

SCIENCE

FOR LANGUAGE DEVELOPMENT

GRADE 6 • BOOK 2

BASED ON
ALASKA
SCIENCE
STANDARDS



Sealaska Heritage Institute



UNIT 6

C-1: Concepts of Life Science



KEY VOCABULARY

Culturally Responsive & Place-Based Introduction of Science Vocabulary

ORGANISM

Place-Based Perspective

Mount a map of Southeast Alaska on the board. Have the students name living things that can be found on the land and in the water. List the suggestions. Introduce all of the living things as organisms.

Heritage Cultural Perspective

The Native people of Southeast Alaska have, since time immemorial, related to all forms of organisms in their environment. For example, people noticed the effects of the environment on organisms, such as the effect of red tides on clams.

PHYSICAL

Place-Based Perspective

Collect samples of a baby's diaper and clothes from a baby, a toddler, a child, a teen, and an adult. Have the students help you to arrange the clothing items from baby to adult. Use this to introduce physical change—while a person gets bigger, he/she maintains the same basic shape.

Heritage Cultural Perspective

The Native people of Southeast Alaska witnessed many physical changes in their environment and the wildlife around them. For example, they saw salmon change color as they migrated upstream. They also saw other animals change colors as the seasons changed.

SYSTEM

Place-Based Perspective

Show the students a picture of a stereo system. Have them identify the function of each component. Use this as an analogy to introduce the systems of the human body.

Heritage Cultural Perspective

The traditional halibut hook represents a system, in that all of its parts work together to hook fish.

Culturally Responsive & Place-Based Introduction of Science Vocabulary

DIGESTION

Place-Based Perspective

If a raw shrimp with its shell on is available, show it to the students. Use a knife to show the vein—lead the students to understand that this is the digestive tract of the shrimp. Draw the outline of a stomach on paper. Place a sugar cube in the center of the stomach; drip water, to represent acid, on the sugar. As the sugar dissolves, relate this to the digestion of food in our stomachs.

Heritage Cultural Perspective

People would often eat seal oil or hooligan oil with berries that had a lot of seeds. This helped them to digest the berries.

GROWTH

Place-Based Perspective

Show the students a cross section of a small tree. Draw the students' attention to the tree rings; have them suggest what the rings represent. Lead them to understand that the rings show years of growth—one year per ring. Have the students cite other things that relate to growth in plants, animals, and humans.

Heritage Cultural Perspective

Traditionally, the physical growth of a girl was recognized when she reached puberty. At that time, she would be segregated from the rest of the family. When boys reached puberty, they would move in with their maternal uncles for life's training.

RESPIRATION

Place-Based Perspective

If an inhaler is available, show it to the students. Use it to introduce "respiration" to the students. Show an inflated balloon and have the students relate it to respiration. Cover the concept of artificial respiration with the students. Draw an outline of lungs on paper. Smear brown paint on the insides of the lungs; use this to show the dangers of smoking and the effects of smoking on a person's lungs.

Heritage Cultural Perspective

Traditionally, when boys reached puberty and moved in with their maternal uncles, their training became very strenuous. The training would have included running to improve their breathing. Also, the boys submerged themselves in cold water, adding to their overall endurance and respiration capacity.

Culturally Responsive & Place-Based Introduction of Science Vocabulary

PHOTOSYNTHESIS

Place-Based Perspective

Tell the students you want to make cookies, and ask what ingredients you would have to collect. Note the students' suggestions. Then, relate this to photosynthesis in plants. There are ingredients necessary to create photosynthesis: light, water, carbon dioxide, and chlorophyll. The chlorophyll gives the plants their green color. Since the plants take in carbon dioxide and exhale oxygen, have the students suggest how forests help the environment.

Heritage Cultural Perspective

In the Tlingit Shangukweidí story "The Sun Children," the sun is recognized as the source of life for all living things on earth. This represents a traditional perspective of an important element of photosynthesis.

TRANSFER

Place-Based Perspective

Show the students a frying pan and an egg. Have the students suggest how you can fry the egg. Lead the students to understand that the heat from the stove is transferred through the frying pan to fry the egg. Have the students cite other examples of heat transfer, such as baking and deep frying.

Heritage Cultural Perspective

Traditionally, hot rocks were used to heat water for cooking and in the making of bentwood boxes and dug out canoes. The heat from the rocks would transfer into the water.



LESSONS

Science Language for Success—Lesson 1

Introduce the key science vocabulary, using concrete materials and/or pictures.

LISTENING

Use the Mini Pictures activity page from the Student Support Materials. Have the students cut out the pictures. Say the key words and the students show the pictures.



Nod and Clap

Mount the vocabulary pictures on the board. Point to one of the pictures and say its name. The students should nod their heads to indicate that you said the correct vocabulary word for the picture. However, when you point to a picture and say an incorrect name for it, the students should clap their hands ONCE. Repeat this process until all of the vocabulary pictures have been used a number of times in this way.

Student Support Materials

Have the students work on the activity pages from the Student Support Materials from this unit. Afterward, review their work.

SPEAKING



The Disappearing Pictures

Mount five or six pictures on the board, vertically. Point to the picture at the top and tell the students to name it. Continue in this way until the students have named all of the pictures from top to bottom. Then, remove the last picture and repeat this process—the students should say all of the vocabulary words, including the name for the “missing” picture. Then, remove another picture from the board and have the students repeat this process. Continue in this way until the students are saying all of the vocabulary words from a blank board or until the students cannot remember the “missing pictures.”

Flashlight Name

Mount the vocabulary pictures on the board and the walls of the classroom. Darken the classroom as much as possible. Use a strong flashlight to direct the students’ attention to one of the pictures. The students should identify the picture that is illuminated by the light of the flashlight. Continue in this way until all of the vocabulary words have been said a number of times.

Roll ‘Em Again!

Mount the vocabulary pictures on the board. Number each picture from one to six (repeat a number as often as necessary). Then, group the students into two teams. Give the first player in each team a die. When you say “Go,” the first player in each team must roll his/her die. He/She should call the number showing on it and then say a complete sentence about a vocabulary picture on the board that has the same number. Repeat this process until all students have participated.

Science Language for Success—Lesson 2

READING

Introduce the science sight words to the students—match the sight words with the vocabulary pictures. The sight words are included in the Student Support Materials, attached to these lesson plans.



Note: After each unit, mount a set of the unit's words on the walls around the room. Use the "word walls" for review and reinforcement activities.

Funnel Words

Group the students into two teams. Give the first player in each team a funnel. Mount the sight words on the walls, board, and windows, around the classroom. Say one of the sight words. The students with the funnels must then look through them to locate the sight word you named. The first student to do this correctly wins the round. Repeat with other pairs of students until all players in each team have played.

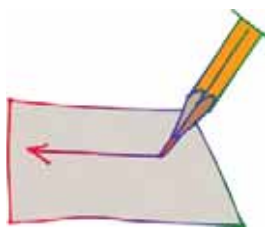
Letter Encode

Give each student his/her envelope that contains the alphabet letters. Mount one of the science pictures on the board. The students must use the cut-out letters to spell the word. Review the students' work. Repeat, until all of the words have been spelled in this way.

Student Support Materials

Have the students complete the sight recognition and encoding activities in the Student Support Materials. When finished, review their work.

WRITING



Mirror Writing

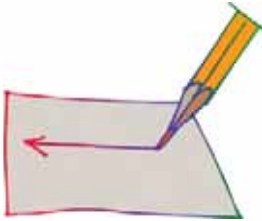
Group the students into two teams. Have the first player from each team stand in front of the board. Give each of the two players a small, unbreakable mirror. Stand some distance behind the two players with pictures for the sight words. Hold up one of the pictures. When you say "Go," the players must use the mirrors to look over their shoulders to see the picture you are holding. When a player sees the picture, he/she must write the sight word for that picture on the board. The first player to do this correctly wins the round. Repeat this process until all players in each team have had an opportunity to respond.

Silent Dictation

Provide each student with writing paper and a pen. The students should watch carefully as you move your lips as though you are saying one of the sight words (do not voice the word). After "lipping" the sight word, each student should write that word on his/her sheet of paper. Repeat this process with other sight words. Afterwards, review the students' responses.

Science Language for Success—Lesson 2

WRITING (CONTINUED)



Student Support Materials

Provide the students with a copy of the writing pages from the Student Support Materials. When finished, review the students' work.



VOCABULARY PICTURES





DIGEST





GROWTH





ORGANISM





PHOTOSYNTHESIS



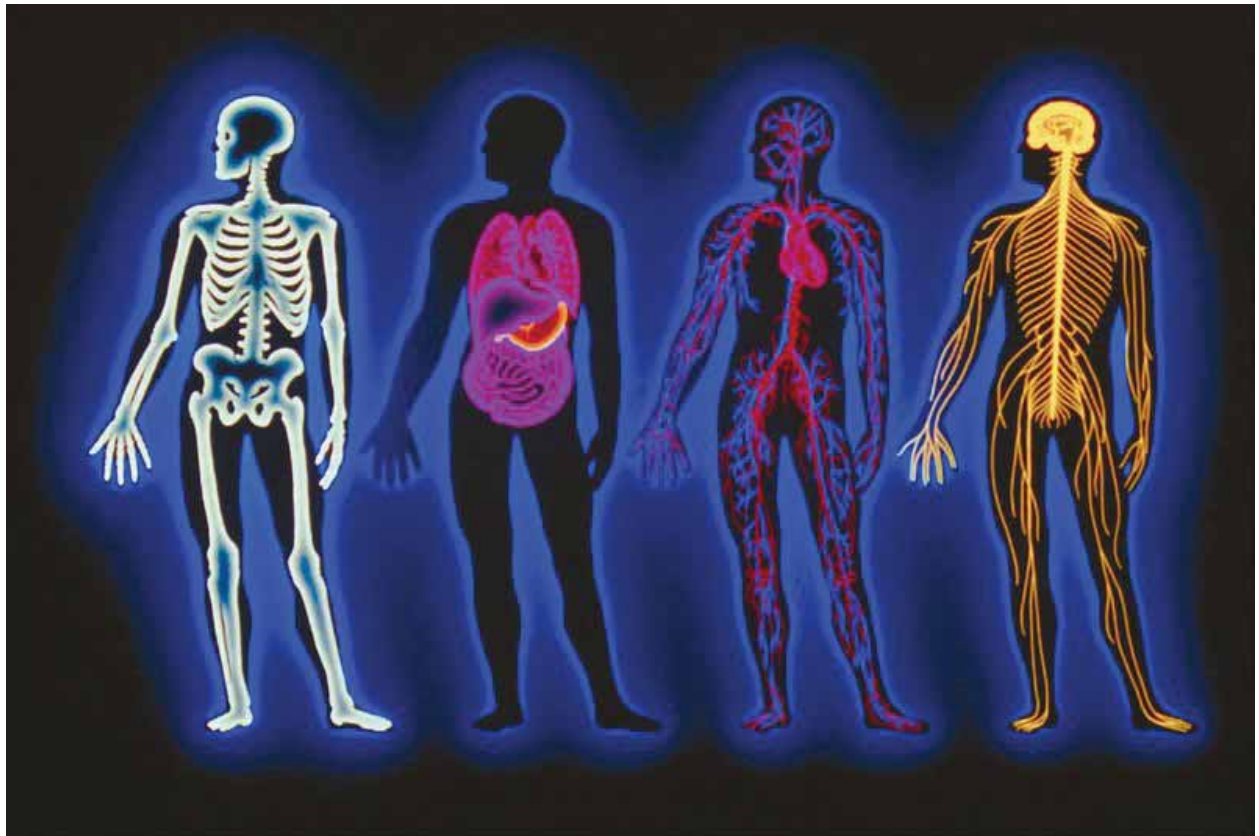


PHYSICAL





RESPIRATION





SYSTEMS





TRANSFER

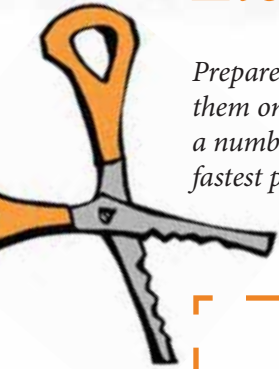


STUDENT SUPPORT MATERIALS

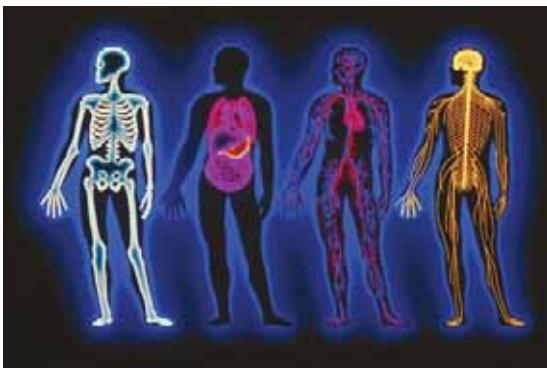
Listening • Mini Pictures

Listening: Mini Pictures

Prepare a copy of these pages for each student. The students should cut out the pictures and lay them on the floor or desk. Say the key words and the students should show you the pictures. Repeat a number of times. This activity can also be done with pairs of students to determine who is the fastest player.



Listening: Mini Pictures







STUDENT SUPPORT MATERIALS

Listening Comprehension

Listening Comprehension




Read the following sentences to the students. The students should circle “true” or “false” for each of the sentences. Review the students’ work.

- ① Organisms are all of the living things found on land and in the water. True
False
- ② Adding vinegar to water is an example of a physical change to the water. True
False
- ③ The stomach is an important part of the body’s systems. True
False
- ④ Digestion occurs through external parts of the body. True
False
- ⑤ The stomach plays an important role in the respiration system of the body. True
False
- ⑥ We can measure growth of an organism over time. True
False
- ⑦ In photosynthesis the sun provides the heat energy. True
False
- ⑧ Making popcorn is a good example of heat transfer. True
False



STUDENT SUPPORT MATERIALS

Sight Words



systems

physical

organism





respiration

growth

digestion



transfer

photosynthesis



STUDENT SUPPORT MATERIALS

Basic Reading • Sight Recognition

Sight Words Activity Page

Have the students highlight or circle the words in this word find. Words appear horizontally.



photosynthesis
physical
digestion

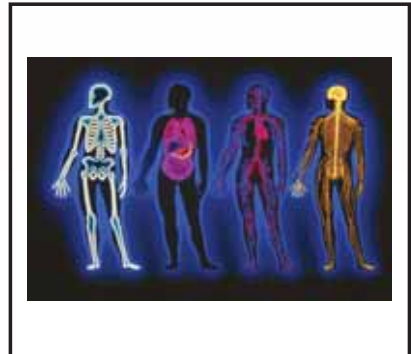
transfer
respiration
organism

system
growth

g i p c o r p r n y e d n y n l n r
t w h o t a d n t i e m h o i o l e
m o h s y s t e m p h y s i c a l s
r p h y s i s s g g s s o r g a n t
c e t r a n s f e r t n w i p h h e
w g n s y s g y g t r a n s f e r t
s t y t o r g r o i n e h s s s i g
i p r r s s i r t i i n t e y r w p
y p h o t o s y n t h e s i s h g i
i e n r e s p i r a t i o t s s i i
i o a g s y s t e t t y t h e l e e
s t f t e o r g a n i s m o s c n a
a s y o y t a m o o r s e t s t n n
a i r e s p i r a t i o n t y d n s
o p e i t g o e g r o w t h s o i c
h y w o i r i o n h s r a r y g t o
d i g e s t i o y y i n m n i i r o
g s p p h o t o s y n t h e o o s h
g n r d i g e s t i o n s i r i h s
n s i l y r s g o n e o e g c o h e

Sight Words Activity Page

Have the students cut out the key words and glue them at the bottom of their pictures.



organism	physical	systems	digestion
growth	respiration	transfer	photosynthesis



STUDENT SUPPORT MATERIALS

Basic Reading • Encoding

Encoding Activity Page

Have the students cut out and encode the syllables of the words, OR number the syllables in their correct sequence.



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Encoding Activity Page

Have the students cut out the word halves and glue them together to create the key words for this unit.



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STUDENT SUPPORT MATERIALS

Reading Comprehension

Reading Comprehension Activity Page

Have the students read the text and then select the correct answer for it. They should fill in the appropriate bullet beside the answer of their choice.



- ① Organisms are
 - the heat of light identified through measuring data.
 - only bugs that have chemical changes in a wet environment.
 - only land animals in an environment that is dry.
 - all living things in an environment.

- ② A physical change is
 - when something changes its shape, color, and chemical data.
 - when something changes but keeps its shape.
 - when two liquids are put together to create a different state of matter.
 - heat energy measured in an environment.

- ③ A system is
 - when a model is used to create something used to collect data.
 - when something changes to form a new substance.
 - when different parts work together.
 - when we measure solids that adapt to the environment.

- ④ Digestion happens when
 - we measure the amount of food a person eats.
 - our bodies adapt to life in a new environment.
 - our bodies break down the food we eat.
 - our bodies differentiate between data collected.

- ⑤ Growth in an organism happens
 - never.
 - as a gas.
 - through gravity.
 - over time.

Reading Comprehension Activity Page



- ⑥ We use our respiration system to
- breathe.
 - reproduce.
 - generalize.
 - inquire.
- ⑦ Photosynthesis needs these to happen:
- gas, force, light, data.
 - light, carbon dioxide, gravity, chlorophyll.
 - light, carbon dioxide, water, chlorophyll
 - matter, models, energy, heat
- ⑧ This is an example of heat transfer:
- measuring data in the environment.
 - freezing water to make ice cubes.
 - differentiating heat and cold.
 - boiling water in a pot.

Reading Comprehension Activity Page

Have the students write the letters for sentence halves that match.



- | | |
|------------------------------------|--|
| ① Organisms include | ① that work together. |
| ② Physical changes mean that | ② happens over time. |
| ③ The human body has systems | ③ lets us breathe. |
| ④ Our digestion system | ④ all living things. |
| ⑤ Growth in an organism | ⑤ makes food in plants. |
| ⑥ The respiration system | ⑥ something changes but keeps its shape. |
| ⑦ Photosynthesis is a process that | ⑦ be used when we cook foods. |
| ⑧ Heat transfer can | ⑧ passes food through the body. |

1 → _____ 2 → _____ 3 → _____ 4 → _____

5 → _____ 6 → _____ 7 → _____ 8 → _____

Reading Comprehension Activity Page

Have the students cut out the words and glue them under their definitions.



Growth causes this type of change to the body.

This is our breathing system.

An increase in weight is an example of this.

This helps us pass food through our bodies.

This is the process a plant uses to make food.

different parts working together

This can happen when we boil water in a pot.

all living things



organism	physical	systems	digestion
growth	respiration	transfer	photosynthesis

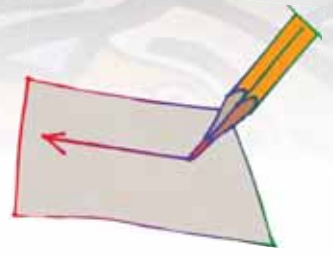


STUDENT SUPPORT MATERIALS

Basic Writing

Basic Writing Activity Page

Have the students write in the missing letters.



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di _____ **n**

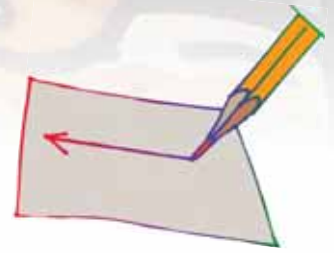
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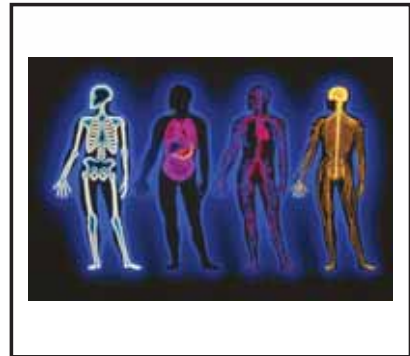
pho _____ **s**

tr _____ **r**

Basic Writing Activity Page



Have the students write the word for each picture.

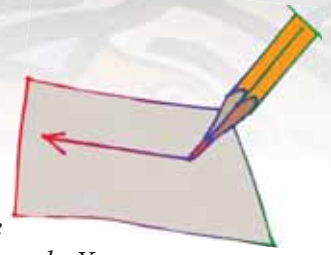




STUDENT SUPPORT MATERIALS

Creative Writing

Creative Writing Activity Page



Have the students write sentences of their own, using the key words from this unit. When the students' sentences are finished, have them take turns reading their sentences orally. The students should say "Blank" for the key words; the other students must name the "missing" words. You may wish to have the students write the "definitions" for the key words.

ORGANISM

PHYSICAL

SYSTEMS

DIGESTION

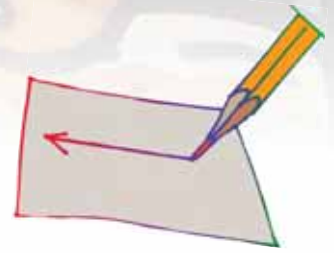
GROWTH

RESPIRATION

PHOTOSYNTHESIS

TRANSFER

Creative Writing Activity Page



Have the students write sentences of their own, based on the picture below. When finished, have each student read his/her sentences to the others.





UNIT ASSESSMENT

C-1: Concepts of Life Science



SCIENCE PROGRAM

Unit Assessment Teacher's Notes
Grade 6 • Unit 6 (C-1)
Theme: Concepts of Life Science

Date: _____



Unit Assessment

Provide each student with a copy of the students' pages. Read the following instructions aloud. The students should answer the questions on their copies of the assessment.

BASIC LISTENING

Turn to pages 1–2 in your test. Look at the pictures in the boxes.

1. Write the number 1 on top of the picture for **ORGANISMS**.
2. Write the number 2 on top of the picture for **PHYSICAL**.
3. Write the number 3 on top of the picture for **SYSTEMS**.
4. Write the number 4 on top of the picture for **DIGESTION**.
5. Write the number 5 on top of the picture for **GROWTH**.
6. Write the number 6 on top of the picture for **RESPIRATION**.
7. Write the number 7 on top of the picture for **PHOTOSYNTHESIS**.
8. Write the number 8 on top of the picture for **TRANSFER**.

LISTENING COMPREHENSION

Turn to page 3 in your test. Listen to the sentences I say. Circle “T” for true and “F” for false sentences.”

1. All organisms are the same.
2. The physical parts of an organism can be measured.
3. The human body has one internal system.
4. Digestion is an external system of the human body.
5. Growth of an organism happens over time.
6. Respiration is gravity that exerts force on the environment.
7. Photosynthesis uses the energy from sunlight.
8. Heat is a form of energy that can be transferred from one solid to another.



Unit Assessment

Provide each student with a copy of the students' pages. Read the following instructions aloud. The students should answer the questions on their copies of the assessment.

SIGHT RECOGNITION

Turn to page 4 in your test. Look at the pictures in the boxes. Circle the word for each picture.

DECODING/ENCODING

Turn to page 5 in your test. Look at the word parts in the boxes. Circle the other half or part of each word.

READING COMPREHENSION

Turn to page 6 in your test. Read the sentence part and fill in the bullet for the correct sentence ending.

BASIC WRITING

Turn to page 7 in your test. Look at the pictures in the boxes. Write the word for each picture.

CREATIVE WRITING

Turn to page 8 in your test. Write a sentence of your own, using each word.

Teacher: To get a percentage for this student's assessment, divide the total number of questions correct by the total number of questions, then multiply this answer by 100 to determine the percentage of questions answered correctly.





SCIENCE PROGRAM

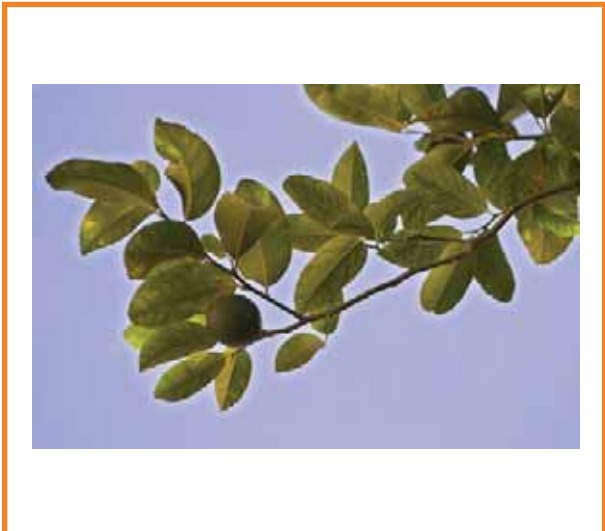
Unit Assessment Student Pages
Grade 6 • Unit 6 (C-1)
Theme: Concepts of Life Science

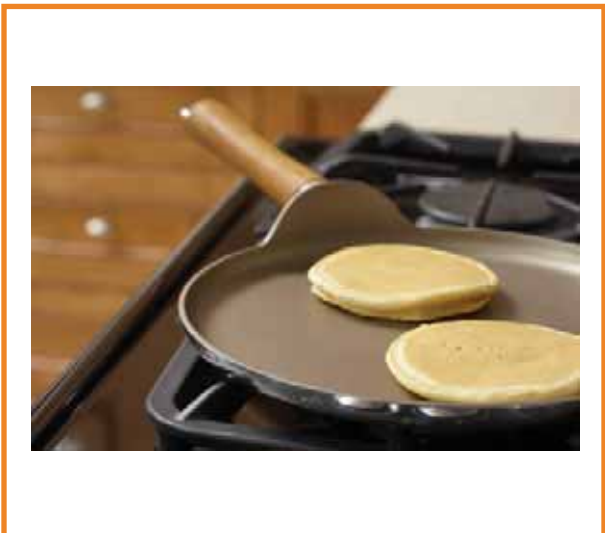
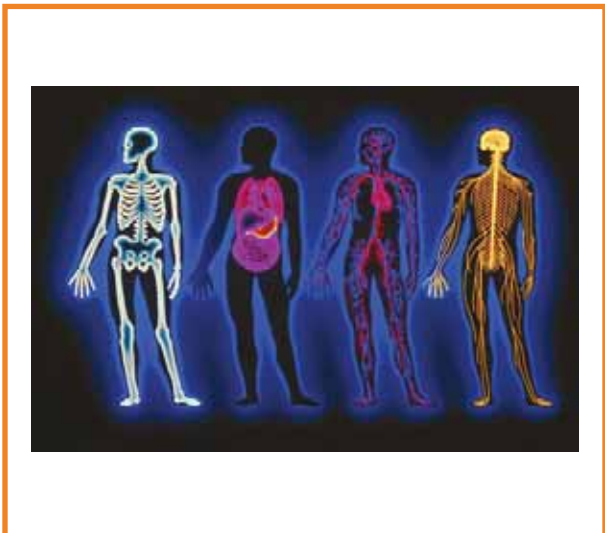
Date: _____ Student's Name: _____

Number Correct: _____ Percent Correct: _____











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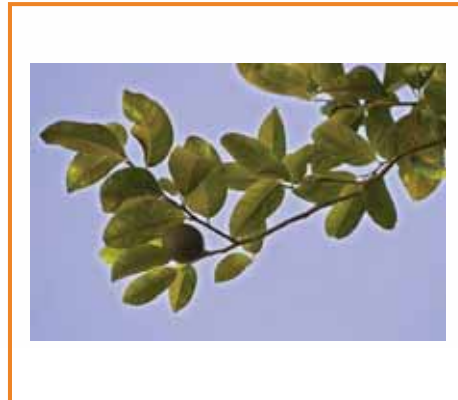
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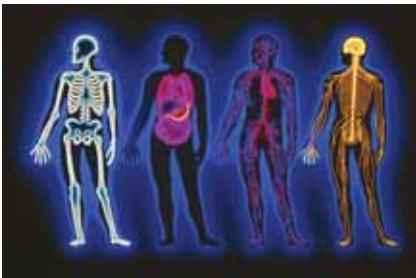
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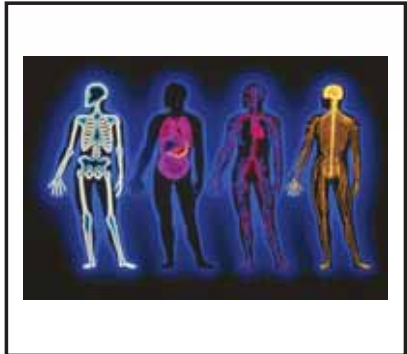
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- 
- 1 Organisms are
- living things.
 - gases.
 - gravity.
- 2 The physical parts of an organism can be
- transferred.
 - measured.
 - predicted.
- 3 Humans have different internal
- opinions.
 - models.
 - systems.
- 4 Digestion is an internal
- gas.
 - system.
 - energy.
- 5 Growth of an organism happens
- over time.
 - during the summer only.
 - by communication.
- 6 Respiration is a system that
- allows an organism to predict.
 - allows an organism to breathe.
 - allows an organism to digest food.
- 7 Plants use the energy of the sun for
- communication.
 - photosynthesis.
 - hypothesizing.
- 8 Cooks can use heat
- transfer.
 - chemicals.
 - hypothesizing.





ORGANISMS

PHYSICAL

SYSTEMS

DIGESTION

GROWTH

RESPIRATION

PHOTOSYNTHESIS

TRANSFER



UNIT 7

D-1: Concepts of Earth Science



KEY VOCABULARY

Culturally Responsive & Place-Based Introduction of Science Vocabulary

IGNEOUS

Place-Based Perspective

As the students watch, melt the wax of a candle onto a heat-proof surface to form a ball. Allow the ball to cool. Show the cooled wax to the students and use this as an analogy for the creation of igneous rocks. Lead the students to understand that at one time, all rocks on the earth were igneous. Show a sample of an igneous rock.

METAMORPHIC

Place-Based Perspective

Show the students a sample of raw dough and dough that has been baked. Have them tell how the dough was cooked. Lead them to suggest that they were baked with heat. Use this as an analogy for the creation of metamorphic rocks—igneous or sedimentary rocks that are formed from heat, deep in the earth. Show a sample of a metamorphic rock.

SEDIMENTARY

Place-Based Perspective

As the students watch, use a grater to grate soap. Drop the grated soap into a glass of water. Use this to introduce the development of sedimentary rocks. As the igneous rocks break down, their dust flows in the rivers and gradually settles, forming sedimentary rocks. Show a sample of a sedimentary rock.

Heritage Cultural Perspective

Native people of Southeast Alaska have always been aware of the differences in rock formations and compositions. While labels do not exist in the Native languages for the geological classifications of rocks, hard rocks, such as igneous rocks, were used to heat water and to act as wedges to split wood. Hard rocks were also used to grind bark for tobacco and to crush berries. They were also used to fashion daggers and slings. Flint-like rock and jade were used to make arrowheads and spearheads.

Culturally Responsive & Place-Based Introduction of Science Vocabulary

PROPERTIES

Place-Based Perspective

Place a lemon, a cookie, a dill pickle, and a potato chip in front of the students. Have the students determine the taste of each of the items. Use this to introduce the properties of items. Have the students cite other properties of items such as weight, size, volume, and feel.

Heritage Cultural Perspective

Native people of Southeast Alaska use the process of dehydration to change the properties of meat, fish, seaweed, and berries. Soaking and steaming also are used to alter the properties of wood and roots. Historically, bark was pounded to make tobacco and medicines. Herbs were also dried for preservation.

CRUST

Place-Based Perspective

Show the students an empty pie crust. As they watch, fill the crust with a filling. Use this as an analogy for the earth's crust. The students should understand that the earth's crust is much deeper under the continents than it is under the oceans. It is about 10 miles deep under the oceans and 30 miles deep under the continents.

Heritage Cultural Perspective

The Land Otter Man stories tell about the subterranean part of the earth. They tell of a society that thrived underground.

MANTLE

Place-Based Perspective

Place the pie plate (crust) from above on a round, inflated balloon. Use the balloon as a model of the earth's mantle. The students should understand that the mantle goes about 1,800 miles down and is a dense, rocky substance. The mantle makes up 85% of the earth's mass and weight.

Heritage Cultural Perspective

The concept of the earth's mantle is not reflected in Southeast Native cultures and languages.

Culturally Responsive & Place-Based Introduction of Science Vocabulary

CORE

Place-Based Perspective

Show the students an avocado or peach. Cut the fruit in half to reveal the pit. Use the pit as an example of the outer core of the earth, which extends about 3,000 miles down. Carefully open the pit to reveal the seed—use this to introduce the inner core, which extends another 900 miles down. The students should understand that the outer and inner cores are molten rock.

Heritage Cultural Perspective

Traditional songs and stories tell of the earth turning and being round. They include mention of the earth's core as being hot and on fire. Volcanoes and hot springs were the physical evidence of underground heat.

PLATE

Place-Based Perspective

As the students watch, place a sheet of construction paper on a tray. Cover it with soil. Then, press the edges of the paper toward the middle, causing the soil to rise (creating a mountain). Use this as a model for the actions of the earth's plates. Relate the plates to earthquakes and tsunamis.

Heritage Cultural Perspective

The concept of the earth's plate is not reflected in Southeast Native cultures and languages.



LESSONS

Science Language for Success—Lesson 1

Introduce the key science vocabulary, using concrete materials and/or pictures.

LISTENING

Use the Mini Pictures activity page from the Student Support Materials. Have the students cut out the pictures. Say the key words and the students show the pictures.



Match My Sequence

Provide each student with three vocabulary pictures. All students should have the same pictures. Have the students lay the pictures on their desks in a row (any sequence). When the students have arranged their pictures, say a sequence of three vocabulary words (using the vocabulary words for the pictures the students have). Any student or students whose pictures are in the same sequence as the vocabulary words you said wins the round. The students may change their sequences after each round of the activity.

Student Support Materials

Have the students work on the activity pages from the Student Support Materials from this unit. Afterward, review their work.

SPEAKING



Sheet Golf

Before the activity begins, obtain an old sheet. Cut a hole (approximately two inches in diameter) in each end of the sheet. Group the students into two teams. Have the first player from each team hold opposite ends of the sheet. Place a marble or small ball in the center of the sheet. When you say “Go,” the players must then lift their ends of the sheet and attempt to cause the marble or ball to fall through the hole in the other player’s side of the sheet. When the ball or marble falls through one of the holes, the player on that side of the sheet must say the name of a vocabulary picture you show or he/she should repeat a sentence you said at the beginning of the round. Repeat with other pairs of students until all students have participated. If the sheet is large enough, all students can play—divide the students into four groups (one group for each side). Cut a hole in the sheet near each side. When the marble or ball falls through, all the players on that side must say the name of a vocabulary picture that you show. Repeat.

Wild Balloon

Before the activity begins, obtain a large balloon. Stand in front of the students and inflate the balloon. Have the vocabulary pictures mounted on the board. Hold the end of the balloon closed. Then, release the balloon. When the balloon lands, the student closest to it should say a complete sentence about a vocabulary picture you point to. Repeat this process until many students have responded.

Science Language for Success—Lesson 2

READING

Introduce the science sight words to the students—match the sight words with the vocabulary pictures. The sight words are included in the Student Support Materials, attached to these lesson plans.



Note: After each unit, mount a set of the unit's words on the walls around the room. Use the "word walls" for review and reinforcement activities.

String Along

Join all of the students together with string. The students do not need to move from their seats. Before tying the ends of the string together, insert a roll of tape over one of the ends of the string. Tie the ends of the string together. Turn your back to the students. The students should pass the roll of tape along the string as quickly as possible. When you clap your hands, the student left holding the tape must then identify a sight word you show him. Repeat this process until many students have responded and until all of the sight words have been correctly identified a number of times.

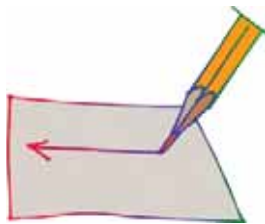
Letter Encode

Give each student his/her envelope that contains the alphabet letters. Mount one of the science pictures on the board. The students must use the cut-out letters to spell the word. Review the students' work. Repeat, until all of the words have been spelled in this way.

Student Support Materials

Have the students complete the sight recognition and encoding activities in the Student Support Materials. When finished, review their work.

WRITING



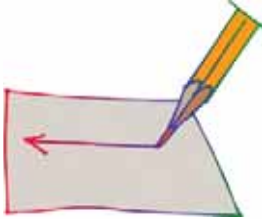
Flashlight Writing

If possible, darken the classroom. Give a student a flashlight. Say one of the vocabulary words and the student should write that word with the light of the flashlight on a wall or on the board. Repeat until many students have had a chance to participate. An alternative is to provide each student with writing paper and a pen. Darken the classroom, if possible. Use the light of a flashlight to write one of the sight words on the wall or board. When you have completed the writing of the word, each student should then write the same word on his/her sheet of paper. Repeat until all sight words have been written in this way.

This activity may also be done in team form. In this case, group the students into two teams. Darken the classroom. Use the light of a flashlight to write one of the sight words on the board. When you say "Go," the first player in each team should rush to the board and use chalk to write the same word on the board. The first player to do this correctly wins the round. Repeat until all players have played.

Science Language for Success—Lesson 2

WRITING (CONTINUED)

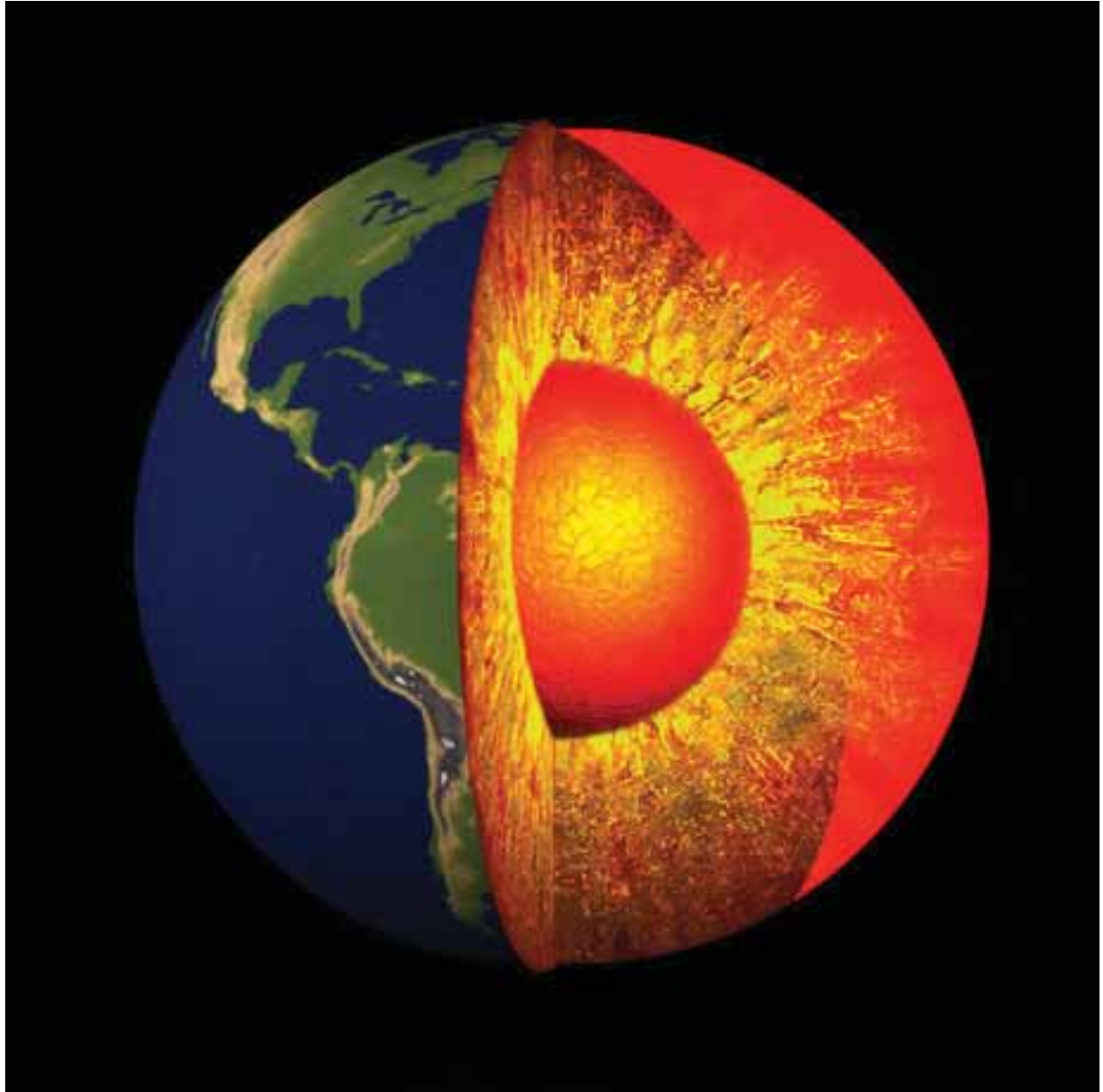


Student Support Materials

Provide the students with a copy of the writing pages from the Student Support Materials. When finished, review the students' work.



VOCABULARY PICTURES





CORE



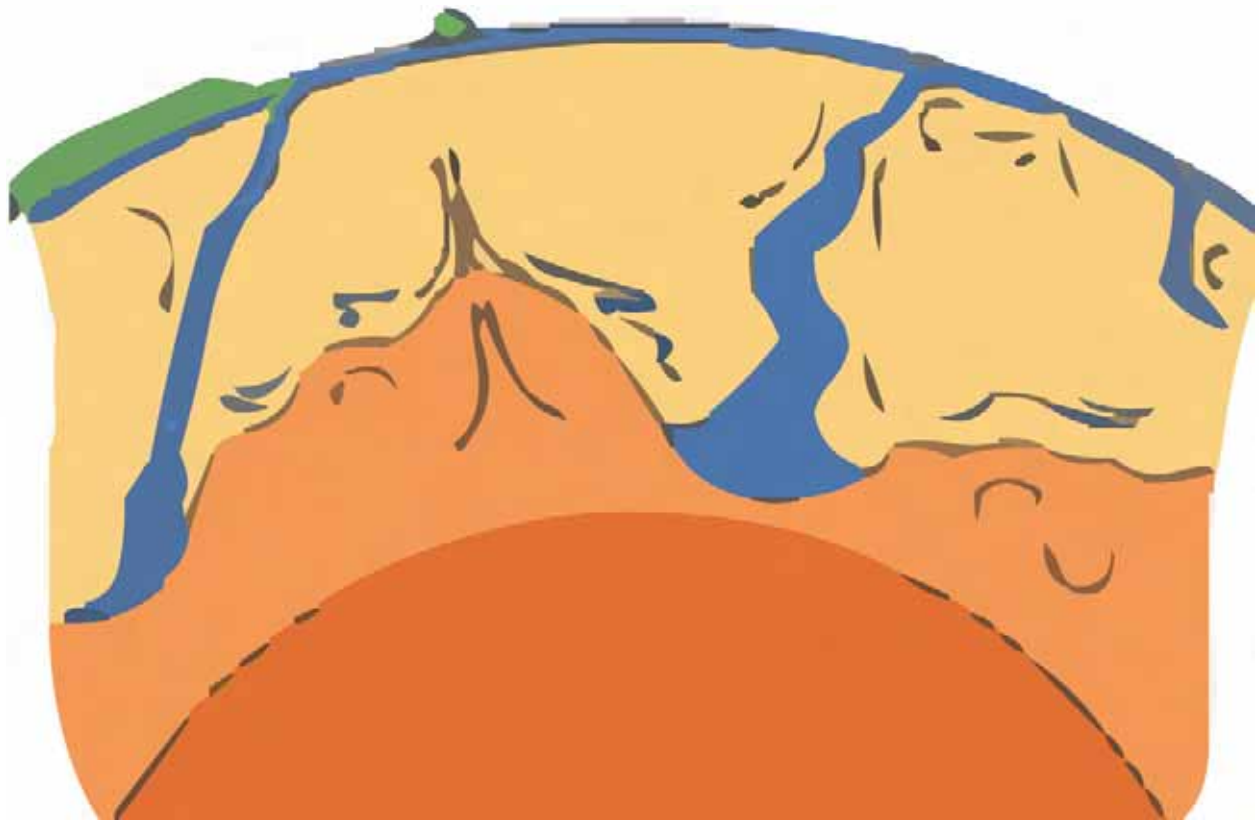


CRUST





IGNEOUS





MANTLE





METAMORPHIC





PLATE





PROPERTIES





SEDIMENTARY

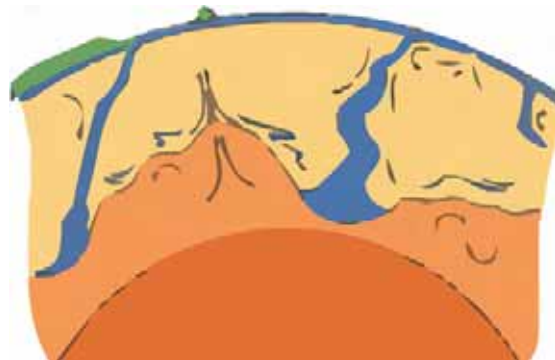
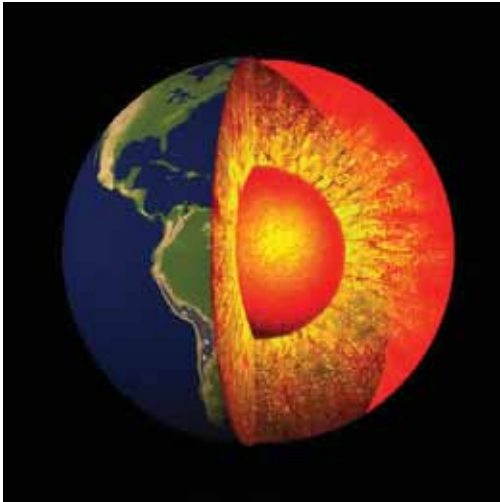
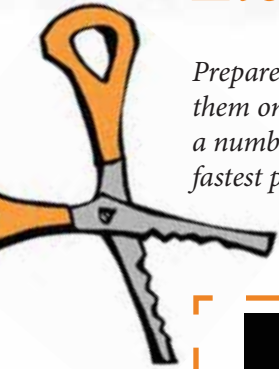


STUDENT SUPPORT MATERIALS

Listening • Mini Pictures

Listening: Mini Pictures

Prepare a copy of these pages for each student. The students should cut out the pictures and lay them on the floor or desk. Say the key words and the students should show you the pictures. Repeat a number of times. This activity can also be done with pairs of students to determine who is the fastest player.



Listening: Mini Pictures







STUDENT SUPPORT MATERIALS

Listening Comprehension

Listening Comprehension



Read the following sentences to the students. The students should circle “true” or “false” for each of the sentences. Review the students’ work.

- ① Igneous rocks are made through reproduction. True
False
- ② Metamorphic rocks are created through heat and pressure. True
False
- ③ Sedimentary rocks are formed from igneous rocks. True
False
- ④ All foods have the same properties that can be measured and identified. True
False
- ⑤ The earth’s crust is made of liquid rock and is at the center of the earth. True
False
- ⑥ The earth’s mantle makes up most of the earth’s weight. True
False
- ⑦ The core of the earth goes about 900 feet down from the earth’s mantle. True
False
- ⑧ The earth’s plates never move, but they can adapt to a changing environment. True
False



STUDENT SUPPORT MATERIALS

Sight Words



sedimentary

metamorphic

igneous






mantle

crust

properties



plate

core



STUDENT SUPPORT MATERIALS

Basic Reading • Sight Recognition

Sight Words Activity Page

Have the students highlight or circle the words in this word find. Words appear horizontally.



plate
sedimentary
crust

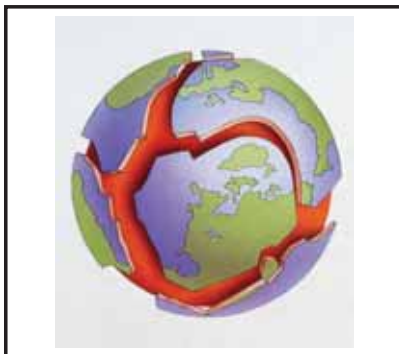
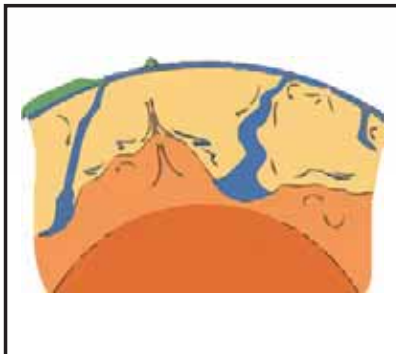
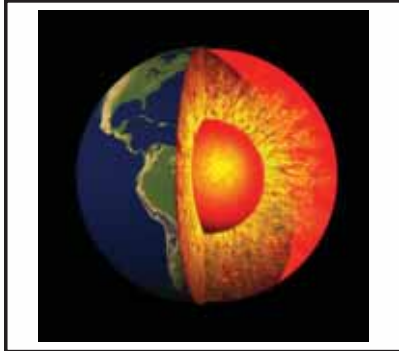
mantle
igneous
core

metamorphic
properties

l i r u c o r e i a a e e a p e e r
p m p m a n t l t e r c c e o s r r
p r p r c r u s t t o e t i s e p i
h p a r m e t a m o r p h i e a m t
p r p e i c l h p r s c r u l e s g
r i i e m e t a m o r p h i c t p e
e i g n e o e e s e d i m e n t a m
l p i u i t s n r a l m s c o t u i
t m n m e e g e e m s o m t p r a l
m c n p r o p e r t i e s i o p a e
r t n s e e m m a n t l e n r e a m
t u p e o m r e p g o d o e o y e i
o s t m d s e d i m e n t a r y c g
i i t p l r e t r i y r r e m u n l
o o r s a u i n i t p l a t e p e s
o h r i l e c h p e r p d e c o m e
p t n h p t p m i g n e o u s n r a
e c m m m a l p l e o i u o r r s e
p r o p e r t e p o m r m m r y e o
t e u m m s n o m s o a g m r t n e

Sight Words Activity Page

Have the students cut out the key words and glue them at the bottom of their pictures.



igneous	metamorphic	sedimentary	properties
crust	mantle	core	plate



STUDENT SUPPORT MATERIALS

Basic Reading • Encoding

Encoding Activity Page

Have the students cut out and encode the syllables of the words, OR number the syllables in their correct sequence.



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Encoding Activity Page

Have the students cut out the word halves and glue them together to create the key words for this unit.



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ties

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morphic

pl

tary





STUDENT SUPPORT MATERIALS

Reading Comprehension

Reading Comprehension Activity Page

Have the students read the text and then select the correct answer for it. They should fill in the appropriate bullet beside the answer of their choice.



- ① An igneous rock is formed by
 - water.
 - heat.
 - reproduction.
 - dichotomous key.

- ② Metamorphic rocks and sedimentary rocks are formed in the same way
 - sometimes.
 - always.
 - never.
 - only during hibernation.

- ③ Sedimentary rocks are formed
 - by settling in water.
 - by gases in the air.
 - by migration to a new environment.
 - by photosynthesis in the winter.

- ④ Which of these is a property of the core of the earth?
 - slow migration
 - poor communication
 - sedimentary rocks moving
 - liquid rock

- ⑤ The crust of the earth is right on top of the
 - earth's core.
 - earth's mantle.
 - earth's dichotomous key.
 - earth's organisms.

Reading Comprehension Activity Page



- 6 The earth's mantle makes up about
- 20 percent of the earth's weight and mass.
 - 30 percent of the earth's weight and mass.
 - 60 percent of the earth's weight and mass.
 - 80 percent of the earth's weight and mass.
- 7 The core of the earth is found
- above the crust.
 - halfway through the mantle.
 - between the earth's plates.
 - in the center of the earth.
- 8 Which can be caused by the moving of the earth's plates?
- earthquakes
 - photosynthesis
 - migration
 - communication

Reading Comprehension Activity Page

Have the students write the letters for sentence halves that match.



- | | |
|--|-----------------------------------|
| ① At one time, all rocks | ① metamorphic rocks. |
| ② Heat makes | ② with igneous rocks flaking off. |
| ③ Sedimentary rocks begin | ③ is above the mantle. |
| ④ A property of an igneous rock is | ④ were igneous rocks. |
| ⑤ The crust of the earth | ⑤ in the center of the earth. |
| ⑥ The earth's mantle is | ⑥ that it is hard. |
| ⑦ The core of the earth is liquid rock | ⑦ under the earth's crust. |
| ⑧ The earth's plates | ⑧ can push against each other. |

1 → _____ 2 → _____ 3 → _____ 4 → _____

5 → _____ 6 → _____ 7 → _____ 8 → _____

Reading Comprehension Activity Page

Have the students cut out the words and glue them under their definitions.



what we can
use to describe
something

This makes up
most of the
earth's weight.

rocks made from
heat and pressure

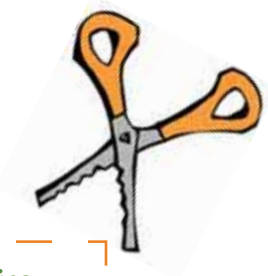
the first layer of
the earth's layers

the rock from
which all other
rocks are formed

rocks made from
settling in water

These can
move, making
mountains.

This is the very
center of
the earth.



igneous	metamorphic	sedimentary	properties
crust	mantle	core	plate

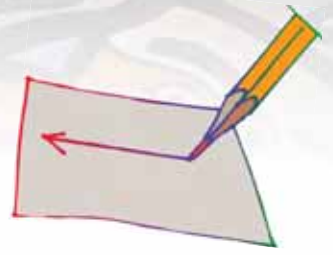


STUDENT SUPPORT MATERIALS

Basic Writing

Basic Writing Activity Page

Have the students write in the missing letters.



ig _____ s

met _____ c

sed _____ y

pr _____ s

cr _____ t

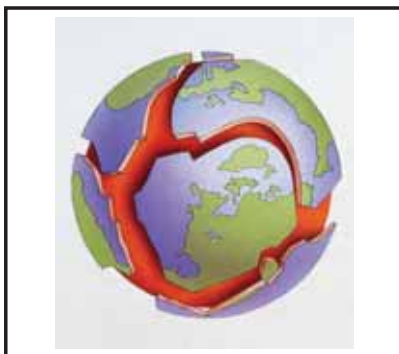
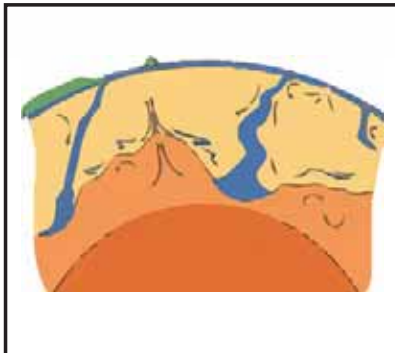
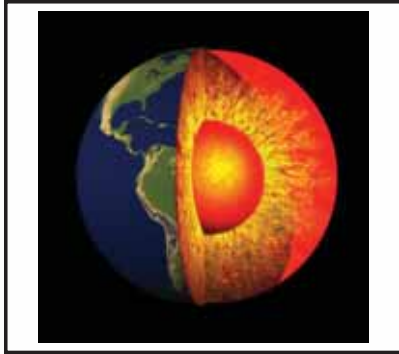
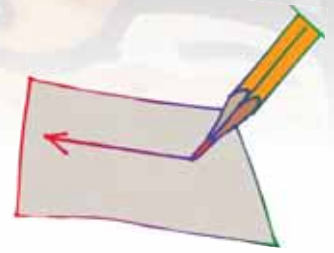
m _____ e

c _____ e

pl _____ e

Basic Writing Activity Page

Have the students write the word for each picture.

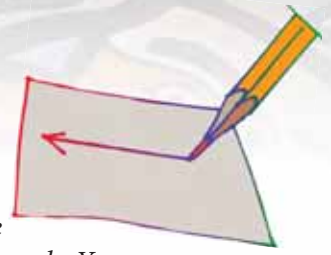




STUDENT SUPPORT MATERIALS

Creative Writing

Creative Writing Activity Page



Have the students write sentences of their own, using the key words from this unit. When the students' sentences are finished, have them take turns reading their sentences orally. The students should say "Blank" for the key words; the other students must name the "missing" words. You may wish to have the students write the "definitions" for the key words.

IGNEOUS

METAMORPHIC

SEDIMENTARY

PROPERTIES

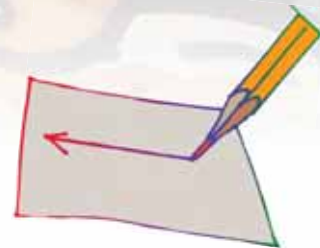
CRUST

MANTLE

CORE

PLATE

Creative Writing Activity Page



Have the students write sentences of their own, based on the picture below. When finished, have each student read his/her sentences to the others.





UNIT ASSESSMENT

D-1: Concepts of Earth Science



SCIENCE PROGRAM

Unit Assessment Teacher's Notes
Grade 6 • Unit 7 (D-1)
Theme: Concepts of Earth Science

Date: _____



Unit Assessment

Provide each student with a copy of the students' pages. Read the following instructions aloud. The students should answer the questions on their copies of the assessment.

BASIC LISTENING

Turn to pages 1–2 in your test. Look at the pictures in the boxes.

1. Write the number 1 on top of the picture for **IGNEOUS**.
2. Write the number 2 on top of the picture for **METAMORPHIC**.
3. Write the number 3 on top of the picture for **SEDIMENTARY**.
4. Write the number 4 on top of the picture for **PROPERTIES**.
5. Write the number 5 on top of the picture for **CRUST**.
6. Write the number 6 on top of the picture for **MANTLE**.
7. Write the number 7 on top of the picture for **CORE**.
8. Write the number 8 on top of the picture for **PLATES**.

LISTENING COMPREHENSION

Turn to page 3 in your test. Listen to the sentences I say. Circle “T” for true and “F” for false sentences.”

1. Igneous rocks are formed by light energy.
2. Metamorphic rocks are formed from heat and pressure.
3. Sedimentary rocks are formed from gas in the environment.
4. Igneous and sedimentary rocks have the same properties.
5. The earth's crust is at the center of the earth.
6. The earth's mantle is between the earth's crust and core.
7. The core of the earth is liquid.
8. The earth's plates can move.



Unit Assessment

Provide each student with a copy of the students' pages. Read the following instructions aloud. The students should answer the questions on their copies of the assessment.

SIGHT RECOGNITION

Turn to page 4 in your test. Look at the pictures in the boxes. Circle the word for each picture.

DECODING/ENCODING

Turn to page 5 in your test. Look at the word parts in the boxes. Circle the other half or part of each word.

READING COMPREHENSION

Turn to page 6 in your test. Read the sentence part and fill in the bullet for the correct sentence ending.

BASIC WRITING

Turn to page 7 in your test. Look at the pictures in the boxes. Write the word for each picture.

CREATIVE WRITING

Turn to page 8 in your test. Write a sentence of your own, using each word.

Teacher: To get a percentage for this student's assessment, divide the total number of questions correct by the total number of questions, then multiply this answer by 100 to determine the percentage of questions answered correctly.





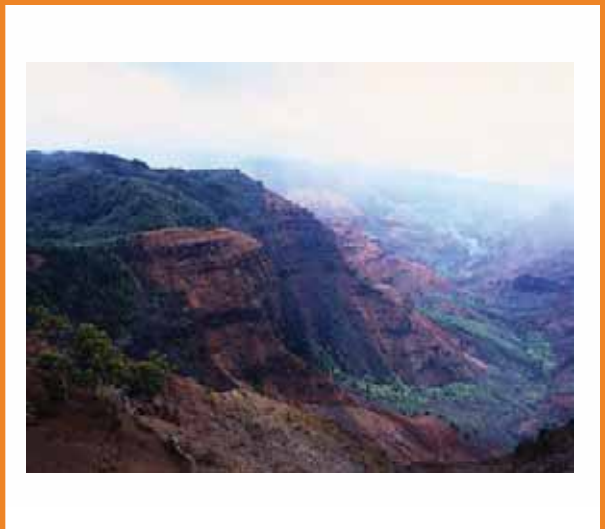
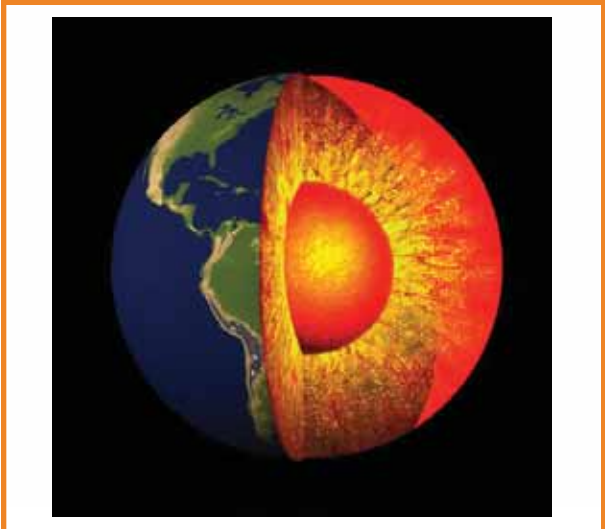
SCIENCE PROGRAM

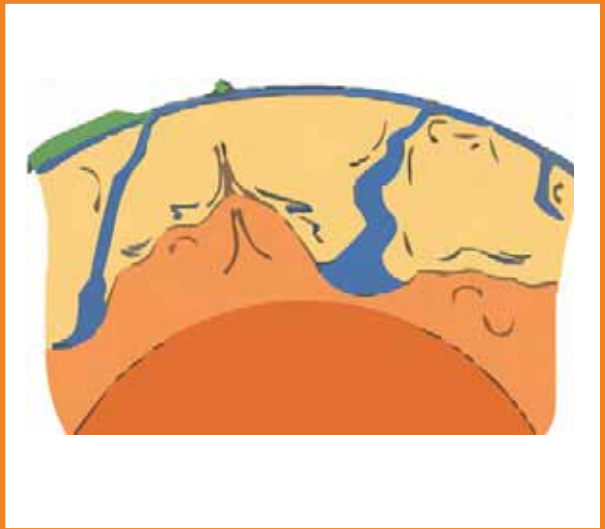
Unit Assessment Student Pages
Grade 6 • Unit 7 (D-1)
Theme: Concepts of Earth Science

Date: _____ Student's Name: _____

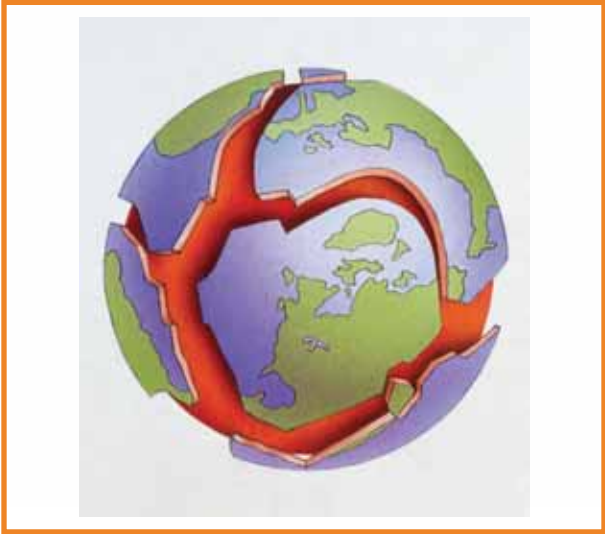
Number Correct: _____ Percent Correct: _____







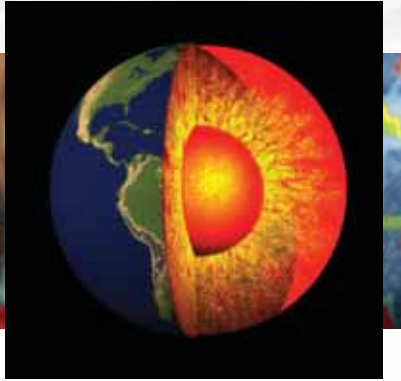








1. T F
2. T F
3. T F
4. T F
5. T F
6. T F
7. T F
8. T F



igneous
metamorphic
sedimentary
properties
crust
mantle
core
plates



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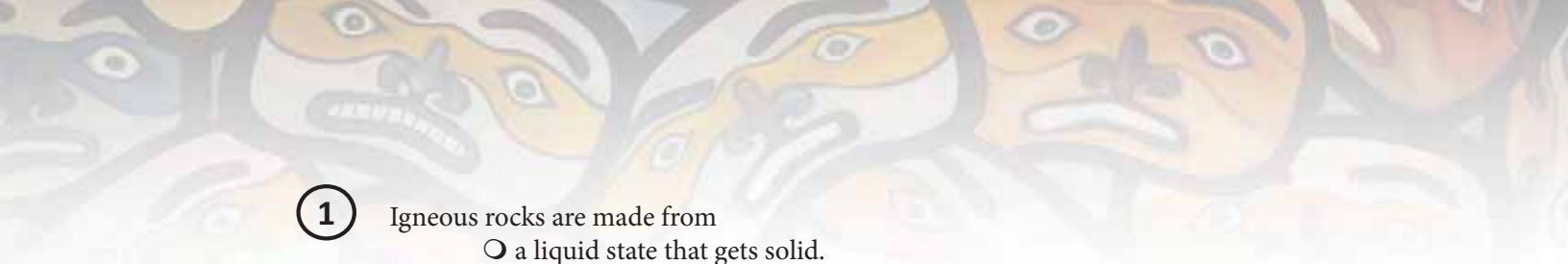
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1 Igneous rocks are made from
 a liquid state that gets solid.
 water.
 internal gases.

2 Heat is one thing that makes
 sedimentary rocks.
 external gases.
 metamorphic rocks.

3 Sedimentary rocks have
 gases.
 layers.
 respiration.

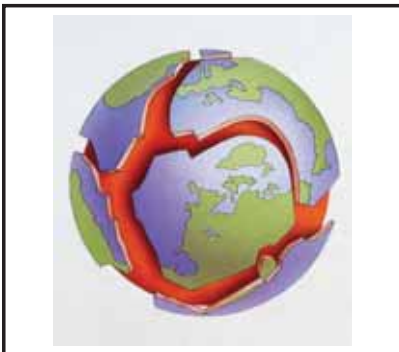
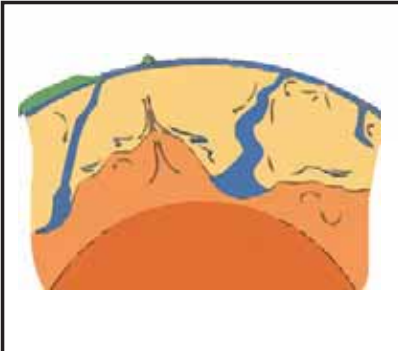
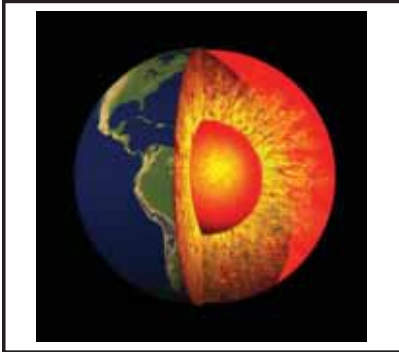
4 One property of a solid is that it
 has gas.
 has light.
 has shape.

5 The crust of the earth is
 at the core.
 above the mantle.
 below the mantle.

6 The earth's mantle is
 under the crust.
 in the core.
 above the crust.

7 The core of the earth is
 at the earth's center.
 just under the earth's crust.
 just above the earth's mantle.

8 The earth's plates can
 light up.
 predict.
 move.





IGNEOUS

METAMORPHIC

SEDIMENTARY

PROPERTIES

CRUST

MANTLE

CORE

PLATES



UNIT 8

D-1: Concepts of Earth Science



KEY VOCABULARY

Culturally Responsive & Place-Based Introduction of Science Vocabulary

EARTHQUAKES

Place-Based Perspective

Place a tray of soil in front of the students. Arrange the soil to create a town, using models of houses (for example, from a Monopoly game). As the students watch, shake the tray. The students should note the results. Relate this to the earth's plates and their movement. Mount a map of North America on the wall. Direct the students' attention to the earthquake-prone areas in the map.

Heritage Cultural Perspective

Earthquakes have always been a natural phenomenon in Southeast Alaska. They are reflected in Native music and song.

TSUNAMIS

Place-Based Perspective

Place a clear container of water in front of the students. Have the students watch as you hit (gently) the bottom of the container. They should note the tsunami created by the underwater earthquake.

Heritage Cultural Perspective

The old Native village in Lituya Bay was wiped out by a tsunami in the late 1950s. As a result of the 1964 Alaska earthquake, many coastal communities felt the impact of tsunamis.

VOLCANOES

Place-Based Perspective

Before the lesson begins, obtain a turkey baster (the type with a rubber bulb). Fill the baster with water; hold the baster vertically and direct the students' attention to the rubber ball—have them imagine that it is the core of the earth. Squeeze the bulb and have the students notice the liquid that is emitted from the top of the volcano. The students should understand that the water represents lava or molten rock.

Heritage Cultural Perspective

Mt. Edgecumbe near Sitka is a well-known volcano. In the story, "How Raven Brought Fire to The People," the hawk is directed to go to a volcano to get the fire to bring it to the people. As a result, the hawk's long beak burned off. Raven gave the hawk a short, stubby beak as a replacement.

Culturally Responsive & Place-Based Introduction of Science Vocabulary

FLOOD

Place-Based Perspective

Place a tray of soil in front of the students. Make a lake or river in the soil, using water. Keep adding water, and have the students observe the resulting flood.

Heritage Cultural Perspective

Like most cultures in the world, the Native people of Southeast Alaska have a “big flood” story. The story tells that the great flood unified the people of Southeast Alaska and that they survived by waiting out the flood in the Wrangell Mountains.

AVALANCHE

Place-Based Perspective

Use the tray of soil mentioned above to create an avalanche. Make a mound to represent a hill. Shake the pan to cause an avalanche on the hill.

Heritage Cultural Perspective

Many years ago, most of the traditional village of Klukwan was wiped out by a huge avalanche of mud and snow. This happened at what is now Mile 19 of the Haines Highway. Both big and small avalanches are common in Southeast Alaska, particularly during spring.

REFLECT

Place-Based Perspective

Place a ball and a beanbag on a table in front of the students. Have a student toss the beanbag at the wall. The students should observe what happens to the beanbag (it drops from the wall). Then, contrast this with a rubber ball—the ball comes back. Use this as an analogy for reflect. Show a mirror and a piece of wood to reinforce the property of reflection.

Heritage Cultural Perspective

Traditionally, silver was used to reflect the sun’s light to get the attention of another community or person. Calm waters were used as mirrors.

Culturally Responsive & Place-Based Introduction of Science Vocabulary

EMIT

Place-Based Perspective

Show the students a model of a car, an airplane, and a flashlight. Have them determine how the three are the same. Lead them to understand that all three emit something—the plane and the car emit fumes, and the flashlight emits light. Have the students suggest other things that emit something (for example, sound and odor). Relate this to science (for example, a volcano emitting gases and lava).

Heritage Cultural Perspective

In parts of Southeast Alaska, at low tide the black mud emits a strong odor. After spawning, the thousands of dead salmon that fill the rivers and streams emit a strong odor of decomposition. Winter-cured salmon, cured stink eggs, and aged fish heads also emit strong odors.

ORBIT

Place-Based Perspective

Show the students a remote control for a television. Have the students describe its use. Lead them into a discussion about how many people get their television reception from satellites. Relate this to the orbiting of the satellites around the earth. Demonstrate the orbiting of the planets—they all orbit in the same direction.

Heritage Cultural Perspective

In the song, “The Raven Love Song for the Wolf,” the raven orbits around his wolf to woo the wolf. Traditionally, Native people of Southeast Alaska knew about the earth’s orbit around the sun and the moon’s orbit around the earth.



LESSONS

Science Language for Success—Lesson 1

Introduce the key science vocabulary, using concrete materials and/or pictures.

LISTENING

Use the Mini Pictures activity page from the Student Support Materials. Have the students cut out the pictures. Say the key words and the students show the pictures.



Stretch

Place the vocabulary pictures on the floor, in a scattered form. The pictures should be quite close together. Have a student stand beside the pictures. Say a vocabulary word for one of the pictures. The student should place his/her left foot on that picture. Then, say other vocabulary words and the student must identify the correct pictures with different parts of his/her body. You may wish to have two students participate in this process at the same time for added motivation.

Student Support Materials

Have the students work on the activity pages from the Student Support Materials from this unit. Afterward, review their work.

SPEAKING



Right or Wrong?

Mount the vocabulary pictures on the board. Point to one of the pictures and say its vocabulary word. The students should repeat the vocabulary word for that picture. However, when you point to a picture and say an incorrect vocabulary word for it, the students should remain silent. Repeat this process until the students have responded a number of times to the different vocabulary pictures.

Change Time

Group the students into pairs. One student should be without a partner to be “it” for the first round of the activity. Have the pairs of students stand, back to back, with elbows interlocked. Say a vocabulary word. Tell the students to listen for that word repeated once again. Say a number of vocabulary words—eventually repeating the vocabulary word you said at the beginning of the round. The students should drop arms and find new partners. However, “it” must also find a partner, thus producing a new “it” for the next round of the game. The student who is left without a partner must then use the vocabulary word you said (at the beginning of the round) in a complete sentence of his/her own. Repeat this process until all students have responded.

Science Language for Success—Lesson 2

READING

Introduce the science sight words to the students—match the sight words with the vocabulary pictures. The sight words are included in the Student Support Materials, attached to these lesson plans.



Note: After each unit, mount a set of the unit's words on the walls around the room. Use the "word walls" for review and reinforcement activities.

The Disappearing Word

Mount all of the sight words on the board. For added motivation, you may wish to prepare an extra set of sight word cards to add to those on the board. Have the students look carefully at the sight words. Then, the students should close their eyes. When the students' eyes are closed, remove one of the sight words from the board. Have the students open their eyes and identify the missing word. Repeat this process until all of the sight words have been removed from the board and identified in this way.

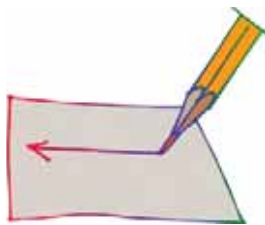
Letter Encode

Give each student his/her envelope that contains the alphabet letters. Mount one of the science pictures on the board. The students must use the cut-out letters to spell the word. Review the students' work. Repeat, until all of the words have been spelled in this way.

Student Support Materials

Have the students complete the sight recognition and encoding activities in the Student Support Materials. When finished, review their work.

WRITING



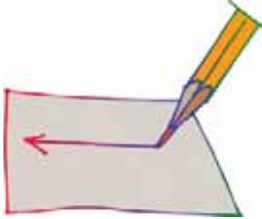
Flashlight Writing

If possible, darken the classroom. Give a student a flashlight. Say one of the vocabulary words and the student should write that word with the light of the flashlight on a wall or on the board. Repeat until many students have had a chance to participate. An alternative is to provide each student with writing paper and a pen. Darken the classroom, if possible. Use the light of a flashlight to write one of the sight words on the wall or board. When you have completed the writing of the word, each student should then write the same word on his/her sheet of paper. Repeat until all sight words have been written in this way.

This activity may also be done in team form. In this case, group the students into two teams. Darken the classroom. Use the light of a flashlight to write one of the sight words on the board. When you say "Go," the first player in each team should rush to the board and use chalk to write the same word on the board. The first player to do this correctly wins the round. Repeat until all players have played.

Science Language for Success—Lesson 2

WRITING (CONTINUED)



Student Support Materials

Provide the students with a copy of the writing pages from the Student Support Materials. When finished, review the students' work.



VOCABULARY PICTURES





AVALANCHE





EARTHQUAKE





EMIT





FLOOD





ORBIT





REFLECT





TSUNAMI





VOLCANO

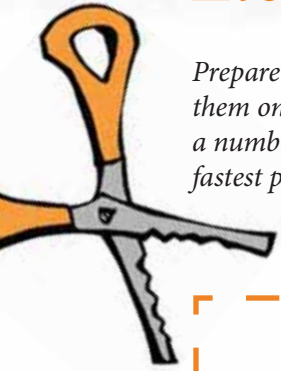


STUDENT SUPPORT MATERIALS

Listening • Mini Pictures

Listening: Mini Pictures

Prepare a copy of these pages for each student. The students should cut out the pictures and lay them on the floor or desk. Say the key words and the students should show you the pictures. Repeat a number of times. This activity can also be done with pairs of students to determine who is the fastest player.



Listening: Mini Pictures







STUDENT SUPPORT MATERIALS

Listening Comprehension

Listening Comprehension



Read the following sentences to the students. The students should circle “true” or “false” for each of the sentences. Review the students’ work.

- ① An earthquake is caused by gases that adapt to their environment. **True**
False
- ② An earthquake under the oceans can cause tsunamis. **True**
False
- ③ A volcano emits gases and liquids from the earth’s crust. **True**
False
- ④ Floods can happen after long periods of rain. **True**
False
- ⑤ An avalanche happens when gases reflect from an orbiting plate. **True**
False
- ⑥ A rock will reflect things, like a mirror. **True**
False
- ⑦ A volcano can emit liquids, solids, and gases from the core of the earth. **True**
False
- ⑧ All planets orbit around the moon. **True**
False



STUDENT SUPPORT MATERIALS

Sight Words




volcano

tsunami

earthquake






reflect

avalanche

flood



orbit

ernit



STUDENT SUPPORT MATERIALS

Basic Reading • Sight Recognition

Sight Words Activity Page

Have the students highlight or circle the words in this word find. Words appear horizontally.



orbit
volcano

avalanche
tsunami

emit
reflect

earthquake
flood

e u i v r b h n a v a l a n c h a a
h c i a a i f l o o d c l l r a u n
f r e f l e c t q i l a c v n l c k
o c e f l o n a o n b r n o l o a a
n o t s t i a v a u m v c e e m t m
o i r e f l e c f c o r v h r a a c
e a r t h q u a k e e f c f a e t n
o n m t e i k t a e r o v o l b o v
a f k q e a h l v o l c k o t e t n
e l t r o t e m i t e n a e a t o m
v a e r e a o v t o i r q c v a q n
e v i k e o r b i t i i e e e o d k
a v q t r r b e o e a m q c o o m t
e c r u h o r e c o a o l s r b c c
l v o l c a n o c f f m v v a l a i
e d c i h t d r e n u r a o h r o o
t s u n a m t s u n a m i v o e r u
a v a l a n c h e a o r t n n r t o
e a r t h q u a k s a t c e c o c o
e h q m q t l u o n d e a n a a c o

Sight Words Activity Page

Have the students cut out the key words and glue them at the bottom of their pictures.



earthquake	tsunami	volcano	flood
avalanche	reflect	emit	orbit



STUDENT SUPPORT MATERIALS

Basic Reading • Encoding

Encoding Activity Page

Have the students cut out and encode the syllables of the words, OR number the syllables in their correct sequence.



mi || na || tsu

ca || vol || no

lanche || a || va



Encoding Activity Page

Have the students cut out the word halves and glue them together to create the key words for this unit.



earthq

cano

tsu

ood

vol

anche

fl

mit

aval

bit

re

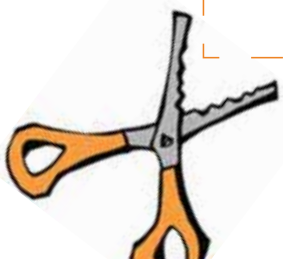
uake

e

flect

or

nami





STUDENT SUPPORT MATERIALS

Reading Comprehension

Reading Comprehension Activity Page

Have the students read the text and then select the correct answer for it. They should fill in the appropriate bullet beside the answer of their choice.



- ① Which of these has to do with earthquakes?
 - the earth's organisms
 - photosynthesis of plants
 - the earth's plates
 - the earth's chemicals

- ② What makes a tsunami?
 - a gas exerted by photosynthesis
 - a flood
 - adapting to a new environment
 - an earthquake

- ③ What do volcanoes emit?
 - gravity
 - dichotomous key
 - gases
 - transfers

- ④ A flood can happen when
 - there is no rain.
 - there is a tsunami.
 - there is a gas in the environment.
 - a mechanical thing makes photosynthesis.

- ⑤ An avalanche is
 - when water runs uphill.
 - when earth or snow go downhill.
 - when earth turns into a gas.
 - when snow adapts to the environment.

Reading Comprehension Activity Page



- ⑥ Which of these can reflect things?
- a rough rock
 - water
 - black paper
 - a gas
- ⑦ Which of these emits something?
- an igneous rock
 - data
 - a car
 - a metamorphic rock
- ⑧ When something orbits, it
- goes up.
 - goes down.
 - goes through.
 - goes around.

Reading Comprehension Activity Page

Have the students write the letters for sentence halves that match.



- | | |
|----------------------------|-------------------------------------|
| ① Earthquakes can | ① is made by an earthquake. |
| ② A tsunami | ② a tsunami. |
| ③ A volcano | ③ by earthquakes. |
| ④ Floods can be caused by | ④ make tsunamis. |
| ⑤ Avalanches can be caused | ⑤ emits liquids, solids, and gases. |
| ⑥ Calm water can | ⑥ gases. |
| ⑦ A car emits | ⑦ around the earth. |
| ⑧ Satellites orbit | ⑧ reflect things. |

1 → _____ 2 → _____ 3 → _____ 4 → _____

5 → _____ 6 → _____ 7 → _____ 8 → _____

Reading Comprehension Activity Page

Have the students cut out the words and glue them under their definitions.



A volcano does this with solids, liquids, and gases.

It is caused by the earth's plates.

It can emit liquids, solids, and gases.

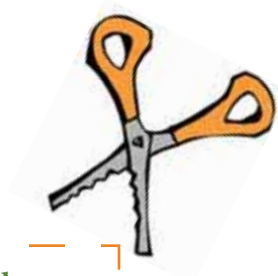
a big wave

something that happens when we look in mirrors

high water

snow or earth that moves downhill

to move around something



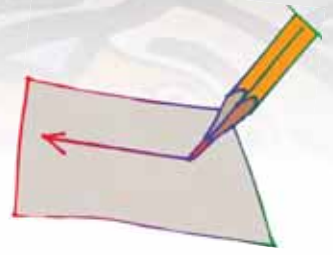
earthquake	tsunami	volcano	flood
avalanche	reflect	emit	orbit



STUDENT SUPPORT MATERIALS

Basic Writing

Basic Writing Activity Page



Have the students write in the missing letters.

ea _____ e

ts _____ i

vol _____ o

fl _____

av _____ e

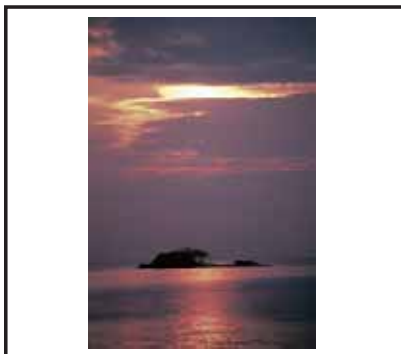
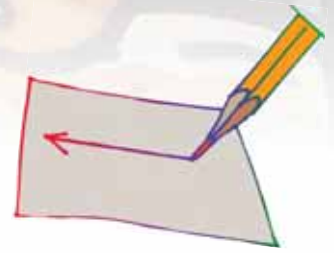
re _____ t

e _____ t

or _____

Basic Writing Activity Page

Have the students write the word for each picture.

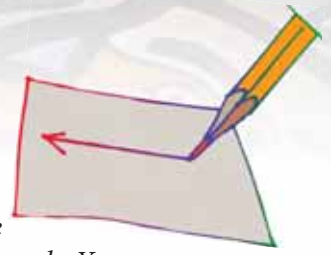




STUDENT SUPPORT MATERIALS

Creative Writing

Creative Writing Activity Page



Have the students write sentences of their own, using the key words from this unit. When the students' sentences are finished, have them take turns reading their sentences orally. The students should say "Blank" for the key words; the other students must name the "missing" words. You may wish to have the students write the "definitions" for the key words.

EARTHQUAKE

TSUNAMI

VOLCANO

FLOOD

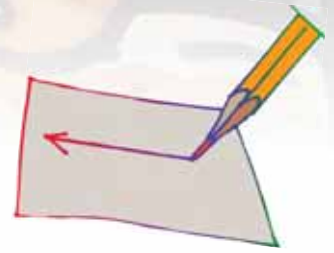
AVALANCHE

REFLECT

EMIT

ORBIT

Creative Writing Activity Page



Have the students write sentences of their own, based on the picture below. When finished, have each student read his/her sentences to the others.





UNIT ASSESSMENT

D-1: Concepts of Earth Science



SCIENCE PROGRAM

Unit Assessment Teacher's Notes
Grade 6 • Unit 8 (D-1)
Theme: Concepts of Earth Science

Date: _____



Unit Assessment

Provide each student with a copy of the students' pages. Read the following instructions aloud. The students should answer the questions on their copies of the assessment.

BASIC LISTENING

Turn to pages 1–2 in your test. Look at the pictures in the boxes.

1. Write the number 1 on top of the picture for **EARTHQUAKES**.
2. Write the number 2 on top of the picture for **TSUNAMIS**.
3. Write the number 3 on top of the picture for **VOLCANOES**.
4. Write the number 4 on top of the picture for **FLOODS**.
5. Write the number 5 on top of the picture for **AVALANCHES**.
6. Write the number 6 on top of the picture for **REFLECTS**.
7. Write the number 7 on top of the picture for **EMIT**.
8. Write the number 8 on top of the picture for **ORBITING**.

LISTENING COMPREHENSION

Turn to page 3 in your test. Listen to the sentences I say. Circle “T” for true and “F” for false sentences.”

1. When the earth's plates move, they can cause earthquakes.
2. A tsunami is made when an earthquake happens under the ocean.
3. A volcano is made of sedimentary rocks.
4. Floods happen when there are too many igneous rocks on the top of the earth.
5. An avalanche can be caused by weather.
6. The earth's core reflects the sun's light.
7. Volcanoes can emit gases.
8. Satellites orbit around the earth.



Unit Assessment

Provide each student with a copy of the students' pages. Read the following instructions aloud. The students should answer the questions on their copies of the assessment.

SIGHT RECOGNITION

Turn to page 4 in your test. Look at the pictures in the boxes. Circle the word for each picture.

DECODING/ENCODING

Turn to page 5 in your test. Look at the word parts in the boxes. Circle the other half or part of each word.

READING COMPREHENSION

Turn to page 6 in your test. Read the sentence part and fill in the bullet for the correct sentence ending.

BASIC WRITING

Turn to page 7 in your test. Look at the pictures in the boxes. Write the word for each picture.

CREATIVE WRITING

Turn to page 8 in your test. Write a sentence of your own, using each word.

Teacher: To get a percentage for this student's assessment, divide the total number of questions correct by the total number of questions, then multiply this answer by 100 to determine the percentage of questions answered correctly.



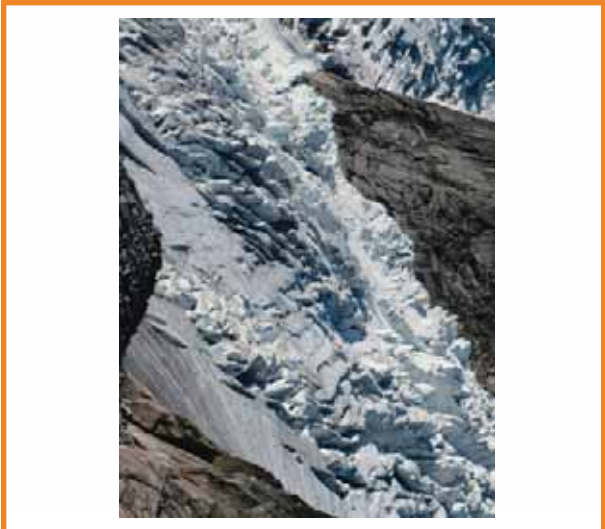


SCIENCE PROGRAM

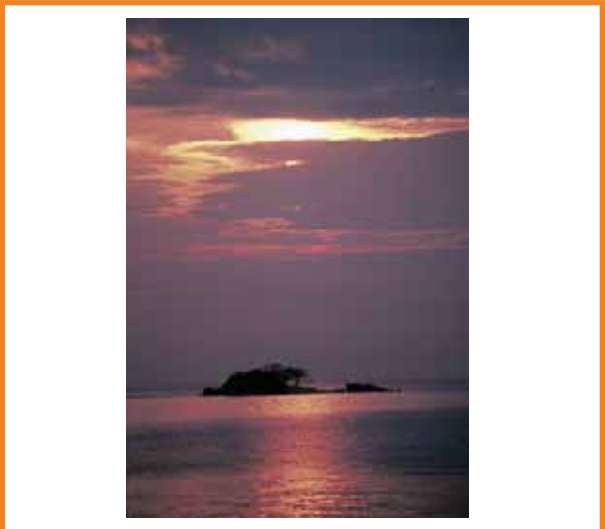
Unit Assessment Student Pages
Grade 6 • Unit 8 (D-1)
Theme: Concepts of Earth Science

Date: _____ Student's Name: _____

Number Correct: _____ Percent Correct: _____











1. T F
2. T F
3. T F
4. T F
5. T F
6. T F
7. T F
8. T F



earthquakes
tsunamis
volcanoes
floods
avalanches
reflect
emit
orbit



earthquakes
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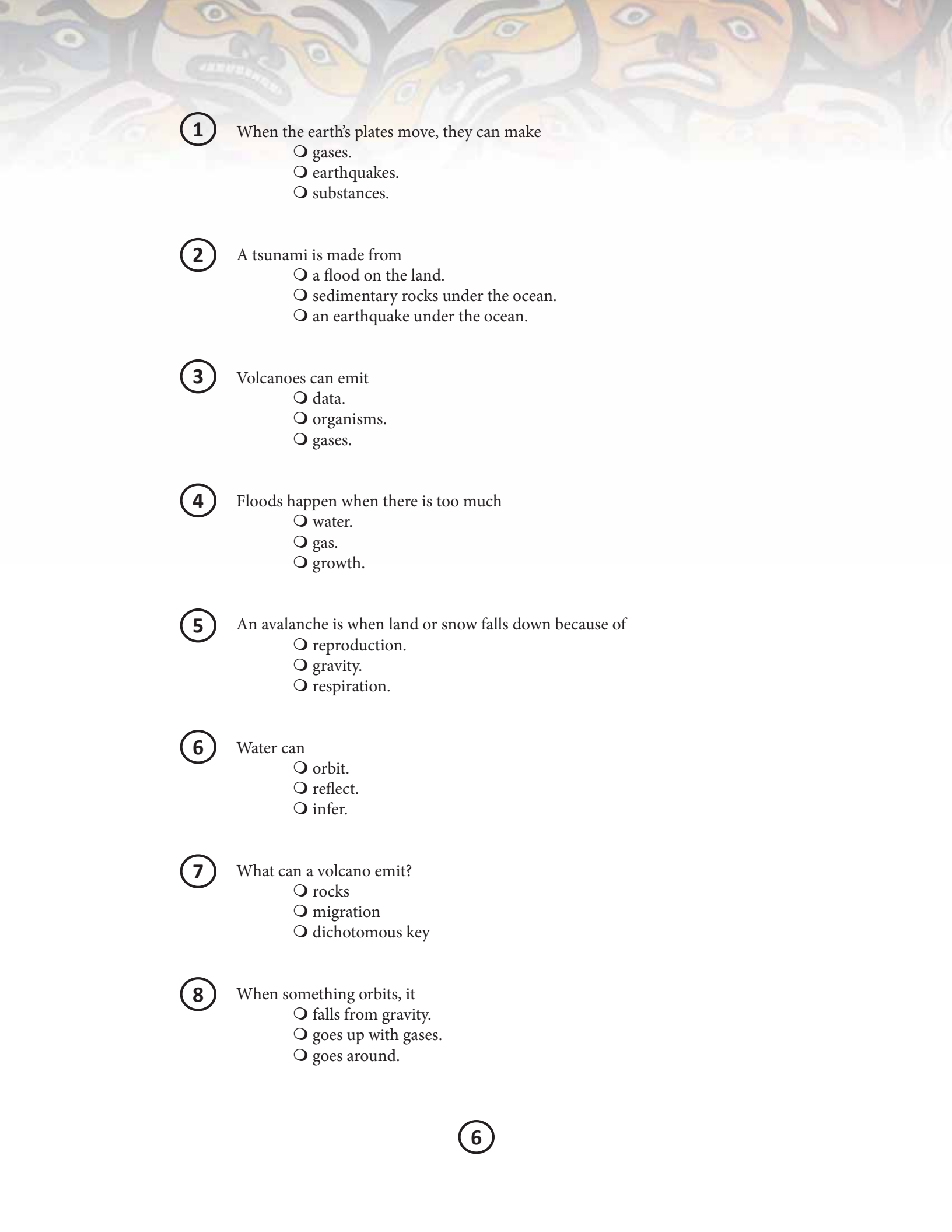
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or

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it
bit
but
bin
hit

- 
- 1 When the earth's plates move, they can make
- gases.
 - earthquakes.
 - substances.
- 2 A tsunami is made from
- a flood on the land.
 - sedimentary rocks under the ocean.
 - an earthquake under the ocean.
- 3 Volcanoes can emit
- data.
 - organisms.
 - gases.
- 4 Floods happen when there is too much
- water.
 - gas.
 - growth.
- 5 An avalanche is when land or snow falls down because of
- reproduction.
 - gravity.
 - respiration.
- 6 Water can
- orbit.
 - reflect.
 - infer.
- 7 What can a volcano emit?
- rocks
 - migration
 - dichotomous key
- 8 When something orbits, it
- falls from gravity.
 - goes up with gases.
 - goes around.





EARTHQUAKES

TSUNAMIS

VOLCANOES

FLOODS

AVALANCHES

REFLECT

EMIT

ORBIT



UNIT 9

E-1: Science and Technology

F-1: Cultural, Social, Personal Perspectives of Science

G-1: History of Science



KEY VOCABULARY

Culturally Responsive & Place-Based Introduction of Science Vocabulary

TECHNOLOGY

Place-Based Perspective

Place a pencil and a cell phone in front of the students. Have them determine how the two items are the same. Lead the students to understand that both the pencil and the cell phone represent developments in technology. Have the students cite other examples of technological development.

Heritage Cultural Perspective

Southeast Alaska Native people developed a variety of technological tools. For example, they developed the adze, halibut hooks, knives (made of meteorite materials and iron from shipwrecks), bows and arrows, snares, fish traps, box drums, and wedges. They also used steam to bend wood.

SOLUTION

Place-Based Perspective

Place a tray of soil in front of the students. Make a river in the soil. Tell the students that people want to cross the river, but there are no bridges. Have the students suggest solutions to the problem (for example, boating across and using logs to make a bridge).

Heritage Cultural Perspective

Southeast Native people developed a wide variety of solutions for various applications. For example, cedar bark was used to make ropes that in turn were used to raise large logs in the making of clan houses. The sun's energy was used to prepare dehydrated foods. A variety of medicines were developed using available resources.

MULTIPLE

Place-Based Perspective

Before the lesson begins, collect a variety of different types of cookies. Present the cookies to the students and use them to introduce the concept of multiple items. Have the students suggest other multiples.

Heritage Cultural Perspective

Native people of Southeast Alaska had multiple uses for trees. For example, they used trees to build things, such as canoes and clan houses. They also used trees to make cultural objects—such as totem poles—and as a source for heat.

Culturally Responsive & Place-Based Introduction of Science Vocabulary

INVESTIGATE

Place-Based Perspective

Place a tray of soil in front of the students. Place a model home on the soil. Surround the home with tape (to represent police tape). Have the students tell why the police would surround a house with tape. Lead them to understand that the police put the tape up so they can investigate something; the tape stops others from entering the house.

Heritage Cultural Perspective

In traditional oral literature of the Native people of Southeast Alaska, Raven is the principal investigator of all things. For example, he investigated why the people were starving on the beach when there was an abundance of food in the water (from “Raven Who Went Down Along the Bull Kelp”—a story that belongs to Raven clans).

INNOVATION

Place-Based Perspective

Show the students an unopened can of food. Have them suggest a variety of methods for opening the can. Show them a can opener—use this as an example of an innovation based on a need. Have the students cite other innovations (for example, cell phones, computers, and Velcro).

Heritage Cultural Perspective

While many innovations were developed by Native people in Southeast Alaska, the halibut hook and Chilkat robes were two of the most famous. In the northern parts of Southeast Alaska, snowshoes were another innovation.

GLOBAL

Place-Based Perspective

Show a globe of the world. Have the students suggest issues that face the entire world today. Use this to introduce global, as in global warming.

Heritage Cultural Perspective

The Tlingit people of Southeast Alaska had a global perspective of the world, as reflected by their language. For example, they said “Lingít aani” when referring to the land of the Tlingit. They said “Lingít’ aani” when referring to the world of the Tlingit (the apostrophe at the end of “Lingít’ ” communicated the concept of “world”).

Culturally Responsive & Place-Based Introduction of Science Vocabulary

ADAPTATION

Place-Based Perspective

Show clothing items that might be used to represent different weather forms (for example, a parka, shorts, and rain coat). Have the students identify the weather form or forms associated with each clothing item. Use this as an example of how people adapt their clothing to the weather. Have the students cite other ways in which people adapt to their environment.

Heritage Cultural Perspective

For Native people, life in Southeast Alaska has always involved a variety of adaptations. This included adapting to the weather, natural resources, and—later—to other societies.

DIFFERENCES

Place-Based Perspective

Place a number of fruit samples in front of the students. This might include an orange, lemon, apple, grapes, and so on. Have the students contrast the differences among the fruit samples. They should also cite differences in other items in their environment (for example, buildings and clothing items).

Heritage Cultural Perspective

Tlingit, Haida, and Tsimshian art forms vary in formline. The differences are noticeable in designs, colors, and details. In addition, the three languages are totally different, and there are dialectic differences within each language group.



LESSONS

Science Language for Success—Lesson 1

Introduce the key science vocabulary, using concrete materials and/or pictures.

LISTENING

Use the Mini Pictures activity page from the Student Support Materials. Have the students cut out the pictures. Say the key words and the students show the pictures.



Whisper

Mount the vocabulary pictures on the board. Group the students into two teams. Whisper a vocabulary word to the first player in each team. When you say “Go,” the first player in each team must then whisper the same word to the next player in his/her team. The players should continue whispering the vocabulary word in this way until the last player in a team hears the word. When the last player in a team hears the word, he/she must rush to the board and point to the picture for the word. The first player to do this correctly wins the round. Repeat until all players have had an opportunity to identify a vocabulary picture. When a player has identified a vocabulary picture, he/she should rejoin the front of his/her team.

Student Support Materials

Have the students work on the activity pages from the Student Support Materials from this unit. Afterward, review their work.

SPEAKING



Half Match

Before the lesson begins, prepare a photocopy of each of the vocabulary pictures. Cut each of the photocopied pictures in half. Give the picture halves to the students (a student may have more than one picture half). Say one of the vocabulary words. The two students who have the halves of the picture for that word must show their halves and repeat the word orally. Continue in this way until all of the vocabulary words have been reviewed. This activity may be repeated more than once by collecting, mixing, and redistributing the picture halves to the students. This activity may also be adapted for team form. To do this, cut each of the vocabulary pictures in half. Place half of the pictures in one pile and the other halves in another pile (one pile for each team). Say a vocabulary word. When you say “Go,” the first player from each team must rush to his/her pile of picture halves. Each player must find the half of the picture for the vocabulary word you said. The first player to correctly identify the picture half and to repeat the vocabulary word for it wins the round. Repeat until all players have played.

Numbered Boxes

Before the activity begins, prepare a page that contains twenty (or more) boxes. Number each of the boxes. Provide each student with a copy of the numbered boxes. Each student should then shade in half of the boxes with a pencil (any ten

Science Language for Success—Lesson 2

SPEAKING (CONTINUED)



boxes). When the students are ready, mount the vocabulary pictures on the board and say the number of a box (between one and twenty) to one of the students. The student should look on his/her form to see if that box number is shaded in. If that box is shaded in, the student may “pass” to another player. However, if the box is not shaded in, he/she should say a complete sentence about a vocabulary picture you point to. The students may exchange pages periodically during this activity. Repeat until many students have responded in this way.

High Card Draw

Give each student in the class a card from a deck of playing cards. Mount the vocabulary pictures on the board and number each one. Call two students’ names. Those two students should show their cards. The student who has the highest card (aces can be high or low) should then say a complete sentence about a vocabulary picture you point to. The students may exchange playing cards periodically during the activity. Repeat until many students have responded.

READING

Introduce the science sight words to the students—match the sight words with the vocabulary pictures. The sight words are included in the Student Support Materials, attached to these lesson plans.



Note: After each unit, mount a set of the unit’s words on the walls around the room. Use the “word walls” for review and reinforcement activities.

Circle of Words

Before the activity begins, prepare a page that contains the sight words. Provide each student with a copy of the page. The students should cut the sight words from their pages. When a student has cut out the sight words, he/she should lay them on his/her desk in a circle. Then, each student should place a pen or pencil in the center of the circle of sight word cards. Each student should spin the pen/pencil. Say a sight word. Any student or students whose pens/pencils are pointing to the sight word you said, should call “Bingo.” The student or students should then remove those sight words from their desks. Continue in this way until a student or students have no sight words left on their desks.

Letter Encode

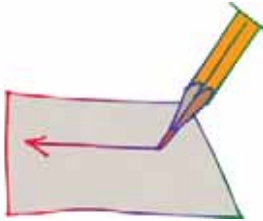
Give each student his/her envelope that contains the alphabet letters. Mount one of the science pictures on the board. The students must use the cut-out letters to spell the word. Review the students’ work. Repeat, until all of the words have been spelled in this way.

Student Support Materials

Have the students complete the sight recognition and encoding activities in the Student Support Materials. When finished, review their work.

Science Language for Success—Lesson 2

WRITING



Yarn Spell

Group the students into two teams. Give the first player in each team lengths of yarn or string. Say a vocabulary word. When you say “Go,” the first player in each team must then use the yarn or string to “write” the word on the floor. The first player to complete his/her word wins the round. Repeat this process until all players in each team have played. If pipe cleaners are available, they may be used in place of the yarn or string (have both long and short lengths of the pipe cleaners ready for the activity).

Overhead Configurations

Before the activity begins, write the sight words on an overhead transparency sheet. Place an overhead projector on the floor, facing the board. Lay the overhead transparency sheet on the screen of the projector and turn the projector on. The sight words should be projected onto the board. Then, use chalk to draw configurations around each of the sight words. When a configuration has been drawn for each sight word, turn the overhead projector off. Call upon a student to use chalk to fill in one of the configurations with its sight word. You may wish to have more than one student participating in this process at the same time.

This activity may also be conducted in team form. In this case, when you say “Go,” the first player in each team must rush to the configurations. Each player must attempt to fill in one of the configurations with its correct sight word. The first player to do this correctly wins the round. Repeat until all configurations have been filled in in this way.

Student Support Materials

Have the students work on the activity pages from the Student Support Materials from this unit. Afterward, review their work.



VOCABULARY PICTURES





ADAPTATION





DIFFERENCES





GLOBAL





INNOVATION





INVESTIGATE



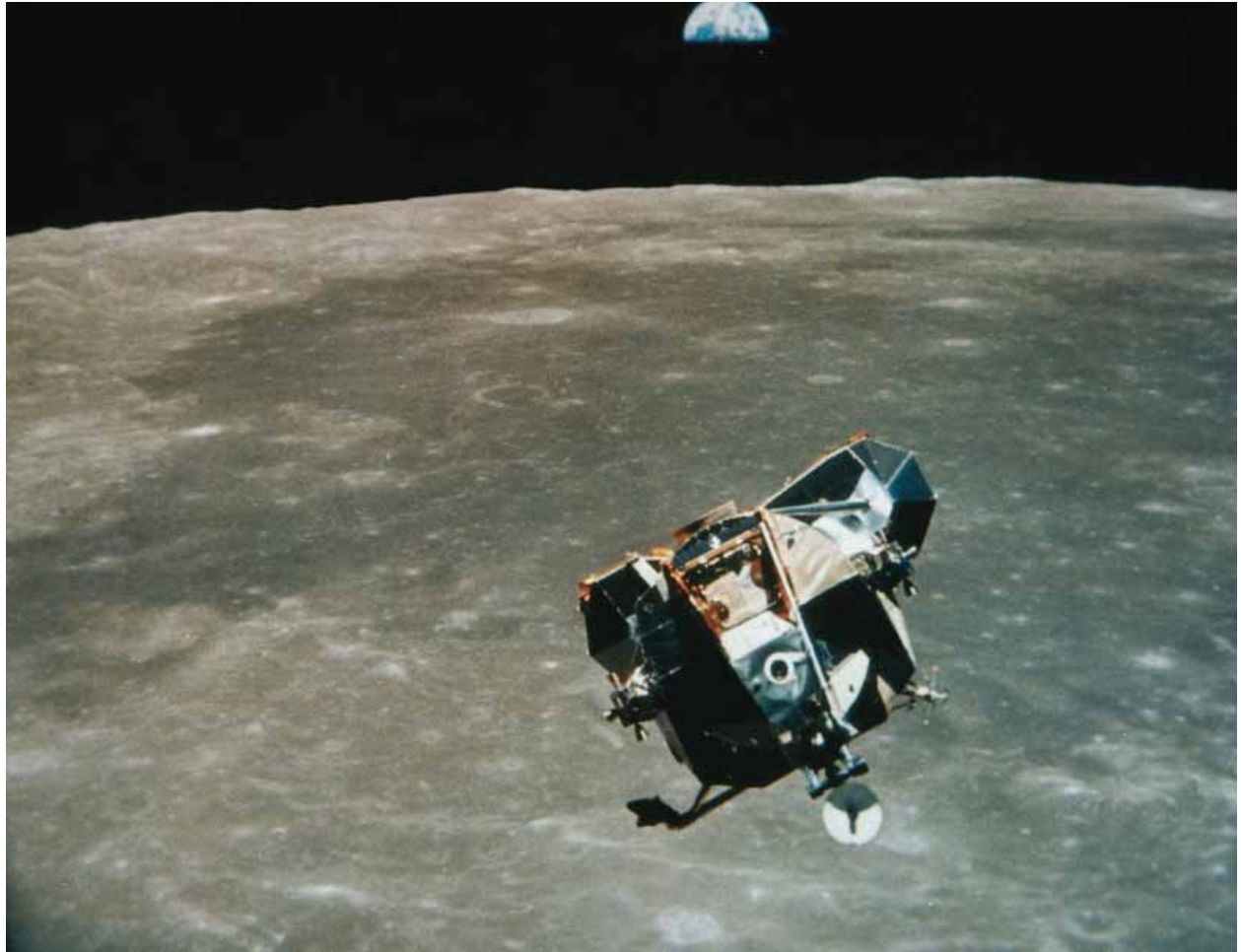


MULTIPLE





SOLUTION





TECHNOLOGY

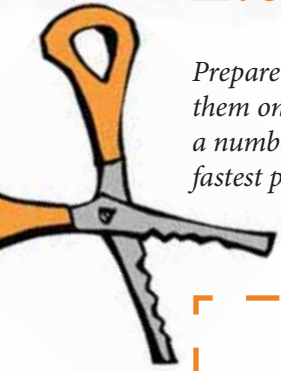


STUDENT SUPPORT MATERIALS

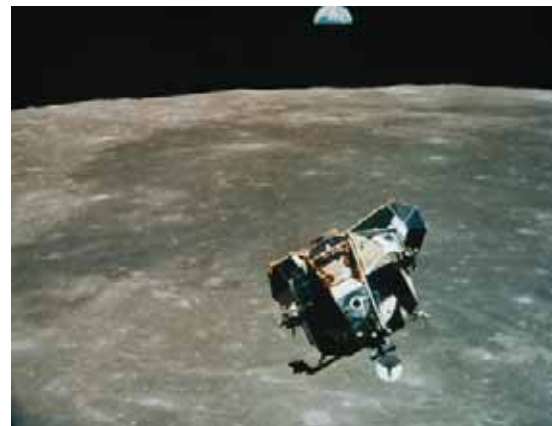
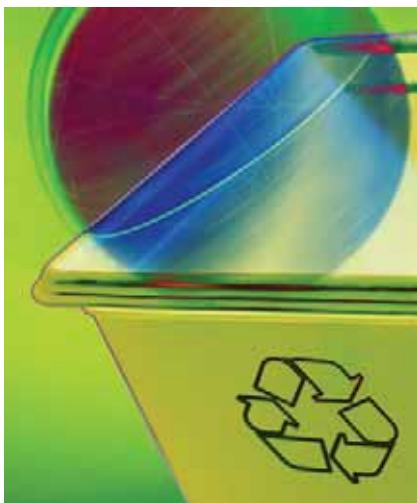
Listening • Mini Pictures

Listening: Mini Pictures

Prepare a copy of these pages for each student. The students should cut out the pictures and lay them on the floor or desk. Say the key words and the students should show you the pictures. Repeat a number of times. This activity can also be done with pairs of students to determine who is the fastest player.



Listening: Mini Pictures







STUDENT SUPPORT MATERIALS

Listening Comprehension

Listening Comprehension




Read the following sentences to the students. The students should circle “true” or “false” for each of the sentences. Review the students’ work.

- | | | |
|---|---|---------------|
| ① | An avalanche is an example of new technology. | True
False |
| ② | A solution to a problem reflects a physical chemical. | True
False |
| ③ | There are multiple banks in the United States. | True
False |
| ④ | The police will investigate something if it orbits around an igneous rock. | True
False |
| ⑤ | A tsunami is an innovation made by studying photosynthesis. | True
False |
| ⑥ | Global things relate to the whole world. | True
False |
| ⑦ | Plants and animals often adapt to their environments. | True
False |
| ⑧ | When we look for differences in things, we try to find out how they are the same. | True
False |



STUDENT SUPPORT MATERIALS

Sight Words




global

adaptation

difference





multiple

investigate

innovation



technology

solution



STUDENT SUPPORT MATERIALS

Basic Reading • Sight Recognition

Sight Words Activity Page

Have the students highlight or circle the words in this word find. Words appear horizontally.



innovation
investigate

technology
differences

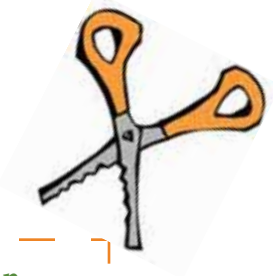
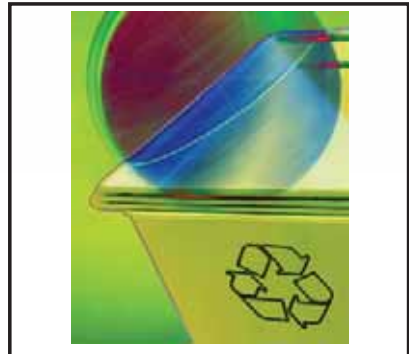
global
adaptation

solution
multiple

o t g o o m d i f f e r e n e a a i
m o a l d h s t l g l o b a l n v v
m u l t i p l e e m t d l f y i v e
f a l e i i n n o v a t i o n n y o
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e t g i s n a a t v e t m e t o e o
a s o l u t i o n a l n e t t e t c
i i n a b s d i f f e r e n c e s a
t i n v e s t i g a t e v l t i b t
t t e c h n o l o g l y t l a i o t
e b n e i r g n u f o g d e n c a t

Sight Words Activity Page

Have the students cut out the key words and glue them at the bottom of their pictures.



innovation	technology	global	solution
investigate	differences	adaptation	multiple



STUDENT SUPPORT MATERIALS

Basic Reading • Encoding

Encoding Activity Page

Have the students cut out and encode the syllables of the words, OR number the syllables in their correct sequence.



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Encoding Activity Page



tion in va no

ta a tion dap

fer en ces dif

Encoding Activity Page

Have the students cut out the word halves and glue them together to create the key words for this unit.



adap

vation

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glo

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inno

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investi

tion

multi

tation

solu

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techno

bal





STUDENT SUPPORT MATERIALS

Reading Comprehension

Reading Comprehension Activity Page

Have the students read the text and then select the correct answer for it. They should fill in the appropriate bullet beside the answer of their choice.



- ① Which of these reflects technology?
 - photosynthesis
 - tsunami
 - igneous rock
 - electrical things

- ② Which of these is a solution?
 - floods
 - earthquakes
 - snowshoes
 - gravity

- ③ When there are multiple things, there are
 - one thing.
 - no things.
 - more than one thing.
 - two things.

- ④ Someone who likes plants might investigate
 - photosynthesis.
 - orbits.
 - volcanoes.
 - mechanical things.

- ⑤ Which of these is an innovation?
 - the earth's crust
 - volcanoes
 - hibernation
 - computers

Reading Comprehension Activity Page



- 6 When we look for differences in things, we
- want to know how they are different.
 - want to know how they are the same.
 - don't want to know how they are the same.
 - don't want to know how they are different.
- 7 When something is global, it is
- only in our environment.
 - around the world.
 - in the center of the earth.
 - on the earth's crust.
- 8 Which of these might reflect an adaptation to the environment?
- an avalanche
 - clothing
 - gravity
 - sedimentary rocks

Reading Comprehension Activity Page

Have the students write the letters for sentence halves that match.



- | | |
|---------------------------------------|---|
| ① Technology has helped people create | ① of computer games. |
| ② For every problem | ② something new. |
| ③ There are multiple types | ③ there should be a solution. |
| ④ We can investigate things | ④ many things we use every day. |
| ⑤ An innovation is | ⑤ in our environment. |
| ⑥ Global things | ⑥ can mean that something changes. |
| ⑦ Adaptations to an environment | ⑦ in the foods people eat around the world. |
| ⑧ There are many differences | ⑧ are about the whole world. |

1 → _____ 2 → _____ 3 → _____ 4 → _____

5 → _____ 6 → _____ 7 → _____ 8 → _____

Reading Comprehension Activity Page

Have the students cut out the words and glue them under their definitions.



to look into or ask about something

around the world

an answer

something new

something that can make our lives easier or more fun

many

change

not the same



innovation	technology	global	solution
investigate	differences	adaptation	multiple

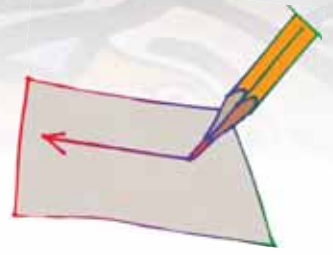


STUDENT SUPPORT MATERIALS

Basic Writing

Basic Writing Activity Page

Have the students write in the missing letters.



tech_____y

sol_____n

mu_____le

in_____e

inn_____n

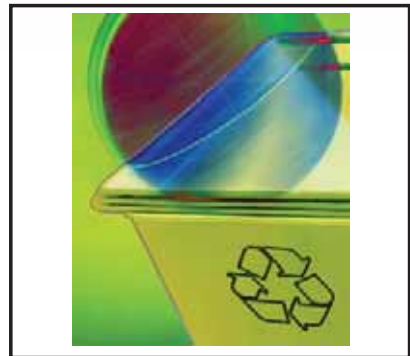
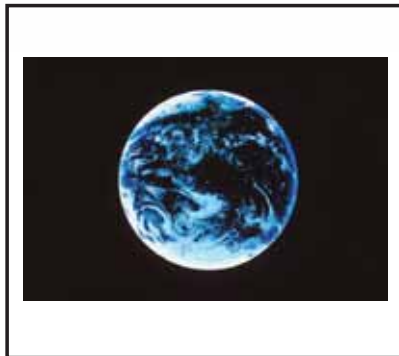
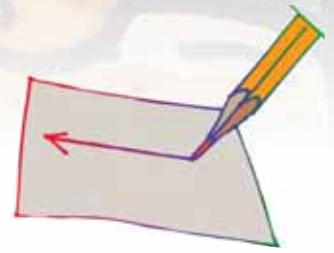
gl_____

ada_____n

dif_____s

Basic Writing Activity Page

Have the students write the word for each picture.

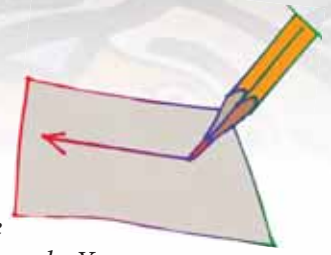




STUDENT SUPPORT MATERIALS

Creative Writing

Creative Writing Activity Page



Have the students write sentences of their own, using the key words from this unit. When the students' sentences are finished, have them take turns reading their sentences orally. The students should say "Blank" for the key words; the other students must name the "missing" words. You may wish to have the students write the "definitions" for the key words.

TECHNOLOGY

SOLUTION

MULTIPLE

INVESTIGATE

INNOVATION

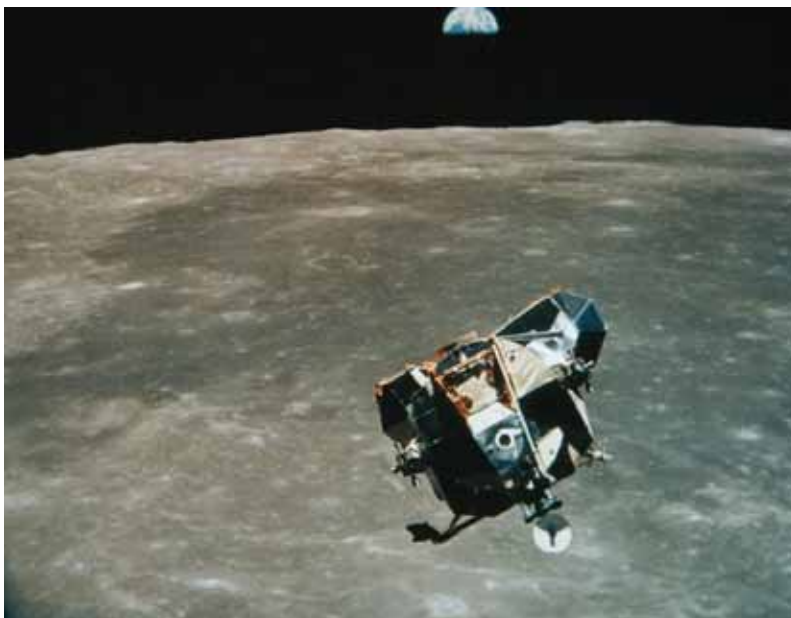
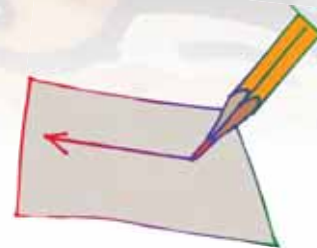
GLOBAL

ADAPTATION

DIFFERENCES

Creative Writing Activity Page

Have the students write sentences of their own, based on the picture below. When finished, have each student read his/her sentences to the others.





UNIT ASSESSMENT

E-1: Science and Technology
F-1: Cultural, Social, and Personal Perspectives of Science
G-1: History of Science



SCIENCE PROGRAM

Unit Assessment Teacher's Notes

Grade 6 • Unit 9 (E-1, F-1, G-1)

Themes: Science and Technology; Cultural, Social, Personal
Perspectives and Science; History of Science

Date: _____



Unit Assessment

Provide each student with a copy of the students' pages. Read the following instructions aloud. The students should answer the questions on their copies of the assessment.

BASIC LISTENING

Turn to pages 1–2 in your test. Look at the pictures in the boxes.

1. Write the number 1 on top of the picture for **TECHNOLOGY**.
2. Write the number 2 on top of the picture for **SOLUTIONS**.
3. Write the number 3 on top of the picture for **MULTIPLE**.
4. Write the number 4 on top of the picture for **INVESTIGATE**.
5. Write the number 5 on top of the picture for **INNOVATION**.
6. Write the number 6 on top of the picture for **GLOBAL**.
7. Write the number 7 on top of the picture for **ADAPTATION**.
8. Write the number 8 on top of the picture for **DIFFERENCES**.

LISTENING COMPREHENSION

Turn to page 3 in your test. Listen to the sentences I say. Circle “T” for true and “F” for false sentences.”

1. New technology has made better forms of communication.
2. Technology can help with solutions to problems.
3. There are multiple types of technologies.
4. A scientist can investigate data that he/she has.
5. An innovation is an organism with multiple physical properties.
6. Global data would be data from one country.
7. Adaptation to the environment is when an organism exerts gravity.
8. Differences among organisms are because of heat transfer.



Unit Assessment

Provide each student with a copy of the students' pages. Read the following instructions aloud. The students should answer the questions on their copies of the assessment.

SIGHT RECOGNITION

Turn to page 4 in your test. Look at the pictures in the boxes. Circle the word for each picture.

DECODING/ENCODING

Turn to page 5 in your test. Look at the word parts in the boxes. Circle the other half or part of each word.

READING COMPREHENSION

Turn to page 6 in your test. Read the sentence part and fill in the bullet for the correct sentence ending.

BASIC WRITING

Turn to page 7 in your test. Look at the pictures in the boxes. Write the word for each picture.

CREATIVE WRITING

Turn to page 8 in your test. Write a sentence of your own, using each word.

Teacher: To get a percentage for this student's assessment, divide the total number of questions correct by the total number of questions, then multiply this answer by 100 to determine the percentage of questions answered correctly.





SCIENCE PROGRAM

Unit Assessment Student Pages

Grade 6 • Unit 9 (E-1, F-1, G-1)

Themes: Science and Technology; Cultural, Social, Personal Perspectives and Science; History of Science

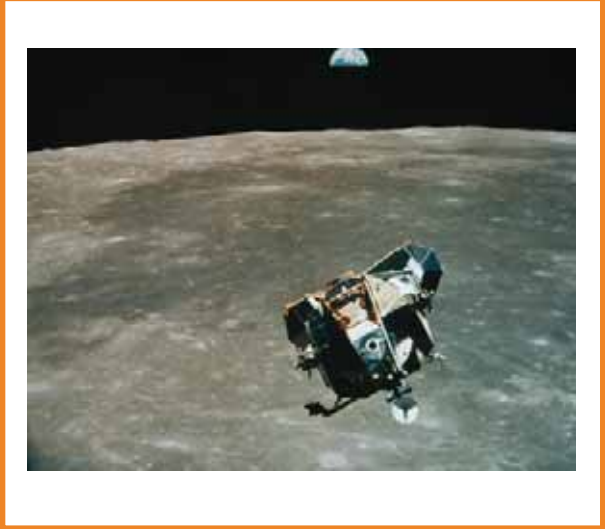
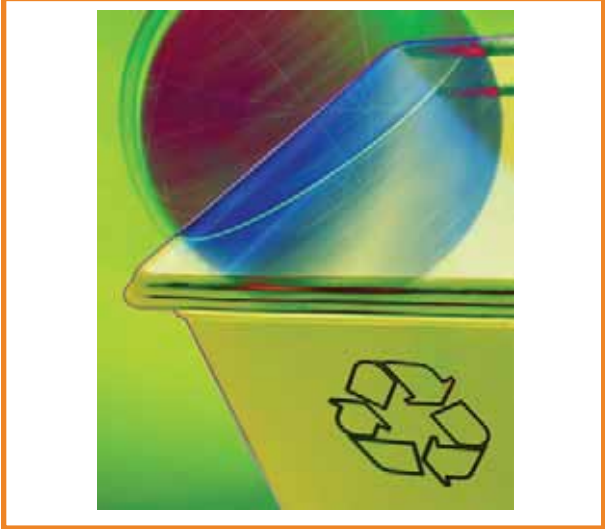
Date: _____ Student's Name: _____

Number Correct: _____ Percent Correct: _____











1. T F
2. T F
3. T F
4. T F
5. T F
6. T F
7. T F
8. T F



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adaptation
differences



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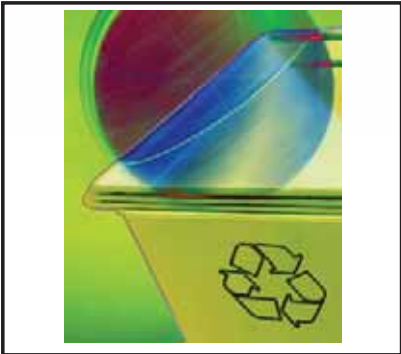
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- 
- 1 Electricity is an example of
- gravity.
 - innovation.
 - differences.
- 2 Technology is the same today as it was a long time ago. True or false?
- true
 - false
- 3 When we look for a solution, we are trying to find
- an answer.
 - gravity.
 - an orbit.
- 4 There are multiple
- gravity.
 - cores.
 - innovations.
- 5 We can investigate something in the environment using
- a song.
 - the dichotomous key.
 - hibernation.
- 6 Something global is about
- part of the earth.
 - the whole earth.
 - the core of the earth.
- 7 Adaptation is when something
- stays the same.
 - falls from gravity.
 - changes.
- 8 Differences among organisms can be
- photosynthesis.
 - gravity.
 - multiple.





TECHNOLOGY

SOLUTIONS

MULTIPLE

INVESTIGATE

INNOVATION

GLOBAL

ADAPTATION

DIFFERENCES



UNIT 10

Raven and the King Salmon



KEY VOCABULARY

Culturally Responsive & Place-Based Introduction of Science Vocabulary

FLOCK

Place-Based Perspective

Show the students pictures of flocks of birds. Have the students explain the meaning of the saying “Birds of a feather, flock together.” Lead them to understand that this refers to the idea that people who share similar interests tend to bond together.

Heritage Cultural Perspective

Flocks of birds have always been a common sight in Southeast Alaska. Native people have always known of the migration cycles of birds. These cycles were seasonal indicators and provided a fresh source of meat.

PIT

Place-Based Perspective

Place a tray of soil in front of the students. As they watch, create a pit in the soil. Have the students suggest uses for the pit. Lead them to understand that a pit was often used by Native people to cook meats. If a sample of skunk cabbage is available, spread some in the pit. Place a sample of meat on the cabbage. Cover the meat. Use sticks to create a fire on top.

Heritage Cultural Perspective

Pits had a variety of uses for Native people in Southeast Alaska. They were used to cook fish and meats. Pits were also used to age fish heads, a delicacy to the Native people of Southeast Alaska. Pits were placed in the center of a clan house to allow for ventilation through the smoke hole in the roof. The fire pit provided warmth and heat for cooking.

BASE

Place-Based Perspective

Use the tray of soil mentioned above, and create a mountain in the center of the tray. Direct the students’ attention to the summit of the mountain and then to its base. Show the students a trophy—direct their attention to its base. Have the students name other items that have bases.

Heritage Cultural Perspective

When constructing totem poles, clan houses, and smoke houses, the bases of the structures had to be designed in such a way that they could withstand strong winds. The bases of totem poles were engineered to bear the weight of the pole. When hunting in the mountains, items were left at the base of the mountains to guarantee a safe return home. The hunter would stand at the base of the mountain and thank it for allowing him to begin his trek up the mountain.

Culturally Responsive & Place-Based Introduction of Science Vocabulary

BATCH

Place-Based Perspective

Lay cookies on a cookie sheet. Introduce them as a batch of cookies. Remove the cookies and replace them with another batch. Cite examples of other batches, such as fish, and bread.

Heritage Cultural Perspective

Traditionally, the skins and hides of hunted and trapped animals were bound together and stored in batches. In addition, the different types of salmon would be dried and stored in batches for future use.

ASHORE

Place-Based Perspective

Use the tray of soil mentioned above to create a river or lake. Clear a portion of the soil and add water to it. Use a small toy boat to demonstrate coming ashore.

Heritage Cultural Perspective

Traditionally, when people went ashore, they would acknowledge the people who owned the land. They would explain the intent of their visit. They would gain permission to go ashore and to use the land for the purpose of their visit.

SKELETON

Place-Based Perspective

Place a bone in the tray of soil mentioned above. Cover the bone completely. As the students watch, pretend to discover the bone. Have the students identify it (e.g., a chicken bone, fish bone, etc.). Place the bone on paper and use a felt marker to draw the remainder of the skeleton.

Heritage Cultural Perspective

The Salmon People have a story about how they were put together from the skeleton of a salmon, bone by bone.

Culturally Responsive & Place-Based Introduction of Science Vocabulary

STUMP

Place-Based Perspective

Before the lesson begins, cut out the shape of a tree from construction paper. As the students watch, cut down the tree by cutting it close to its base with a pair of scissors. Use the remaining base to introduce the word “stump” to the students.

Heritage Cultural Perspective

Traditionally, Native people used large stumps as shelters during storms. Stumps with large holes in their bases were particularly popular for temporary shelters.

SCORCH

Place-Based Perspective

Show the students a match. Have them discuss the uses of the match to create fire. Also, have them suggest the dangers associated with fire. Use this to lead them to fire scorching the earth or items. If a scorched item is available, show it to the students.

Heritage Cultural Perspective

The Native people of Southeast Alaska were familiar with a variety of scorched items. This would have included scorches caused by lightning and fire. Burns were treated with a combination of tree sap and Devil's Club. Often, meats were scorched in a pit fire before being consumed.



LESSONS

Science Language for Success—Lesson 1

Introduce the key science vocabulary, using concrete materials and/or pictures.

LISTENING

Use the Mini Pictures activity page from the Student Support Materials. Have the students cut out the pictures. Say the key words and the students show the pictures.



Whisper

Mount the vocabulary pictures on the board. Group the students into two teams. Whisper a vocabulary word to the first player in each team. When you say “Go,” the first player in each team must then whisper the same word to the next player in his/her team. The players should continue whispering the vocabulary word in this way until the last player in a team hears the word. When the last player in a team hears the word, he/she must rush to the board and point to the picture for the word. The first player to do this correctly wins the round. Repeat until all players have had an opportunity to identify a vocabulary picture. When a player has identified a vocabulary picture, he/she should rejoin the front of his/her team.

The Story

Read or tell the story “Raven and the King Salmon” on page 754 to the students. You may wish to cut out props from construction paper to enhance the story’s contents.

Student Support Materials

Have the students work on the activity pages from the Student Support Materials from this unit. Afterward, review their work.

SPEAKING



Sheet Golf

Before the activity begins, obtain an old sheet. Cut a hole (approximately two inches in diameter) in each end of the sheet. Group the students into two teams. Have the first player from each team hold opposite ends of the sheet. Place a marble or small ball in the center of the sheet. When you say “Go,” the players must then lift their ends of the sheet and attempt to cause the marble or ball to fall through the hole in the other player’s side of the sheet. When the ball or marble falls through one of the holes, the player on that side of the sheet must say the name of a vocabulary picture you show or he/she should repeat a sentence you said at the beginning of the round. Repeat with other pairs of students until all students have participated. If the sheet is large enough, all students can play—divide the students into four groups (one group for each side). Cut a hole in the sheet near each side. When the marble or ball falls through, all the players on that side must say the name of a vocabulary picture that you show. Repeat.

Science Language for Success—Lesson 2

SPEAKING (CONTINUED)



Picture Jigsaw

Cut each of the vocabulary pictures into four pieces. Mix the cut out pieces together and distribute them to the students (a student may have more than one picture section). When you say “Go,” the students should attempt to match the jigsaw sections they have to reproduce the original vocabulary pictures. When the students put the necessary pieces of a picture together, they should identify the picture by its vocabulary word. Continue until all vocabulary pictures have been put together and named in this way.

The Story

Have the students say sentences related to the story “Raven and the King Salmon” on page 754. You may wish to write the students’ sentences on strips of paper or on chart paper. Later, have individuals tell the story, in their own words.

READING

Introduce the science sight words to the students—match the sight words with the vocabulary pictures. The sight words are included in the Student Support Materials, attached to these lesson plans.



Note: After each unit, mount a set of the unit’s words on the walls around the room. Use the “word walls” for review and reinforcement activities.

Balloon Volleyball

Group the students into two teams. The two teams should stand, facing one another. Toss a round, inflated balloon to the members of Team One. The members of Team One must then bounce the balloon to the members of Team Two. The players should continue to bounce the balloon back and forth in this way until a team loses the balloon. You may wish to establish the rule that players may not move their feet during the activity. When a team loses the balloon, show them a vocabulary picture and all team members in that team must say the vocabulary word for it. Repeat until players in both teams have responded a number of times.

The Story

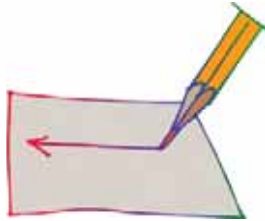
Give each student a copy of the story “Raven and the King Salmon” on page 754. Have the students read the story silently. Then, they should take turns reading portions of the story orally. Afterward, ask questions related to the story’s contents; the students must read to find the answers to the questions.

Student Support Materials

Have the students complete the sight recognition and encoding activities in the Student Support Materials. When finished, review their work.

Science Language for Success—Lesson 2

WRITING



Word Completion

Before the activity begins, prepare clozure cards for the sight words; omit letters and syllables. Provide each student with a clozure card. Call upon the students to complete their words on the clozure cards by writing in the missing parts. Afterward, review the students' responses.

Every Second Letter

Write a sight word on the board, omitting every second letter. Provide the students with writing paper and pens. The students should look at the incomplete word on the board and then write the sight word for it on their papers. Repeat using other sight words.

This activity may also be done in team form. In this case, have the incomplete words prepared on separate flash cards. Mount one of the cards on the board. When you say "Go," the first player from each team must rush to the board and write the sight word for it—adding all of the missing letters. Repeat until all players have participated.

The Story

Make a version of the story that has the key words missing. Give a copy of the story to each student. The students should then write in the missing words. Later, review their work.

Student Support Materials

Have the students work on the activity pages from the Student Support Materials from this unit. Afterward, review their work.



VOCABULARY PICTURES





ASHORE





BASE





BATCH





FLOCK





PIT





SKELETON





STUMP





SCORCH

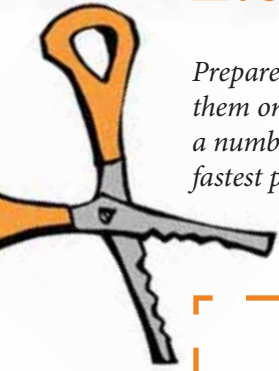


STUDENT SUPPORT MATERIALS

Listening • Mini Pictures

Listening: Mini Pictures

Prepare a copy of these pages for each student. The students should cut out the pictures and lay them on the floor or desk. Say the key words and the students should show you the pictures. Repeat a number of times. This activity can also be done with pairs of students to determine who is the fastest player.



Listening: Mini Pictures







STUDENT SUPPORT MATERIALS

Listening Comprehension

Listening Comprehension




Read the following sentences to the students. The students should circle “true” or “false” for each of the sentences. Review the students’ work.

- ① When a boat is driven ashore, it moves away from the shore. True
False
- ② Two birds make up a flock. True
False
- ③ Traditionally, Native peoples of Southeast Alaska sometimes used pits to cook meat. True
False
- ④ When he reached the base of the mountain, he was on top of it. True
False
- ⑤ Cookies can be baked in batches. True
False
- ⑥ The skeleton of a fish is an external part. True
False
- ⑦ The stump of a tree is a branch near the base of the tree. True
False
- ⑧ Scorched earth is earth that has been burned or dried by the sun. True
False



STUDENT SUPPORT MATERIALS

Sight Words



pit

flock

ashore






stump

skeleton

base



batch

scorch



STUDENT SUPPORT MATERIALS

Basic Reading • Sight Recognition

Sight Words Activity Page

Have the students highlight or circle the words in this word find. Words appear horizontally.



skeleton
scorch

batch
pit

base
stump

flock
ashore

b s s e p e r h h r o t o t s b h b
m c t k s o o h h h t h s t u m p r
l c m o h u h s k e l e e s r r l h
p c b o n k a p n o s c o r c h c o
s o b e i c e o c s a p c i c c o r
c o l c b b n a h t e c t o a m n u
c k o s t p h i r e u o o l h h k a
k e a s k o a s h o r e s m k c a c
a r l r c r t b o e s e c b p c b c
o o k t a t s o k m t b e c t p r s
k a n k o l p s a s k e l e t o n u
k n t n e s t h t e s c k e t t e b
c b h h s c t k t u a k e o i c t a
p s f l o c k p h t r o c h p s o e
t f l o c m s c o r e s f b a s e h
a t c c c i a c b a t c h c b p p c
s e u c s h c b a t s s c a s h o s
r n s h l p s s c f e p i t k s a f
l u m t c h k p s o r e c p k s k c
r t o s k s b p r f n i e m t c o m

Sight Words Activity Page

Have the students cut out the key words and glue them at the bottom of their pictures.



ashore	flock	pit	base
batch	skeleton	stump	scorch



STUDENT SUPPORT MATERIALS

Basic Reading • Encoding

Encoding Activity Page

Have the students cut out the word halves and glue them together to create the key words for this unit.



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STUDENT SUPPORT MATERIALS

Reading Comprehension

Reading Comprehension Activity Page

Have the students read the text and then select the correct answer for it. They should fill in the appropriate bullet beside the answer of their choice.



- ① When people are ashore, where are they?
 - on the water
 - on the ocean
 - on land
 - in the air

- ② What is a flock of birds?
 - a group that shows photosynthesis
 - a group of birds that are together
 - a bird that lands in its own environment
 - two birds that land ashore

- ③ A pit is
 - the external part of a fish.
 - the base of a hill.
 - a hole in the earth.
 - a hill on the earth.

- ④ Where is the base of a mountain?
 - on the top
 - in the middle
 - inside of it
 - at the bottom

- ⑤ What is a batch?
 - a flock
 - a pit
 - a group
 - a skeleton

Reading Comprehension Activity Page



- 6 The skeleton of a raven is
- internal.
 - external.
 - at the base.
 - in a pit.
- 7 The stump of a tree is
- at the top of the tree.
 - at the base of the tree.
 - in the pit of a tree.
 - in the center of the tree.
- 8 When something is scorched, it is
- wet.
 - ashore.
 - a gas.
 - burned.

Reading Comprehension Activity Page

Have the students write the letters for sentence halves that match.



① We took the

Ⓐ in the pit.

② The flock

Ⓑ to the base of the mountain.

③ He cooked the meat

Ⓒ people ashore.

④ Rocks fell

Ⓓ internal.

⑤ She made a second

Ⓔ of birds flew away.

⑥ The skeleton of a fish is

Ⓕ has been burned.

⑦ The stump of a tree

Ⓖ batch of cookies.

⑧ Scorched earth

Ⓗ is the base of it.

1 → _____ 2 → _____ 3 → _____ 4 → _____

5 → _____ 6 → _____ 7 → _____ 8 → _____

Reading Comprehension Activity Page

Have the students cut out the words and glue them under their definitions.



on land

burn

the bottom

bones

a group

one set

part of a tree

a hole



ashore	flock	pit	base
batch	skeleton	stump	scorch

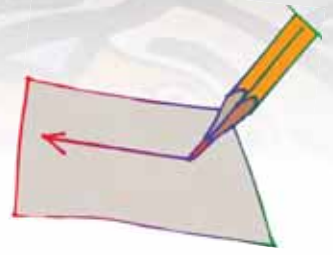


STUDENT SUPPORT MATERIALS

Basic Writing

Basic Writing Activity Page

Have the students write in the missing letters.



a _____ **e**

fl _____

p _____

ba _____

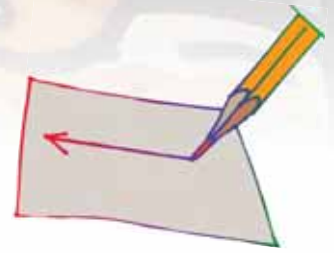
b _____ **h**

sk _____ **n**

st _____ **p**

sc _____ **h**

Basic Writing Activity Page



Have the students write the word for each picture.

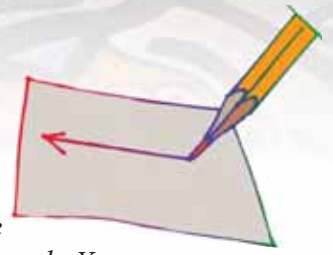




STUDENT SUPPORT MATERIALS

Creative Writing

Creative Writing Activity Page



Have the students write sentences of their own, using the key words from this unit. When the students' sentences are finished, have them take turns reading their sentences orally. The students should say "Blank" for the key words; the other students must name the "missing" words. You may wish to have the students write the "definitions" for the key words.

ASHORE

FLOCK

PIT

BASE

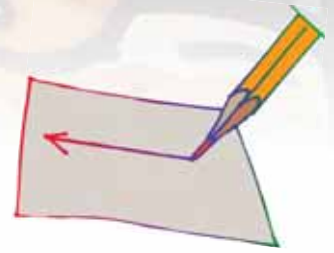
BATCH

SKELETON

STUMP

SCORCH

Creative Writing Activity Page



Have the students write sentences of their own, based on the picture below. When finished, have each student read his/her sentences to the others.






Raven and the King Salmon

Told by Katherine Mills. Translated and edited by Nora Marks Dauenhauer and Richard Dauenhauer.

Raven was going along the beach.
While he was going along there, he saw the King Salmon.
It was jumping out there in the bay.
He was thinking
about it then,
“What can I do to that King Salmon
to trick him into coming ashore?”
How far had he gone
when he found the greenstone?
Maybe he placed it on top of a rock.
That’s when
he puts down around it.
That’s when he said to the salmon,
“Hey, Salmon,
listen here!
This little greenstone is saying this about you,
‘You dirty-gilled person!’”
But the King Salmon didn’t listen to him.
Then he was jumping out there again.
That’s when he’d say to him again, “Hey, King Salmon,
this greenstone is insulting you.
Listen to what he’s saying! Swim on in here!
But King Salmon was just swimming out there.
He didn’t listen to him.
At what point was it he hollered out,
“Hey, King Saaaaaaaalmon!
Swim in heeeeeeeere
so you can really hear what the little greenstone is saying about you!”
That’s when he finally started swimming toward him.
While he couldn’t believe it, King Salmon swam up on the beach.
That’s when [Raven] said to him,



“Oh, no!

Oh, no!

It occurred to me that I really have to go [to the bathroom]!

I’ll run up in the woods first.”

Then he ran up.

Here he ran to get a club from up there.

Then he ran down with the club and hit that salmon on the head with it.

But the salmon was too heavy for him.

The birds that fly in flocks
are [Raven’s] grandchildren.

That’s when he said to them,
to these grandchildren of his, “Help me.

Let’s pull it up here.

We’ll bake this salmon in a pit.”

Then, with the help of his grandchildren,
he digs a pit.

“Run up in the woods!

Bring down some skunk cabbage.

We’ll put them on the bottom of the pit.

We’ll wrap it. And finally
we’ll put a tiny fire over it.”

Then the small birds started flying.

Then they brought down
the skunk cabbage.

Then he asked them,

“Where did you get the skunk cabbage from?” “In back of here,
at the base of the hill.”

This is when Raven said,

“From just back here?” “Yes.

There are lots there.


Very fine.



Raven and the King Salmon CONTINUED

Told by Katherine Mills. Translated and edited by Nora Marks Dauenhauer and Richard Dauenhauer.

This is why they looked good to us.
What's wrong?"
is what they said to Raven.
But then Raven said,
"Yuck!
That's where my wife goes [to the bathroom]!
Go get a different batch!
You will go over two mountains.
That's when they'll be good."
So then they started flying, and they left the skunk cabbage there for him.
That's when he layered it in the bottom of the pit.
Then he also lifted the King Salmon.
That's when he made a fire around it.
Before long
the huge salmon was cooked.
Then he ate it.
But he saved the salmon tail.
What did he save that salmon tail for?
Only the skeleton is left there.
Then
he buried it.
Then he also rolled a tree stump over it.
Then before long
they flew back with new skunk cabbage.
Then he said to them, "Something awful has happened to us,
my little Grandchildren.
This tree stump rolled over on our salmon. It's gone, all gone."
Then
some of the little birds
are crying.
When they're wiping the white around their eyes [it turns black].



But Robin sat close to the fire,
then scorched her belly
and it's the color of fire.
But Magpie's trying to fly away from them. They're holding her back.
He'd grab her.
That's why he said to Magpie,
"While there are still salmon in the creeks,
don't come down here.
Only when there are no more salmon in the creek, that's when
you will fly down [to the coast].
Then here also
he said to the wren,
"You will always hop through holes.
Wherever you fly,
you'll hop through holes."
He also gave instructions
to the ones he named Chickadees.
And as for Bluejay,
[Raven] is really combing
the feathers on his head,
combing up each side differently.
It's really fun the way Raven fixed his feathers.
That's when
Raven stayed there for a little while,
then [the small birds] ran away from him.
That's how it happened.
His grandchildren
were the ones who worked for him. But then,
he didn't treat them right.
He also instructed them in many ways.
That's how
this story ends.



UNIT ASSESSMENT

Raven and the King Salmon



SCIENCE PROGRAM

Unit Assessment Teacher's Notes
Grade 6 • Unit 10
Theme: Raven and the King Salmon

Date: _____



Unit Assessment

Provide each student with a copy of the students' pages. Read the following instructions aloud. The students should answer the questions on their copies of the assessment.

BASIC LISTENING

Turn to pages 1–2 in your test. Look at the pictures in the boxes.

1. Write the number 1 on top of the picture for **FLOCK**.
2. Write the number 2 on top of the picture for **PIT**.
3. Write the number 3 on top of the picture for **BASE**.
4. Write the number 4 on top of the picture for **BATCH**.
5. Write the number 5 on top of the picture for **ASHORE**.
6. Write the number 6 on top of the picture for **SKELETON**.
7. Write the number 7 on top of the picture for **STUMP**.
8. Write the number 8 on top of the picture for **SCORCH**.

LISTENING COMPREHENSION

Turn to page 3 in your test. Listen to the sentences I say. Circle “T” for true and “F” for false sentences.”

1. A flock of birds refers to individual birds that are flying.
2. A fire pit can provide both heat and light.
3. The base of a totem pole is the part at the top that holds it together.
4. Fish can be dried in batches.
5. He came ashore when he sailed out to sea.
6. A skeleton consists of muscles and fat.
7. A stump is the part of a tree found underground among the roots.
8. Lightning can scorch the land.



Unit Assessment

Provide each student with a copy of the students' pages. Read the following instructions aloud. The students should answer the questions on their copies of the assessment.

SIGHT RECOGNITION

Turn to page 4 in your test. Look at the pictures in the boxes. Circle the word for each picture.

DECODING/ENCODING

Turn to page 5 in your test. Look at the word parts in the boxes. Circle the other half or part of each word.

READING COMPREHENSION

Turn to page 6 in your test. Read the sentence part and fill in the bullet for the correct sentence ending.

BASIC WRITING

Turn to page 7 in your test. Look at the pictures in the boxes. Write the word for each picture.

CREATIVE WRITING

Turn to page 8 in your test. Write a sentence of your own, using each word.

Teacher: To get a percentage for this student's assessment, divide the total number of questions correct by the total number of questions, then multiply this answer by 100 to determine the percentage of questions answered correctly.





SCIENCE PROGRAM

Unit Assessment Student Pages

Grade 6 • Unit 10

Theme: Raven and the King Salmon

Date: _____ Student's Name: _____

Number Correct: _____ Percent Correct: _____















- | | | |
|----|---|---|
| 1. | T | F |
| 2. | T | F |
| 3. | T | F |
| 4. | T | F |
| 5. | T | F |
| 6. | T | F |
| 7. | T | F |
| 8. | T | F |



flock
pit
base
batch
ashore
skeleton
stump
scorch



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- 
- 1 Which of these may travel in flocks?
 salmon.
 geese.
 caribou.
- 2 A pit is
 part of a flock.
 in the air.
 in the ground.
- 3 The base of a hill is
 on the peak.
 in the middle of the hill.
 at the bottom.
- 4 Which of these can be made in batches?
 salmon
 bread
 water
- 5 When a ship moves ashore, it is
 heading to shore.
 heading from shore.
 not moving.
- 6 Which of these is internal?
 finger nails
 human hair
 skeleton
- 7 A stump is
 the tip of a tree.
 the base of a tree.
 the roots of a tree.
- 8 When something is scorched, it is
 burned.
 drowned.
 evaporated.





FLOCK

PIT

BASE

BATCH

ASHORE

SKELETON

STUMP

SCORCH
