SCIENCE

FOR LANGUAGE DEVELOPMENT

GRADE 8 • BOOK 1

BASED ON
ALASKA
SCIENCE
STANDARDS

Sealaska Heritage Institute

Integrating culturally responsive place-based content with language skills development for curriculum enrichment

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2009

Contents

Introduction to the Developmental Language Process in Science

OVER THE YEARS, much has been written about the successes and failures of students in schools. There is no end to the solutions offered, particularly for those students who are struggling with academics. For example, there have been efforts to bring local cultures into the classroom, thus providing the students with familiar points of departure for learning.

While the inclusion of Native concepts, values,and traditions into a curriculum provide a valuable foundation for self-identity and cultural pride, they may not, on their own, fully address improved academic achievement.

Through science lessons, students are exposed to new information and to the key vocabulary that represents that information. While the students may acquire, through various processes, the scientific information, the vocabulary is often left at an exposure level and not internalized by the students. Over time, this leads to language delay that impacts negatively on a student's ongoing achievement.

Due to weak language bases, many Native Alaskan high school students struggle with texts that are beyond their comprehension levels and writing assignments that call for language they do not have.

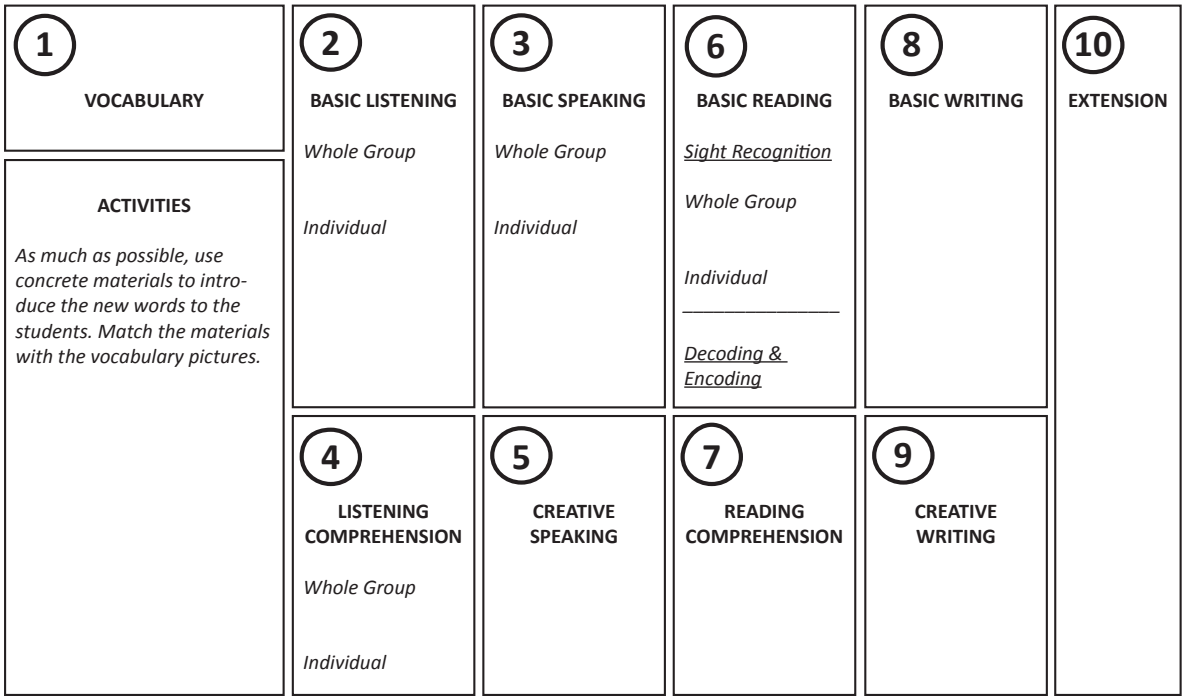
This program is designed to meet the academic realities faced by high school students every day, using a developmental process that integrates culture with skills development.

To this end, each key vocabulary word, in science, is viewed as a concept. The words are introduced concretely, using place-based information and contexts. Whenever possible, the concept is viewed through the Native heritage cultural perspectives. Using this approach, the students have the opportunity to acquire new information in manageable chunks, the sum total of which represent the body of information to be learned in the science program.

When the key vocabulary/concepts have been introduced, the students are then taken through a sequence of listening, speaking, reading, and writing activities designed to instill the vocabulary into their long-term memories.

This is the schema for the Developmental Language Process:

The Developmental Language Process

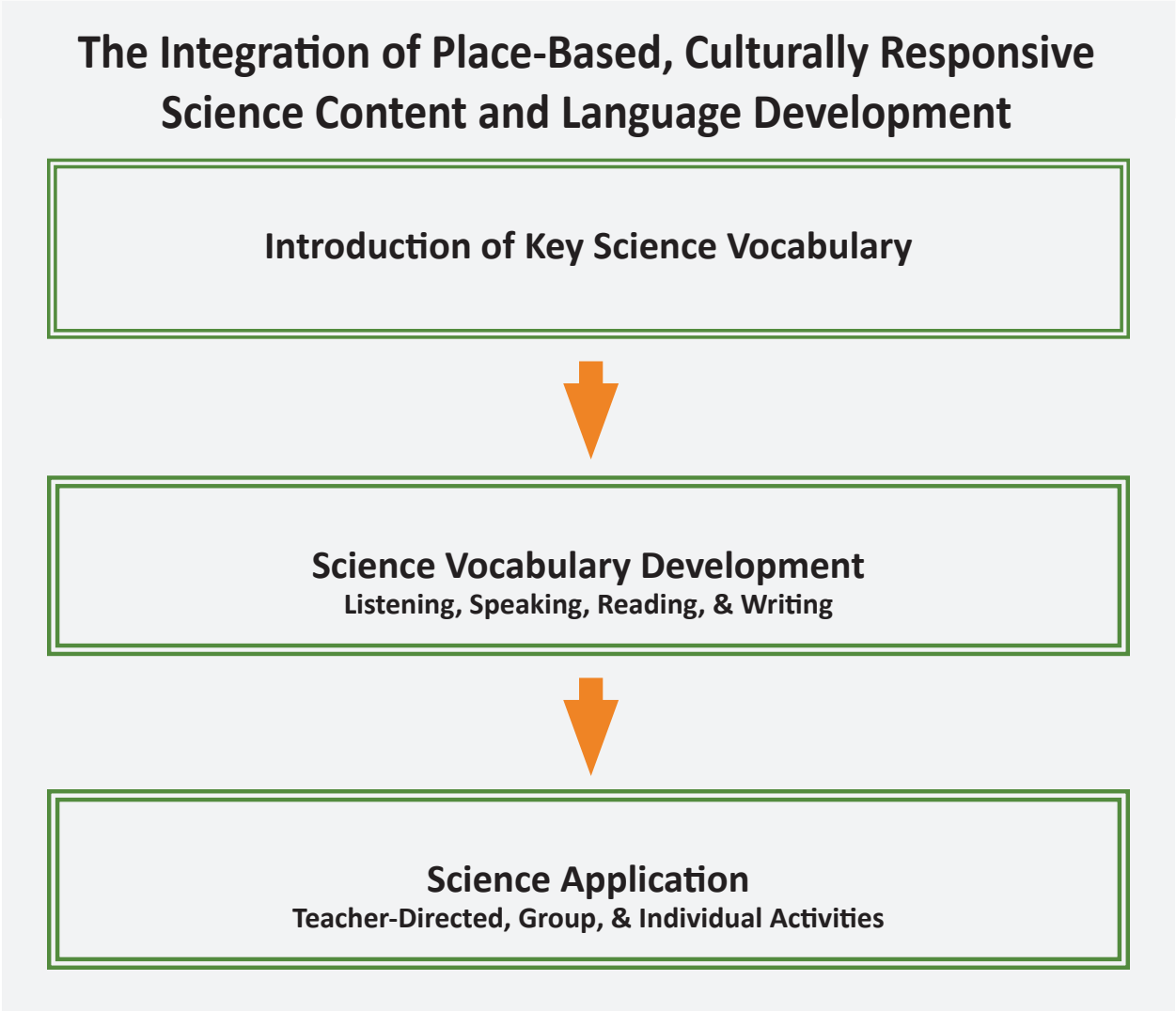


Finally, at the end of each unit, the students will participate in enrichment activities based on recognized and research-based best practices. By this time, the science information and vocabulary will be familiar, adding to the students' feelings of confidence and success. These activities will include place-based and heritage culture perspectives of the information learned.

This approach is radically different from current practices in most science classes. Historically, little or no formal vocabulary development takes place. It is assumed that the vocabulary is being internalized during the learning process, which is most often an erroneous assumption.

Increasing the language bases of the students will lead to improved comprehension in listening and reading, and higher levels of production in creative speaking and writing.

This, coupled with the place-based and culturally-responsive content, will provide the students with the foundations necessary for ongoing confidence and achievement.



UNIT 1

A–1: Science as Inquiry Process

KEY VOCABULARY

Culturally Responsive & Place-Based Introduction of Science Vocabulary

INTEGRITY

Place-Based Perspective

Show the students the picture of the Tlingit clan leader on page 17. Explain that he was a leader of his people and that leaders are expected to have integrity. If leaders are moral and honest, the people are more likely to support them. Ask the students who in their lives they see as having integrity.

Heritage Cultural Perspective

Behaving with dignity and integrity at all times is deeply entrenched in Tlingit and Haida culture and their customary laws. In fact, the Teslin Tlingit Nation of Canada included these principles as laws within their governing documents.

LOGICAL REASONING

Place-Based Perspective

Bring in the ingredients to make a peanut butter and jelly sandwich. Before showing the ingredients, ask the students what they are. Then ask the students to tell you the steps in making a peanut butter and jelly sandwich and do it as they tell you. Ask what would have happened if you put the jelly on the opposite side of the bread from the peanut butter. Explain that they came up with the steps using logical reasoning.

Heritage Cultural Perspective

Alaska Native peoples had to use logical reasoning to survive the harsh climatic conditions of the north. Rational decisions related to the weather, wildfires, hunting and fishing, sea travel, and almost every aspect of a traditional lifestyle were a necessity.

SKEPTICISM

Place-Based Perspective

Show the students a piece of paper that has been crumpled and torn. Tell them that it was a very important piece of paper and that your dog ate it. Have the students who believe you raise their hands. Explain that many of them probably had "doubts" that the paper was eaten by a dog — they had skepticism. Tell them that it's good to have at least a little skepticism because what appears to be truth is sometimes not.

Heritage Cultural Perspective

Alaska's Tlingit and Haida people had good reason to have skepticism regarding European intentions post-contact. Previously unknown peoples were coming to Alaska to take its land and resources, often without Native consent. Would you question someone's intentions if they raided your home and property?

Culturally Responsive & Place-Based Introduction of Science Vocabulary

OPENNESS

Place-Based Perspective

Show the students a globe and ask them to raise their hands if they believe that the Earth is round. Explain that at one time, people believed the earth was flat and that this was absolute. Some people who had "openness" to alternative explanations were able to consider other arguments. This openness eventually lead to the finding that the Earth is in fact round.

Heritage Cultural Perspective

The Native peoples of the Northwest coast had a level of openness to new ideas and ways of viewing the world around them. When they interacted with unfamiliar cultures, they often adopted some of the customs that would benefit themselves at home. They understood that lifelong learning was an important part of the human experience.

CONDUCT

Place-Based Perspective

Show the students the picture on page 25 of Haida people conducting a totem raising ceremony in Hydaburg. Ask the students what types of things they have been asked to conduct. Explain that conducting experiments in science is necessary in order to understand the world around us.

Heritage Cultural Perspective

Totem raisings continue to be conducted across Southeast Alaska. These ceremonies are often held in conjunction with a feast or ku.éex' (potlatch). The significance of the pole and stories of the crests are told including the right of clans to claim the crests.

RECOGNIZE

Place-Based Perspective

Ask students if they recognize the pictures of red baneberries on page 27. Explain that these are extremely poisonous and that it is important to recognize that they are not food items.

*Ask students to identify the recognizable characteristics of these species.

Heritage Cultural Perspective

There are many plants, berries, and mushrooms that Alaska Native peoples use as important parts of their diet and subsistence lifestyle. Over time, they have learned to recognize which items can cause severe sickness and even death. Recognition is VERY important!

Culturally Responsive & Place-Based Introduction of Science Vocabulary

PRESENT

Place-Based Perspective

Show the students the pictures of people hunting and fishing on page 29. Tell them that you are presenting them with two choices for which activity they prefer most. Keep a tally of each student's response to their preferred activity. "Present" the results of the tally to the students.

Heritage Cultural Perspective

The Chookaneidí Clan of the Tlingit was once presented with a dangerous situation. A glacier near their village began to advance rapidly, threatening their homes and lives. What decision would you make if presented with this same situation?

EXPLANATION

Place-Based Perspective

Show students the picture of a rough-skinned newt on page 31. Ask them to offer an explanation as to why it has a bright orange/red stomach. "Explain" to them that many animals that are brightly colored are poisonous or toxic if consumed.

*Ask students if they have seen these animals in Alaska and to "explain" where they were found.

Heritage Cultural Perspective

Rough-skinned newts are present throughout Southeast Alaska, typically living in bogs and muskegs. While they rarely if ever appear in Alaska Native art or stories, indigenous peoples undoubtedly found them frequently.

MODELS

Place-Based Perspective

Show the students the picture of a mammal metabolism on page 33. Explain that the way that the body works is complicated and that models can help us to make concepts a bit easier to understand. Explain that models are used to predict weather by incorporating many smaller concepts. Ask the students to list things that contribute to weather (i.e. temperature, mountains, oceans, winds etc.)

Heritage Cultural Perspective

In northern environments the weather can often change very quickly. Alaska Natives were able to model weather, in their own heads, to predict storms and other events. By recognizing many different signs from nature, people could prepare for extreme weather conditions.

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.

Let's Move

Identify an appropriate body movement for each vocabulary word. This may involve movements of hands, arms, legs, etc. Practice the body movements with the students. When the students are able to perform the body movements well, say a vocabulary word. The students should respond with the appropriate body movement. You may wish to say the vocabulary words in a running story. When a vocabulary word is heard, the students should perform the appropriate body movement. Repeat, until the students have responded to each word a number of times.

What's the Answer?

Before the activity begins, develop questions related to the concept being studied. For each question, prepare three answers—only one of which in each set is correct for the question asked. Ask the students the question and then read the three answers to them. The students should show you (using their fingers or prepared number cards) which answer is correct for the question asked. Repeat this process with other questions and answers.

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.

Hand Tag

Group the students in a circle on the floor. Have the students place their hands on the floor, palms down. Stand in the center of the circle with the vocabulary picture and a flashlight. The object of the activity is to attempt to tag a student's hand or hands with the light of the flashlight. The students must pull their hands from the circle when they think they are about to be tagged. When you eventually tag a student's hand or hands, he/she must then say a complete sentence using the word for a vocabulary picture that you show. 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.

Sight Word Bingo

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 out the sight words. When the students have cut out their sight words, each student should lay all of the sight words, but one, face down on his/her desk. Show a vocabulary picture. Any student or students who have the sight word for that picture face-up on their desks should show the sight word to you. Then, those sight words should be placed to the side and other sight words turned over in their place. Continue in this way until a student or students have no sight words left on their desks.

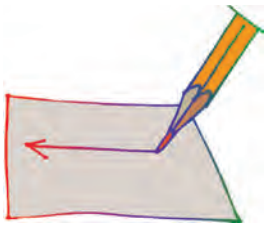
Letter Encode

Give each student five copies of a page that contains the letters of the alphabet. The students should cut all of the letters out. 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. The students should keep their letters in individual envelopes for use in other units.

Student Support Materials

Have the students work on the activity pages from the Student Support Materials for this Unit.

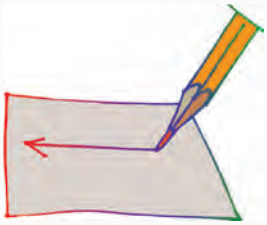
WRITING



Watch Your Half

Prepare a photocopy of each of the vocabulary pictures. Cut the photocopied pictures in half. Keep the picture halves in separate piles. Group the students into two teams. Give all of the picture halves from one pile to the players in Team One. Give the picture halves from the other pile to the players in Team Two. Say a vocabulary word. When you say "Go," the student from each team who has the picture half for the vocabulary word you said should rush to the board and write the word on the board. The first player to do this correctly wins the round. Repeat until all players have participated. This activity may be played more than once by collecting, mixing, and redistributing the picture halves to the two teams.

WRITING (CONTINUED)



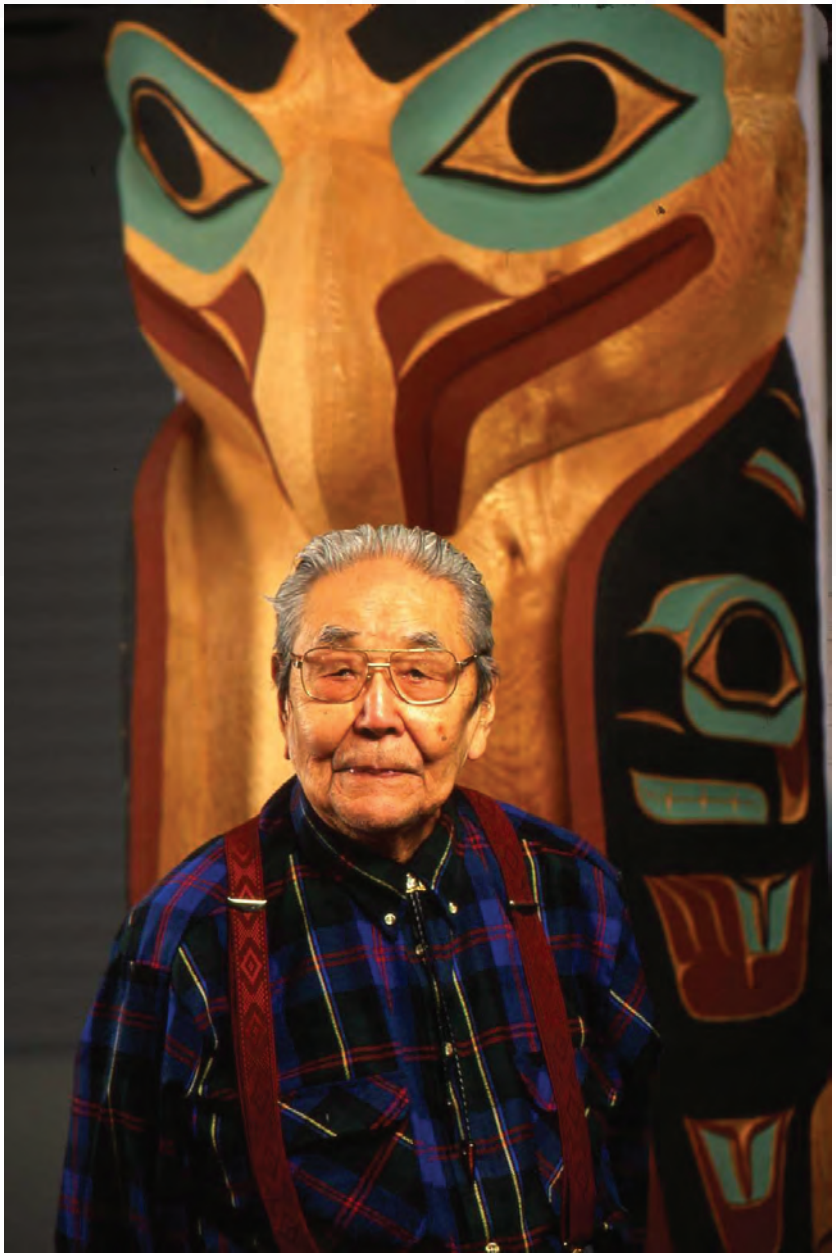
Sentence Completion

Write a number of sentence halves on individual sentence strips. These should include both the beginning and ending halves of sentences. Mount the sentence halves on the board and number each one. Provide the students with writing paper and pencils/pens. Each student should then complete ONE of the sentence halves in his/her own words, writing his/her part of the sentence on the sheet of paper. When the students have completed their sentence halves, have a student read ONLY the sentence half he/she wrote. The other students must then attempt to identify the "other half" of the sentence on the board (by its number). Repeat until all of the students have shared their sentence halves in this way.

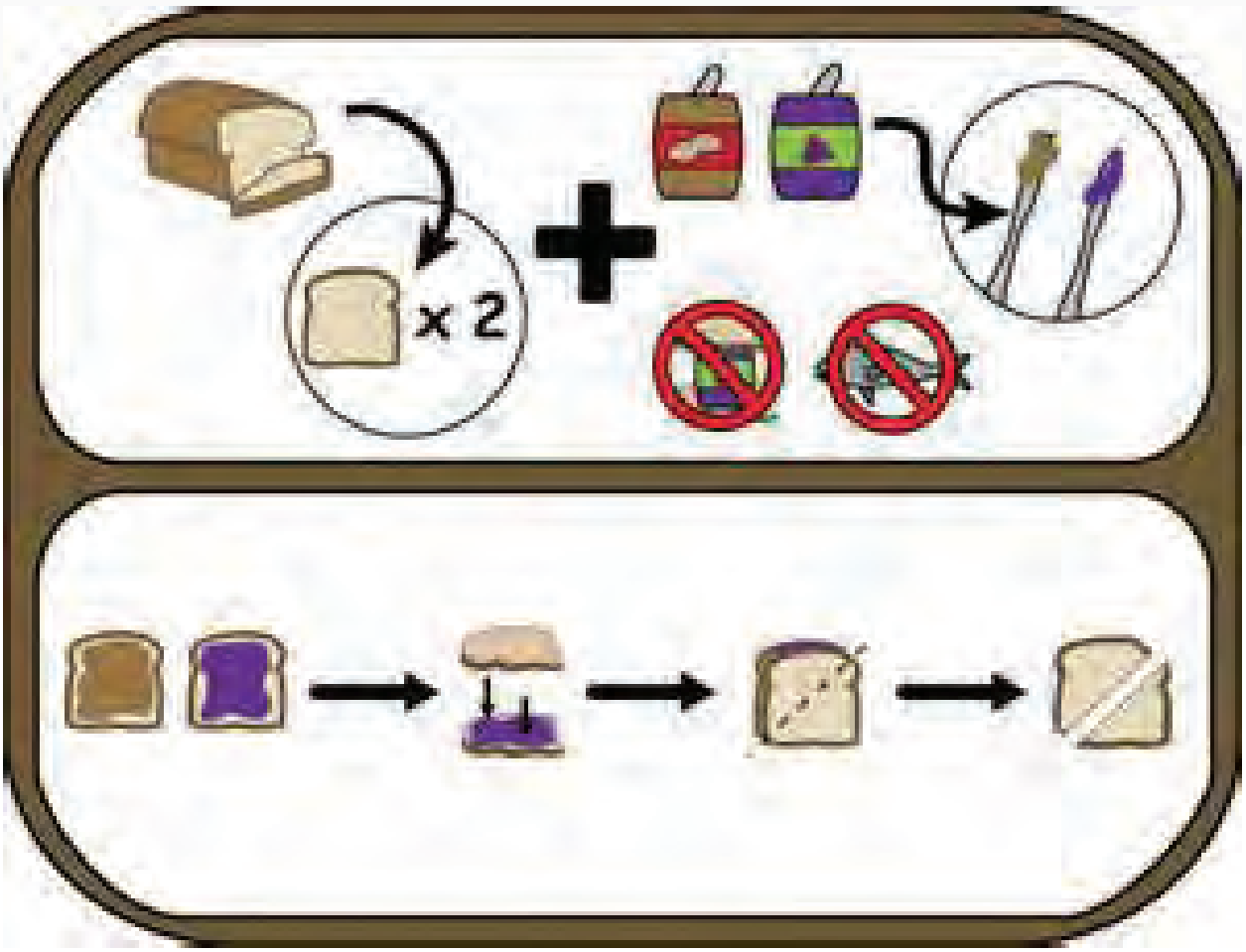
Student Support Materials

Have the students work on the activity pages from the Student Support Materials for this Unit.

VOCABULARY PICTURES



INTEGRITY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LOGICAL REASONING

SKEPTICISM


New
Ideas

OPENNESS


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CONDUCT

RECOGNIZE

PRESENT

EXPLANATION

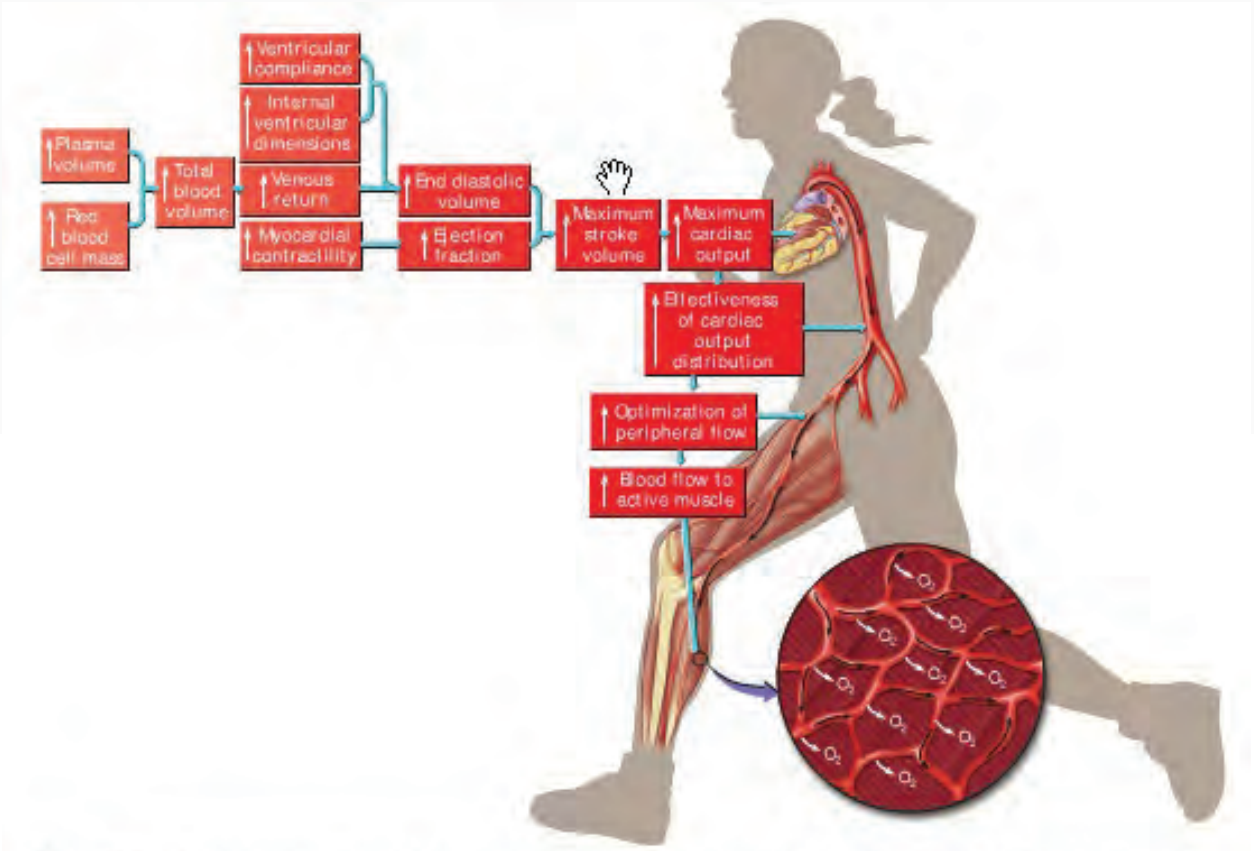


Figure 21.5 • Adaptations in cardiovascular function with aerobic exercise training that increase oxygen delivery to active muscles.

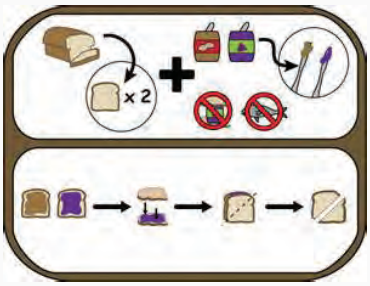
MODELS

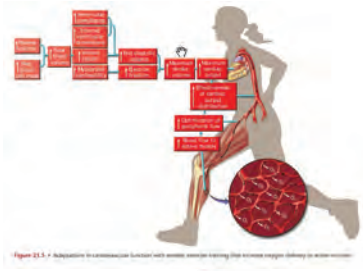
STUDENT SUPPORT MATERIALS

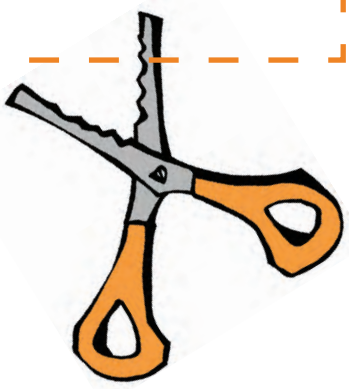
Listening • Mini Pictures

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 scientist must have integrity and report true and accurate results.	**True** **False**
2	Logical reasoning is typically done by guessing and not by considering facts.	**True** **False**
3	A degree of skepticism is good when reviewing the results of experiments.	**True** **False**
4	Openness to alternative explanations is important in science.	**True** **False**
5	Scientists often conduct experiments to help understand the world around us.	**True** **False**
6	It is <u>not</u> very important to recognize poisonous and toxic foods.	**True** **False**
7	Scientists should present their findings so that others can use the information.	**True** **False**
8	There may be several explanations for the outcome of an experiment.	**True** **False**
9	Models are not useful for understanding complex concepts.	**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 scientist must have integrity and report true and accurate results.	**True** / False
2	Logical reasoning is typically done by guessing and not by considering facts.	True / **False**
3	A degree of skepticism is good when reviewing the results of experiments.	**True** / False
4	Openness to alternative explanations is important in science.	**True** / False
5	Scientists often conduct experiments to help understand the world around us.	**True** / False
6	It is <u>not</u> very important to recognize poisonous and toxic foods.	True / **False**
7	Scientists should present their findings so that others can use the information.	**True** / False
8	There may be several explanations for the outcome of an experiment.	**True** / False
9	Models are not useful for understanding complex concepts.	True / **False**

STUDENT SUPPORT MATERIALS

Sight Words

integrity

logical reasoning

skepticism

openness

conduct

recognize

present

explanations

models

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.

explanations
integrity
present
skepticism
conduct
logical reasoning
recognize
openness
models

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

Sight Words Activity Page

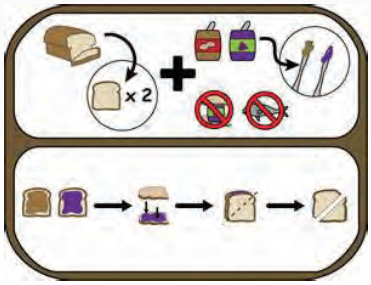
Answer Key

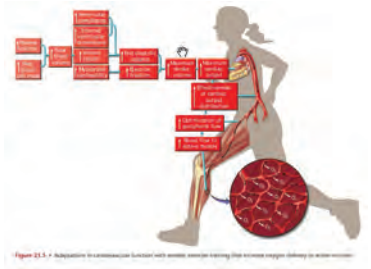
explanations
integrity
present
skepticism
conduct
logical reasoning
recognize
openness
models

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

Sight Words Activity Page

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





integrity | logical reasoning | skepticism | openness

conduct | recognize | present | explanations

models

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.

teg	in	ri	ty
_____	_____	_____	_____

i	log	cal
_____	_____	_____

rea	ing	son
_____	_____	_____

skep	cism	ti
_____	_____	_____

Encoding Activity Page

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

ness	pen	o
_____	_____	_____

duct	con
_____	_____

og	nize	rec
_____	_____	_____

Encoding Activity Page

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

ent	pres
_____	_____

ex	tion	pla	na
_____	_____	_____	_____

els	mod
_____	_____

Encoding Activity Page

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

integ	soning
logical rea	duct
skep	els
ope	nness
con	nize

Encoding Activity Page

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

recog	ation
pres	ticism
explan	ent
mod	rity

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. A scientist's integrity refers to his or her:
   - ❍ laboratory equipment
   - ❍ honesty
   - ❍ grant funding
   - ❍ math skills

2. What type of reasoning uses a rational systematic series of steps based on sound mathematical procedures to arrive at a conclusion?
   - ❍ educated guess
   - ❍ haphazard
   - ❍ intuitive
   - ❍ logical

3. Skepticism is doubting the _____ of something.
   - ❍ truth
   - ❍ size
   - ❍ extent
   - ❍ none of the above

4. One's openness to experimental findings suggests that he/she:
   - ❍ does not enjoy the subject matter
   - ❍ is uninterested
   - ❍ is completely convinced
   - ❍ is not completely convinced

5. What do scientists conduct?
   - ❍ orchestras
   - ❍ electricity
   - ❍ experiments
   - ❍ all of the above

Reading Comprehension Activity Page

6 It is important to recognize the difference between:

- ❍ edible and toxic foods
- ❍ Chinook and Sockeye salmon
- ❍ rough and calm seas
- ❍ all of the above

7 What do scientists do with the results of experiments?

- ❍ present them to others
- ❍ throw them in the trash
- ❍ flush them down the toilet
- ❍ make paper airplanes

8 When we put the knives, forks, and spoons in their own trays, we are

- ❍ making foods spicier
- ❍ measuring the amount of liquid in a beaker
- ❍ better understanding a concept or question
- ❍ polluting the environment

9 Models are useful tools for

- ❍ understanding complicated subjects
- ❍ looking at larger projects on a smaller scale
- ❍ teaching about large or dangerous concepts
- ❍ all of the above

Reading Comprehension Activity Page

ANSWER KEY

1. A scientist's integrity refers to his or her:
   - ❍ laboratory equipment
   - ● honesty
   - ❍ grant funding
   - ❍ math skills

2. What type of reasoning uses a rational systematic series of steps based on sound mathematical procedures to arrive at a conclusion?
   - ❍ educated guess
   - ❍ haphazard
   - ❍ intuitive
   - ● logical

3. Skepticism is doubting the _____ of something.
   - ● truth
   - ❍ size
   - ❍ extent
   - ❍ none of the above

4. One's openness to experimental findings suggests that he/she:
   - ❍ does not enjoy the subject matter
   - ❍ is uninterested
   - ❍ is completely convinced
   - ● is not completely convinced

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   - ❍ electricity
   - ● experiments
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Reading Comprehension Activity Page

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- ❍ polluting the environment

9 Models are useful tools for

- ❍ understanding complicated subjects
- ❍ looking at larger projects on a smaller scale
- ❍ teaching about large or dangerous concepts
- ● all of the above

Reading Comprehension Activity Page

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

1	A scientist without integrity	A	skepticism when analyzing data.
2	When possible, it's better to use logical	B	is an important quality for scientists.
3	One should have a certain degree of	C	his findings to other scientists.
4	Openness to alternative explanations	D	reasoning rather than a mere guess.
5	The Haida people conducted a	E	is that it serves as a warning to predators.
6	The woman recognized that	F	the berries were toxic.
7	The scientist wanted to present	G	totem-raising ceremony.
8	An explanation for the newt's red stomach	H	the weather.
9	Models can help to predict	I	cannot be believed.

1→_____ 2→ _____ 3→ _____ 4→ _____

5→ _____ 6→ _____ 7→ _____ 8→ _____

9→ _____

Reading Comprehension Activity Page

ANSWER KEY

1	A scientist without integrity	A	skepticism when analyzing data.
2	When possible, it's better to use logical	B	is an important quality for scientists.
3	One should have a certain degree of	C	his findings to other scientists.
4	Openness to alternative explanations	D	reasoning rather than a mere guess.
5	The Haida people conducted a	E	is that it serves as a warning to predators.
6	The woman recognized that	F	the berries were toxic.
7	The scientist wanted to present	G	totem-raising ceremony.
8	An explanation for the newt's red stomach	H	the weather.
9	Models can help to predict	I	cannot be believed.

1→ I 2→ D 3→ A 4→ B

5→ G 6→ F 7→ C 8→ E

9→ H

Reading Comprehension Activity Page

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

Soundness of character	**Not fully decided**	**A meaning or interpretation**
Doubting the truth of something	**Example for imitation or comparison**	**To perceive as existing or true**
To bring, offer, or give	**Using a rational systematic series of steps to reach a conclusion**	**To direct an action or course**

integrity

logical reasoning

skepticism

openness

conduct

recognize

present

models

explanations

Reading Comprehension Activity Page

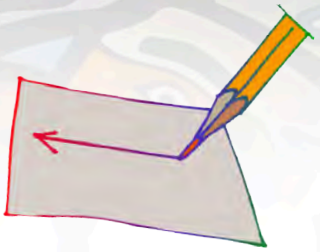
ANSWER KEY

Soundness of character integrity	**Not fully decided** openness	**A meaning or interpretation** explanation
Doubting the truth of something skepticism	**Example for imitation or comparison** models	**To perceive as existing or true** recognize
To bring, offer, or give present	**Using a rational systematic series of steps to reach a conclusion** logical reasoning	**To direct an action or course** conduct

STUDENT SUPPORT MATERIALS

Basic Writing

Basic Writing Activity Page



Have the students write in the missing letters.

int_____y

log_____l reasoning

s_____icism

o_____ess

co_____ct

rec_____ze

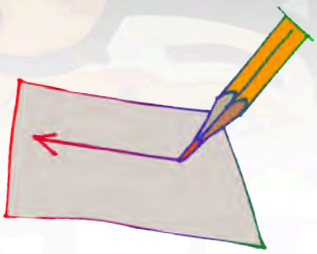
pr_____nt

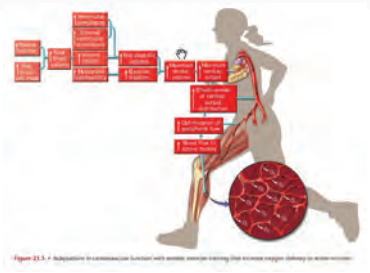
ex_____tion

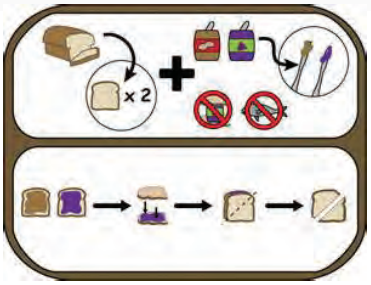
m_____ls

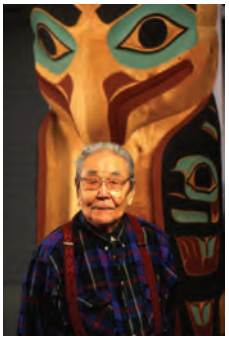
Basic Writing Activity Page

Have the students write the word for each picture.



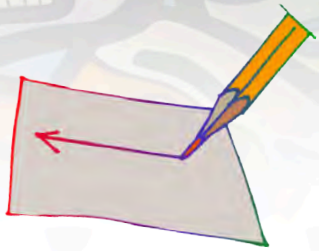






Basic Writing Activity Page

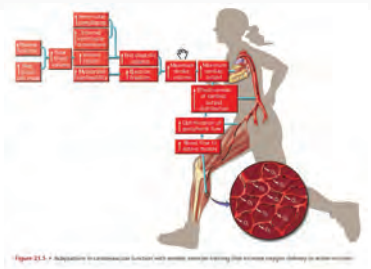
ANSWER KEY



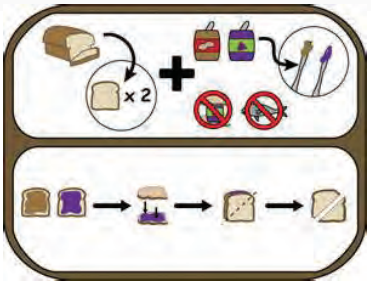
conduct

recognize

openness

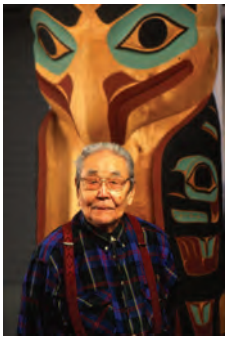


models



logical reasoning

present



integrity

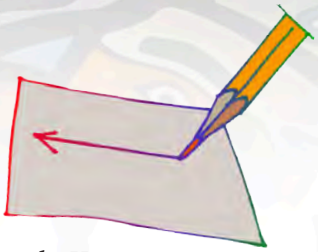
explanation

skepticism

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.

INTEGRITY

_____

LOGICAL REASONING

_____

SKEPTICISM

_____

OPENNESS

_____

CONDUCT

_____

RECOGNIZE

_____

PRESENT

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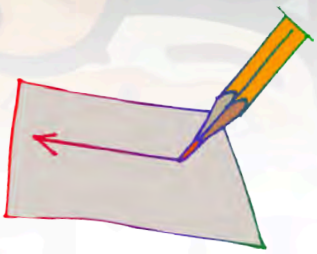
EXPLANATION

_____

MODELS

_____

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

A–1: Science as Inquiry Process

SCIENCE PROGRAM

Unit Assessment Teacher's Notes
Grade 8 • Unit 1 (A–1)
Theme: Science as Inquiry Process

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 **INTEGRITY**.
2. Write the number 2 by the picture for **LOGICAL REASONING**.
3. Write the number 3 by he picture for **SKEPTICISM**.
4. Write the number 4 by the picture for **OPENNESS**.
5. Write the number 5 by the picture for **CONDUCT**.
6. Write the number 6 by the picture for **RECOGNIZE**.
7. Write the number 7 by the picture for **PRESENT**.
8. Write the number 8 by the picture for **EXPLANATION**.
9. Write the number 9 by the picture for **MODEL**.

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. One must have integrity if he/she is to be believed.
2. Guessing is always better than logical reasoning.
3. Skepticism is always unhealthy and should be avoided in science.
4. Openness allows for alternative explanations to be explored.
5. Scientists conduct experiments.
6. There is no reason to recognize toxic plants and mushrooms.
7. It is good to present the results of experiments to others.
8. There is an explanation for why newts have red stomachs.
9. Models are useful tools for understanding more complicated things.

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 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.

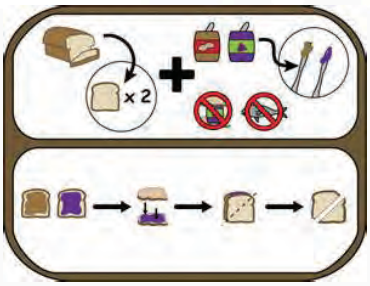
Teacher: To get a percentage for this student's assessment, divide the total number of questions correct by the total number of questions, then multiply this answer by 100 to determine the percentage of questions answered correctly.

SCIENCE PROGRAM

Unit Assessment Student Pages
Grade 8 • Unit 1 (A–1)
Theme: Science as Inquiry Process

Date:_____ Student's Name:_____

Number Correct:_____ Percent Correct:_____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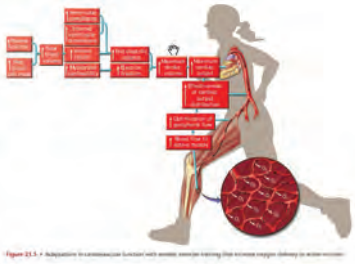
New Ideas



1. T F

2. T F

3. T F

4. T F

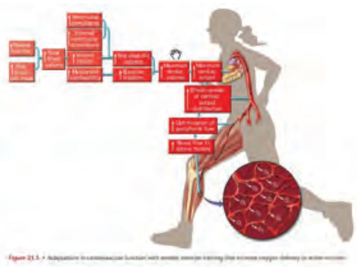
5. T F

6. T F

7. T F

8. T F

9. T F



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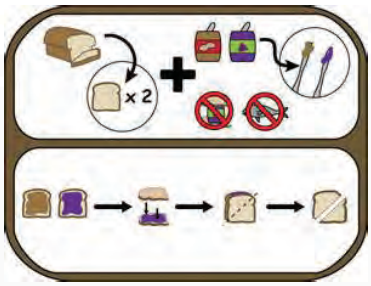

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open	nas nes nis nos nus nass ness niss noss	co	nduct nduck ndukt ndact ndakt ndect ndekt mduct mdukt	recog	nace nase nece nese nyze nize noze nose nise
pre	cant sant zant sent cent zent cont sant zant	explan	ition ishion eshion etion ezion otion oshion ashion ation	mo	dal tal del tel tul dul dol tol dle

1. If someone has integrity, he or she is NOT:
   - ❍ trustworthy
   - ❍ loyal
   - ❍ a habitual liar

2. When logical reasoning is used to reach a conclusion, a person:
   - ❍ makes a random guess
   - ❍ makes an educated guess
   - ❍ follows a series of rational steps

3. If one has skepticism about a conclusion, he/she _____ it.
   - ❍ accepts
   - ❍ doubts
   - ❍ denies

4. Scientists should maintain openness toward:
   - ❍ alternative explanations
   - ❍ errors in their data
   - ❍ illogical methods

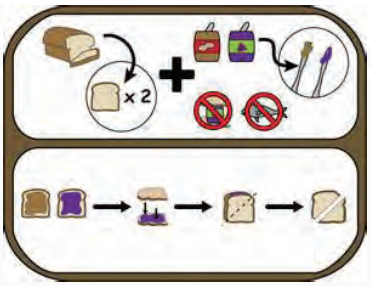
5. To conduct an experiment means that you are:
   - ❍ doing the experiment
   - ❍ learning the experiment
   - ❍ destroying the experiment

6. If you recognize a toxic berry, you:
   - ❍ have no clue if you should eat it
   - ❍ have made a friend
   - ❍ know not to eat it

7. To present the results of an experiment is to:
   - ❍ tell others about it
   - ❍ give a gift
   - ❍ do it now

8. An explanation for a newt's red stomach is:
   - ❍ a denial that it is red
   - ❍ a reason that it is red
   - ❍ an unfortunate encounter with it

9. A model of the solar system would:
   - ❍ help to understand a larger idea
   - ❍ walk a catwalk
   - ❍ help to understand a smaller idea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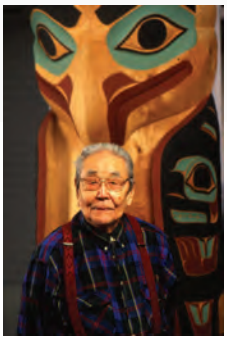
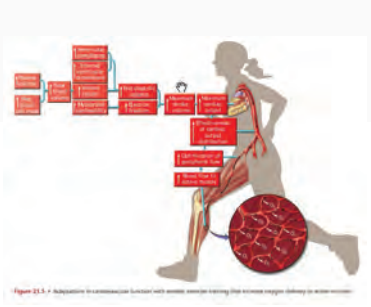



New Ideas



INTEGRITY

LOGICAL REASONING

SKEPTICISM

OPENNESS

CONDUCT

RECOGNIZE

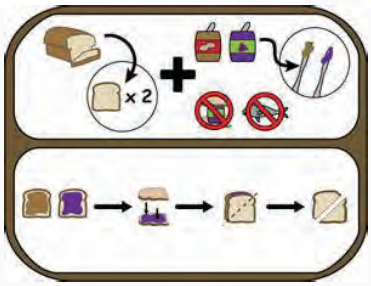
PRESENT

EXPLANATION

MODELS

SCIENCE PROGRAM

Unit Assessment ANSWER KEY
Grade 8 • Unit 1 (A–1)
Theme: Science as Inquiry Process



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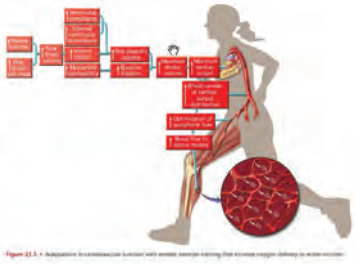
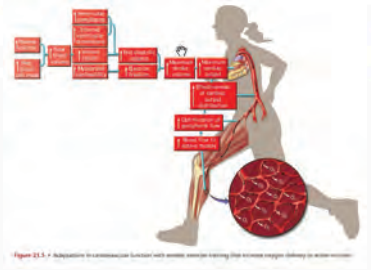


9

5

1. (T) F
2. T (F)
3. T (F)
4. (T) F
5. (T) F
6. T (F)
7. (T) F
8. (T) F
9. (T) F



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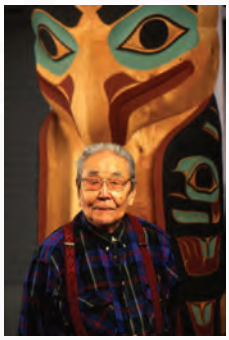

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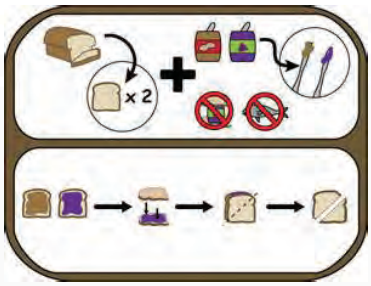

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co	**nduct** nduck ndukt ndact ndakt ndect ndekt mduct mdukt
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explan	ition ishion eshion etion ezion otion oshion ashion **ation**
mo	dal tal **del** tel tul dul dol tol dle

1. If someone has integrity, he or she is NOT:
   - ❍ trustworthy
   - ❍ loyal
   - ● a habitual liar

2. When logical reasoning is used to reach a conclusion, a person:
   - ❍ makes a random guess
   - ❍ makes an educated guess
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3. If one has skepticism about a conclusion, he/she _____ it.
   - ❍ accepts
   - ● doubts
   - ❍ denies

4. Scientists should maintain openness toward:
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5. To conduct an experiment means that you are:
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   - ❍ destroying the experiment

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   - ● Tell others about it
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9. A model of the solar system would:
   - ● Help to understand a larger idea
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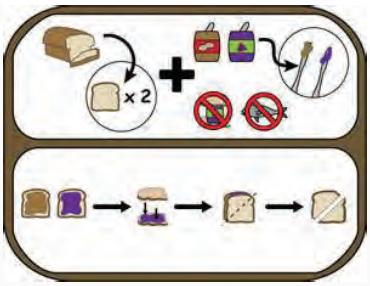
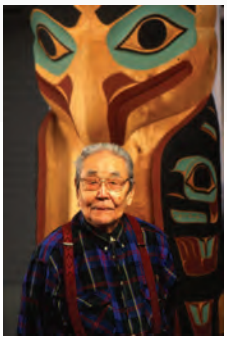
   - ❍ Help to understand a smaller idea

explanation

present

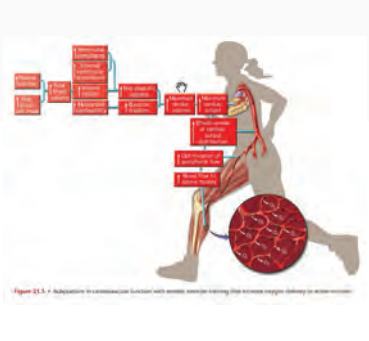


logical reasoning



integrity

openness



models

skepticism

conduct

recognize