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.

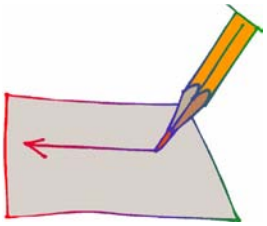
Letter Encode

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



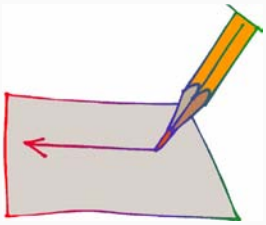
Mirror Writing

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.

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.

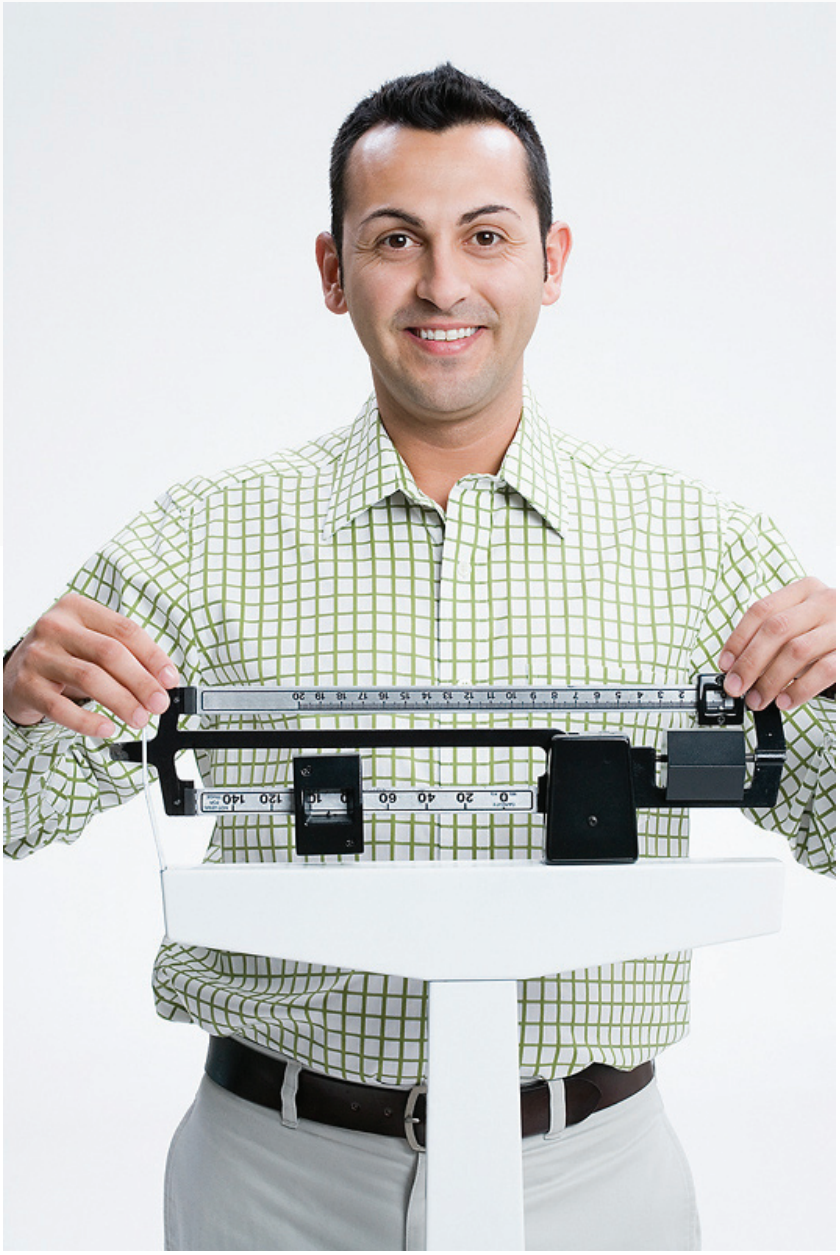
VOCABULARY PICTURES

DIGEST

GROWTH

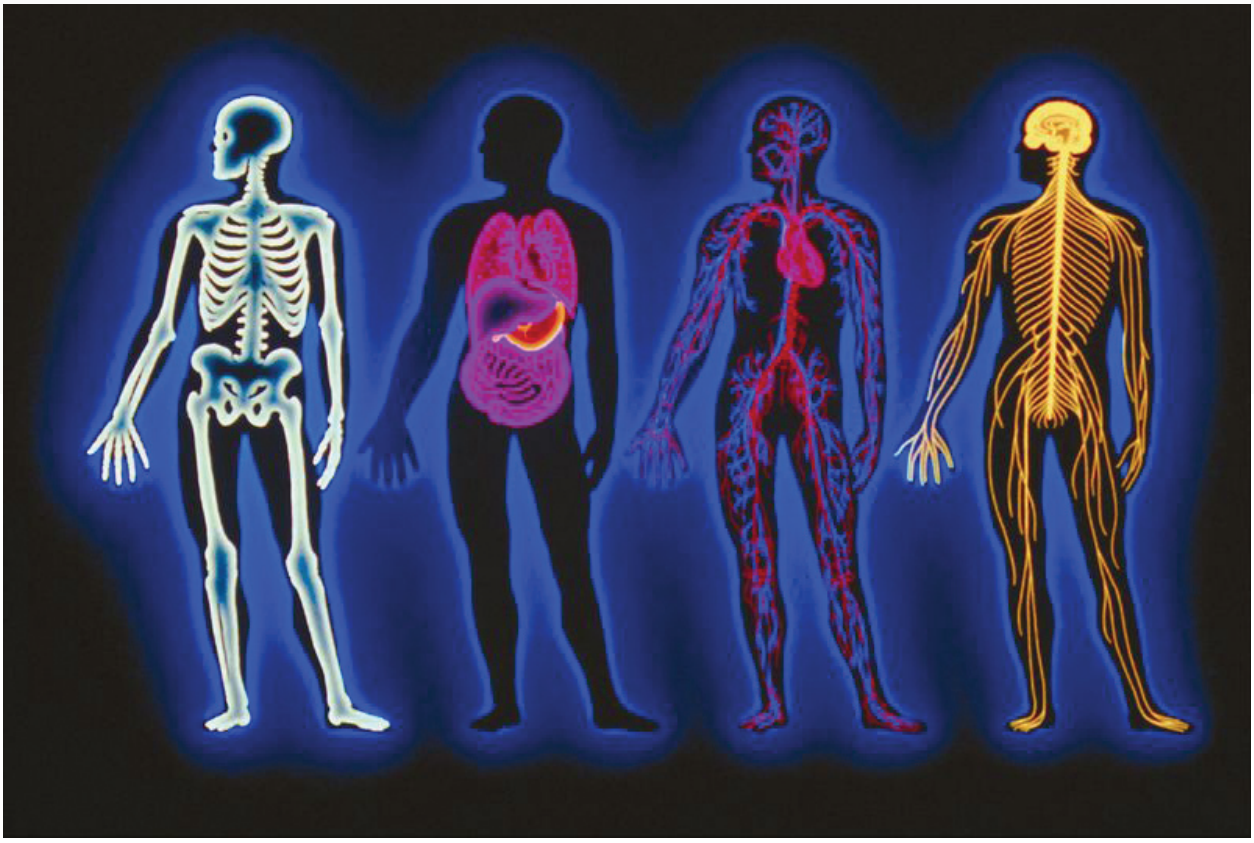
ORGANISM

PHOTOSYNTHESIS



PHYSICAL

RESPIRATION



SYSTEMS

TRANSFER

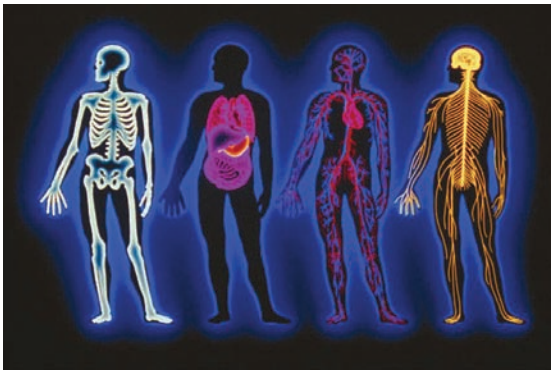
STUDENT SUPPORT MATERIALS

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

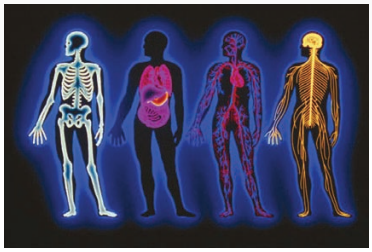
Have the students highlight or circle the words in this word find. Words appear horizontally.

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

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.

sm	or	ni	ga
_____	_____	_____	_____

si	phy	cal
_____	_____	_____

ges	di	tion
_____	_____	_____

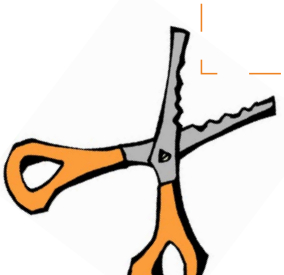
ra	re	tion	spi
_____	_____	_____	_____

to	pho	the	syn	sis
_____	_____	_____	_____	_____

Encoding Activity Page

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

orga	tems
phys	owth
sys	piration
diges	nism
gr	synthesis
res	fer
photo	tion
trans	ical



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	A	that work together.
2	Physical changes mean that	B	happens over time.
3	The human body has systems	C	lets us breathe.
4	Our digestion system	D	all living things.
5	Growth in an organism	E	makes food in plants.
6	The respiration system	F	something changes but keeps its shape.
7	Photosynthesis is a process that	G	be used when we cook foods.
8	Heat transfer can	H	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.

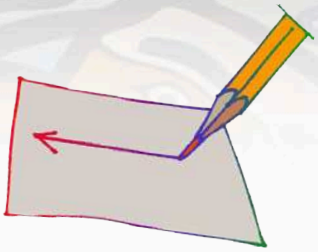
Growth causes this type of change to the body.	This is our breathing system.	An increase in weight is an example of this.
This helps us pass food through our bodies.	This is the process a plant uses to make food.	different parts working together
This can happen when we boil water in a pot.	all living 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.

or_____s

ph_____l

sy_____m

di_____n

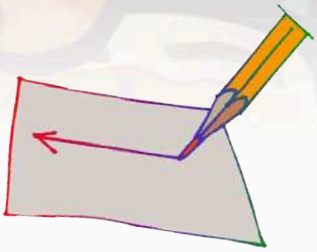
gr_____

res_____n

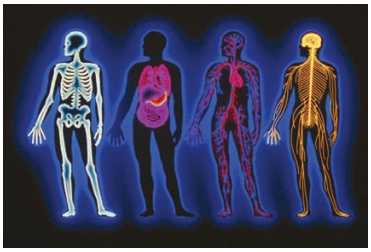
pho_____s

tr_____r

Basic Writing Activity Page



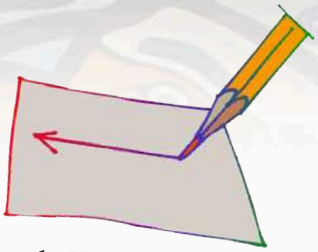
Have the students write the word for each picture.



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

_____

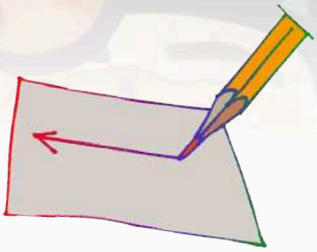
PHOTOSYNTHESIS

_____

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.

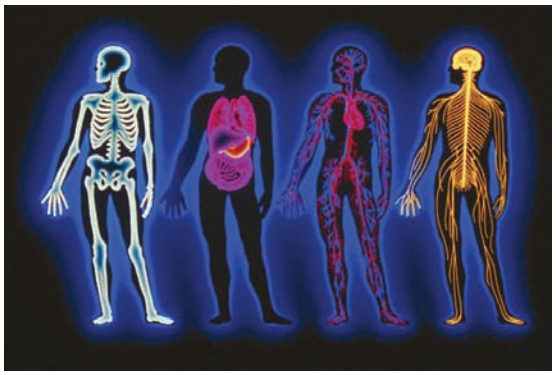
Teacher: To get a percentage for this student's assessment, divide the total number of questions correct by the total number of questions, then multiply this answer by 100 to determine the percentage of questions answered correctly.

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:_____



1. T F

2. T F

3. T F

4. T F

5. T F

6. T F

7. T F

8. T F

organisms
physical
systems
digestion
growth
respiration
photosynthesis
transfer

organisms
physical
systems
digestion
growth
respiration
photosynthesis
transfer

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respiration
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or	genisms gunisms ginisms ganisms rganisms anisms nisms ganisms gun
phy	sical sucal sacal ysical cal al zical acal ical
sys	tims tams tums stems ems tems tam am ums
di	gistion gastion gestion estion tion igestion estion gustion ustion
gr	rowth owth ewth ith ath owath woth rith rath
res	pirution pirition piration peration puration eration tion ation pert
photo	sinthesis cinthesis ynthesis thesis esis synthesis sunthesis sinthesis inthesis
trans	far fur fir fer for sfer er fere fare

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.

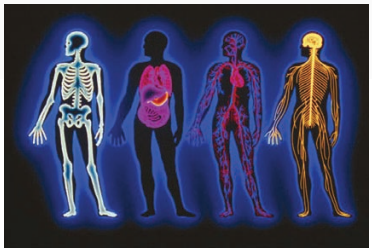
4. Digestion is an internal
   - ❍ gas.
   - ❍ system.
   - ❍ energy.

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

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SYSTEMS

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DIGESTION

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GROWTH

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RESPIRATION

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PHOTOSYNTHESIS

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TRANSFER

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