UNIT 7

D-1: Concepts of Earth Science

KEY VOCABULARY

Culturally Responsive & Place-Based Introduction of Science Vocabulary

COMPONENTS

Place-Based Perspective

Find an old calculator or electronic device that is no longer functional. Use a screwdriver or a hammer, if appropriate, to open it up. Show the students all of the intricate parts on the inside. Explain that these are components of the device, the pieces that make up the whole. What other objects can students think of that are made up of many components?

Heritage Cultural Perspective

Traditional Tlingit spirituality divided the living being into several components:

Du daa.it — body, physical being
X̲'aséikw — vital force, breath
Du toowú — mind, thought and feelings
Du yahaayí — soul, shadow
S'igeek̲áawu — ghost, revenant

The latter two were considered immortal and persisted in various forms after death.

GEOLOGIC

Place-Based Perspective

Use flour and water to make various structures representing geologic formations such as mountains and plateaus. Ask the students what other geologic formations they know about and if they can name any near their homes. Explain that geologic refers to the Earth's physical structure, its history, and the processes that act on it. So, a landslide would be a "geologic" event.

Heritage Cultural Perspective

Geologic processes have been important considerations for Alaska's indigenous peoples. The eruptions of volcanoes, movement of tectonic plates, advancement and retreat of glaciers, landslides and other events have impacted human life in Alaska for millennia. Tlingit, Haida, and Tsimshian people were aware of these occurrences and often took precautions to avoid being in their path!

ROCK CYCLE

Place-Based Perspective

Show the students different types of rocks and explain that they were formed in different ways. Over time, rocks begin to erode and fall apart due to various geologic processes. Those particles from the rocks are often then reformed over time to make new rocks. This cycle, the rock cycle, has proceeded throughout Earth's history and often operates on very long time scales. Where have the students found interesting rocks?

Heritage Cultural Perspective

The rock cycle can take hundreds or even thousands of years to complete. Some rocks are more brittle than others. Rocks found along the beaches of Southeast Alaska are often very old and have been in relatively the same position for many generations. Petroglyphs are frequent in parts of Southeast and the Tlingit believe that their ancestors produced the rock images. Many remain today but are slowly eroding as a natural part of the rock cycle.

Culturally Responsive & Place-Based Introduction of Science Vocabulary

WATER CYCLE

Place-Based Perspective

Ask the students to make a list of what Southeast Alaska is known for. Then ask how many people wrote rainforest, rain, ocean, water, Xtra Tuf boots…. It is a wet place to live! The water cycle is constantly working in this region. Through several processes, water enters the air and eventually falls back to earth. The water cycle is important for most living organisms!

Heritage Cultural Perspective

Southeast Alaska is considered a temperate rainforest and has been home to indigenous peoples since time immemorial. These peoples survived in an environment where water was consistently present in the ocean, on land, and in the air. Thanks to the water cycle, the fog, mist, and rain that we are so accustomed to have been a part of indigenous life since long ago.

EARTH SURFACE

Place-Based Perspective

Cut a small loaf of bread in half. Show the students that the crust is just like the crust of the Earth, it is the outermost layer. Ask the students what can be found on the Earth's crust. Is that where we live? What can be found beneath the Earth's crust? Of course the world that we know in our daily lives is on the Earth's surface — an important part of the planet for those of us who call it home.

Heritage Cultural Perspective

Throughout Alaska, Native peoples have thrived on the Earth's surface. The Earth's surface is where most life on this planet can be found. It provides food, water, and shelter to make life possible. Many Native peoples recognized the beauty and bounty of the Earth and respected its contributions to their own survival.

TOPOGRAPHICAL MAP

Place-Based Perspective

Show the students the topographical map of Southeast Alaska on page 593. Ask them to try to figure out what various items on the map indicate. Explain to them that this map contains a lot of valuable information, especially regarding elevation and slope. Ask the students to tell you when having a map like this might be useful, and even save one's life. What types of occupations would find these maps useful?

Heritage Cultural Perspective

The concept of navigating with a map and knowledge of slope and elevation is ancient. Alaska's Native peoples were very aware of their surroundings and the relative height of hills and mountains. Kohklux, a clan leader of the Tlingit Chilkat, famously drew a map from Lynn Canal to the interior with the help of his wives. The detailed knowledge that they had of this route is spectacular.

Culturally Responsive & Place-Based Introduction of Science Vocabulary

TUNDRA

Place-Based Perspective

Draw a rough outline of the Americas on the board and include several of the mountain chains (Andes, Rockies, Appalachians). Explain to the students that tundra is a biome where tree growth is hindered by short growing seasons, low temperatures, and permanently frozen ground. Have them guess where tundra occurs in the Americas, including the three types (Arctic, Antarctic, Alpine).

Heritage Cultural Perspective

Tundra is not only found in the northern reaches of Alaska but also at high elevations on mountain slopes. This type of tundra is called alpine tundra and is the kind that Southeast Alaska's indigenous peoples are familiar with. Tlingit, Haida and Tsimshian peoples frequently visited alpine tundra in their travels. It is here that they hunted mountain goats and escaped the Great Flood.

CONVECTION CURRENT

Place-Based Perspective

Draw the outline of a large hot air balloon on the board. Do not draw the fire flame. Have the students guess what is missing in order to make the balloon rise. When the air is heated, the balloon gets higher. If allowed to cool, what happens? The balloon begins to descend. This is convection current. Warmer, less dense substances rise and when they cool and become less dense, they descend. What other examples can the students come up with?

Heritage Cultural Perspective

Convection currents are all around us. They impact our weather systems and are often very different from place to place. In Juneau, for instance, the weather and its related convection currents can be highly variable between downtown, the Mendenhall Valley and North Douglas Island. The Tlingit of Juneau came to know these currents and their resulting weather patterns. This knowledge aided them in both travel and harvest!

MANTLE

Place-Based Perspective

Cut a peach in half and show the students the cross section. Explain that if this were the Earth, the skin would be the crust and the seed would be the core. What is the fruit flesh in between? The mantle! The mantle consists of hot dense silicate rocks and makes up about 84% of Earth's volume!

Heritage Cultural Perspective

The mantle of the Earth is deep below its surface. Though Alaska's Native peoples did not travel to the mantle, they may have contemplated what was far below their feet. The mantle did however have an effect on their lives, especially when the movement of its parts caused earthquakes and volcanic eruptions.

LESSONS

Science Language for Success

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

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.

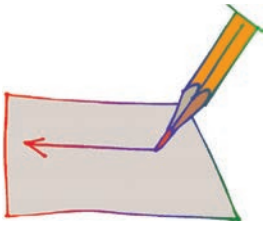
Letter Encode

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

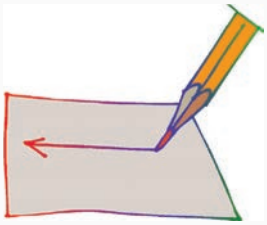


Flashlight Writing

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.

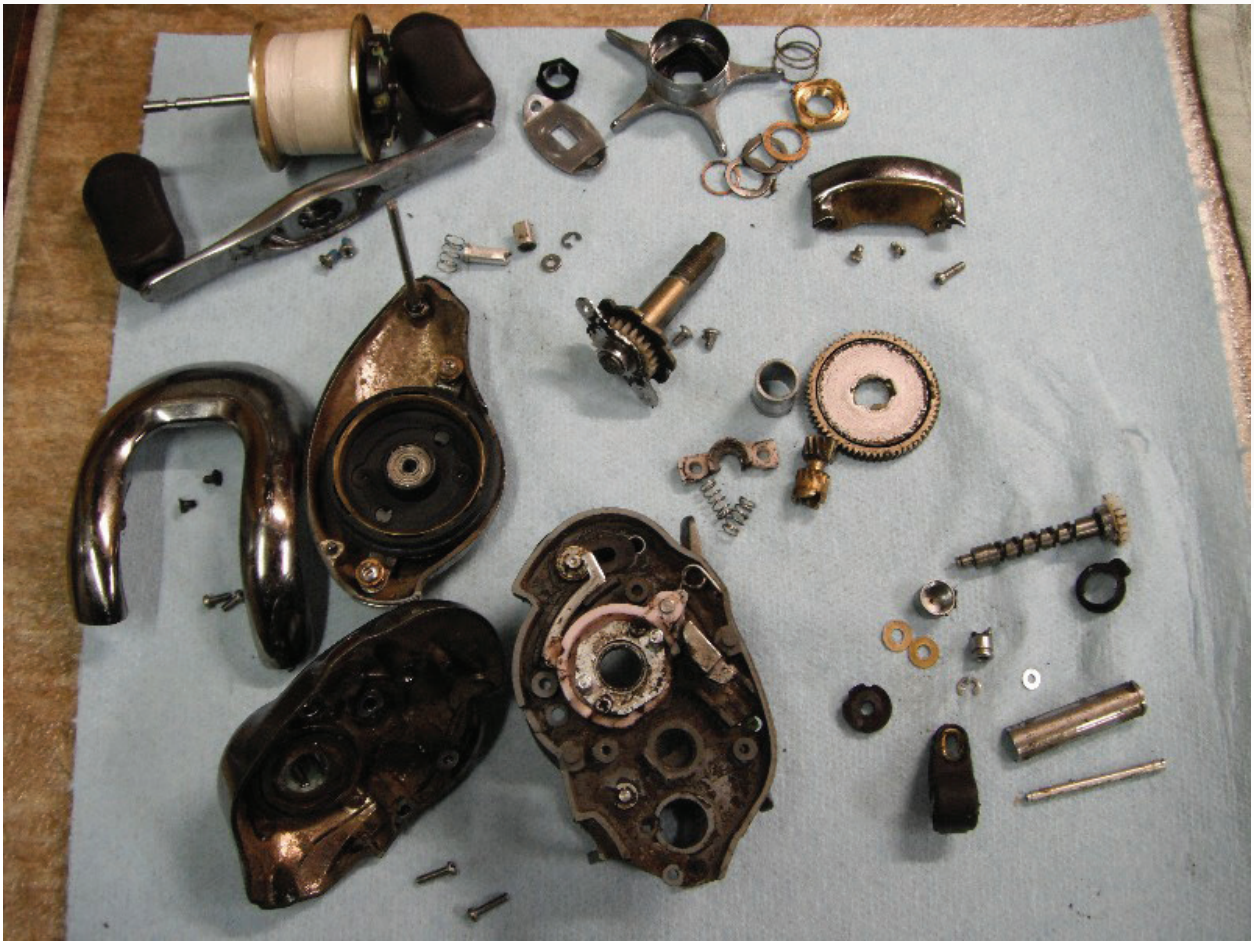
WRITING (CONTINUED)



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



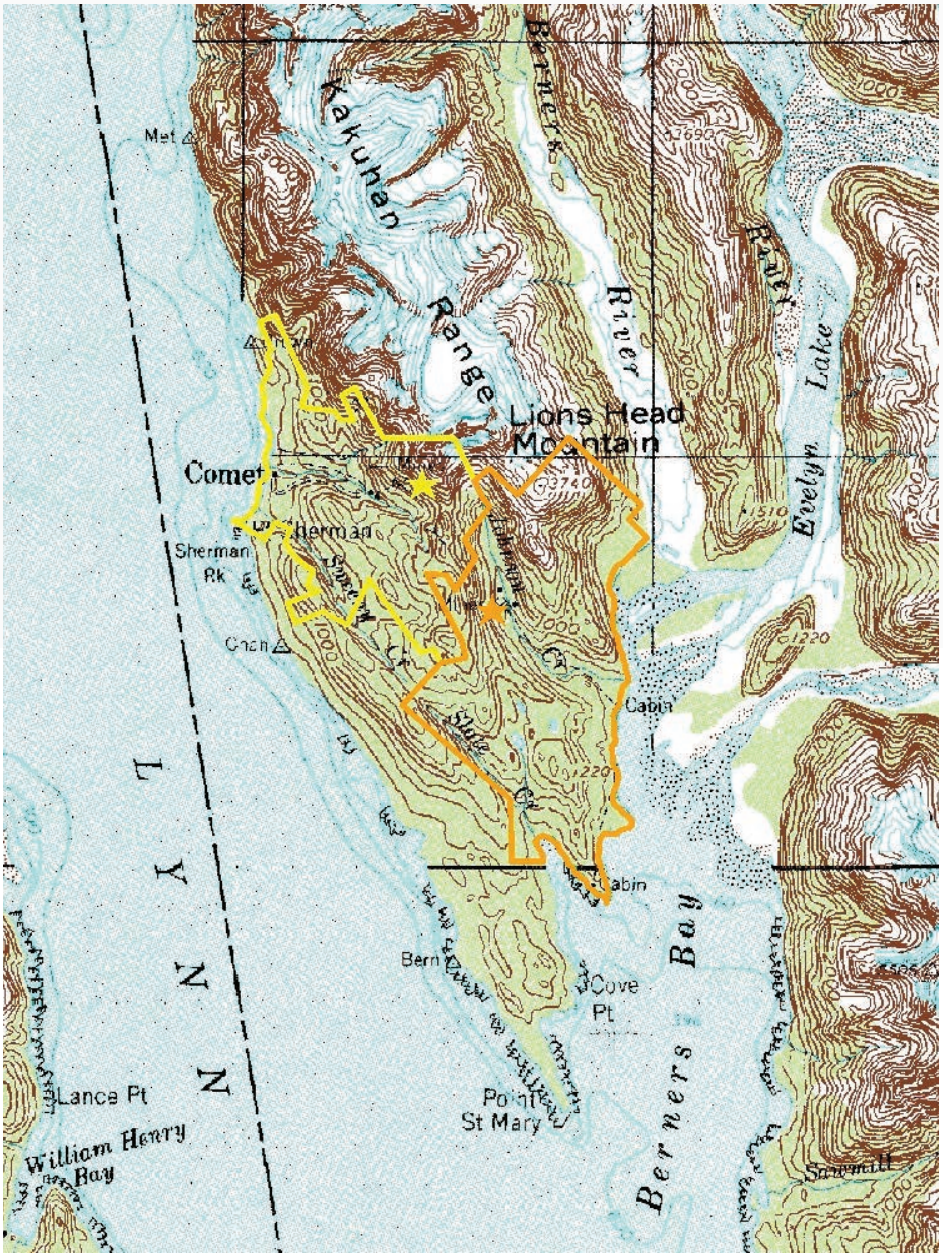
COMPONENTS

GEOLOGIC

ROCK CYCLE

WATER CYCLE

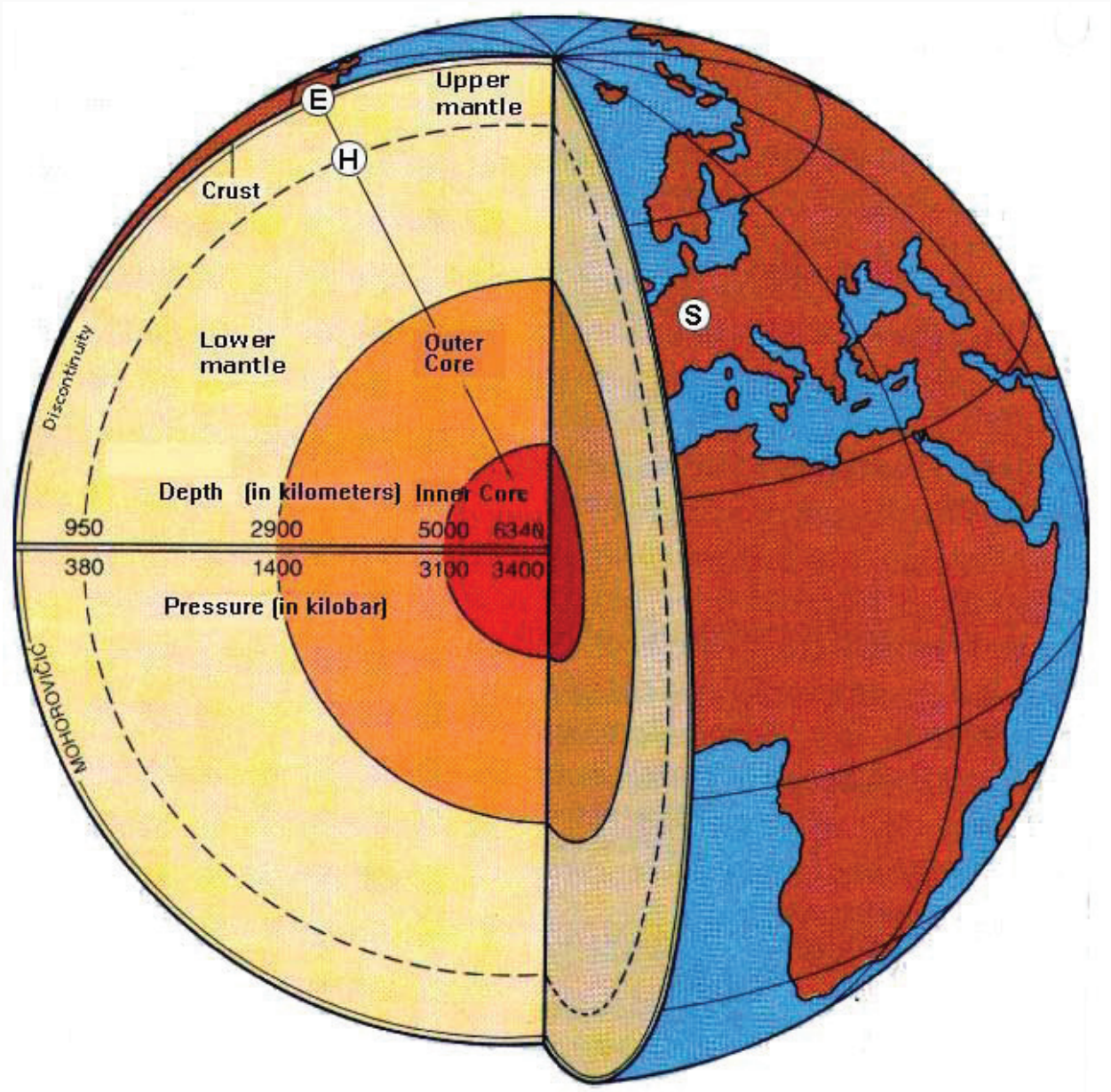
EARTH SURFACE


Kakuhan Range
Berners River
Lions Head Mountain
Comet
Herman
Sherman Rk
Cabin
Evelyn Lake
Cove Pt
Point St Mary
Lance Pt
William Henry Bay
Berners Bay
L Y N N

TOPOGRAPHICAL MAP

TUNDRA

CONVECTION CURRENT


E
H
S
Upper mantle
Crust
Lower mantle
Outer Core
Inner Core
Discontinuity
MOHOROVIČIĆ
Depth (in kilometers)
950
2900
5000
6340
380
1400
3100
3400
Pressure (in kilobar)

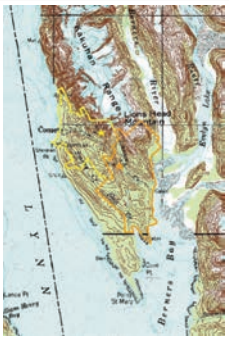
MANTLE

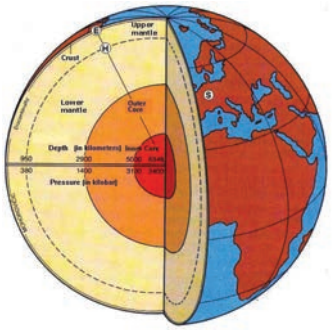
STUDENT SUPPORT MATERIALS

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.





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. A wrist watch is made up of many individual components. **True** **False**

2. Geologic formations can be seen across Southeast Alaska. **True** **False**

3. Rocks are never formed as part of the rock cycle, only destroyed. **True** **False**

4. Evaporation is not a part of the water cycle. **True** **False**

5. The earth's surface is the part of the planet on which we live. **True** **False**

6. You can determine the elevation of an area with a topographic map. **True** **False**

7. There is no plant or animal life that lives on tundra. **True** **False**

8. Boiling water is an example of convection current. **True** **False**

9. The mantel of the earth is completely frozen, too cold for humans. **True** **False**

Listening Comprehension: Answer Key

Read the following sentences to the students. The students should circle "true" or "false" for each of the sentences. Review the students' work.

1. A wrist watch is made up of many individual components. **True** / **False**

2. Geologic formations can be seen across Southeast Alaska. **True** / **False**

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STUDENT SUPPORT MATERIALS

Sight Words

components

geologic

rock cycle

rock cycle

earth surface

topographical map

tundra

convection current

mantle

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.

geologic
water cycle
earth surface
mantle
rock cycle
topographical map
components
tundra

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

Sight Words Activity Page

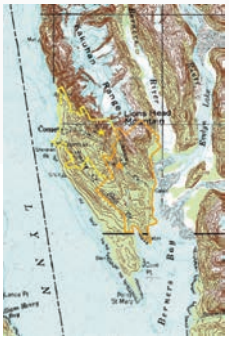
Answer Key

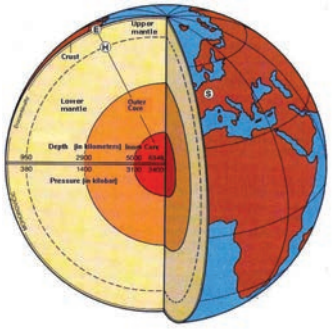
geologic
water cycle
earth surface
mantle
rock cycle
topographical map
components
tundra

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

Sight Words Activity Page

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





component

geologic

rock cycle

topographical map

tundra

water cycle

earth surface

convection current

mantle

Sight Words Activity Page

Have the students print the key words from this unit horizonally in the boxes (each word may be written more than once). They should then fill in all other boxes with any letters. Have the students exchange pages. The students should then circle the words on the page.

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.

nents	po	com
_____	_____	_____

geo	ic	log
_____	_____	_____

cle	rock	cy
_____	_____	_____

Encoding Activity Page

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

ter	cle	cy	wa
_____	_____	_____	_____

po	graph	to	cal	map	i
_____	_____	_____	_____	_____	_____

tun	dra
_____	_____

Encoding Activity Page

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

rent	vec	cur	tion	con

tle	man

Encoding Activity Page

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

comp	logic
geo	er cycle
roc	k cycle
wat	tion current
earth su	dra

Encoding Activity Page

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

topograph	onents
tun	rface
convec	tle
man	ical map

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 the following is made up of several components?
   - ❍ nails
   - ❍ stones
   - ❍ cars
   - ❍ clouds

2. Geologic formations may include:
   - ❍ mountains
   - ❍ plateaus
   - ❍ river valleys
   - ❍ all of the above

3. The rock cycle is a process where:
   - ❍ rocks are broken down and reformed through chemical and physical means
   - ❍ rocks tumble down mountainsides, often settling on the ocean floor
   - ❍ rocks fall apart due to their age
   - ❍ none of the above

4. Which of the following is NOT a part of the water cycle?
   - ❍ evaporation
   - ❍ precipitation
   - ❍ condensation
   - ❍ acceleration

5. Which of the following can be found on the Earth's surface?
   - ❍ forests
   - ❍ oceans
   - ❍ wildlife
   - ❍ all of the above

Reading Comprehension Activity Page

6. A topographical map can be useful in:
   - ❍ identifying the elevation of an area
   - ❍ identifying the slope of an area
   - ❍ identifying safe routes of travel
   - ❍ all of the above

7. Which of the following is NOT a characteristic of tundra?
   - ❍ low temperatures
   - ❍ short growing seasons
   - ❍ extensive forests
   - ❍ permanently frozen ground

8. A convection current is present when:
   - ❍ warm water rises to the surface, cools and sinks
   - ❍ warm air rises, cools, and falls back toward Earth
   - ❍ hotter magma within the earth rises, cools, and sinks
   - ❍ all of the above

9. The Earth's mantle is:
   - ❍ the shelf above its fireplace
   - ❍ the area between the crust and the core
   - ❍ its several populations of manta rays
   - ❍ none of the above

Reading Comprehension Activity Page

ANSWER KEY

1. Which of the following is made up of several components?
   - ❍ nails
   - ❍ stones
   - ● cars
   - ❍ clouds

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   - ❍ plateaus
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Reading Comprehension Activity Page

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- ● all of the above

9 The Earth's mantle is:

- ❍ the shelf above its fireplace
- ● the area between the crust and the core
- ❍ its several populations of manta rays
- ❍ none of the above

Reading Comprehension Activity Page

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

1	A component of Southeast Alaska	A	outermost layer of our planet.
2	Mountains and plateaus	B	all involved in the rock cycle.
3	Wind, water, and gravity are	C	ecosystems are marine mammals.
4	The water cycle involves the	D	and slope is a topographic map.
5	The Earth's surface is the	E	characteristic of tundra.
6	A useful instrument that depicts elevation	F	of cold substances is convection current.
7	Permanently frozen ground is a	G	are geologic formations.
8	The rising of warm substances and falling	H	and it's core is called the mantle.
9	The area between the Earth's crust	I	circulation of water on Earth.

1→_____ 2→ _____ 3→ _____ 4→ _____

5→ _____ 6→ _____ 7→ _____ 8→ _____

9→ _____

Reading Comprehension Activity Page

ANSWER KEY

1	A component of Southeast Alaska	A	outermost layer of our planet.
2	Mountains and plateaus	B	all involved in the rock cycle.
3	Wind, water, and gravity are	C	ecosystems are marine mammals.
4	The water cycle involves the	D	and slope is a topographic map.
5	The Earth's surface is the	E	characteristic of tundra.
6	A useful instrument that depicts elevation	F	of cold substances is convection current.
7	Permanently frozen ground is a	G	are geologic formations.
8	The rising of warm substances and falling	H	and it's core is called the mantle.
9	The area between the Earth's crust	I	circulation of water on Earth.

1→ C 2→ G 3→ B 4→ I

5→ A 6→ D 7→ E 8→ F

9→ H

Reading Comprehension Activity Page

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

A map indicating elevation and slope	**Breaking down and reforming rocks**	**Things that deal with the earth's physical structure**
Circulation of water on earth	**Rising of less dense material and falling of denser material**	**The outermost layer of our planet**
Biome with low temperatures, short growing seasons and permanently frozen ground	**A part or element of a larger whole**	**Region of the earth's interior between the crust and the core**

component

geologic

rock cycle

topographical map

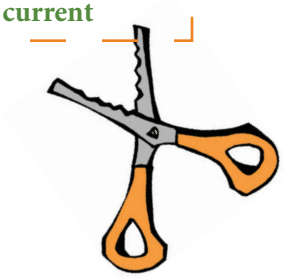
tundra

water cycle

earth surface

convection current

mantle



Reading Comprehension Activity Page

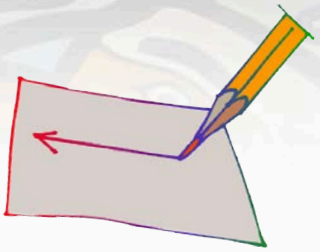
ANSWER KEY

A map indicating elevation and slope topographical map	**Breaking down and reforming rocks** rock cycle	**Things that deal with the earth's physical structure** geologic
Circulation of water on earth water cycle	**Rising of less dense material and falling of denser material** convection current	**The outermost layer of our planet** earth surface
Biome with low temperatures, short growing seasons and permanently frozen ground tundra	**A part or element of a larger whole** components	**Region of the earth's interior between the crust and the core** mantle

STUDENT SUPPORT MATERIALS

Basic Writing

Basic Writing Activity Page



Have the students write in the missing letters.

com_____ts

g_____gic

rock c_____e

wa_____ c_____e

earth s_____e

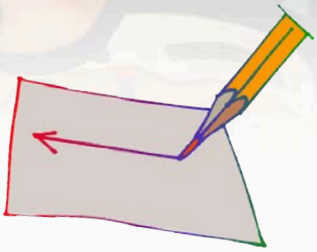
topo_____l map

t_____a

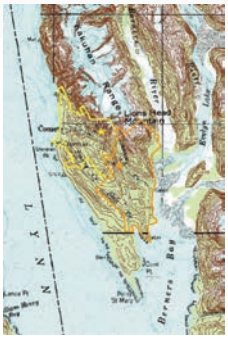
co_____ion current

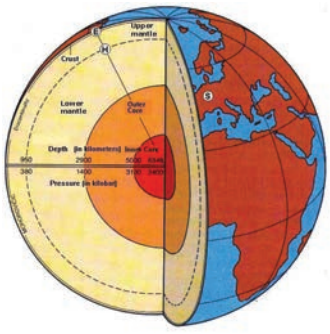
m_____le

Basic Writing Activity Page



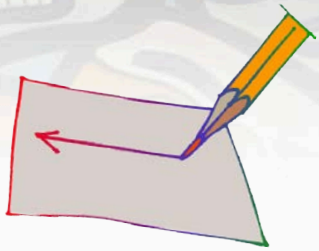
Have the students write the word for each picture.





Basic Writing Activity Page

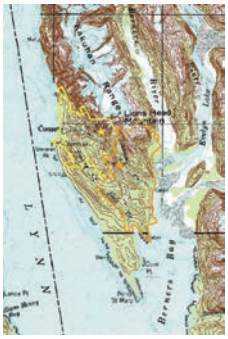
ANSWER KEY



earth surface

tundra

water cycle

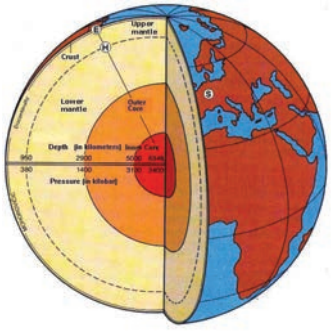


topographical map

geologic

rock cycle

convection current



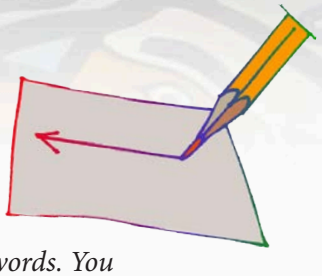
mantle

components

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.

COMPONENTS

_____

GEOLOGIC

_____

ROCK CYCLE

_____

WATER CYCLE

_____

EARTH SURFACE

_____

TOPOGRAPHICAL MAP

_____

TUNDRA

_____

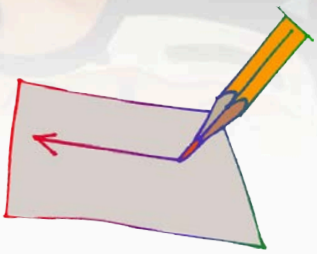
CONVECTION CURRENT

_____

MANTLE

_____

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 tatScience

SCIENCE PROGRAM

Unit Assessment Teacher's Notes
Grade 8 • 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 page 1 in your test. Look at the pictures in the boxes.

1. Write the number 1 by the picture for **COMPONENTS**.
2. Write the number 2 by the picture for **GEOLOGIC**.
3. Write the number 3 by he picture for **ROCK CYCLE**.
4. Write the number 4 by the picture for **WATER CYCLE**.
5. Write the number 5 by the picture for **EARTH SURFACE**.
6. Write the number 6 by the picture for **TOPOGRAPHICAL MAP**.
7. Write the number 7 by the picture for **TUNDRA**.
8. Write the number 8 by the picture for **CONVECTION CURRENT**.
9. Write the number 9 by the picture for **MANTLE**.

LISTENING COMPREHENSION

Turn to page 2 in your test. Listen to the sentences I say. Circle "T" for true and "F" for false sentences."

1. Cars are comprised of many different components.
2. Geologic formations are absent from Southeast Alaska.
3. The rock cycle refers to the rise and fall of rock bands.
4. The water cycle helps to circulate water across the Earth.
5. Earth's surface refers to the outermost layer of the planet.
6. There is no usefulness in a topographic map, who needs to know elevation anyway?
7. In Alaska, animals such as caribou and muskox thrive on the tundra.
8. Convection current refers to the electric charge used to run streetcars.
9. The mantle of the earth is extremely hot.

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 pages 3 and 4 in your test. Look at the pictures in the boxes. Circle the word for each picture.

DECODING/ENCODING

Turn to pages 5 and 6 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 7 in your test. Read the sentence part and fill in the bullet for the correct sentence ending.

BASIC WRITING

Turn to page 8 in your test. Look at the pictures in the boxes. Write the word for each picture.

CREATIVE WRITING

Turn to page 9 in your test. Write a sentence of your own, using each word.

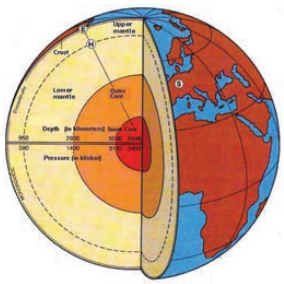
Teacher: To get a percentage for this student's assessment, divide the total number of questions correct by the total number of questions, then multiply this answer by 100 to determine the percentage of questions answered correctly.

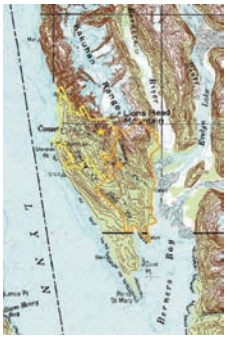
SCIENCE PROGRAM

Unit Assessment Student Pages
Grade 8 • Unit 7 (D–1)
Theme: Concepts of Earth Science

Date:_____ Student's Name:_____

Number Correct:_____ Percent Correct:_____


Upper mantle
Crust
Lower mantle
Outer Core
Depth (in kilometers)
Pressure (in kilobar)



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9. T F

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convection current
mantle

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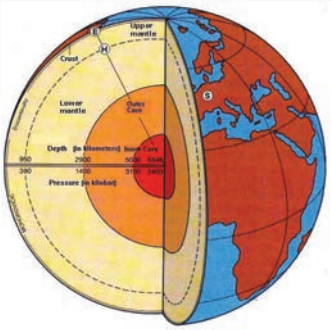

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1. Which of the following is NOT a component of a car?
   - ❍ tail flap
   - ❍ steering wheel
   - ❍ engine

2. Which of the following is a geologic formation?
   - ❍ mountain
   - ❍ origami
   - ❍ skyscraper

3. Rocks are broken down and reformed in a process called the rock:
   - ❍ system
   - ❍ cycle
   - ❍ symmetry

4. _____ is part of the water cycle.
   - ❍ anticipation
   - ❍ acceleration
   - ❍ precipitation

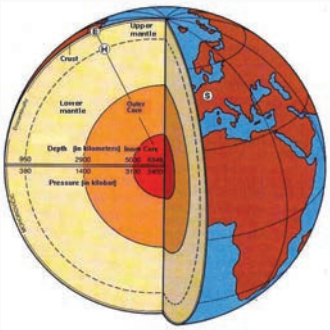
5. The Earth's surface is where:
   - ❍ satellites orbit
   - ❍ wildlife exists
   - ❍ massive beds of magma churn

6. Which of the following is not part of a topographical map?
   - ❍ population
   - ❍ slope
   - ❍ elevation

7. Tundra has all of the following characteristics EXCEPT:
   - ❍ permanently frozen ground
   - ❍ extensive forests
   - ❍ short growing seasons

8. Which of the following is an example of convection current?
   - ❍ boiling water
   - ❍ riptides
   - ❍ a plant with small berries

9. The Earth's mantle is located between the :
   - ❍ outer core and inner core
   - ❍ surface and atmosphere
   - ❍ crust and core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Crust
Lower mantle
Outer Core
Depth (in kilometers)
Inner Core
Pressure (in kilobar)

COMPONENTS

GEOLOGIC

ROCK CYCLE

WATER CYCLE

EARTH SURFACE

TOPOGRAPHICAL MAP

TUNDRA

CONVECTION CURRENT

MANTLE

SCIENCE PROGRAM

Unit Assessment ANSWER KEY
Grade 8 • Unit 7 (D–1)
Theme: Concepts of Earth Science

4

7

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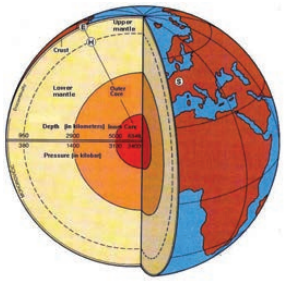
Upper mantle
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Lower mantle
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Depth (in kilometers)
Pressure (in kilobar)

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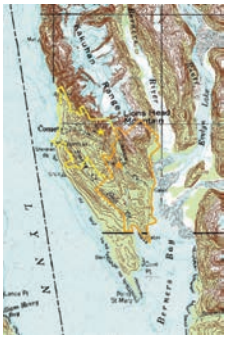

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1. **T** **F**

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4. **T** F

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6. T **F**

7. **T** F

8. T **F**

9. **T** F

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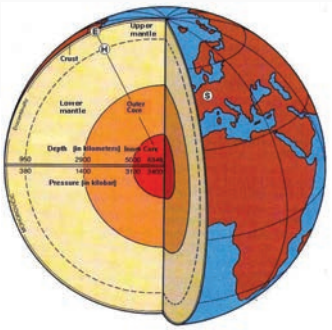

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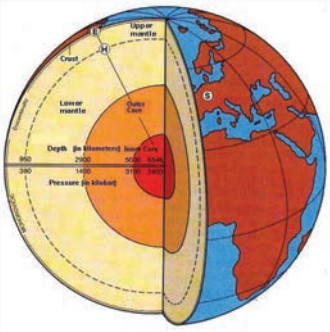
rock cycle



mantle

components

geologic

water cycle

tundra

convection current

topographical map

earth surface