemical energy?</p>



# Energy: Forms, Sources, and States



I have **energy** we get  
from **eating food**.

Who has an example of stored  
mechanical energy?

I have **sound energy**.

Who has an example of using  
sound energy?

I have **stretched rubber bands**.

Who has the type of energy used  
by plants to grow and by scientists  
to create lasers?

I have **music coming**  
from a **radio**.

Who has what energy can do if one  
form of energy becomes another  
form of energy?

I have **light energy**.

Who has an example of using  
light energy?

I have **change or transform**.

Who has what an airplane uses to  
get chemical energy that is changed  
to mechanical energy to fly?

I have **turning on a lamp**.

Who has the type of energy  
that produces sound?

I have **gasoline**.

Who has what a person uses to get  
chemical energy that is transformed  
to mechanical energy while  
riding a bike?



# Energy: Forms, Sources, and States



<p>I have <b>food</b>.</p> <p>Who has what a hybrid car uses to transform electrical energy into mechanical energy?</p>	<p>I have <b>traffic signal</b>.</p> <p>Who has an example of something that changes the sun's light energy into chemical energy?</p>
<p>I have <b>battery</b>.</p> <p>Who has an example of a person using mechanical energy to create sound energy?</p>	<p>I have <b>peach tree</b>.</p> <p>Who has the resulting energy when a lightning bolt's electrical energy changes?</p>
<p>I have <b>ringing a doorbell</b>.</p> <p>Who has what can be used to turn mechanical energy from the wind into electrical energy?</p>	<p>I have <b>light and sound energy</b>.</p> <p>Who has what a person who wants to protect the environment might install in his house to transform light energy into electrical energy?</p>
<p>I have <b>windmills</b>.</p> <p>Who has an example of what you might see on your way to school that turns electrical energy into light energy?</p>	<p>I have <b>solar panels</b>.</p> <p>Who has the first card?</p>



# Energy: Forms, Sources, and States

Draw a line from word to word to complete the maze as your classmates read the clues.

START	ENERGY	THE SUN	HEAT AND LIGHT
ELECTRICAL ENERGY	ELECTRICITY	POTENTIAL ENERGY	SOLAR ENERGY
SPEED	FOSSIL FUELS	NONRENEWABLE RESOURCES	RENEWABLE ENERGY
MOTION	THERMAL ENERGY	RENEWABLE RESOURCES	WIND ENERGY
KINETIC ENERGY	FORCE	GREATER FORCE	FRICTION
HEAT ENERGY AND SOUND ENERGY	ALL MOVING OBJECTS	LIGHT ENERGY	HEAT ENERGY
FOSSIL FUELS	FRICTION	POTENTIAL ENERGY	THERMAL ENERGY
STRETCHED RUBBER BANDS	ENERGY WE GET FROM EATING FOOD	CHEMICAL ENERGY AND STORED MECHANICAL ENERGY	RENEWABLE ENERGY
LIGHT ENERGY	WINDMILLS	TRAFFIC SIGNAL	PEACH TREE
TURNING ON A LAMP	RINGING A DOORBELL	BATTERY	LIGHT AND SOUND ENERGY
SOUND ENERGY	MUSIC COMING FROM A RADIO	FOOD	SOLAR PANELS
KINETIC ENERGY	CHANGE OR TRANSFORM	GASOLINE	FINISH

Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ energy that can be used or made again and again
- \_\_\_\_\_ energy in motion
- \_\_\_\_\_ stored energy or energy that an object has due to its position
- \_\_\_\_\_ nonrenewable resources made from fuels found deep in the earth, such as coal, oil, and natural gas
- \_\_\_\_\_ another term for heat energy
- \_\_\_\_\_ the force between surfaces that resists the motion of one surface past another and creates heat energy
- \_\_\_\_\_ the type of energy used by plants to grow and by scientists to create lasers



# Electricity and Magnetism



<p>I have the <b>first card</b>.</p> <p>Who has the term for a push or pull on an object?</p>	<p>I have <b>magnetic field</b>.</p> <p>Who has the word that means “to pull together”?</p>
<p>I have <b>force</b>.</p> <p>Who has a device that attracts metals such as iron or nickel with an invisible force?</p>	<p>I have <b>attract</b>.</p> <p>Who has the word that means “to push apart”?</p>
<p>I have <b>magnet</b>.</p> <p>Who has the term for the push or pull of a magnet?</p>	<p>I have <b>repel</b>.</p> <p>Who has the opposite ends of a magnet, where the magnet is the strongest?</p>
<p>I have <b>magnetic force</b>.</p> <p>Who has the invisible field that carries the magnetic force to other objects?</p>	<p>I have <b>poles</b>.</p> <p>Who has the terms used to identify the poles of a magnet?</p>



# Electricity and Magnetism



<p>I have <b>north and south</b>.</p> <p>Who has what will happen when two of the same poles are facing?</p>	<p>I have <b>soda can and rubber boot</b>.</p> <p>Who has an example of an item that is magnetic?</p>
<p>I have they will <b>push apart</b>.</p> <p>Who has what will happen when opposite poles are facing?</p>	<p>I have <b>paper clip</b>.</p> <p>Who has the term for an electrically charged particle with a negative charge?</p>
<p>I have they will <b>pull together</b>.</p> <p>Who has two common tools that use magnets?</p>	<p>I have <b>electron</b>.</p> <p>Who has the term for energy related to the movement of charged particles (electrons) that usually comes from batteries and power plants?</p>
<p>I have <b>compass and telephone</b>.</p> <p>Who has two examples of items that are <i>not</i> magnetic?</p>	<p>I have <b>electrical energy</b>.</p> <p>Who has the term for anything involving an electric charge?</p>



# Electricity and Magnetism



<p>I have <b>electricity</b>.</p> <p>Who has the type of electricity that is created by a buildup of electrical charges on an object?</p>	<p>I have <b>discharge</b>.</p> <p>Who has the discharge of static electricity from a thundercloud?</p>
<p>I have <b>static electricity</b>.</p> <p>Who has the way that most static electricity is created through the gain or loss of electrons?</p>	<p>I have <b>lightning</b>.</p> <p>Who has the term for the continuous flow of electrons?</p>
<p>I have <b>rubbing</b>.</p> <p>Who has what you might feel if you rub your feet on carpet and then touch a doorknob?</p>	<p>I have <b>electric current</b>.</p> <p>Who has the term for a material that easily allows the flow of an electric current?</p>
<p>I have <b>small shock</b>.</p> <p>Who has the movement of a charge that is felt as a small shock?</p>	<p>I have <b>conductor</b>.</p> <p>Who has an example of a good conductor?</p>





# Electricity and Magnetism



I have **metal**.

Who has the term for a material that does not easily allow the flow of an electric current?

I have **resistance**.

Who has the term for the pathway taken by an electric current?

I have **insulator**.

Who has an example of a good insulator?

I have **circuit**.

Who has the device that controls the flow of electricity through a circuit?

I have **rubber**.

Who has an object that produces an electric current by changing chemical energy to electrical energy?

I have **switch**.

Who has the term for a circuit in which the current can flow along only one path?

I have **battery**.

Who has the term for anything that works against the free flow of an electric current?

I have **series circuit**.

Who has the amount of electric current traveling in every part of a series circuit?



# Electricity and Magnetism



<p>I have <b>same amount</b>.</p> <p>Who has an example of a series circuit that might be seen hanging outside a house?</p>	<p>I have <b>closed circuit</b>.</p> <p>Who has the type of circuit that does not allow the movement of electrical energy?</p>
<p>I have <b>holiday lights</b>.</p> <p>Who has the term for a circuit with separate paths through which the current moves?</p>	<p>I have <b>open circuit</b>.</p> <p>Who has what most people use to plug their computers into because they create open circuits when dangerously large currents flow through them?</p>
<p>I have <b>parallel circuit</b>.</p> <p>Who has an example of something that usually uses parallel circuits?</p>	<p>I have <b>surge protectors</b>.</p> <p>Who has the units of measurement that power departments use in the United States to figure out how fast electrical energy is being used?</p>
<p>I have <b>houses and buildings</b>.</p> <p>Who has the type of circuit that allows the movement of electrical energy?</p>	<p>I have <b>kilowatt-hours</b>.</p> <p>Who has the first card?</p>



# Electricity and Magnetism

Draw a line from word to word to complete the maze as your classmates read the clues.

CIRCUIT	SWITCH	SERIES CIRCUIT	SAME AMOUNT
RESISTANCE	MAGNET	PARALLEL CIRCUIT	HOLIDAY LIGHTS
BATTERY	CLOSED CIRCUIT	HOUSES AND BUILDINGS	<b>FINISH</b>
RUBBER	OPEN CIRCUIT	SURGE PROTECTORS	KILOWATT-HOURS
INSULATOR	ELECTRIC CURRENT	LIGHTNING	DISCHARGE
METAL	CONDUCTOR	FORCE	SMALL SHOCK
CIRCUIT	REPEL	STATIC ELECTRICITY	RUBBING
ELECTRON	ELECTRICAL ENERGY	ELECTRICITY	ELECTRON
PAPER CLIP	PARALLEL CIRCUIT	POLES	REPEL
SODA CAN AND RUBBER BOOT	PUSH APART	NORTH AND SOUTH	ATTRACT
COMPASS AND TELEPHONE	PULL TOGETHER	STATIC ELECTRICITY	MAGNETIC FIELD
<b>START</b>	FORCE	MAGNET	MAGNETIC FORCE









Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ the push or pull on an object
- \_\_\_\_\_ device that attracts metals such as iron or nickel with an invisible force
- \_\_\_\_\_ to push apart
- \_\_\_\_\_ electricity created by a buildup of electrical charges on an object
- \_\_\_\_\_ an electrically charged particle with a negative charge
- \_\_\_\_\_ the pathway taken by an electric current
- \_\_\_\_\_ the type of circuit with separate paths through which the current flows



# Forces, Motion, and Simple Machines



 <p>I have the <b>first card</b>.</p> <p>Who has the definition of <i>force</i>?</p>	 <p>I have <b>buoyancy</b>.</p> <p>Who has the property that determines if something will sink or float?</p>
 <p>I have the <b>cause of motion or change in an object</b>.</p> <p>Who has the term for the force when two objects apply forces that are equal in strength and opposite in direction?</p>	 <p>I have <b>density</b>.</p> <p>Who has what will happen to an object that has a greater density than the fluid it is in?</p>
 <p>I have <b>balanced</b>.</p> <p>Who has the term for the force when one object applies a force that is stronger than that of another object?</p>	 <p>I have <b>it will sink</b>.</p> <p>Who has what will happen to an object that has less density than the fluid it is in?</p>
 <p>I have <b>unbalanced</b>.</p> <p>Who has the upward force on an object by a fluid in which the object is completely submerged?</p>	 <p>I have <b>it will float</b>.</p> <p>Who has the scientist who discovered that forces can change the motion of an object?</p>



# Forces, Motion, and Simple Machines











<p>I have <b>Isaac Newton</b>.</p> <p>Who has the rest of Newton's First Law of Motion: <i>An object in motion . . .</i></p>	<p>I have <b>force upon the object</b>.</p> <p>Who has the term for the rate of change of an object's speed and direction as described in Newton's Second Law of Motion?</p>
<p>I have <b>stays in motion</b>.</p> <p>Who has what happens with an object at rest?</p>	<p>I have <b>acceleration</b>.</p> <p>Who has the rest of Newton's Third Law of Motion: <i>For every action, there is an . . .</i></p>
<p>I have <b>it will stay at rest</b>.</p> <p>Who has the term for an object's resistance to change its state of motion?</p>	<p>I have <b>equal and opposite reaction</b>.</p> <p>Who has the force used to move an object for a distance against some form of resistance?</p>
<p>I have <b>inertia</b>.</p> <p>Who has what will change an object's inertia?</p>	<p>I have <b>work</b>.</p> <p>Who has a device that replaces human or animal efforts and makes work easier?</p>



# Forces, Motion, and Simple Machines



 <p>I have <b>machine</b>.</p> <p>Who has the type of machine that makes work easier by changing the size or direction of the force?</p>	 <p>I have <b>lever</b>.</p> <p>Who has two examples of levers?</p>
 <p>I have <b>simple machine</b>.</p> <p>Who has the simple machine that uses grooved wheels and a rope to raise, lower, or move something?</p>	 <p>I have <b>bottle opener and seesaw</b>.</p> <p>Who has the simple machine that is made up of a wheel with a rod through its center that lifts or moves loads?</p>
 <p>I have <b>pulley</b>.</p> <p>Who has two examples of pulleys?</p>	 <p>I have <b>wheel and axle</b>.</p> <p>Who has two examples of a wheel and axle?</p>
 <p>I have <b>elevator and flagpole</b>.</p> <p>Who has the simple machine that is a stiff bar that rests on a support and spins around a fixed point?</p>	 <p>I have <b>doorknob and bicycle gears</b>.</p> <p>Who has the simple machine that has a sloping surface used to raise or lower objects?</p>



# Forces, Motion, and Simple Machines



I have **inclined plane**.

Who has two examples of inclined planes?



I have **screw**.

Who has the term for the ridges on a screw?



I have **ramp and ladder**.

Who has the simple machine that is an inclined plane with one or two sloping sides?



I have **threads**.

Who has the amount of force it will take to turn a screw compared to pounding a nail?



I have **wedge**.

Who has two examples of wedges?



I have **less force**.

Who has the amount of distance needed to apply less force to do the work?



I have **ax and chisel**.

Who has the simple machine that is an inclined plane wrapped in a spiral around a cylinder?











I have **longer distance**.

Who has two examples of objects that use screws?



# Forces, Motion, and Simple Machines



 <p>I have <b>neck of a lightbulb and corkscrew.</b></p> <p>Who has the type of machine made out of two or more simple machines?</p>	 <p>I have <b>gears.</b></p> <p>Who has two examples of objects that use gears?</p>
 <p>I have <b>compound machine.</b></p> <p>Who has two examples of compound machines?</p>	 <p>I have <b>clock and car.</b></p> <p>Who has two simple machines that make up the bicycle?</p>
 <p>I have <b>pencil sharpener and bulldozer.</b></p> <p>Who has two simple machines that make up the arm of a bulldozer?</p>	 <p>I have <b>wheel and axle and lever.</b></p> <p>Who has the reason why most machines are compound machines?</p>
 <p>I have <b>lever and wedge.</b></p> <p>Who has the part of a compound machine that has two toothed wheels that fit together through a chain or belt so one wheel will turn the other?</p>	 <p>I have <b>they can do more work than simple machines.</b></p> <p>Who has the first card?</p>





# Forces, Motion, and Simple Machines

Draw a line from word to word to complete the maze as your classmates read the clues.

PULLEY	LEVER AND WEDGE	GEARS	WORK
INERTIA	PENCIL SHARPENER AND BULLDOZER	CLOCK AND CAR	<b>FINISH</b>
NECK OF A LIGHTBULB AND CORKSCREW	COMPOUND MACHINE	WHEEL AND AXLE AND LEVER	CAN DO MORE WORK THAN SIMPLE MACHINES
LONGER DISTANCE	LESS FORCE	AX AND CHISEL	WEDGE
COMPOUND MACHINE	THREADS	SCREW	RAMP AND LADDER
SIMPLE MACHINE	PULLEY	DENSITY	INCLINED PLANE
MACHINE	ELEVATOR AND FLAGPOLE	LEVER	DOORKNOB AND BICYCLE GEARS
WORK	INCLINED PLANE	BOTTLE OPENER AND SEESAW	WHEEL AND AXLE
EQUAL AND OPPOSITE REACTION	INERTIA	IT WILL STAY AT REST	STAYS IN MOTION
ACCELERATION	FORCE UPON THE OBJECT	SCREW	ISAAC NEWTON
BALANCED	UNBALANCED	BUOYANCY	IT WILL FLOAT
THE CAUSE OF MOTION OR CHANGE IN AN OBJECT.	<b>START</b>	DENSITY	IT WILL SINK

Look at the words you did **not** use in the maze above. Write one of those words for each definition.

- \_\_\_\_\_ the property that determines if something will sink or float
- \_\_\_\_\_ the force used to move an object for a distance against some form of resistance
- \_\_\_\_\_ a simple machine that uses grooved wheels and a rope to raise, lower, or move something
- \_\_\_\_\_ a simple machine with a sloping surface used to raise or lower objects
- \_\_\_\_\_ a simple machine that is an inclined plane wrapped in a spiral around a cylinder
- \_\_\_\_\_ a machine made from two or more simple machines that can do more work
- \_\_\_\_\_ the term for an object's resistance to change its state of motion until there is a force

# Answer Key

## Plants and Animals (Page 11)

START	ORGANISM	ROOTS	STEM
AMPHIBIAN	TREES	CONIFER	LEAVES
ROOTS	LIFE CYCLE	FLOWERING PLANT	OXYGEN
METAMORPHOSIS	NUCLEUS	INVERTEBRATES	PHOTOSYNTHESIS
FROGS AND BUTTERFLIES	CELL	TRANSPIRATION	POLLINATION
AIR	OXYGEN	GERMINATION	CHLOROPHYLL
TISSUE	SYSTEM	DIGESTIVE SYSTEM	LIFE CYCLE
ORGAN	HEART AND BRAIN	MOUTH	INVERTEBRATES
AMPHIBIAN	FISH	DOGS AND PEOPLE	WORM AND OCTOPUS
FROGS AND SALAMANDERS	PHOTOSYNTHESIS	VERTEBRATES	WATER AND SOIL
REPTILE	MAMMAL	APE	METAMORPHOSIS
TURTLES AND ALLIGATORS	BIRD	SEASONS AND WEATHER	FINISH

1. life cycle
2. photosynthesis
3. metamorphosis
4. invertebrates
5. oxygen
6. amphibian
7. roots

## Habitats, Interdependence, and Adaptation (Page 17)

START	PRODUCER	CARNIVORE	CHEETAHS AND CROCODILES
ENERGY	HERBIVORE	RABBITS AND HORSES	PRODUCERS, CONSUMERS, AND DECOMPOSERS
THE SUN	PIGS AND RED FOXES	PREDATOR	DECOMPOSER
FOOD WEB	OMNIVORE	PRODUCER	FUNGI AND MOLD
SCAVENGER	CONSUMER	PLANTS AND TREES	ADAPT
COMMUNITY	PREY	INSTINCTS	LEARNED BEHAVIORS
MIGRATE	CAMOUFLAGE	MIMICRY	ADAPTATIONS
SWAMPS AND RIVERS	IT CHANGES	THEY SLOW DOWN	HIBERNATION
GRASSLANDS AND DESERTS	HABITAT	STORED FAT	OMNIVORE
ADAPT	ENERGY	HAWKS AND TIGERS	PREY
WHITE FUR	DORMANCY	PREDATOR	DEER AND MICE
PHYSICAL ADAPTATION	BEHAVIORAL ADAPTATION	DECOMPOSERS	FINISH

1. energy
2. omnivore
3. producer
4. predator
5. adapt
6. prey
7. decomposers

## Ecosystems and Biomes (Page 23)

<b>START</b>	POPULATION	POSITIVE, NEGATIVE, OR NEUTRAL	CONSERVATION OF HABITATS
COMMUNITY	HABITAT	BALANCE CAN BE DISRUPTED	DESTRUCTION OF HABITATS
ENVIRONMENT	OCEANS	FRAGILE	BIOMES
ECOSYSTEM	CLIMATE	SALTWATER	TAIGA OR BOREAL FOREST
RAIN FOREST	FLOODS AND FIRES	FRESHWATER	DESERTS
ENDANGERED	MOVE, ADAPT, OR DIE	CORAL REEF AND SHIPWRECK	MOUNTAINS
EXTINCT	RAIN FOREST	OCEAN	OCEANS
SYMBIOSIS	BALANCED AND HEALTHY	BIOMES	SAVANNA
WETLANDS	ECOLOGY	TEMPERATE FOREST	TEMPERATE GRASSLANDS
SHORELINES AND TROPICAL OCEANS	TUNDRA	TROPICAL RAIN FOREST	ENDANGERED
TIDE POOLS AND SALT MARSHES	THREE-QUARTERS	ECOSYSTEM	MOVE, ADAPT, OR DIE
EXTINCT	BLUE WHALE	KELP FOREST	<b>FINISH</b>

- ecosystem
- biomes
- endangered
- ocean
- extinct
- move, adapt, or die
- rain forest

## Living Things Change Their Environment (Page 29)

<b>START</b>	BUILDS A NEST	DIGS A HOLE	HUMANS
HELPFUL, HARMFUL, AND NEUTRAL	EVERY SECOND OF EVERY DAY	SPINS A WEB	CHOPPING DOWN A TREE
LAND COULD FLOOD	ENVIRONMENTS CHANGE	RESOURCES	BACTERIA OR FUNGI BREAKING DOWN LEAVES
PLANTS CAN DIE	REDUCING	TREES AND PLANTS GROW AND COMPETE FOR SPACE, LIGHT, AND WATER	COMPETITION
HOMES OF OTHER PLANTS OR ANIMALS COULD BE WASHED AWAY	MAKE SPACE FOR SMALLER PLANTS TO GROW WHEN THEY CUT DOWN TREES	WETLAND	PROVIDES NEW HOMES FOR PLANTS AND ANIMALS
REDUCE	REDUCE, REUSE, AND RECYCLE	ADAPT	HUMANS
PERSON WALKING INSTEAD OF DRIVING	THREE RS	POLLUTION	PRODUCE TONS OF TRASH EACH YEAR
PREVENTS THE BURNING OF GASOLINE, WHICH CAUSES AIR POLLUTION	HELPFUL, HARMFUL, AND NEUTRAL	HARMFUL MATERIALS GET INTO THE AIR, WATER, OR SOIL	COLLECTED IN LANDFILLS
PERSON WHO USES ZIPPERED PLASTIC BAGS OVER AND OVER AGAIN	COMPETITION	WOOLLY MAMMOTH	BECAME EXTINCT
LESS TRASH IN THE LANDFILLS	LESS POLLUTION	COULD BECOME ENDANGERED OR EXTINCT	CROCODILE
ENVIRONMENTS CHANGE	PERSON WHO SAVES ALUMINUM CANS TO RECYCLE	FOR SURVIVAL	FOSSILS OF CROCODILES LOOK THE SAME AS TODAY'S CROCODILES
POLLUTION	SAVES SPACE IN LANDFILLS	ADAPT	<b>FINISH</b>

- competition
- environments change
- helpful, harmful, and neutral
- humans
- pollution
- reducing
- adapt

## Weather (Page 35)

START	WEATHER	WEATHER FORECASTER	METEOROLOGIST
AIR PRESSURE	THERMOMETER	STRATUS CLOUDS	ATMOSPHERE
HIGH PRESSURE	GRAVITY	EXOSPHERE	GASES AND DUST
LOW PRESSURE	CIRRUS CLOUDS	THERMOSPHERE	TROPOSPHERE
BAROMETER	HUMIDITY	MESOSPHERE	STRATOSPHERE
FAIR WEATHER	RAIN	WEATHER	BAROMETER
ANEMOMETER	WIND	CUMULUS CLOUDS	STRATUS CLOUDS
WEATHER VANE	CLOUD	CIRRUS CLOUDS	CUMULONIMBUS CLOUDS
TROPICAL ZONE	HYGROMETER	HUMIDITY	PRECIPITATION
POLAR ZONE	ATMOSPHERE	WARM FRONT	RAIN GAUGE
TEMPERATE ZONE	WEATHER SATELLITE	COLD FRONT	AIR MASS
CUMULUS CLOUDS	FINISH	FRONT	TROPICS AND POLAR REGIONS

1. atmosphere
2. barometer
3. cloud
4. humidity
5. stratus clouds
6. cirrus clouds
7. cumulus clouds

## The Earth, Moon, and Sun (Page 41)

START	SPHERE	DARKNESS	AXIS
THE SUN	ROTATION	DAYLIGHT	EARTH'S AXIS IS TILTED
EAST	WINTER	ONE YEAR	ONE DAY
THE SAME	SUMMER	THE SUN	REVOLVE
SOLAR ENERGY	BOTH ROTATE AND REVOLVE	FIRST QUARTER	WAXING GIBBOUS
THE MOON	NEW MOON	WAXING CRESCENT	FULL MOON
29 DAYS	EIGHT	ROTATION	WANING GIBBOUS
TIDES	NEIL ARMSTRONG AND EDWIN "BUZZ" ALDRIN	WANING CRESCENT	LAST QUARTER
GRAVITATIONAL ATTRACTION	ASTRONAUT	EAST	WEST
SPRING TIDES	SOLAR ECLIPSE	SUMMER	THE SUN'S RAYS
FINISH	LUNAR ECLIPSE	29 DAYS	BOTH ROTATE AND REVOLVE
FULL MOON	ECLIPSE	LUNAR	NO AIR AND NO LIQUID WATER

1. rotation
2. the sun
3. 29 days
4. east
5. full moon
6. summer
7. both rotate and revolve

### The Solar System (Page 47)

VENUS	EARTH	MARS	SOLID, ROCKLIKE MATERIALS
MERCURY	SATURN	JUPITER	STAR
PLANET	URANUS	NEPTUNE	PLUTO
SOLAR	THE SUN	GASES	SOLID, ROCKLIKE MATERIALS
TELESCOPE	STAR	MIXTURE OF ROCK AND ICE	THEY GET COLDER
START	SOLAR SYSTEM	ELLIPTICAL OR OVAL	SEASONS
ORBIT	COLLECT OBSERVATIONS AND DATA	SPACE PROBE	TELESCOPE
ASTEROIDS	GASES	MOON	SATELLITE
METEORIDS	SUNSPOTS	LIGHT-YEAR	CRATERS AND DUST
METEORS	MILKY WAY	HUBBLE SPACE TELESCOPE	NASA
METEORITE	GALAXY	ELLIPTICAL OR OVAL	SOLAR SYSTEM
COMETS	CONSTELLATION	FINISH	MILKY WAY

1. solar system
2. star
3. solid, rocklike materials
4. gases
5. telescope
6. elliptical or oval
7. Milky Way

### The Changing Earth—Rocks, Minerals, and Soil (Page 53)

SOIL	EROSION	EARTHQUAKE	FINISH
MANTLE	CORE	IGNEOUS ROCK	HURRICANES AND TORNADOES
EARTHQUAKE	VOLCANO	MINERALS	WEATHERING AND EROSION
EARTH'S CRUST	IGNEOUS ROCK	CRYSTALS	MINERALS AND FOSSIL FUELS
WATER, WIND, AND PLANTS	WEATHERING	GRANITE AND BASALT	NONRENEWABLE RESOURCES
START	PLANTING GRASS OR TREES	SEDIMENTARY ROCK	TREES AND SOIL
ORGANIC	EROSION	SANDSTONE AND LIMESTONE	RENEWABLE RESOURCES
INORGANIC	BEDROCK	METAMORPHIC ROCK	NATURAL RESOURCE
SOIL	SUBSOIL	MARBLE AND SLATE	HEAT
NUTRIENTS	TOPSOIL	MINERALS	FOSSIL FUELS
WEATHERING	FRACTURE	LUSTER	FUEL
RENEWABLE RESOURCES	HARDNESS	AMBER	FOSSILS

1. igneous rock
2. soil
3. renewable resources
4. erosion
5. weathering
6. earthquake
7. minerals

### Bodies of Water, Landforms, and Forces That Change the Earth (Page 59)

ISLAND	PENINSULA	GLACIERS	LANDFORMS
GULF	TORNADO	MOUNTAINS	CONTINENTS
BAY	COAST	PLATEAU	PRESSURE
LAKE	OCEANS	VALLEYS	CANYON
RIVER	FLOOD	TORNADO	PLAINS
START	EARTHQUAKE	HURRICANE	FARMLAND
EPICENTER	ENERGY	LANDFORMS	OCEANS
MAGNITUDE	ERUPTION	VENT	MAGMA
IN WAVES	SEISMOGRAPH	CONTINENTS	PIPE
PENINSULA	RING OF FIRE	CARBON DIOXIDE	LAVA
USEFUL MINERALS	TSUNAMIS AND FLASH FLOODS	PRESSURE	CRATER
FERTILE SOIL	HEAT ENERGY	FINISH	CANYON

- landforms
- continents
- canyon
- pressure
- oceans
- peninsula
- tornado

### Matter and Its Changing States (Page 65)

ATOMS	BURNT SUGAR AND RUSTED IRON	100° CELSIUS	IT EXPANDS
MOVING	CHEMICAL CHANGE	MIXTURE	0° CELSIUS
TEMPERATURE	FOLDING PAPER AND MELTING ICE	PHYSICAL CHANGE	TEMPERATURE AND AIR MOVEMENT
IT INCREASES	IT DECREASES	CONDENSATION	EVAPORATION
MATTER	ELEMENT	WATER VAPOR	ICE
SOLID	COMPOUND	GAS	IT MELTS
MIXTURE	TABLE SALT	MASS	HYDROGEN AND OXYGEN
FINISH	EVAPORATION	LIQUID	GAS
IT WILL SINK	IT WILL FLOAT	SOLID	CONDENSATION
TINY PARTICLES	PHYSICAL CHANGE	LUSTER	TEXTURE
LITER	VOLUME	MAGNETISM	BALANCE
START	MATTER	MASS	GRAM

- matter
- mass
- solid
- gas
- condensation
- evaporation
- physical change

## Heat and Light (Page 71)

START	WARMING OUR HOMES AND COOKING	FROM HOT THINGS TO COLD THINGS	CONDUCTION
ENERGY	THE SUN	METAL	PUTTING A COOL SPOON IN A MUG OF HOT WATER, WHICH WILL WARM THE SPOON
BOILING POINT	THERMAL ENERGY	SO THE HEAT CAN TRAVEL QUICKLY TO THE FOOD	PLASTIC
MOVE FASTER	HEAT ENERGY	REFRACTION	INSULATORS
CONDUCTION	CONVECTION	HOT AIR BALLOON	FUR AND WOOL
TRANSPARENT	WIND	IT EXPANDS	BODY INSULATION
ABSORBED OR REFLECTED	RADIATION	REFLECT	CONVECTION
DARKER SURFACES	SHADOW	BROKEN	CAMERA AND EYEGLASSES
REFLECT MORE RADIATION TO KEEP YOU COOLER	IN STRAIGHT LINES OR RAYS	REFRACTION	LASER
HEAT ENERGY	BOUNCE BACK	TRANSLUCENT	FINISH
MIRROR	REFLECT	SHADOW	WALLS AND PEOPLE
REFLECTIVE CLOTHING	TRANSPARENT	GLASS AND WATER	OPAQUE

1. heat energy
2. conduction
3. convection
4. reflect
5. transparent
6. shadow
7. refraction

## Energy: Forms, Sources, and States (Page 77)

START	ENERGY	THE SUN	HEAT AND LIGHT
ELECTRICAL ENERGY	ELECTRICITY	POTENTIAL ENERGY	SOLAR ENERGY
SPEED	FOSSIL FUELS	NONRENEWABLE RESOURCES	RENEWABLE ENERGY
MOTION	THERMAL ENERGY	RENEWABLE RESOURCES	WIND ENERGY
KINETIC ENERGY	FORCE	GREATER FORCE	FRICTION
HEAT ENERGY AND SOUND ENERGY	ALL MOVING OBJECTS	LIGHT ENERGY	HEAT ENERGY
FOSSIL FUELS	FRICTION	POTENTIAL ENERGY	THERMAL ENERGY
STRETCHED RUBBER BANDS	ENERGY WE GET FROM EATING FOOD	CHEMICAL ENERGY AND STORED MECHANICAL ENERGY	RENEWABLE ENERGY
LIGHT ENERGY	WINDMILLS	TRAFFIC SIGNAL	PEACH TREE
TURNING ON A LAMP	RINGING A DOORBELL	BATTERY	LIGHT AND SOUND ENERGY
SOUND ENERGY	MUSIC COMING FROM A RADIO	FOOD	SOLAR PANELS
KINETIC ENERGY	CHANGE OR TRANSFORM	GASOLINE	FINISH

1. renewable energy
2. kinetic energy
3. potential energy
4. fossil fuels
5. thermal energy
6. friction
7. light energy

## Electricity and Magnetism (Page 83)

CIRCUIT	SWITCH	SERIES CIRCUIT	SAME AMOUNT
RESISTANCE	MAGNET	PARALLEL CIRCUIT	HOLIDAY LIGHTS
BATTERY	CLOSED CIRCUIT	HOUSES AND BUILDINGS	<b>FINISH</b>
RUBBER	OPEN CIRCUIT	SURGE PROTECTORS	KILOWATT-HOURS
INSULATOR	ELECTRIC CURRENT	LIGHTNING	DISCHARGE
METAL	CONDUCTOR	FORCE	SMALL SHOCK
CIRCUIT	REPEL	STATIC ELECTRICITY	RUBBING
ELECTRON	ELECTRICAL ENERGY	ELECTRICITY	ELECTRON
PAPER CLIP	PARALLEL CIRCUIT	POLES	REPEL
SODA CAN AND RUBBER BOOT	PUSH APART	NORTH AND SOUTH	ATTRACT
COMPASS AND TELEPHONE	PULL TOGETHER	STATIC ELECTRICITY	MAGNETIC FIELD
<b>START</b>	FORCE	MAGNET	MAGNETIC FORCE

1. force
2. magnet
3. repel
4. static electricity
5. electron
6. circuit
7. parallel circuit

## Forces, Motion, and Simple Machines (Page 89)

PULLEY	LEVER AND WEDGE	GEARS	WORK
INERTIA	PENCIL SHARPENER AND BULLDOZER	CLOCK AND CAR	<b>FINISH</b>
NECK OF A LIGHTBULB AND CORKSCREW	COMPOUND MACHINE	WHEEL AND AXLE AND LEVER	CAN DO MORE WORK THAN SIMPLE MACHINES
LONGER DISTANCE	LESS FORCE	AX AND CHISEL	WEDGE
COMPOUND MACHINE	THREADS	SCREW	RAMP AND LADDER
SIMPLE MACHINE	PULLEY	DENSITY	INCLINED PLANE
MACHINE	ELEVATOR AND FLAGPOLE	LEVER	DOORKNOB AND BICYCLE GEARS
WORK	INCLINED PLANE	BOTTLE OPENER AND SEESAW	WHEEL AND AXLE
EQUAL AND OPPOSITE REACTION	INERTIA	IT WILL STAY AT REST	STAYS IN MOTION
ACCELERATION	FORCE UPON THE OBJECT	SCREW	ISAAC NEWTON
BALANCED	UNBALANCED	BUOYANCY	IT WILL FLOAT
THE CAUSE OF MOTION OR CHANGE IN AN OBJECT.	<b>START</b>	DENSITY	IT WILL SINK

1. density
2. work
3. pulley
4. inclined plane
5. screw
6. compound machine
7. inertia