



ALTERNATE

***Alabama Comprehensive Assessment
Program (ACAP) Alternate***

Item Specifications

Science

Grade 4

***Alabama Comprehensive Assessment Program
(ACAP) Alternate***

Item Specifications

Science

The *Alabama Comprehensive Assessment Program (ACAP) Alternate* item specifications are based on the development of alternate assessments that measure the 2018 *Alabama Alternate Achievement Standards: Science*. The item specifications define the purpose of the *ACAP Alternate* and provide important information regarding the content to be measured. The item specifications also serve as a road map to guide Alabama educators in the development and subsequent review of items that best measure the 2018 *Alabama Alternate Achievement Standards: Science* for a given grade and subject area. Each item specification is aligned to the given Alabama content area, domain, and standard and includes the following key information:

- Course of Study Standard
- Alternate Achievement Standard
- Content limits/constraints
- Recommended depth of knowledge (DOK) or cognitive levels
- Sample item stem information

The appendix to this document includes sample test items, along with information about each item, including item type, page reference, alignment, depth of knowledge, and answer key. These sample items are provided to be an additional resource for educators to help guide instruction and assessment building in the classroom. Teachers can use the sample items as models when leading classroom discussion and when creating items for classroom tests or quizzes. In each sample item, the level of rigor needed in the item to align with the content standard is evident.

Definitions

Course of Study Standards: The Course of Study Standards are a set of content curriculum statements that define what general education students should know and be able to do at a given grade level.

Alternate Achievement Standards: The 2018 *Alabama Alternate Achievement Standards: Science* are directly aligned to the Alabama Course of Study Standards. The 2018 *Alabama Alternate Achievement Standards: Science* define what students with the most significant support needs should understand (know) and be able to do at the conclusion of a course or grade.

Alabama Content Areas: Alabama content areas are large groups of related clusters and content standards. Because science is a connected subject, standards from different Alabama content areas may sometimes be closely related.

Standards: Standards define what students should understand (know) and be able to do at the conclusion of a course or grade.

Assessment Limits/Content Constraints: Assessment limits and/or content constraints define the range of content knowledge and the degree of difficulty allowable when items are written to measure a given standard.

Depth of Knowledge (DOK): Depth of knowledge involves the cognitive complexity, or the nature of thinking, required for a given item. Depth of knowledge levels are used in the development of items for cognitive demand. Therefore, when developing items for depth of knowledge, each item should be as demanding cognitively as what the actual standard expects. The depth of knowledge includes three levels, from the lowest (basic recall) to the highest (strategic thinking).

The *ACAP Alternate* assessment items are written to one of three levels of cognitive complexity:

- Level 1: Recall
- Level 2: Application of a Skill/Concept
- Level 3: Strategic Thinking

Item Types: The *ACAP Alternate* assessments are composed of various item types. These item types are described in the following section.

Context: Context provides information regarding the types of stimulus materials that can be used in items. If context is allowable, it means that the item may have context. If context is required, then the item measuring the given standard must have context. If no context is noted, then the item measuring the given standard should not have context.

Sample Stem Information: This statement explains what students are expected to do when they respond to a given item.

Item Types

The *Alabama Comprehensive Assessment Program (ACAP) Alternate* assessments are composed of various item types. These item types are described below.

Multiple-Choice (MC) Items: MC items have three answer choices, including two distractors and one correct answer. Distractors for science represent common misconceptions, incorrect logic, incorrect application of an algorithm, computational errors, etc. A correct response to an MC item is worth one score point in the science *ACAP Alternate*.

Performance Task Items

Multiple-Select (MS) Items: MS items are similar in structure to MC items. However, unlike an MC item, an MS item has four options and more than one correct answer. In other words, multiple responses are required for a given item. A correct response to an MS item is worth two score points in the science *ACAP Alternate*.

Two-Part Multiple-Choice Items: Two-part multiple-choice Items have two questions. The questions may require students to identify parts of the water cycle, parts of the solar system, interpret information from a graph or chart, etc. A correct response to a two-part MC item is worth two score points in the science *ACAP Alternate* when both parts are correct.

Item Specifications

Item specifications are one of the key requirements for a high-quality, legally defensible, standards-based assessment. Item specifications help define important characteristics of the items (i.e., test questions) developed for each Alternate Achievement Standard. These item specifications provide guidelines to help clarify the focus of what is to be assessed, what items may include, and what items may not include (i.e., assessment limits). Item specifications are used by item writers, item editors, and item reviewers as a common reference throughout the item-development process, from initial writing to final approval. These science item specifications are based on the 2018 *Alabama Alternate Achievement Standards: Science*.

Grade	4
Content Area	Science
Strand	ENERGY
Standard	SCI.4.1- Use evidence to explain the relationship of the speed of an object to the energy of that object.
Alternate Achievement Standard	SCI.AAS.4.1- Recognize that objects move at different speeds.
Assessment Limits/Content Constraints	<p>Use visual representation as needed.</p> <p>May use real-world scenarios.</p> <p>Limit to common objects such as ball, book, car, box, classroom objects, and objects found at home.</p>
DOK(s)	1 or 2
Sample Item Stem(s)	<p>Melissa is pulling her little brother in a wagon. Which sentence explains how Melissa moves the wagon?</p> <p>Melissa and Jon want to see whether a hardboiled egg or a small toy car will move faster down a ramp. Melissa tells Jon that the hardboiled egg will move faster down the ramp. Jon thinks the small toy car will move faster down the ramp. Who is correct, Melissa or Jon?</p>

Grade	4
Content Area	Science
Strand	ENERGY
Standard	<p>SCI.4.2- Plan and carry out investigations that explain transference of energy from place to place by sound, light, heat, and electric currents.</p> <ul style="list-style-type: none"> a. Provide evidence that heat can be produced in many ways (e.g., rubbing hands together, burning leaves) and can move from one object to another by conduction. b. Demonstrate that different objects can absorb, reflect, and/or conduct energy. c. Demonstrate that electric circuits require a complete loop through which an electric current can pass.
Alternate Achievement Standard	SCI.AAS.4.2- Recognize different sources of heat; Identify materials that are conductors of heat, such as metals.
Assessment Limits/Content Constraints	<p>Use visual representation as needed.</p> <p>Limit to heat and electricity.</p> <p>May use real-world scenarios (familiar).</p>
DOK(s)	1 or 2
Sample Item Stem(s)	<p>Gerald puts some soup into a pot. He puts the pot onto a burner on a stove and turns on the burner. What will happen to the soup?</p> <p>What happens to a metal slide on a hot, sunny day?</p>

Grade	4
Content Area	Science
Strand	ENERGY
Standard	SCI.4.3- Investigate to determine changes in energy resulting from increases or decreases in speed that occurs when objects collide.
Alternate Achievement Standard	SCI.AAS.4.3- Identify the effect of an opposing force on a moving object.
Assessment Limits/Content Constraints	Use visual representations as needed. May use real-world scenarios. Limit to change of motion; refrain from “crashes.”
DOK(s)	1 or 2
Sample Item Stem(s)	Jon bounced a ball toward the wall. What will happen when the ball hits the wall?

Grade	4
Content Area	Science
Strand	ENERGY
Standard	SCI.4.4- Design, construct, and test a device that changes energy from one form to another (e.g., electric circuits converting electrical energy into motion, light, or sound energy; a passive solar heater converting light energy into heat energy). *
Alternate Achievement Standard	SCI.AAS.4.4- Identify common sources of energy used every day (e.g., electricity, gas, sun).
Assessment Limits/Content Constraints	Use visual representation as needed. Use common examples. Limit to electricity, gas, and the sun.
DOK(s)	1 or 2
Sample Item Stem(s)	Cars need energy to run. Which energy source makes cars run? Which source of energy is used to light up a dark room?

Grade	4
Content Area	Science
Strand	ENERGY
Standard	SCI.4.5- Compile information to describe how the use of energy derived from natural renewable and nonrenewable resources affects the environment (e.g., constructing dams to harness energy from water, a renewable resource, while causing a loss of animal habitats; burning of fossil fuels, a nonrenewable resource, while causing an increase in air pollution; installing solar panels to harness energy from the sun, a renewable resource, while requiring specialized materials that necessitate mining).
Alternate Achievement Standard	SCI.AAS.4.5- Identify common resources as renewable or nonrenewable.
Assessment Limits/Content Constraints	Use visual representation as needed. Limit to coal, natural gas, sunlight, water, and trees. May use real-world scenarios.
DOK(s)	1 or 2
Sample Item Stem(s)	Trees are used to make paper and build houses. Which sentence explains why trees are a renewable resource? A nonrenewable resource is something that is nonliving, doesn't regrow, and can be used up. What is an example of a nonrenewable resource? A renewable resource is a resource that will never be used up and can regrow or be replaced in a person's lifetime. What is an example of a renewable resource?

Grade	4
Content Area	Science
Strand	WAVES AND THEIR APPLICATIONS IN TECHNOLOGIES FOR INFORMATION TRANSFER
Standard	SCI.4.6- Develop a model of waves to describe patterns in terms of amplitude and wavelength, and including that waves can cause objects to move.
Alternate Achievement Standard	SCI.AAS.4.6- Using given models, identify patterns found in waves.
Assessment Limits/Content Constraints	Use visual representation. Limit to wavelength patterns. Limit to light, heat, and sound waves.
DOK(s)	1 or 2
Sample Item Stem(s)	Here are drawings of a light wave and a sound wave. Which statement explains how the light wave and the sound wave are the same? Here are drawings of a light wave and a sound wave. Which statement explains how the light wave and the sound wave are different?

Grade	4
Content Area	Science
Strand	WAVES AND THEIR APPLICATIONS IN TECHNOLOGIES FOR INFORMATION TRANSFER
Standard	SCI.4.7- Develop and use models to show multiple solutions in which patterns are used to transfer information (e.g., using a grid of 1s and 0s representing black and white to send information about a picture, using drums to send coded information through sound waves, using Morse code to send a message). *
Alternate Achievement Standard	SCI.AAS.4.7- Identify models that show ways in which patterns are used to transfer information (using drums to send coded information through sound waves, using Morse code to send a message).
Assessment Limits/Content Constraints	<p>Use visual representation.</p> <p>Limit to transfer of information.</p> <p>Limit to common objects such as pencil, phone, computer, radio, and television.</p> <p>May use real-world scenarios.</p>
DOK(s)	1 or 2
Sample Item Stem(s)	<p>Which picture is an example of an object that is used to communicate?</p> <p>Which model <u>best</u> shows a solution for sending a picture over a long distance?</p>

Grade	4
Content Area	Science
Strand	WAVES AND THEIR APPLICATIONS IN TECHNOLOGIES FOR INFORMATION TRANSFER
Standard	SCI.4.8- Construct a model to explain that an object can be seen when light reflected from its surface enters the eyes.
Alternate Achievement Standard	SCI.AAS.4.8- Identify a model that shows the path of light reflected from the surface of an object to be seen by the eye.
Assessment Limits/Content Constraints	Use visual representation as needed. Limit to real and reflected images. May used real-world scenarios.
DOK(s)	1 or 2
Sample Item Stem(s)	Here is a picture of Jan looking in a mirror and an arrow. Which statement tells what the arrow is pointing to?

Grade	4
Content Area	Science
Strand	FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES.
Standard	SCI.4.9- Examine evidence to support an argument that the internal and external structures of plants (e.g., thorns, leaves, stems, roots, colored petals, xylem, phloem) and animals (e.g., heart, stomach, lung, brain, skin) function to support survival, growth, behavior, and reproduction.
Alternate Achievement Standard	SCI.AAS.4.9- Identify basic parts of plants and animals.
Assessment Limits/Content Constraints	<p>Use visual representation.</p> <p>Limit plant parts to leaf, stem, flower, and root.</p> <p>Limit animal parts to head, body, tail, legs, arms, wings, eyes, ears, mouth, nose, hair, and fur.</p>
DOK(s)	1 or 2
Sample Item Stem(s)	<p>Here is a picture of a plant and an arrow. What part of the plant is the arrow pointing to?</p> <p>Here is a picture of a bird. Which part of the bird helps it fly?</p>

Grade	4
Content Area	Science
Strand	FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES
Standard	SCI.4.10- Obtain and communicate information explaining that humans have systems that interact with one another for digestion, respiration, circulation, excretion, movement, control, coordination, and protection from disease.
Alternate Achievement Standard	SCI.AAS.4.10- Identify human systems (i.e. digestive, circulatory, and respiratory).
Assessment Limits/Content Constraints	Use visual representation as needed. Limit systems to circulatory, respiratory, digestive, muscular, and skeletal. May use real-world scenarios.
DOK(s)	1 or 2
Sample Item Stem(s)	Here are examples of three different human systems. Which example is the digestive system?

Grade	4
Content Area	Science
Strand	FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES
Standard	SCI.4.11- Investigate different ways animals receive information through the senses, process that information, and respond to it in different ways (e.g., skunks lifting tails and spraying an odor when threatened, dogs moving ears when reacting to sound, snakes coiling or striking when sensing vibrations).
Alternate Achievement Standard	SCI.AAS.4.11- Identify the sense organs and the information they receive (eyes/sight, tongue/taste, ears/hearing, skin/touch, nose/smell).
Assessment Limits/Content Constraints	Use visual representation. Limit sense organs to eye, tongue, ear, skin, and nose. Real-world scenarios may be used.
DOK(s)	1 or 2
Sample Item Stem(s)	Which part of the human body is used to smell flowers? Here is a drawing of a person. An arrow is pointing to the person's hand. What does the hand help the person do?

Grade	4
Content Area	Science
Strand	EARTH'S SYSTEMS
Standard	SCI.4.12- Construct explanations by citing evidence found in patterns of rock formations and fossils in rock layers that Earth changes over time through both slow and rapid processes (e.g., rock layers containing shell fossils appearing above rock layers containing plant fossils and no shells indicating a change from land to water over time, a canyon with different rock layers in the walls and a river in the bottom indicating that over time a river cut through the rock).
Alternate Achievement Standard	SCI.AAS.4.12- Identify patterns in rock formations and rock layers; explain how Earth changes over time.
Assessment Limits/Content Constraints	Use visual representation. Limit rock changes to erosion, heat, pressure, and sedimentation.
DOK(s)	1 or 2
Sample Item Stem(s)	This picture shows layers of rock. Which layer is the oldest?

Grade	4
Content Area	Science
Strand	EARTH'S SYSTEMS
Standard	SCI.4.13- Plan and carry out investigations to examine properties of soils and soil types (e.g., color, texture, capacity to retain water, ability to support growth of plants).
Alternate Achievement Standard	SCI.AAS.4.13- Observe the properties of soils (e.g., color, texture, capacity to retain water, ability to support growth of plants); Identify different types of soil (e.g., silt, clay, sand).
Assessment Limits/Content Constraints	Use visual representation. Limit soil types to silt, clay, and sand. May use real-world scenarios.
DOK(s)	1 or 2
Sample Item Stem(s)	Here are three types of soil. Which type of soil is made of very tiny rocks and minerals?

Grade	4
Content Area	Science
Strand	EARTH'S SYSTEMS
Standard	SCI.4.14- Explore information to support the claim that landforms are the result of a combination of constructive forces, including crustal deformation, volcanic eruptions, and sediment deposition as well as a result of destructive forces, including erosion and weathering.
Alternate Achievement Standard	SCI.AAS.4.14- Identify relationships between landforms and both constructive (volcanic eruptions and sediment deposition) and deconstructive (erosion and weathering) forces.
Assessment Limits/Content Constraints	Use visual representation. Limit to volcanoes, earthquakes, and weathering.
DOK(s)	1 or 2
Sample Item Stem(s)	Here are examples of three different landforms. Which landform is a volcano? Here is a picture of a canyon that formed over time. What formed the canyon?

Grade	4
Content Area	Science
Strand	EARTH'S SYSTEMS
Standard	SCI.4.15- Analyze and interpret data (e.g., angle of slope in downhill movement of water, volume of water flow, cycles of freezing and thawing of water, cycles of heating and cooling of water, speed of wind, relative rate of soil deposition, amount of vegetation) to determine effects of weathering and rate of erosion by water, ice, wind, and vegetation using one single form of weathering or erosion at a time.
Alternate Achievement Standard	SCI.AAS.4.15- Identify the effects of weathering by water, ice, wind, or vegetation.
Assessment Limits/Content Constraints	Use visual representation.
DOK(s)	1 or 2
Sample Item Stem(s)	Here is a picture of a lake in summer. Here is a picture of the same lake in winter. How does the seasonal temperatures affect the lake during the two seasons?

Grade	4
Content Area	Science
Strand	EARTH'S SYSTEMS
Standard	SCI.4.16- Describe patterns of Earth's features on land and in the ocean using data from maps (e.g., topographic maps of Earth's land and ocean floor; maps of locations of mountains, continental boundaries, volcanoes, and earthquakes).
Alternate Achievement Standard	SCI.AAS.4.16- Use a map key to identify land and water features on a map.
Assessment Limits/Content Constraints	Use visual representation. Limit features to mountains, hills, valleys, plains, rivers, lakes, oceans, and coasts. Limit features in the key to five or fewer.
DOK(s)	1 or 2
Sample Item Stem(s)	Here is a map of Alabama with features labeled L, M, and N. Here is the map's key. What is the feature labeled M?

Grade	4
Content Area	Science
Strand	EARTH'S SYSTEMS
Standard	SCI.4.17- Formulate and evaluate solutions to limit the effects of natural Earth processes on humans (e.g., designing earthquake, tornado, or hurricane-resistant buildings; improving monitoring of volcanic activity). *
Alternate Achievement Standard	SCI.AAS.4.17- Predict the best option for human safety in a given weather situation.
Assessment Limits/Content Constraints	Use visual representation as needed. Limit weather situations to common weather. <u>Do not</u> use catastrophic weather examples.
DOK(s)	1 or 2
Sample Item Stem(s)	The National Weather Service has predicted that Birmingham, Alabama, will receive heavy rain and strong winds within the next hour. Where is the <u>best</u> place for a person to stay to be safe in this type of weather?

Appendix: Released Items: Grade 4

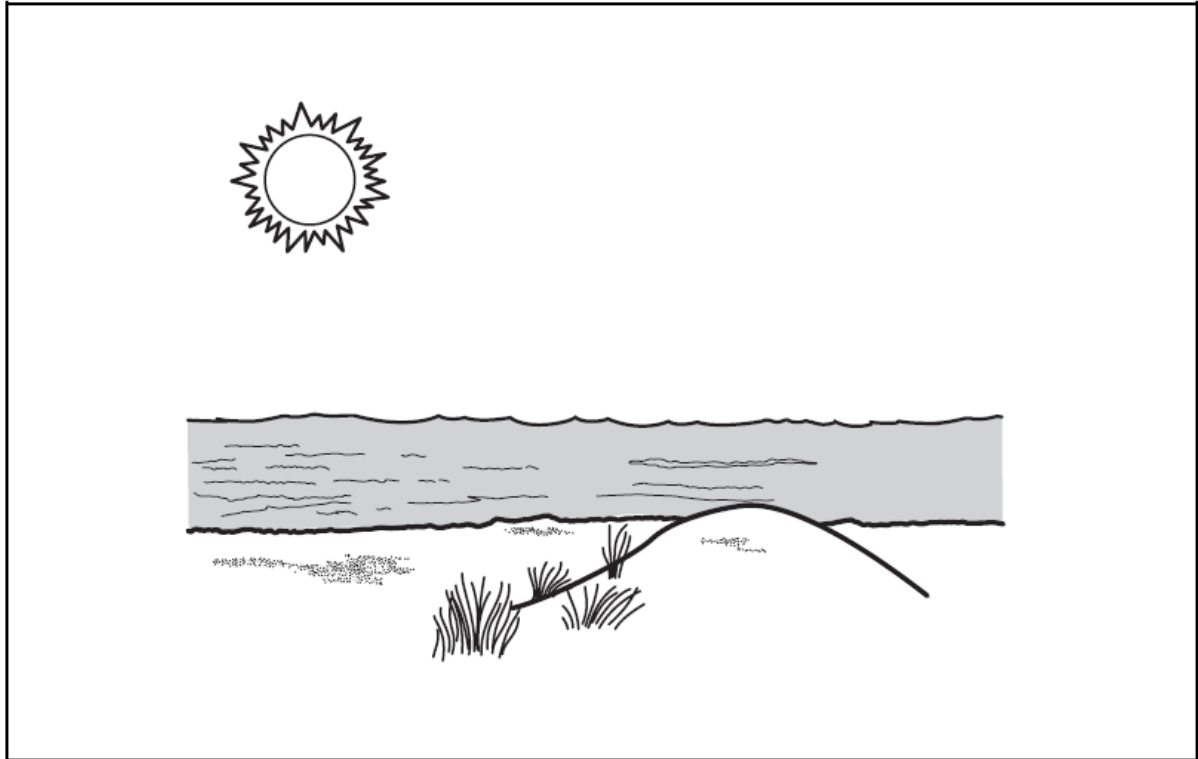
Released Items

Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Cory and Reese went to the beach with their parents. They saw a small sand dune. <i>Point to the picture.</i> When they were older, they went back to the beach and noticed that the sand dune was not in the same place. What most likely caused the sand dune to move to another place? <i>Point to and read the answer choices.</i></p> <p>A. sun B. wind C. snow D. no response</p>

Item Information	
Item Type	MC
Page Reference	20
Alignment	SCI.AAS.4.15
Point Value	1
Depth of Knowledge	2
Answer Key	B

Appendix: Released Items: Grade 4



sun

wind

snow

Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Here is a picture of a large rock. <i>Point to the rock. Which sentence best describes the rock? Point to and read the answer choices.</i></p> <p>A. The rock was formed in layers. B. The rock was formed by a volcano. C. The rock was formed by water. D. no response</p>

Item Information	
Item Type	MC
Page Reference	17
Alignment	SCI.AAS.4.12
Point Value	1
Depth of Knowledge	1
Answer Key	A

Appendix: Released Items: Grade 4



The rock was formed in layers.

The rock was formed by a volcano.

The rock was formed by water.

Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Which example shows that metal is a conductor of heat? <i>Point to and read the answer choices.</i></p> <p>A. Fruit punch in a metal cup stays the same temperature when it is left on the table.</p> <p>B. Water in a metal ice cube tray freezes when it is put in the freezer.</p> <p>C. Soup in a metal pot gets hot when the burner is turned on.</p> <p>D. no response</p>

Item Information	
Item Type	MC
Page Reference	7
Alignment	SCI.AAS.4.2
Point Value	1
Depth of Knowledge	2
Answer Key	C

Appendix: Released Items: Grade 4

Fruit punch in a metal cup stays the same temperature when it is left on the table.

Water in a metal ice cube tray freezes when it is put in the freezer.

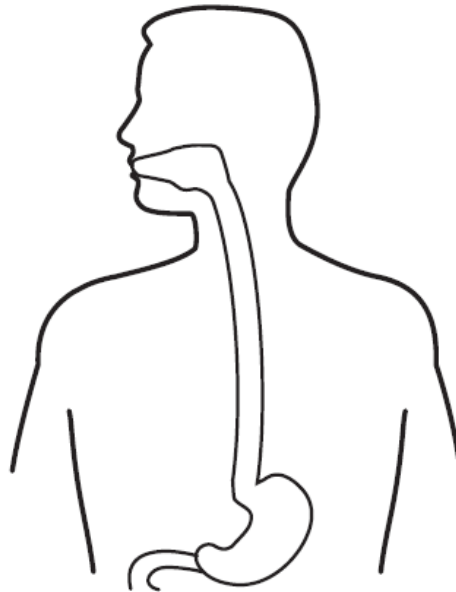
Soup in a metal pot gets hot when the burner is turned on.

Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Carter is eating chicken for lunch. He chews the food in his mouth, and then it travels through the esophagus to his stomach. <i>Point to the picture. Which body system includes the mouth, esophagus, and stomach? Point to and read the answer choices.</i></p> <p>A. digestive B. circulatory C. respiratory D. no response</p>

Item Information	
Item Type	MC
Page Reference	15
Alignment	SCI.AAS.4.10
Point Value	1
Depth of Knowledge	1
Answer Key	A

Appendix: Released Items: Grade 4



digestive

circulatory

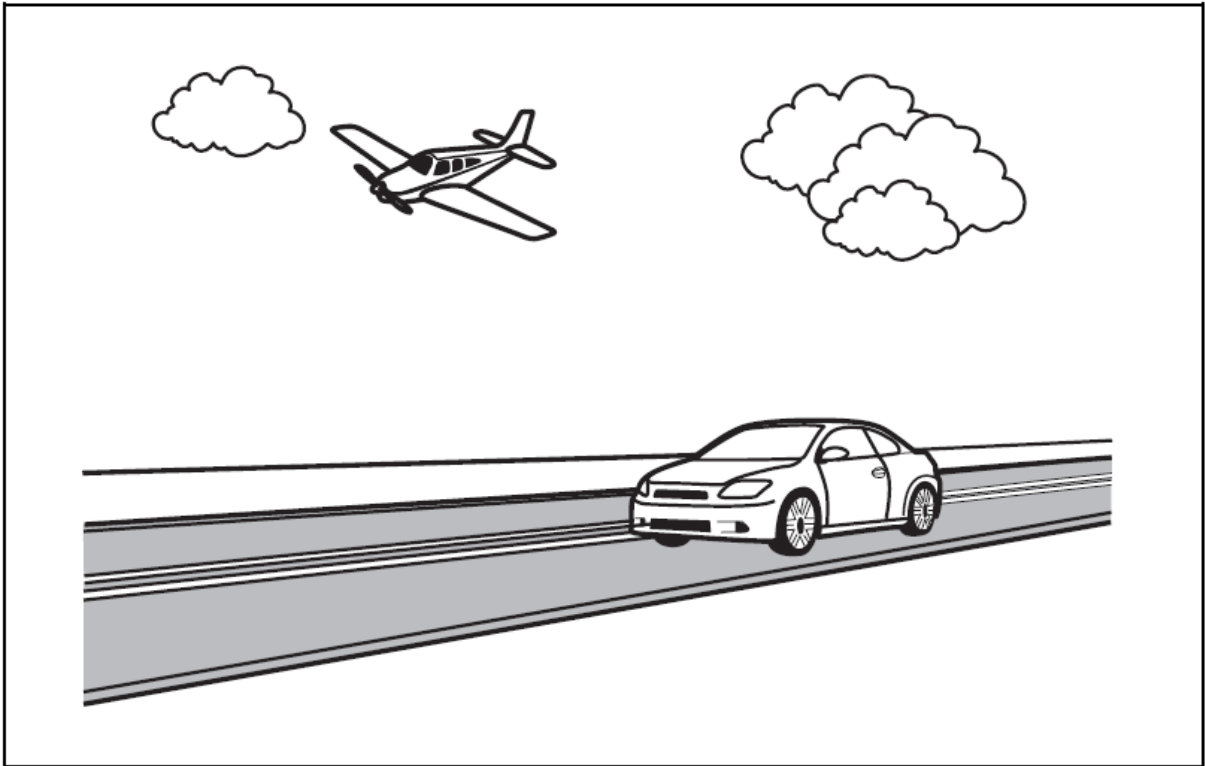
respiratory

Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Dana is traveling from Birmingham to Mobile by car. It takes her three and a half hours. Drew is traveling from Birmingham to Mobile on a plane. It takes him fifty-five minutes. <i>Point to the picture. Which sentence explains why there is a difference in the time it takes to travel this distance? Point to and read the answer choices.</i></p> <p>A. Airplanes and cars travel at different speeds. B. Airplanes and cars have different drivers. C. Airplanes and cars move at the same speeds. D. no response</p>

Item Information	
Item Type	MC
Page Reference	6
Alignment	SCI.AAS.4.1
Point Value	1
Depth of Knowledge	2
Answer Key	A

Appendix: Released Items: Grade 4



Airplanes and cars travel at different speeds.

Airplanes and cars have different drivers.

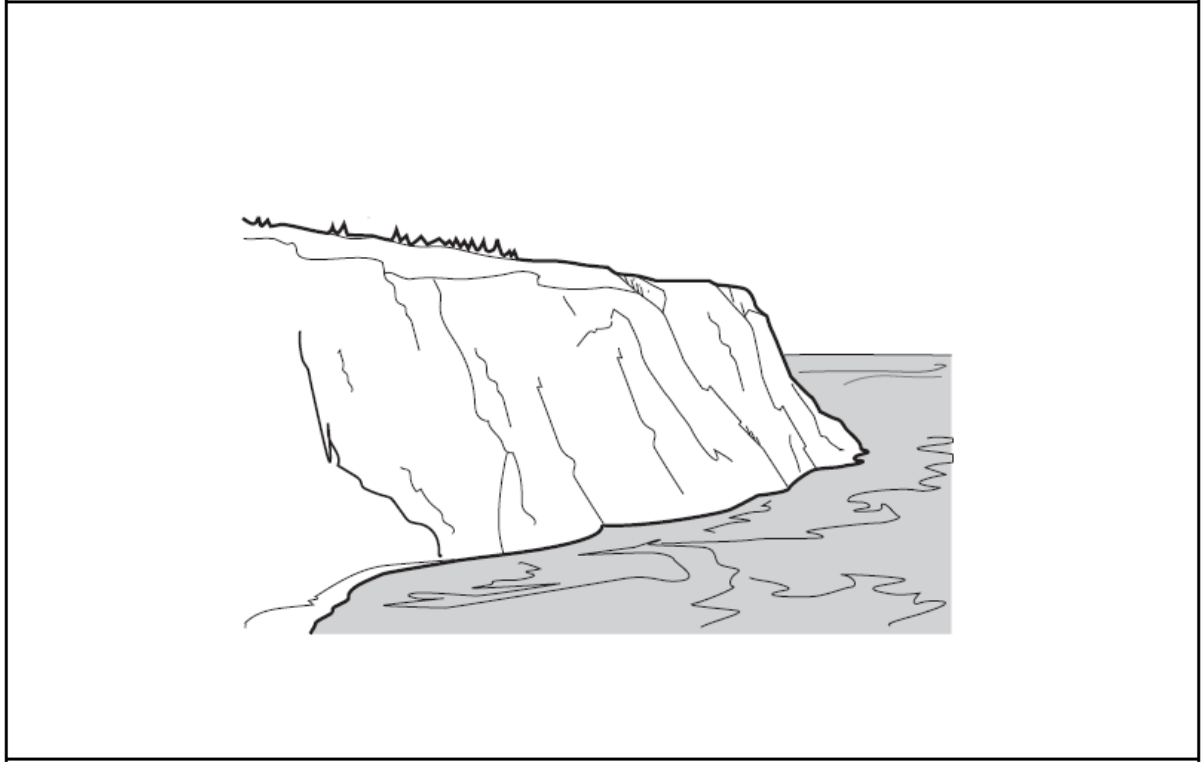
Airplanes and cars move at the same speeds.

Appendix: Released Items: Grade 4

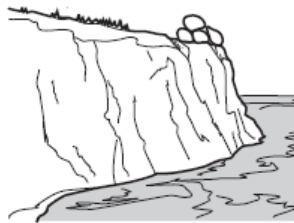
Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Here is a rocky cliff above a lake. <i>Point to the picture.</i> Every winter, water goes into cracks in the cliff's rock and freezes. Which picture shows what may happen to the cliff because of this type of weathering? <i>Point to and read the answer choices.</i></p> <p>A. The rocky cliff will stay the same. B. Rocks will be added to make the cliff taller. C. Some of the rocky cliff will break off. D. no response</p>

Item Information	
Item Type	MC
Page Reference	19
Alignment	SCI.AAS.4.14
Point Value	1
Depth of Knowledge	2
Answer Key	C

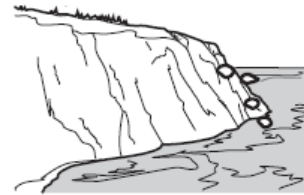
Appendix: Released Items: Grade 4



The rocky cliff will stay the same.



Rocks will be added to make the cliff taller.



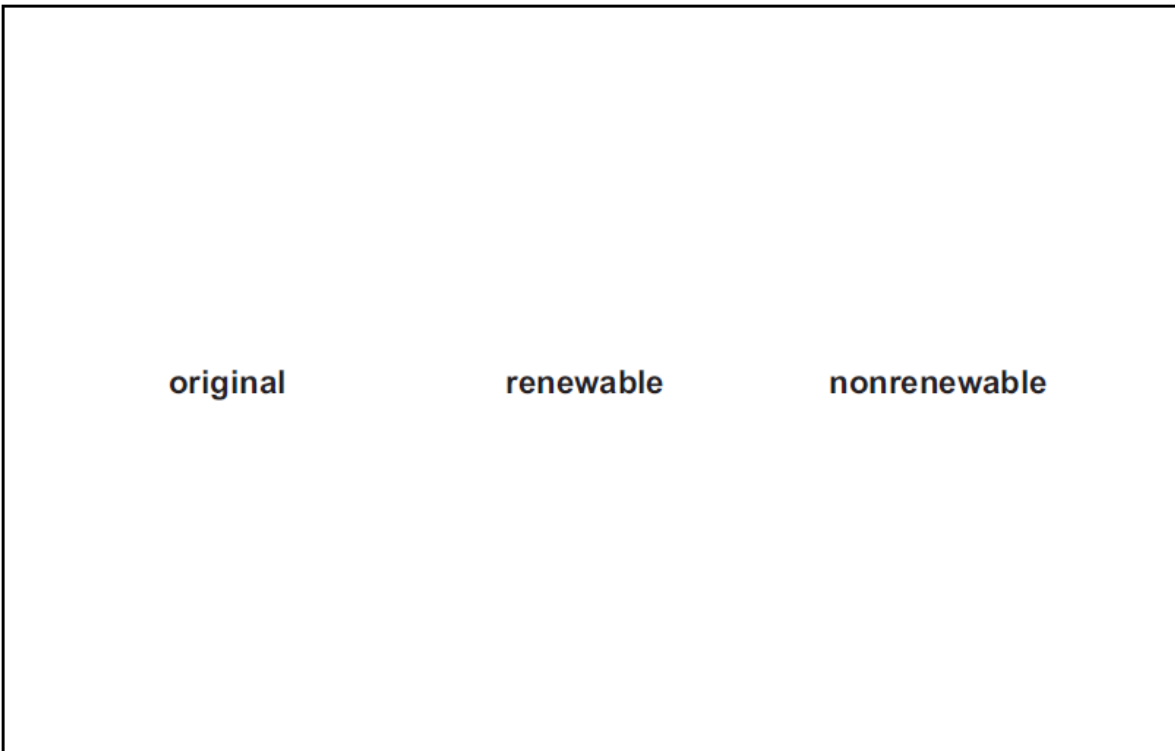
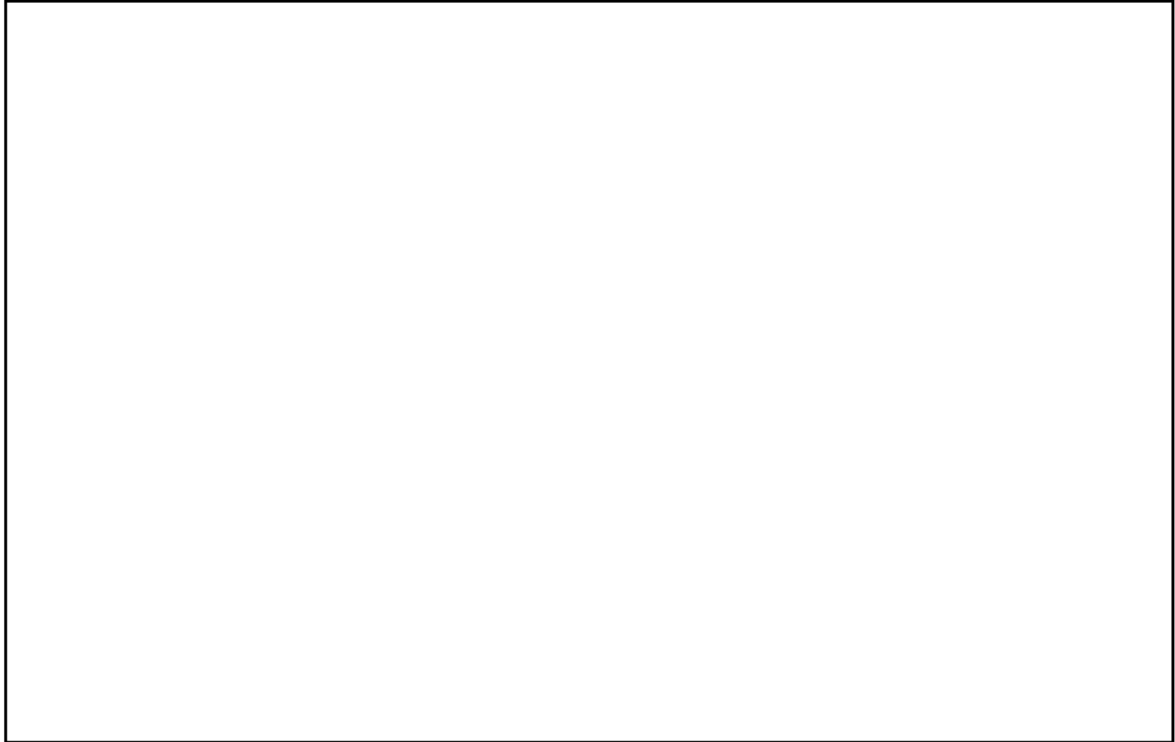
Some of the rocky cliff will break off.

Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Coal forms very slowly in the earth. It is nonliving and is not made by humans. Which type of resource is coal? <i>Point to and read the answer choices.</i></p> <p>A. original B. renewable C. nonrenewable D. no response</p>

Item Information	
Item Type	MC
Page Reference	10
Alignment	SCI.AAS.4.5
Point Value	1
Depth of Knowledge	1
Answer Key	C

Appendix: Released Items: Grade 4

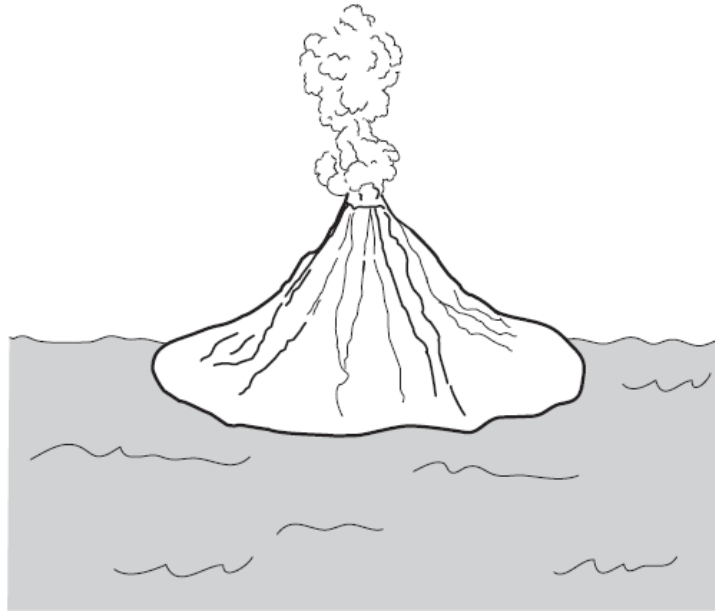


Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Here is an island in the Pacific Ocean. <i>Point to the picture.</i> What constructive force most likely caused the island to form? <i>Point to and read the answer choices.</i></p> <p>A. earthquake B. volcano C. weathering D. no response</p>

Item Information	
Item Type	MC
Page Reference	19
Alignment	SCI.AAS.4.14
Point Value	1
Depth of Knowledge	1
Answer Key	B

Appendix: Released Items: Grade 4



earthquake

volcano

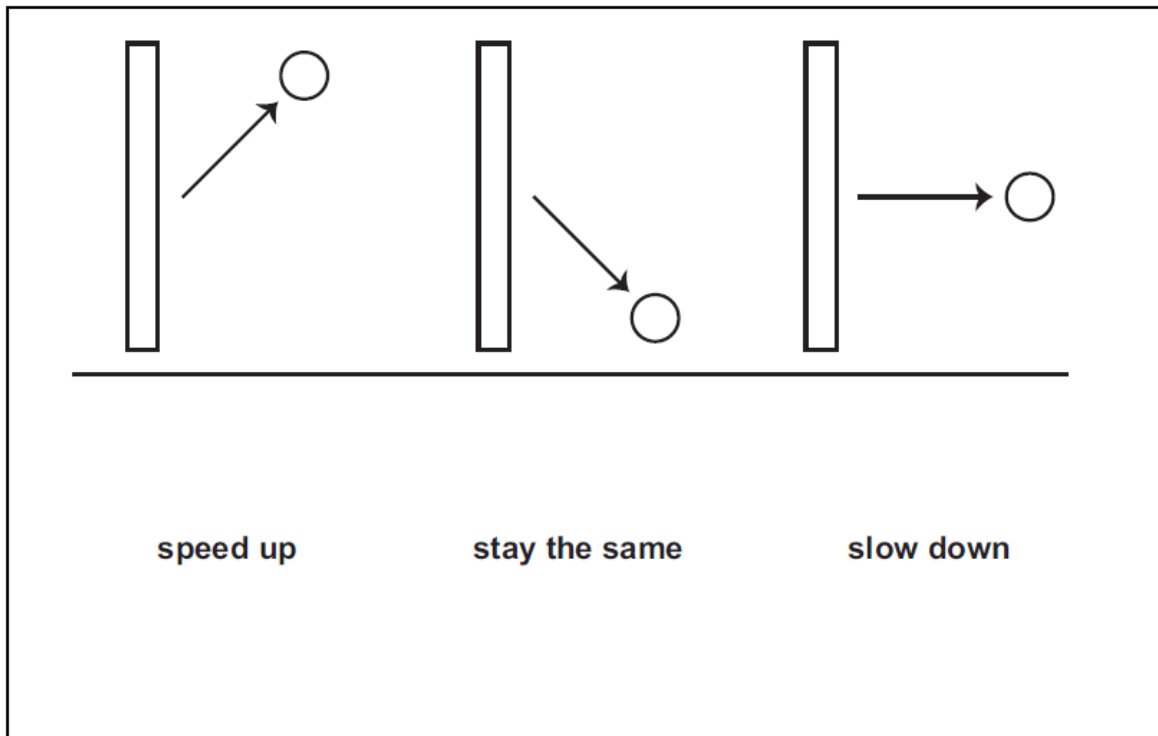
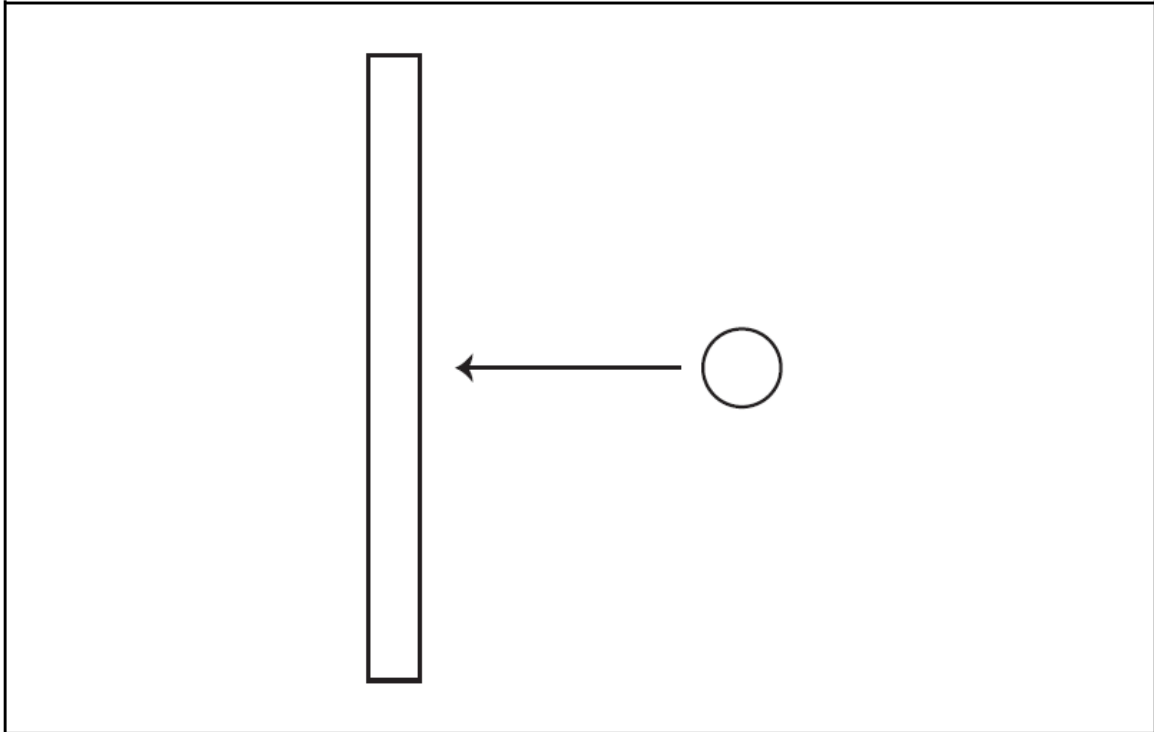
weathering

Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Here is a picture of a ball being thrown against a wall. <i>Point to the picture.</i></p> <p>Question one: After the ball hits the wall, in which direction will it go? <i>Point to the answer choices.</i></p> <p>A. upward at 45 degrees B. downward at 45 degrees C. back at the same angle D. no response</p> <p>Question two: After the ball hits the wall, what will happen to the speed of the ball? <i>Point to and read the answer choices.</i></p> <p>A. speed up B. stay the same C. slow down D. no response</p>

Item Information		Answer Key(s) Description
Item Type	EBSR	B, C
Page Reference	8	
Alignment	SCI.AAS.4.3	
Point Value	1	
Depth of Knowledge	2	
Answer Key	(see description)	

Appendix: Released Items: Grade 4

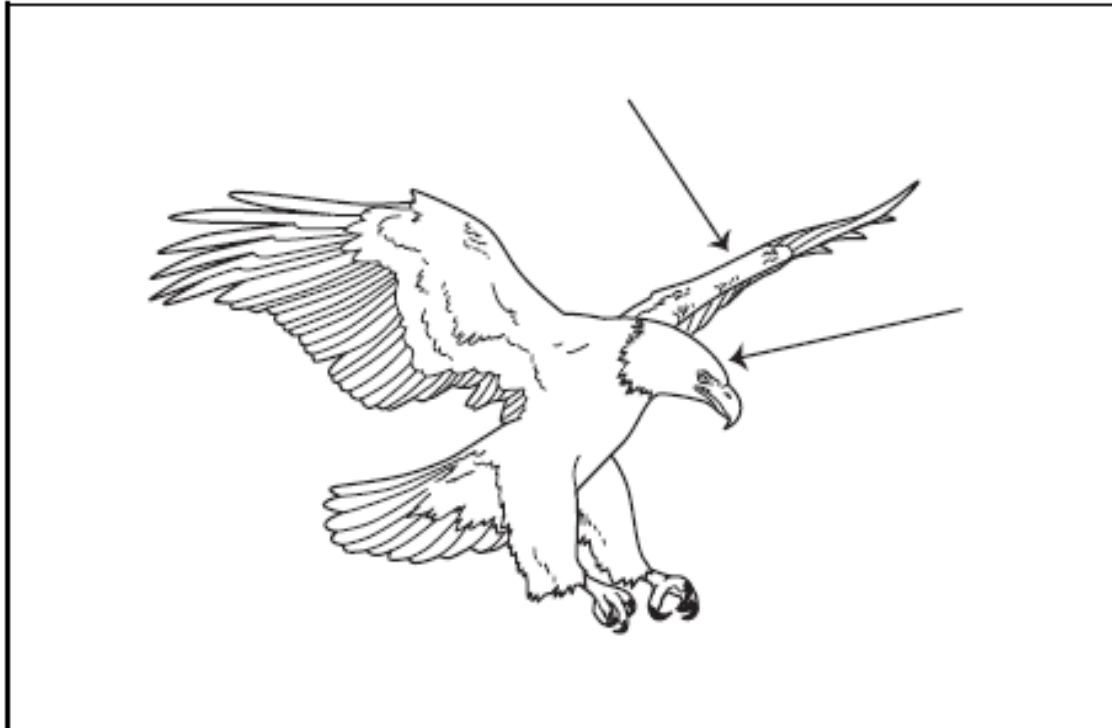


Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Here is a picture of a bird. <i>Point to the picture.</i> Here are two arrows pointing to parts of the bird. <i>Point to the arrows.</i> What two parts of the bird are the arrows pointing to? Choose two. <i>Point to and read the answer choices.</i></p> <p>A. tail B. wing C. head D. leg E. no response</p>

Item Information	
Item Type	MS
Page Reference	14
Alignment	SCI.AAS.4.9
Point Value	2
Depth of Knowledge	1
Answer Key	B, C

Appendix: Released Items: Grade 4



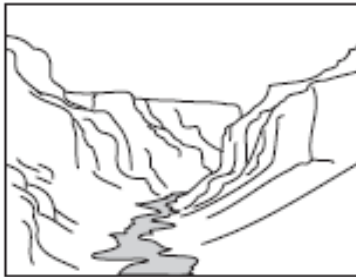
tail	wing
head	leg

Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Here is a picture of the Grand Canyon in Arizona. Point to the picture on the left. A long time ago, this area was very flat with just a river flowing through it. Point to the picture on the right. Which sentence best describes how the changes happened that formed the Grand Canyon? Point to and read the answer choices.</p> <p>A. The river eroded layers of rock and sediment. B. Ice from a glacier that moved through the area removed the rock. C. Grass along the sides of the river broke the rock apart. D. no response</p>

Item Information	
Item Type	MC
Page Reference	20
Alignment	SCI.AAS.4.15
Point Value	1
Depth of Knowledge	2
Answer Key	A

Appendix: Released Items: Grade 4



The river eroded layers of rock and sediment.

Ice from a glacier that moved through the area removed the rock.

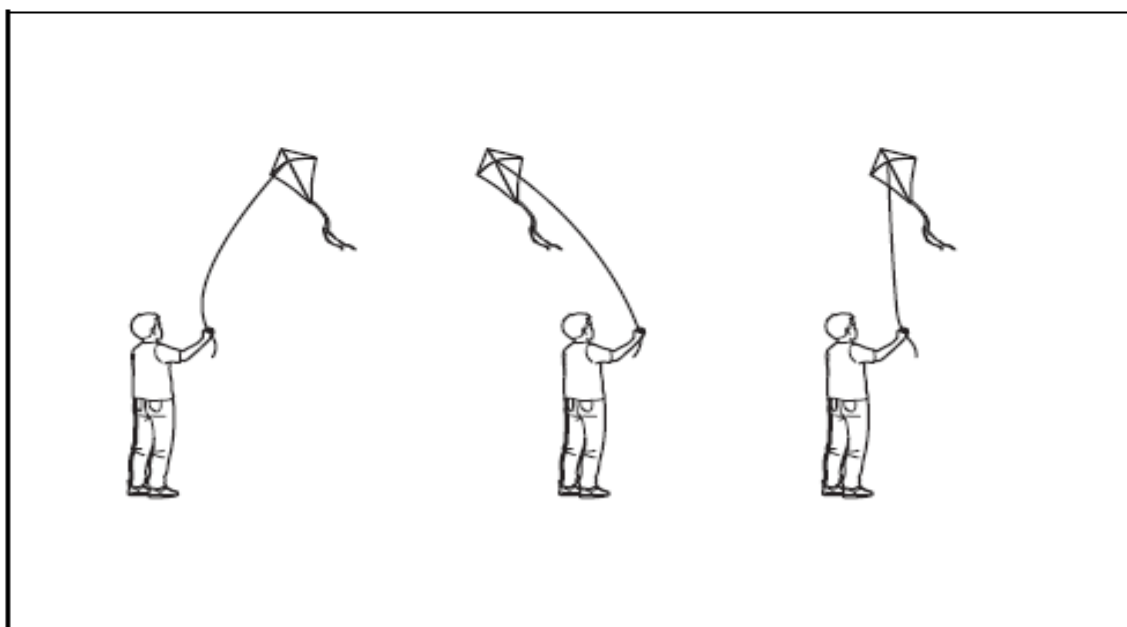
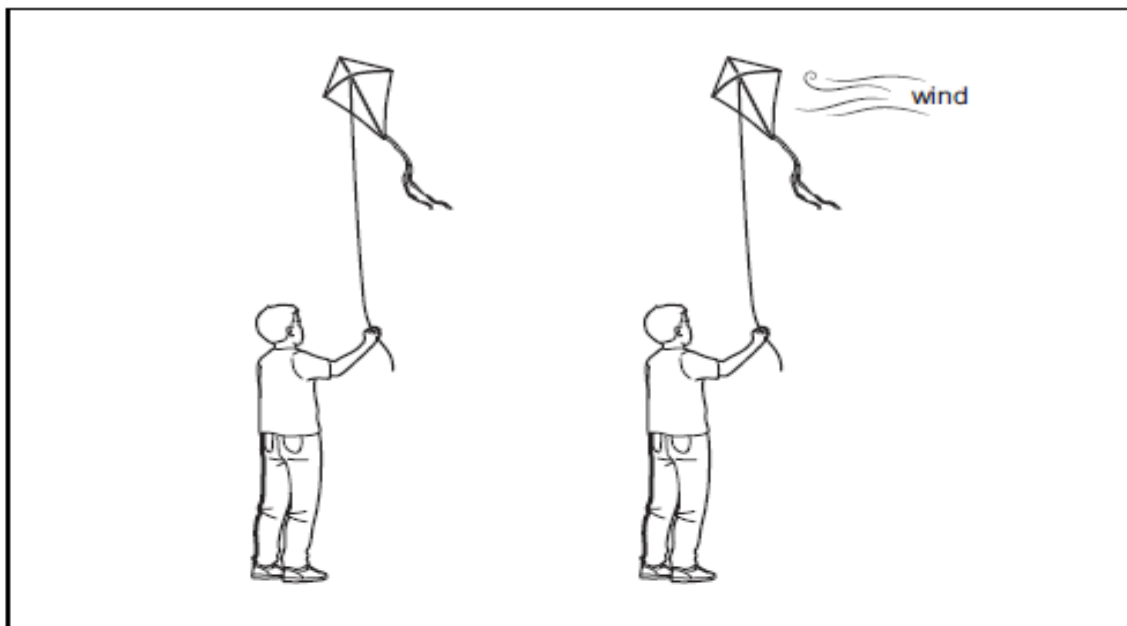
Grass along the sides of the river broke the rock apart.

Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Kevin is flying his kite. Point to the picture on the left. A sudden gust of wind comes from this direction. Point to the wind in the picture on the right. Which picture shows what will happen to Kevin's kite? Point to the answer choices.</p> <p>A. It will move to the right. B. It will move to the left. C. It will stay in the same place. D. no response</p>

Item Information	
Item Type	MC
Page Reference	8
Alignment	SCI.AAS.4.3
Point Value	1
Depth of Knowledge	2
Answer Key	B

Appendix: Released Items: Grade 4



Appendix: Released Items: Grade 4

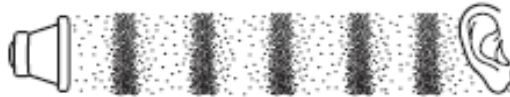
Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Here is a model of a sound wave. Point to the sound wave. Here is a model of a light wave. Point to the light wave. Which statement explains a difference between a sound wave and a light wave? Point to and read the answer choices.</p> <p>A. Sound waves need air, water, or solids to travel. B. Light waves can travel through a solid, such as wood. C. Sound waves and light waves are exactly the same. D. no response</p>

Item Information	
Item Type	MC
Page Reference	11
Alignment	SCI.AAS.4.6
Point Value	1
Depth of Knowledge	2
Answer Key	A

Appendix: Released Items: Grade 4

Wave Models

sound wave



light wave



Sound waves need air, water, or solids to travel.

Light waves can travel through a solid, such as wood.

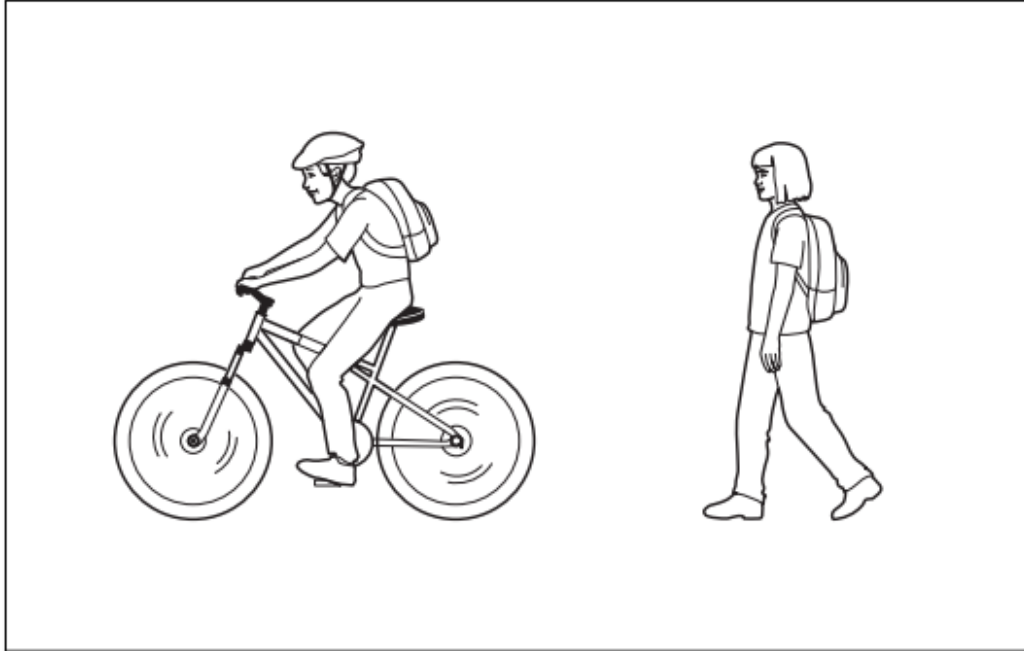
Sound waves and light waves are exactly the same.

Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Sammy and Lisa, his sister, left their house at the same time. Sammy rode his bicycle from home to the library. Point to the picture on the left. Lisa walked from home to the library. Point to the picture on the right. Which answer choice best explains why Sammy got to the library before his sister? Point to and read the answer choices.</p> <p>A. Riding a bicycle has a faster speed than walking. B. Walking has a faster speed than riding a bicycle. C. Riding a bicycle and walking have the same speed. D. no response</p>

Item Information	
Item Type	MC
Page Reference	6
Alignment	SCI.AAS.4.1
Point Value	1
Depth of Knowledge	1
Answer Key	A

Appendix: Released Items: Grade 4



Riding a bicycle has a faster speed than walking.

Walking has a faster speed than riding a bicycle.

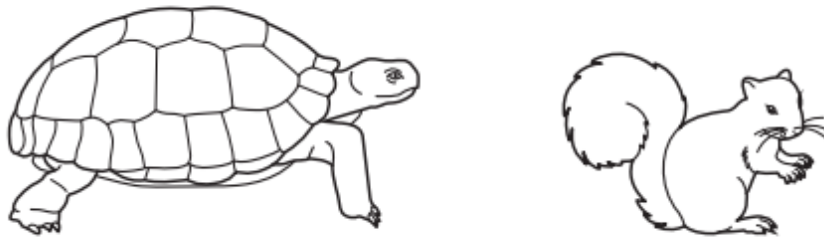
Riding a bicycle and walking have the same speed.

Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>A student observed how both a turtle and a squirrel move. Point to the picture. Which animal will <u>most likely</u> move with a faster speed? Point to and read the answer choices.</p> <p>A. the turtle B. the squirrel C. They both move at the same speed. D. no response</p>

Item Information	
Item Type	MC
Page Reference	6
Alignment	SCI.AAS.4.1
Point Value	1
Depth of Knowledge	1
Answer Key	B

Appendix: Released Items: Grade 4



the turtle

the squirrel

They both move at the same speed.

Appendix: Released Items: Grade 4

Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>In Alabama there are many different types of soil. Which soil contains many tiny rocks? <i>Point to and read the answer choices.</i></p> <p>A. peat B. sand C. clay D. no response</p>

Item Information	
Item Type	MC
Page Reference	18
Alignment	SCI.AAS.4.13
Point Value	1
Depth of Knowledge	2
Answer Key	B

Appendix: Released Items: Grade 4

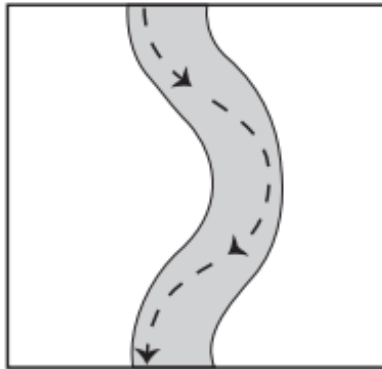
peat	sand	clay

Appendix: Released Items: Grade 4

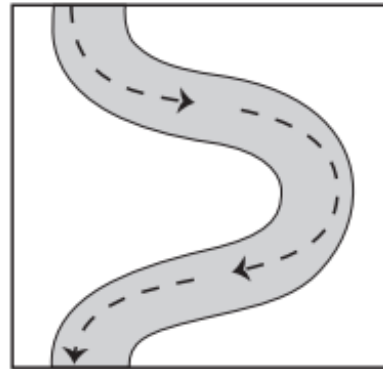
Teacher Book	
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	<p>Here are two drawings of the same river. Point to the drawings. This is a drawing of the river two hundred years ago. Point to the picture on the left. This is a drawing of the river today. Point to the picture on the right. Which answer choice best explains why the river looks different today? Point to and read the answer choices.</p> <p>A. Heat energy breaks down the soil on the riverbanks, causing the river to change course.</p> <p>B. Wind energy makes waves in the river, causing the river to change course.</p> <p>C. Flowing water causes erosion on the outside bank where the river curves, causing the river to change course.</p> <p>D. no response</p>

Item Information	
Item Type	MC
Page Reference	20
Alignment	SCI.AAS.4.15
Point Value	1
Depth of Knowledge	2
Answer Key	C

Appendix: Released Items: Grade 4



200 years ago



today

Heat energy breaks down the soil on the riverbanks, causing the river to change course.

Wind energy makes waves in the river, causing the river to change course.

Flowing water causes erosion on the outside bank where the river curves, causing the river to change course.