

Grade 11

# Science as Inquiry and Process

## Concepts of Physical Science

## Concepts of Life Science

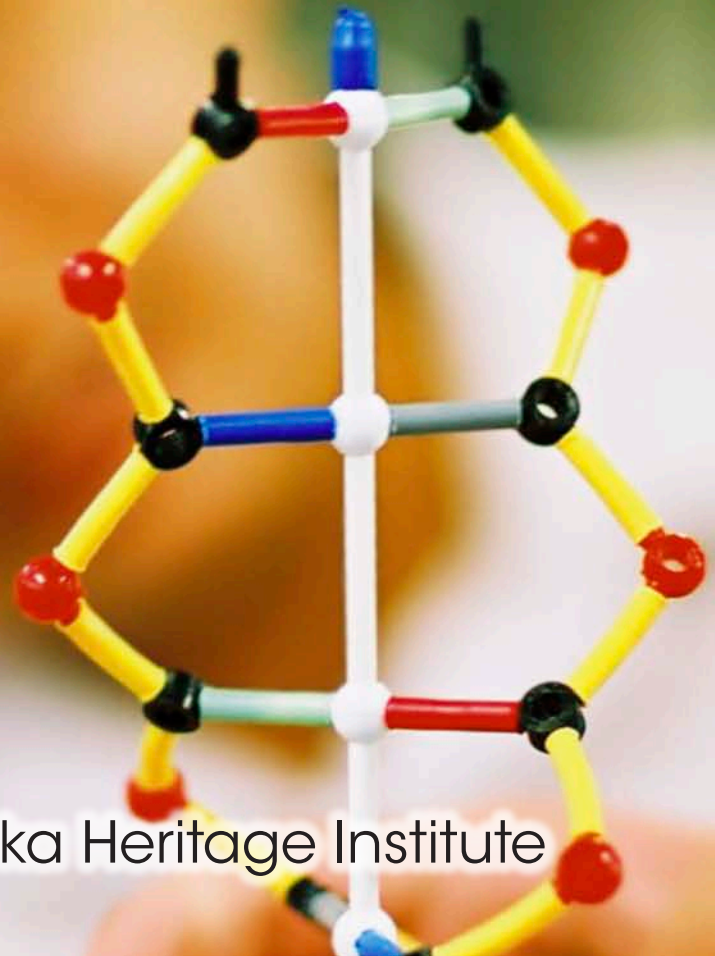
### Units A-1, B-1, C-1

Based on the Alaska Science Standards

SA1.1,2; SA2.1; SA3.1

SB1.1; SB2.1; SB3.1,2; SB4.1,2

SC1.1,2; SC2.1,2,3; SC3.1,2



Sealaska Heritage Institute

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# Integrating Culturally Responsive, Place-Based Content with Language Skills Development for Curriculum Enrichment

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# INTRODUCTION

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. There have been efforts to bring local cultures into the classroom, thus providing the students with familiar points of departure for learning. However, most often such instruction has been limited to segregated activities such as arts and crafts or Native dancing rather than integrating Native culture into the overall learning process. Two core cultural values, *Haa Aaní*, the reference for and usage of the land, and *Haa Shagóon*, the tying of the present with the past and future, are known by both students and parents, and can be included in a curriculum that simultaneously provides a basis for self-identity and cultural pride, within the educational setting. This will provide a valuable foundation for improved academic achievement.

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

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. The values of *Haa Aaní* and *Haa Shagóon* are reinforced through the various activities in the program.

During science lessons, the students are exposed to new information and to key vocabulary that represent 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 them. Over time, this leads to *language-delay* that impacts negatively on a student's on-going academic achievement.

Due to *language delay*, 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.

To this end, in this resource program, 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 concepts are viewed through the Native heritage cultural perspectives, thus reinforcing the value of *Haa Shagóon* and *Haa Aaní*. 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.

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.

## **The Integration of Place-Based, Culturally Responsive Science Content and Language Development**

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### **Introduction of Key Science Vocabulary**



### **Science, Vocabulary Development**

**Listening, speaking, reading & writing**



### **Science Application Reinforcement Activities**

# The Developmental Language Process

The Developmental Language Process is designed to instill language into long term memory. The origin of the Process is rooted in the struggles faced by language-delayed students, particularly when they first enter school.

The Process takes the students/children through developmental steps that reflect the natural acquisition of language in the home and community. Initially, once key language items have been introduced concretely to the students, the vocabulary are used in the first of the language skills, Basic Listening. This stage in the process represents *input* and is a critical venue for language acquisition and retention. A baby hears many different things in the home, gradually the baby begins to *listen* to what he/she hears. As a result of the *input* provided through Basic Listening, the baby tries to repeat some of the language heard – this is represented by the second phase of the Process, Basic Speaking - the oral *output* stage of language acquisition.

As more language goes into a child's long-term memory, he/she begins to understand simple commands and phrases. This is a higher level of listening represented by the stage, Listening Comprehension. With the increase in vocabulary and sentence development, the child begins to explore the use of language through the next stage in the Process, Creative Speaking. All of these steps in the Process reflect the natural sequence of language development.

The listening and speaking skill areas represent *true* language skills; most cultures, including Alaska Native cultures, never went beyond them to develop written forms. Oral traditions are inherent in the listening and speaking skills.

However, English does have abstract forms of language in reading and writing. Many Native children entering kindergarten come from homes where language is used differently than in classic Western homes. This is not a value judgment of child rearing practices but a definite cross-cultural reality. Therefore, it is critical that the Native child be introduced to the concepts of reading and writing before ever dealing with them as skills areas. It is vital for the children to understand that reading and writing are *talk in print*.

The Developmental Language Process integrates the *real* language skills of listening and speaking with the related skills of reading and writing. At this stage in the Process, the students are introduced to the printed words for the first time. These abstract representations are now familiar, through the listening and speaking activities, and the relationship is formed between the words and language, beginning with Basic Reading.

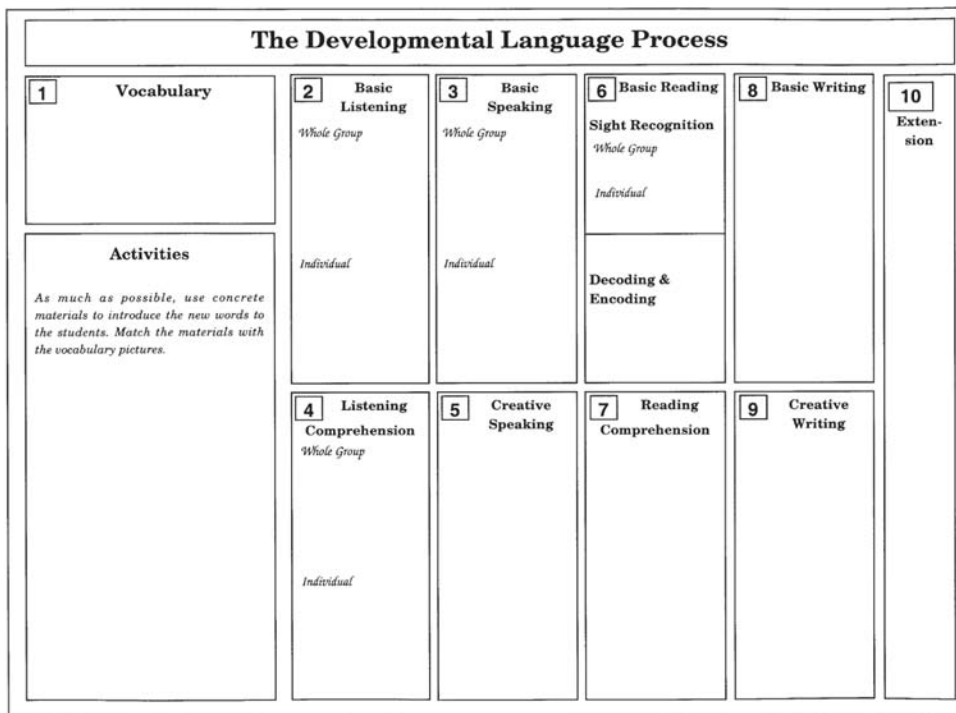
As more language goes into the children's long-term memories, they begin to comprehend more of what they read, in Reading Comprehension.

Many Alaskan school attics are filled with reading programs that didn't work – in reality, any of the programs would have worked had they been implemented through a language development process. For many Native children, the printed word creates angst, particularly if they are struggling with the reading process. Often, children are asked to read language they have never heard.

Next in the Process is Basic Writing, where the students are asked to write the key words. Finally, the most difficult of all the language skills, Creative Writing, asks the students to write sentences of their own, using the key words and language from their long-term memories. This high level skill area calls upon the students to not only retrieve language, but to put the words in their correct order within the sentences, to spell the words correctly and to sequence their thoughts in the narrative.

A student's ability to comprehend well in listening and reading, and to be creatively expressive in speaking and writing, is dependent upon how much language he/she has in long-term memory.

The Developmental Language Process is represented in this chart:



It should be understood that these materials are not a *curriculum* - rather, they are resource materials designed to encourage academic achievement through intensive language development in the content areas.

These resource materials are *culturally responsive* in that they utilize teaching and learning styles effective with Native students. As the students progress through the steps of the Process, they move from a concrete introduction of the key vocabulary, to a symbolic representation of the vocabulary, and finally, to their abstract forms - reading and writing. This provides a format for the students to develop language and skills that ultimately lead to improved academic performance.

# Alaska Content Standards for Science

## A. Science as Inquiry and Process

A student should understand and be able to apply the processes and applications of scientific inquiry. A student who meets the content standard should:

1. develop an understanding of the processes of science used to investigate problems, design and conduct repeatable scientific investigations, and defend scientific arguments;
2. develop an understanding that the processes of science require integrity, logical reasoning, skepticism, openness, communication, and peer review; and
3. develop an understanding that culture, local knowledge, history, and interaction with the environment contribute to the development of scientific knowledge, and local applications provide opportunity for understanding scientific concepts and global issues.

## B. Concepts of Physical Science

A student should understand and be able to apply the concepts, models, theories, universal principals, and facts that explain the physical world. A student who meets the content standard should:

1. develop an understanding of the characteristic properties of matter and the relationship of these properties to their structure and behavior;
2. develop an understanding that energy appears in different forms, can be transformed from one form to another, can be transferred or moved from one place or system to another, may be unavailable for use, and is ultimately conserved;
3. develop an understanding of the interactions between matter and energy, including physical, chemical, and nuclear changes, and the effects of these interactions on physical systems; and
4. develop an understanding of motions, forces, their characteristics and relationships, and natural forces and their effects.

## C. Concepts of Life Science

A student should understand and be able to apply the concepts, models, theories, facts, evidence, systems, and processes of life science. A student who meets the content standard should:

1. develop an understanding of how science explains changes in life forms over time, including genetics, heredity, the process of natural selection, and biological evolution;
2. develop an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms; and
3. develop an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy.

#### **D. Concepts of Earth Science**

A student should understand and be able to apply the concepts, processes, theories, models, evidence, and systems of earth and space sciences. A student who meets the content standard should:

1. develop an understanding of Earth's geochemical cycles;
2. develop an understanding of the origins, ongoing processes, and forces that shape the structure, composition, and physical history of the Earth;
3. develop an understanding of the cyclical changes controlled by energy from the sun and by Earth's position and motion in our solar system; and
4. develop an understanding of the theories regarding the origin and evolution of the universe.

#### **E. Science and Technology**

A student should understand the relationships among science, technology, and society. A student who meets the content standard should:

1. develop an understanding of how scientific knowledge and technology are used in making decisions about issues, innovations, and responses to problems and everyday events;
2. develop an understanding that solving problems involves different ways of thinking, perspectives, and curiosity that lead to the exploration of multiple paths that are analyzed using scientific, technological, and social merits; and
3. develop an understanding of how scientific discoveries and technological innovations affect and are affected by our lives and cultures.

#### **F. Cultural, Social, Personal Perspectives and Sciences**

A student should understand the dynamic relationships among scientific, cultural, social, and personal perspectives. A student who meets the content standard should:

1. develop an understanding of the interrelationships among individuals, cultures, societies, science, and technology;
2. develop an understanding that some individuals, cultures, and societies use other beliefs and methods in addition to scientific methods to describe and understand the world; and
3. develop an understanding of the importance of recording and validating cultural knowledge.

#### **G. History and Nature of Science**

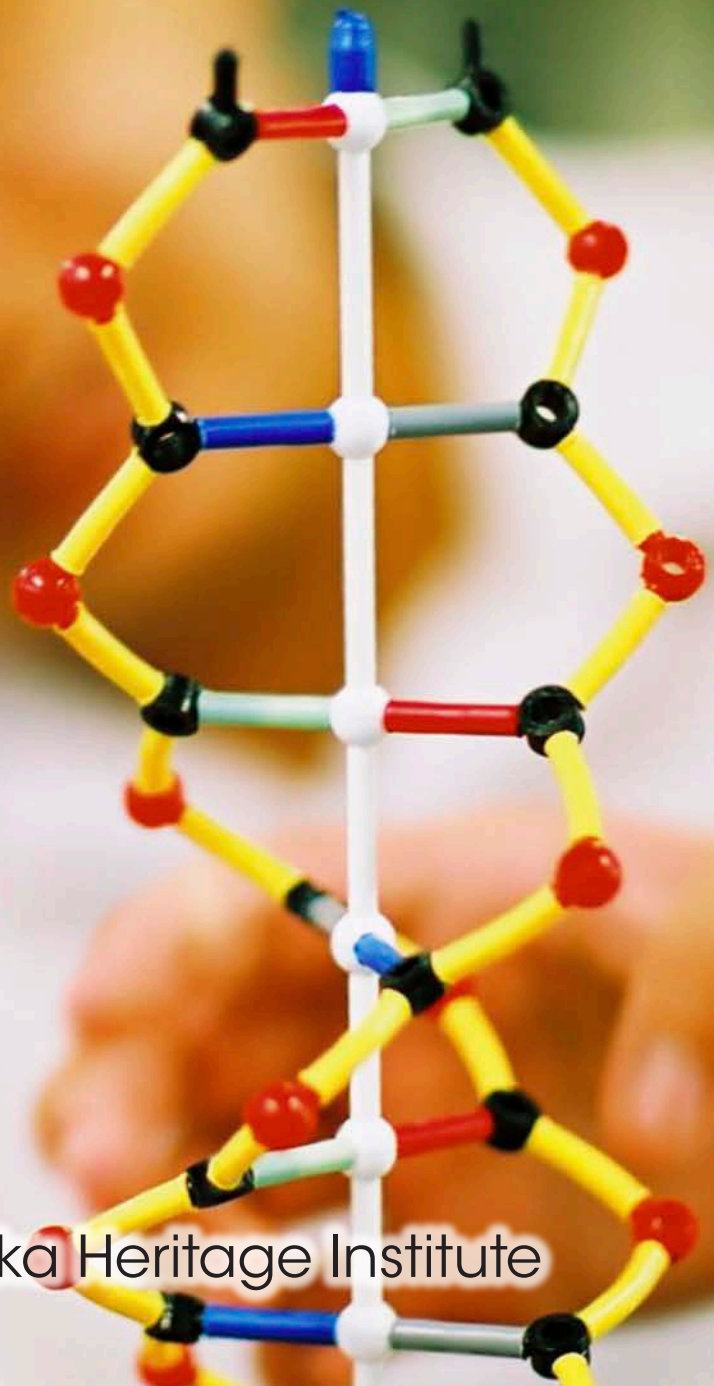
A student should understand the history and nature of science. A student who meets the content standard should:

1. develop an understanding that historical perspectives of scientific explanations demonstrate that scientific knowledge changes over time, building on prior knowledge;
2. develop an understanding that the advancement of scientific knowledge embraces innovation and requires empirical evidence, repeatable investigations, logical arguments, and critical review in striving for the best possible explanations of the natural world;
3. develop an understanding that scientific knowledge is ongoing and subject to change as new evidence becomes available through experimental and/or observational confirmation(s); and
4. develop an understanding that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base.

<http://www.educ.state.ak.us/ContentStandards/Science.html>



# UNIT A-1



Sealaska Heritage Institute





INTRODUCTION OF

# Key Vocabulary







# Culturally Responsive & Place-based Perspective Introduction of Science Vocabulary

## Logical

### PLACE-BASED PERSPECTIVE

Prepare a set of statements and have students determine whether the statements can be supported by valid repeatable proof or experiential knowledge (i.e. the sun will rise tomorrow) or cannot be supported by valid repeatable proof (i.e. extraterrestrial beings exist). Use this to introduce that the use of *logic* is part of the formal scientific method.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### HERITAGE CULTURAL PERSPECTIVE

One example of the traditional application of *logical* thinking was the design of the smoke hole in clan houses.

## Reasoning

### PLACE-BASED PERSPECTIVE

Have students write down what they want to do after high school. Then have them explain their decision using their beliefs and feelings as to why they chose their post-secondary paths. Discuss with the students that *reasoning* is the thought process that led them to their decisions, not the decision itself.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### HERITAGE CULTURAL PERSPECTIVE

One example of *reasoning* would be the invention of the halibut hooks. The sizes of the hooks determined the sizes of the halibut that could be caught.

## Interaction

### PLACE-BASED PERSPECTIVE

Discuss with students how social networking sites like MySpace and Facebook are opportunities for *interaction* with friends.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### HERITAGE CULTURAL PERSPECTIVE

Traditional parties included many forms of *interaction*, including speeches, responses, songs, food, and gifts.

# Culturally Responsive & Place-based Perspective

## Introduction of Science Vocabulary

### Contribute

#### PLACE-BASED PERSPECTIVE

Show pictures of the devastating effects of Hurricane Katrina on the southeast. Have the students suggest how people *contributed* to the rebuilding of the devastated areas.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

During a memorial party, guests *contribute* support in the form of words of encouragement. In turn, the host *contributes* gifts, foods, and other material goods to the guests.

### Opportunity

#### PLACE-BASED PERSPECTIVE

Discuss how graduating from high school should lead to greater *opportunities* for better jobs.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

Daily life provided the *opportunity* for place-based education. This included the learning of traditional living skills such as the gathering and preparing of foods, hunting, and learning family and clan histories.

### Global

#### PLACE-BASED PERSPECTIVE

Show students a globe. Discuss how *global* events span oceans and continents. Cite examples of *global* events.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

The Native languages and cultures of Southeast Alaska reflect a *global* awareness. This is evidenced in their songs, music, and oratories.



# Culturally Responsive & Place-based Perspective

## Introduction of Science Vocabulary

### Revise

#### PLACE-BASED PERSPECTIVE

Discuss how applications such as spell check on the computer allow writers to *revise* papers. Cite examples of ideas or things that had to be *revised*.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

There are many examples of things that have been *revised* by Native peoples in Southeast Alaska. This includes revisions to tools, harvesting methods, food preservation, clothing, and education in general.

### Credibility

#### PLACE-BASED PERSPECTIVE

Tell the students that you are going to have a party catered. Ask the students, "Who would you most likely choose for this, a chef or a scientist?" (assuming the scientist isn't also a chef). Use this to introduce *credibility* in that, as far as cooking goes, the chef has more credibility.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

Elders who have the respect of their communities have *credibility*.

### Cite

#### PLACE-BASED PERSPECTIVE

Discuss how many traditional songs *cite* people or events that are important in a culture.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

Native oratory uses traditional stories to *cite* names, place names, songs, and music.

# Culturally Responsive & Place-based Perspective Introduction of Science Vocabulary

## Source

### PLACE-BASED PERSPECTIVE

Show a picture of a library and discuss how reference materials are good *sources* for information.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### HERITAGE CULTURAL PERSPECTIVE

Native oral histories are one *source* of information relating to land ownership in Southeast Alaska.

## Conduct

### PLACE-BASED PERSPECTIVE

to represent how investigations are *conducted* to find answers to scientific questions.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### HERITAGE CULTURAL PERSPECTIVE

When a traditional party begins, the host *conducts* traditional protocol. This would include thanking his/her guests, naming their clans, giving their names, and stating their relationships to the host.



# Language Skills





# Language & Skills Development

## LISTENING

Use the activity pages from the Student Support Materials.



### The Hidden Words

Say a vocabulary word for the students. Tell the students to listen for that vocabulary word as you say a running story. Provide each student with writing paper and a pen. When the students hear the vocabulary word in the running story, they must make a check mark on their papers each time the word occurs. Depending upon the readiness of your students, you may wish to have them listen for two or three words. In this case, have the students make a check mark for one word, and a “X” and an “O” for the other words.

## SPEAKING



### What’s The Date?

Before the activity begins, collect an old calendar or calendars of different years. Say the name of a month to a student. The student should then say a date within that month. Look on the calendar to see which day the date represents. If the date represents a day between Monday and Friday, the student should identify a vocabulary illustration you show or he/she should repeat a sentence you said at the beginning of the round. However, if the date named by the student is a Saturday or Sunday, the student may “pass” to another player. Repeat until many students have responded.

## READING

Use the activity pages from the Student Support Materials.



### The Lost Syllable

Say a syllable from one of the sight words. Call upon the students to identify the sight word (or words) that contain that syllable. Depending upon the syllable you say, more than one sight word may be the correct answer. This activity may also be done in team form. In this case, lay the sight word cards on the floor. Group the students into two teams. Say a syllable from one of the sight words. When you say “Go,” the first player in each team must rush to the sight word cards and find the sight word that contains the syllable you said.

## WRITING

Use the activity pages from the Student Support Materials.



### The Other Half

Cut each of the sight words in half. Give each student a sheet of writing paper, a pen, and one of the word halves. Each student should glue the word half on his/her writing paper and then complete the spelling of the word. You may wish to have enough word-halves prepared so that each student completes more than one word. Afterwards, review the students’ responses.



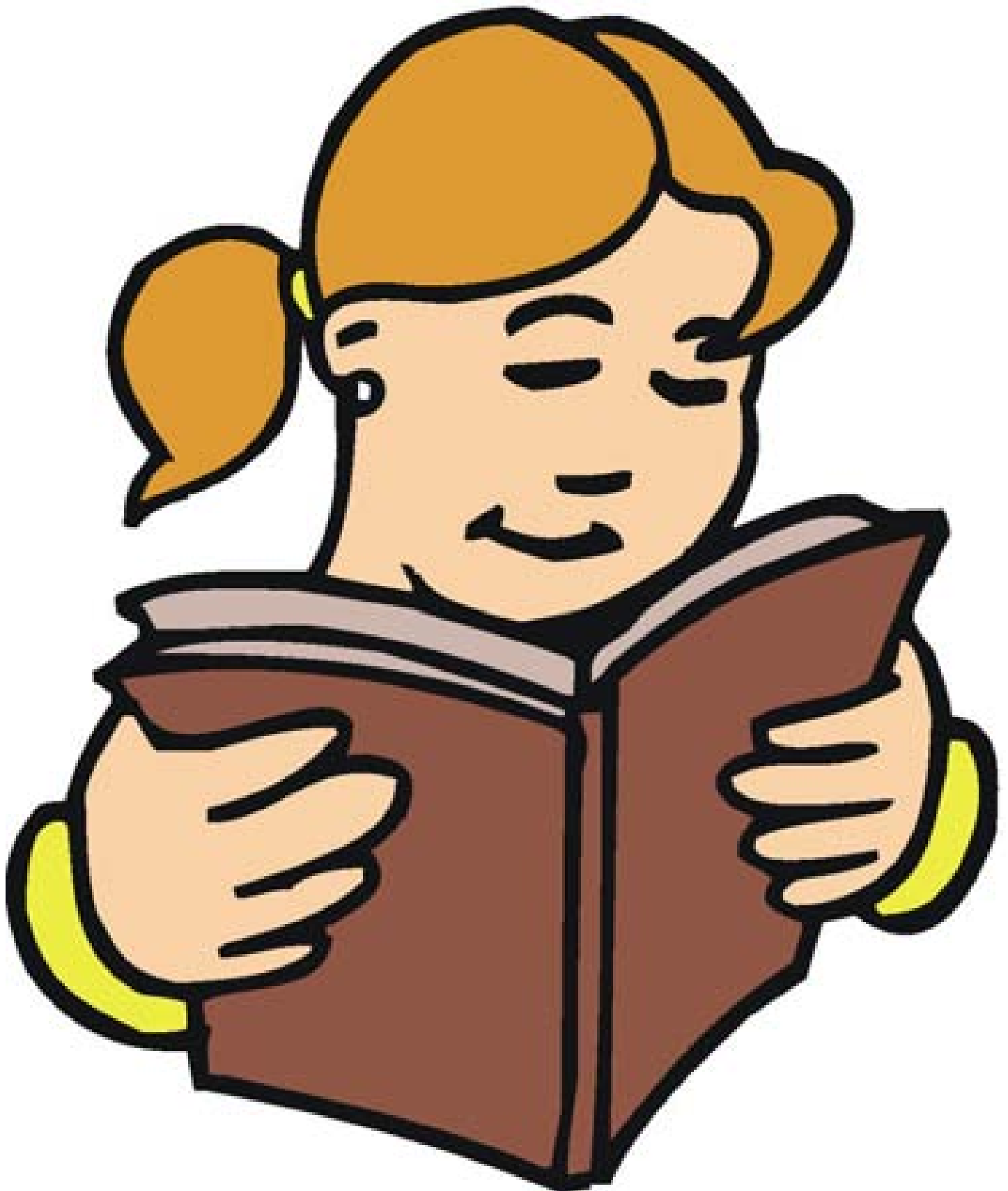




# Vocabulary Images



















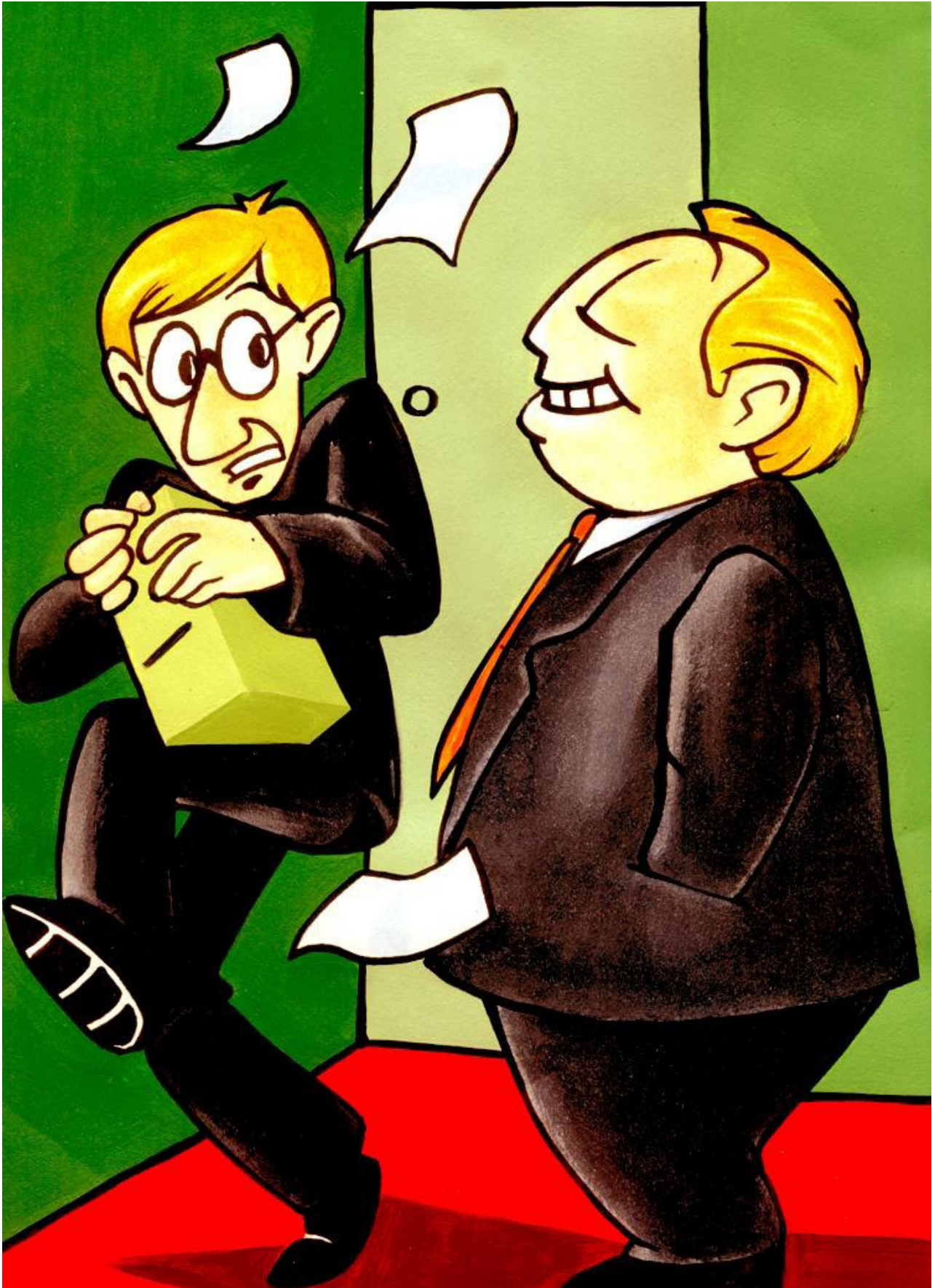








































STUDENT SUPPORT MATERIALS

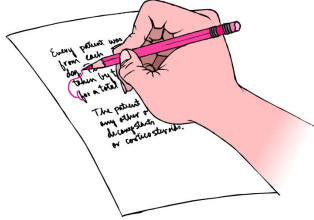
# Listening





Say these words to the students - they should write the numbers of the words under the pictures.

- 1, logical, reasoning, 3. interaction, 4. contribute, 5. opportunity, 6. global, 7. revise, 8. credibility  
9. cite, 10. source, 11. conduct



## Fill-in The Blanks

*Read the sentences to the students. The students should name the "missing words."*

1. Not biting the hard candy was \_\_\_\_ because Sally had braces on her teeth.
2. Many people questioned the \_\_\_\_ of gorillas until they scored well on human intelligence tests.
3. The \_\_\_\_ between sodium and water is a violent reaction.
4. Mr. Smith was confident that he could \_\_\_\_ to society in his role as a teacher.
5. The \_\_\_\_ to attend the prestigious university on scholarship was one that Molly couldn't pass up.
6. \_\_\_\_ warming is a problem that must be dealt with soon if some nations such as the Maldives are to remain above water.
7. It is important to \_\_\_\_ all papers before sending them for final publication.
8. The \_\_\_\_ of Dr. Albert Einstein on the subject of relativity was impeccable as he originated the theory.
9. Scientists always \_\_\_\_ the work of others when writing papers about theories.
10. A \_\_\_\_ of information that many people have come to rely on is the internet.
11. An important part of any research project is when research is \_\_\_\_.

### ANSWERS:

1. logical, 2. reasoning, 3. interaction, 4. contribute, 5. opportunity, 6. global, 7. revise, 8. credibility  
9. cite, 10. source, 11. conducted

# True Or False?

*Read the following sentences to the students. The students should write "true" or "false" for each of the sentences.*

- 1) It is logical to expect rain when there are few clouds in the sky.
- 2) Billy placed first in the swimming even because his reasoning powers were excellent.
- 3) The interaction between sunlight and a photosynthesizing organism results in the production of oxygen.
- 4) The most important contribution a scientist can make is a written piece of work describing their research.
- 5) The best shopping opportunities are to be had after holidays when items are on sale.
- 6) Recessions in one country don't usually have an effect on the global economy.
- 7) Old maps need to be revised every so often.
- 8) The credibility of Dr. Albert Einstein on the subject of pie-making was irrefutable.
- 9) The Grand Canyon is a historically significant cite.
- 10) Native elders are an important source of information.
- 11) It was reasonable to expect a gorilla to conduct himself properly at the palace dinner.

## ANSWERS

1. f, 2. f, 3. t, 4. t, 5. t, 6. f, 7. t, 8. f, 9. f, 10. t, 11. f







STUDENT SUPPORT MATERIALS

# Sight Words





**logical**

**reasoning**

**interaction**

**contribute**

**opportunity**

**global**

**revise**

**credibility**

**cite**

**source**

**conduct**



STUDENT SUPPORT MATERIALS

# Reading







# Word Find

Find the words in the grid. Words can go horizontally, vertically and diagonally in all eight directions.

X H I N T E R A C T I O N  
F R R L W J G J K R D R G  
O C Y A L Q L T V T G N P  
P R X C T C Y D C R I G B  
P E K I O P M U Z N F K H  
O D X G H N D T O D V N T  
R I P O W N T S H G B R B  
T B E L O W A R L J J F C  
U I C C B E T O I E G M L  
N L R F R R B N Q B T J R  
I I U X N A B N L X U I M  
T T O M L N B W H F D T C  
Y Y S M L Y E S I V E R E

[www.WordSearchMaker.com](http://www.WordSearchMaker.com)

Cite

Conduct

Contribute

Credibility

Global

Interaction

Logical

Opportunity

Reasoning

Revise

Source

# Word Find Solution

X	H	I	N	T	E	R	A	C	T	I	O	N
F	R	R	L	W	J	G	J	K	R	D	R	G
O	C	Y	A	L	Q	L	T	V	T	G	N	P
P	R	X	C	T	C	Y	D	C	R	I	G	B
P	E	K	I	O	P	M	U	Z	N	F	K	H
O	D	X	G	H	N	D	T	O	D	V	N	T
R	I	P	O	W	N	T	S	H	G	B	R	B
T	B	E	L	O	W	A	R	L	J	J	F	C
U	I	C	C	B	E	T	O	I	E	G	M	L
N	L	R	F	R	R	B	N	Q	B	T	J	R
I	I	U	X	N	A	B	N	L	X	U	I	M
T	T	O	M	L	N	B	W	H	F	D	T	C
Y	Y	S	M	L	Y	E	S	I	V	E	R	E

# Sight Words Activity Page

Have the students highlight or circle the words for the pictures.



logical  
reasoning  
interaction  
contribute  
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revise  
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## Sentence Halves

*Have the students write the numbers/letters for sentence halves that match.*

- |  |   |
|--|---|
| 1) It is logical to assume that the food made you                      | A. And the suspect was found guilty by the jury.                |
| 2) The reasoning of the prosecutor was flawless                        | B. Follow through with established protocols.                   |
| 3) In an interaction between oil and water,                            | C. Water always goes to the bottom as it is more dense.         |
| 4) Albert Einstein contributed   | D. To have your work cited by others.                           |
| 5) Given the opportunity, a hyena                                      | E. sick if you vomit shortly after eating it.                   |
| 6) The global economy  | F. Will steal a kill from a pride of lions.                     |
| 7) After revising his work,  | G. Refers to the worldwide trading and labor market.            |
| 8) The credibility of the newly hired principal was questioned by many | H. The internet.  |
| 9) It is considered prestigious, among scientists,                     | I. Dr. Seuss submitted it for publication.                      |
| 10) A source often used without citation by students is                | J. The Theory of Relativity before he died.                     |
| 11) When conducting work, it is important to                           | K. When it became known that he had never taught school before. |

### ANSWERS

1/E 2/A 3/C 4/J 5/F 6/G 7/I 8/K 9/D 10/H 11/B

## Word & Definition Match

Have the students write the word numbers on their matching definitions.

*reciprocal  
action*

*a book, per-  
son, etc.,  
supplying  
information*

*pertaining  
to the whole  
world*

*the process  
of forming  
conclusions*

*to quote or  
mention in  
support*

*to amend  
or alter in  
order to  
make cor-  
rections*

*to be  
expected*

*a favor-  
able time or  
occasion*

*to furnish*

*execution,  
direction or  
manage-  
ment*

*the capabil-  
ity to elicit  
belief*

1. logical

2. reasoning

3. interaction

4. contribute

5. opportunity

6. global

7. revise

8. credibility

9. cite

10. source

11. conduct



## Which Belongs?

*Have the students circle/identify the word that is correct for each sentence.*

1. “What’s your source/cite?” the skeptic asked.
2. The interaction/contribute between the dual spark plug and the curved piston head caused greater power output.
3. There are proper ways to cite/revise all the works of others that you refer to in a paper.
4. “Yes!” – exclaimed the scientist when asked if chimpanzees had any reasoning/logical powers.
5. “I’m happiest when I am conducting/interacting research,” the scientist said.
6. “Is the source/cite of the diamonds that mine over there?” the child asked the tour guide.
7. You must understand that this is the only opportunity/logical way to solve the problem.
8. “Now, there’s an interaction/opportunity too good to pass up!” one shopper said to another in a mall.
9. There would undoubtedly be a collapse in business if the global/source internet suddenly went down.
10. “Can you help me reason/revise my paper please?” the child asked his parents.
11. “What an excellent way to reasoning/contribute,” the teacher said to the student.
12. All of the judges were retained on the basis of their credibility/logic.

### ANSWERS

1. source, 2. interaction, 3. cite, 4. reasoning, 5. conducting, 6. source, 7. logical, 8. opportunity  
9. global, 10. revise, 11. contribute, 12. credibility

# What's The Answer?

Have the students read the questions and then select the correct answer for them. They should fill-in the appropriate circles, beside the answers of their choice.

- 1) The capture
  - (a) Of the roadrunner by Wile E. Coyote is always done logically;
  - (b) And identification of suspects by members of the Scotland Yard is based on logic;
  - (c) Of an elephant by use of a fishing line is logical.
  
- 2) Conclusions in science are
  - (a) Best arrived at after careful reasoning and contemplation of evidence;
  - (b) Usually arrived at after reasoning and a healthy dose of intuition;
  - (c) Not based on reasoning, but rather beliefs.
  
- 3) Which of the following interactions would be most interesting to an ecologist?
  - (a) A book resting on a table;
  - (b) A small parasitic fly that afflicts cattle;
  - (c) How the introduction of a trout will affect the other fish in a lake.
  
- 4) A measure of success for many professors
  - (a) Is how much they contribute to the body of scientific literature;
  - (b) Is how many hours of their vacation days they contribute to work;
  - (c) Is how often their students contribute funds to their research efforts.
  
- 5) A scientist views unanswered questions
  - (a) As roadblocks to theories;
  - (b) As opportunities to explore the world further;
  - (c) As a means by which to reject scientific methodology.
  
- 6) The increase of carbon dioxide gases in our atmosphere is a
  - (a) Problem best addressed on a nation-by-nation means;
  - (b) Phenomena that is not related to humans;
  - (c) Global problem that must be dealt with or life on Earth as we know it will be compromised.

## What's The Answer?

Have the students read the questions and then select the correct answer for them. They should fill-in the appropriate circles, beside the answers of their choice.

- 7) It is important to revise scientific documents
- (a) So that errors can be removed before publishing;
  - (b) To increase their length;
  - (c) So that they are more entertaining and easily read by the public.
- 8) The conviction of the suspect was based in large part on
- (a) His lawyer's effectiveness;
  - (b) The credibility of the witnesses who spoke;
  - (c) The evidence that exonerated him.
- 9) A scientist will
- (a) Cite work that has no relation to the research they are conducting into order to illustrate the larger picture;
  - (b) Cite work that supports and refutes their work;
  - (c) Cite work that only supports their work.
- 10) To conduct the best research possible a scientist will
- (a) Consult only those resources immediately available so that work can begin quickly;
  - (b) Consult sources that support their findings only;
  - (c) Consult a wide array of sources including the internet, published research, and other experts in the field.
- 11) A scientist
- (a) Conducts research primarily after they design an experiment;
  - (b) Conducts research primarily before they design an experiment;
  - (c) Conducts research primarily during an experiment (e.g. after they have begun the experiment).





STUDENT SUPPORT MATERIALS

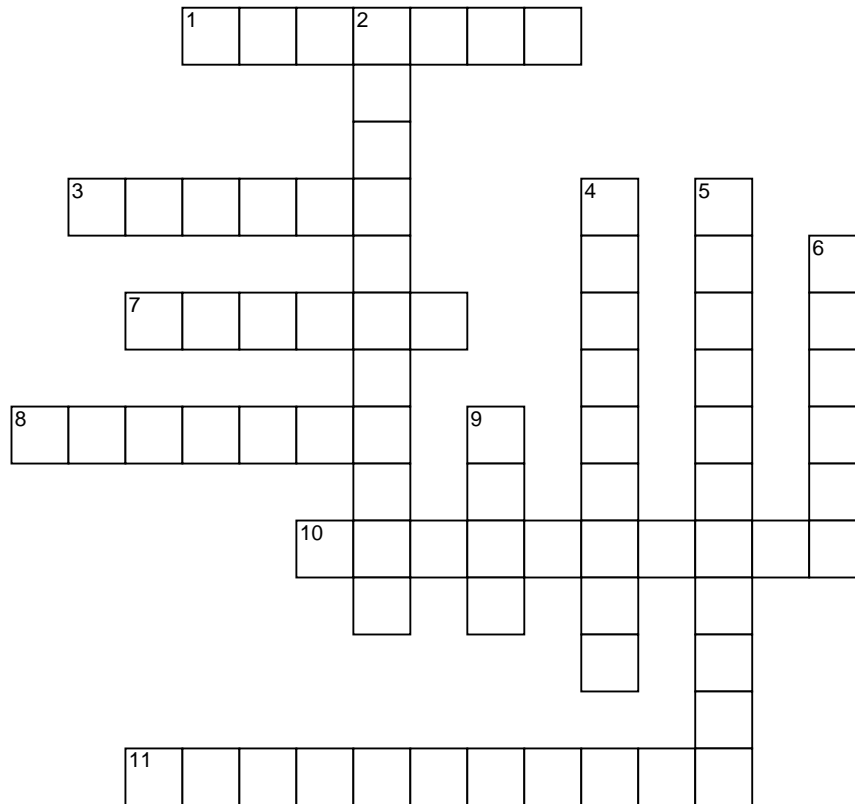
# Writing





# A-1 Science as Inquiry + Process

11th Grade



www.CrosswordWeaver.com

## ACROSS

- 1 reasonable; to be expected
- 3 to amend or alter in order to make corrections, updates, improves, or update
- 7 pertaining to the whole world, worldwide
- 8 (conducting research)- execution, direction, or management
- 10 to give, furnish
- 11 the capability or power to elicit belief

## DOWN

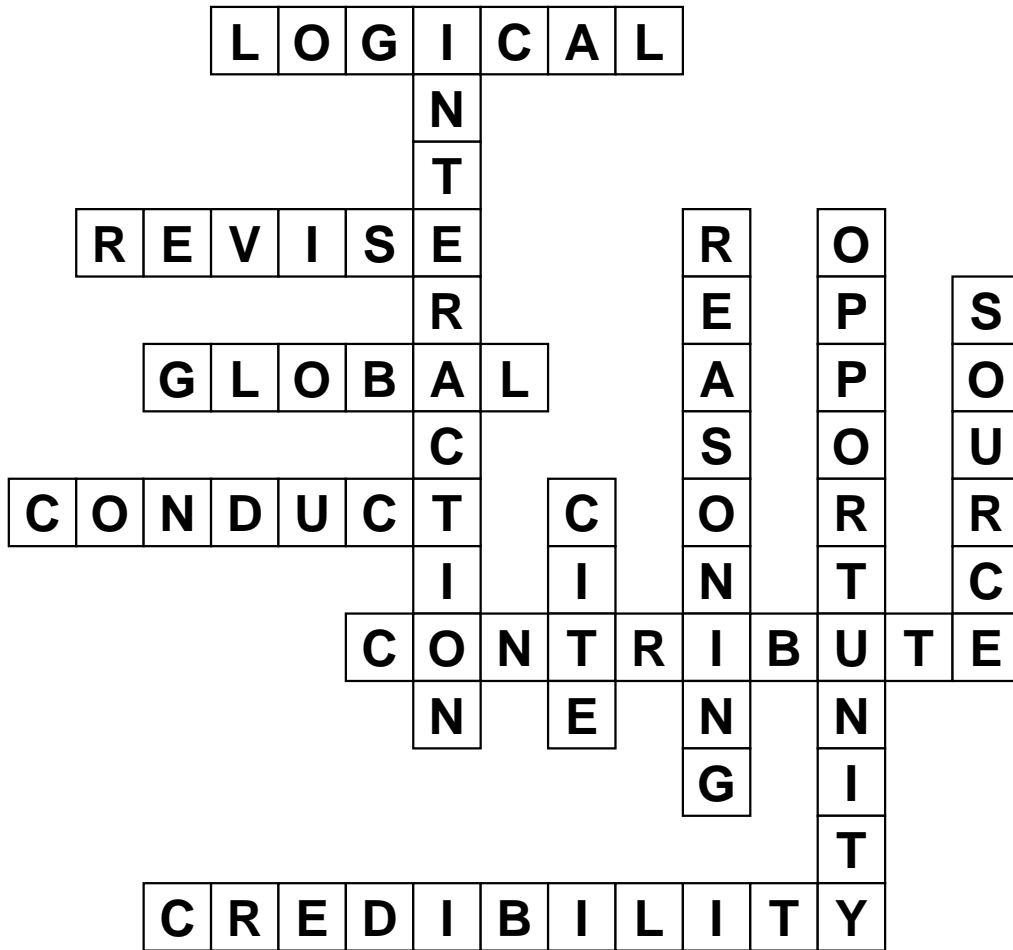
- 2 reciprocal action, effect, or influence
- 4 the process of forming conclusions, judgements, or inferences from facts of premises
- 5 a favorable time or occasion; a situation or condition favorable for attainment of a goal
- 6 a book, statement, person, etc., supplying information
- 9 to quote or mention in support



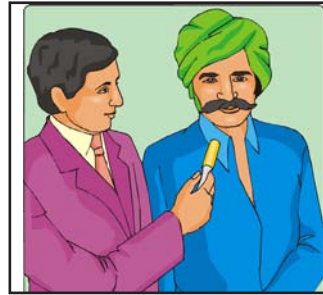
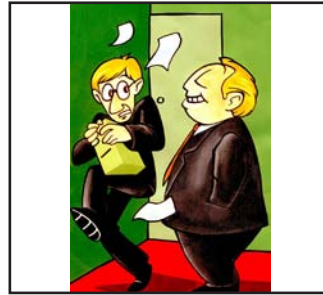
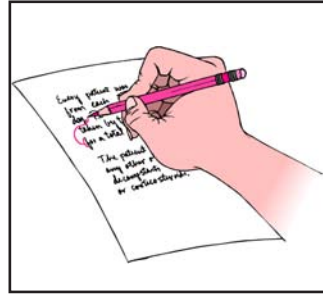
# A-1 Science as Inquiry + Process

11th Grade

Solution:



# Write The Words!



Write the Words!



\_\_\_\_\_



# Complete The Sentence

*Have the students write the key words in the blanks.*

1. It is important to \_\_\_ all papers before sending them for final publication.
2. A \_\_\_ of information that many people have come to rely on is the internet.
3. Not biting the hard candy was \_\_\_\_\_ because sally had braces on her teeth.
4. The \_\_\_ between sodium and water is a violent reaction.
5. The \_\_\_ of Dr. Einstein on the subject of Relativity was impeccable as he originated the Theory.
6. Mr. Smith was confident that he could \_\_\_ to society in his role as teacher.
7. An important part of any research project is when research is \_\_\_\_\_.
8. The \_\_\_ to attend the prestigious university on scholarship was one that Molly couldn't \_\_\_\_\_ pass up.
9. Scientists always \_\_\_ the work of others when writing discussions about theories.
10. Many questioned the \_\_\_ of gorillas until they scored well on Human intelligence tests.
11. \_\_\_ warming is a problem that must be dealt with soon if some nations such as the Maldives are to remain above water.

---

## ANSWERS

1. revise, 2. source, 3. logical, 4. interaction, 5. credibility, 6. contribute, 7. conduct, 8. opportunity, 9. cite, 10. reasoning, 11. global

# 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.*

**logical**

---

**reasoning**

---

**interaction**

---

**contribute**

---

**opportunity**

---

**global**

---

**revise**

---

**credibility**

---

**cite**

---

## 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.*

**source**

---

**conduct**

---







# Unit Assessment

## Unit Quiz





## Grade 11 Science: Inquiry & Process A-1 Quiz

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Multiple Choice:** In each item below, choose the word that best completes the sentence. Circle the correct answer.

- 1) A book, a person, and a newspaper article that supply information are known as \_\_\_\_\_.
  - a) sources
  - b) solutions
  - c) logical
  
- 2) When a writer quotes an article or a person in support of something said or written, the writer \_\_\_\_\_ where the information comes from.
  - a) reasons
  - b) cites
  - c) revises
  
- 3) When someone gives or furnishes information to help someone else, that person \_\_\_\_\_.
  - a) revises
  - b) contributes
  - c) cites
  
- 4) When a writer changes what he/she writes, by improving it, updating the piece, or adding to or changing it, the writer \_\_\_\_\_ the writing.
  - a) sources
  - b) cites
  - c) revises
  
- 5) When we refer to the whole world or to something happening worldwide, it is \_\_\_\_\_.
  - a) internal
  - b) global
  - c) worldly

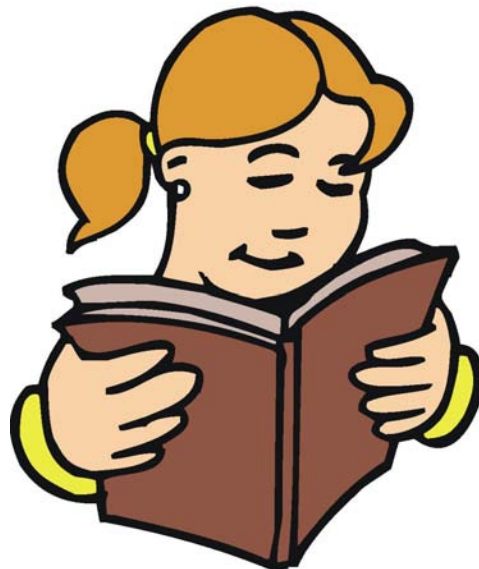
- 6) When a scientist carries out, manages or directs a research project, she \_\_\_\_\_ it.
- a) conducts
  - b) revises
  - c) responds to

**Matching:** Match the key vocabulary word on the left with the correct definition on the right. Put the letter from the definition in front of the word it matches.

- |                       |  |
|-----------------------|--|
| 7) _____ reasoning    | a. the capability or power to elicit belief  |
| 8) _____ contribute   | b. the process of forming conclusions, judgments, or inferences from facts of premises       |
| 9) _____ opportunity  | c. a favorable time or occasion; a situation or condition favorable for attainment of a goal |
| 10) _____ interaction | d. reasonable; to be expected  |
| 11) _____ credibility | e. to give, furnish  |
| 12) _____ logical     | f. reciprocal action, effect, or influence   |

**Illustrations:** The following test items will use illustrations for defining the key words.

- 13) Look at the two illustrations below. Write the word SOURCE and CITE under the illustration it matches.



- 14) Look at the two illustrations below. Write the word LOGICAL and REASONING under the illustration it matches.



- 15) Write a definition of, OR draw the illustration that best defines the key vocabulary word CREDIBILITY.



## Grade 11 Science: Inquiry & Process A-1 Quiz

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Multiple Choice:** In each item below, choose the word that best completes the sentence. Circle the correct answer.

1) A book, a person, and a newspaper article that supply information are known as \_\_\_\_\_ .

**a) sources**

b) solutions

c) logical

2) When a writer quotes an article or a person in support of something said or written, the writer \_\_\_\_\_ where the information comes from.

a) reasons

**b) cites**

c) revises

3) When someone gives or furnishes information to help someone else, that person \_\_\_\_\_.

a) revises

**b) contributes**

c) cites

4) When a writer changes what he/she writes, by improving it, updating the piece, or adding to or changing it, the writer \_\_\_\_\_ the writing.

a) sources

b) cites

**c) revises**

5) When we refer to the whole world or to something happening worldwide, it is \_\_\_\_\_.

a) internal

**b) global**

c) worldly



6) When a scientist carries out, manages or directs a research project, she \_\_\_\_\_ it.

**a) conducts**

b) revises

c) responds to

**Matching: Match the key vocabulary word on the left with the correct definition on the right. Put the letter from the definition in front of the word it matches.**

7)   **b**   reasoning

8)   **e**   contribute

9)   **c**   opportunity

10)   **f**   interaction

11)   **a**   credibility

12)   **d**   logical

a. the capability or power to elicit belief

b. the process of forming conclusions, judgments, or inferences from facts of premises

c. a favorable time or occasion; a situation or condition favorable for attainment of a goal

d. reasonable; to be expected

e. to give, furnish

f. reciprocal action, effect, or influence

**Illustrations:** The following test items will use illustrations for defining the key words.

13) Look at the two illustrations below. Write the word SOURCE and CITE under the illustration it matches.



illustration for source



illustration for cite

Show the illustrations here with the correct word under it.

- 14) Look at the two illustrations below. Write the word LOGICAL and REASONING under the illustration it matches.



illustration for reasoning



illustration for logical

Show the illustrations with the correct word written under it.

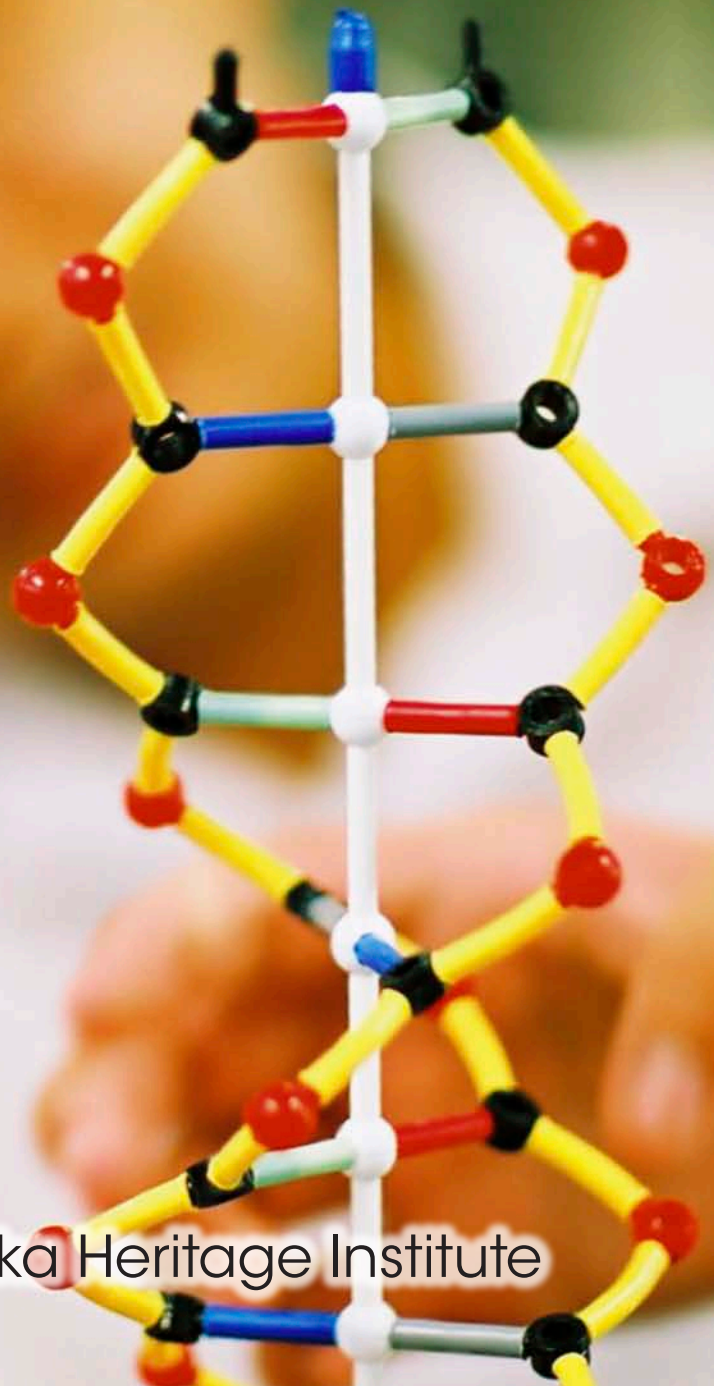
- 15) Write a definition of, OR draw the illustration that best defines the key vocabulary word CREDIBILITY.

Student writes: the capability or power to elicit belief OR draws the matching illustration.





# UNIT B-1



Sealaska Heritage Institute







INTRODUCTION OF

# Key Vocabulary







# Culturally Responsive & Place-based Perspective Introduction of Science Vocabulary

## Property

### PLACE-BASED PERSPECTIVE

Show a picture of a tongue. Different foods have different *properties*, like sweet, sour, or salty.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### HERITAGE CULTURAL PERSPECTIVE

The smoking of fish and meat produces foods with distinct *properties* such as taste, appearance, and texture.

## Element

### PLACE-BASED PERSPECTIVE

Show a picture of a bar of gold and discuss with the students that the *element* gold would retain all of its physical and chemical properties even if it were cut in half over and over again until it was an atom of gold.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### HERITAGE CULTURAL PERSPECTIVE

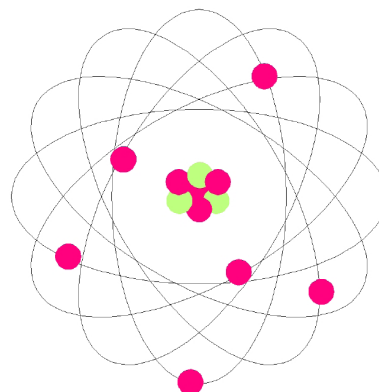
The copper shields, copper earrings, silver bracelets, silver earrings, and gold jewelry of the Pacific Northwest are good examples of the use of *elements* by Native people.

## Reactivity

### PLACE-BASED PERSPECTIVE

Show a picture of a stick of dynamite and discuss that the *reactivity* of dynamite is based on its chemical make-up.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



# Culturally Responsive & Place-based Perspective

## Introduction of Science Vocabulary

### Verify

#### PLACE-BASED PERSPECTIVE

Discuss with students that school counselors at universities need copies of diplomas and test scores to *verify* the preparedness of a student prior to entering into a post-secondary program.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

Traditionally, the telling of stories and the singing of songs would *verify* clan histories.

### Entropy

#### PLACE-BASED PERSPECTIVE

Show the students a rusty nail and discuss with them how *entropy* occurs during the act of oxidation by taking something made of metal that seems to be indestructible and returning it back to its atomic elements.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

Traditional gambling, such as the Stick Game, represents a form of *entropy* in terms of the randomness in selecting the winner.

### Interact

#### PLACE-BASED PERSPECTIVE

Show the students the picture from this unit that represents *interact*. Have them discuss how the picture represents the key word.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

Many forms of *interaction* appear in Southeast Alaska. This includes physical interactions such as the effects of glaciers on the land and personal interactions of Native peoples with other cultural groups.

# Culturally Responsive & Place-based Perspective

## Introduction of Science Vocabulary

### Configuration

#### PLACE-BASED PERSPECTIVE

Have the students study a book shelf in the room and look at the *configuration* of the construction of the bookshelf and the *configuration* of the books on the shelf.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

Clan houses were designed using *configurations* that allowed for all families to have their own living spaces.

### Matter

#### PLACE-BASED PERSPECTIVE

Show the students a picture of a classroom. Explain to students that everything that they see is *matter* and have them identify *matter* in the room. Ask them if air is *matter*. Have them take a deep breath and hold it. Explain while they are holding their breath that *matter* has mass and takes up space. Have them exhale and discuss why air is *matter*.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

Southeast Alaska has a wealth of natural *matter* that are used by artists and others to create works of art and tools. These include wood, ivory, shells, roots, bark, and precious metals.

### Convert

#### PLACE-BASED PERSPECTIVE

Show students some flour, yeast, sugar, and water. Then show students some bread and discuss with them how the raw ingredients are mixed and *converted* into bread. Also, discuss with them how the holes in the bread are created from the conversion of sugar into carbon dioxide by the yeast.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

In Southeast Alaska, many Native peoples historically *converted* from a traditional lifestyle to a Western lifestyle. Many of the federal and state laws caused Native peoples to change their lifestyles.

# Culturally Responsive & Place-based Perspective Introduction of Science Vocabulary

## Exert

### PLACE-BASED PERSPECTIVE

Discuss how basketball players *exert* energy when practicing or playing.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### HERITAGE CULTURAL PERSPECTIVE

The main character in the story The Strong Man *exerts* supernatural strength when he tears a sea lion in half with his bare hands.

(Note: this story can be found in *Haa Shuká, Our Ancestors*.)





# Language Skills





# Language & Skills Development

## LISTENING

Use the activity pages from the Student Support Materials.



### Flashlight Find

Mount the vocabulary illustrations on the walls, chalkboard, windows, etc. Have a student stand in the center of the classroom with a flashlight. Say one of the vocabulary words. The student must find the illustration for the vocabulary word you said using the light of the flashlight. This activity may also be conducted in team form. In this case, have two flashlights available. Have a player from each team stand in the center of the classroom. When you say the vocabulary word, each player must attempt to find the correct illustration with the light of his/her flashlight. The first player to correctly identify the illustration for the vocabulary word you said wins the round. Repeat until all players have played.

## SPEAKING



### Calendar Bingo

Before the activity begins, prepare a page that contains a calendar page (complete with days and dates). Provide each student with a copy of the calendar page. Also, provide each student with ten small markers. Each student should place the markers on different dates on his/her calendar page. Mount the vocabulary illustrations on the chalkboard. Call a student's name and say a date in the month. If a marker is not on the date you named, he/she should say a complete sentence about a vocabulary illustration you point to. However, if a marker is on the date you called, he/she may "pass" to the next player. Repeat this process until all students have participated. You may wish to provide each student with more than one marker for this activity.

## READING

Use the activity pages from the Student Support Materials.



### Right or Wrong?

Provide each student with writing paper and a pen. Spell a sight word orally. If you spell the sight word correctly, each student should make a checkmark on his/her paper. However, if you misspell the word, each student should make an "X" on his/her paper. Continue until all sight words have been spelled in this way. Afterwards, review the students' responses. This activity may also be done in team form. In this case, group the students into two teams. Write a sight word on the chalkboard (either spelling it correctly or incorrectly). When you say "Go," the first player from each team must rush to the chalkboard and indicate whether you spelled the word correctly or incorrectly. For *correct*, the players should make a checkmark on the chalkboard; for *incorrect*, the players should make an "X" on the chalkboard. The first player to respond correctly wins the round. Repeat until all players have participated. Use a different sight word for each round of the activity.

## WRITING

Use the activity pages from the Student Support Materials.



### The Other Half

Cut each of the sight words in half. Give each student a sheet of writing paper, a pen and one of the word halves. Each student should glue the word half on his/her writing paper and then complete the spelling of the word. You may wish to have enough word halves prepared so that each student completes more than one word. Afterwards, review the students' responses.



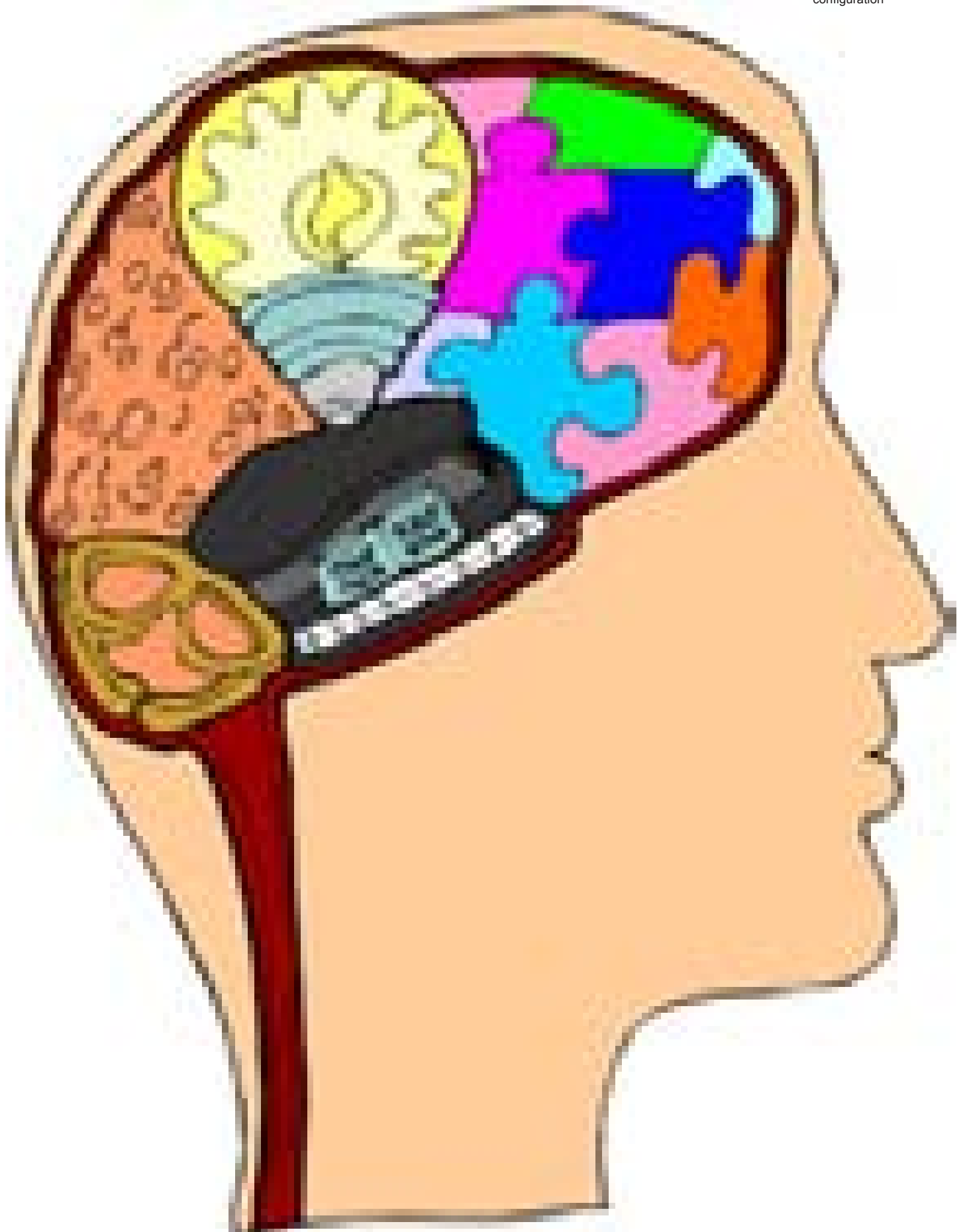




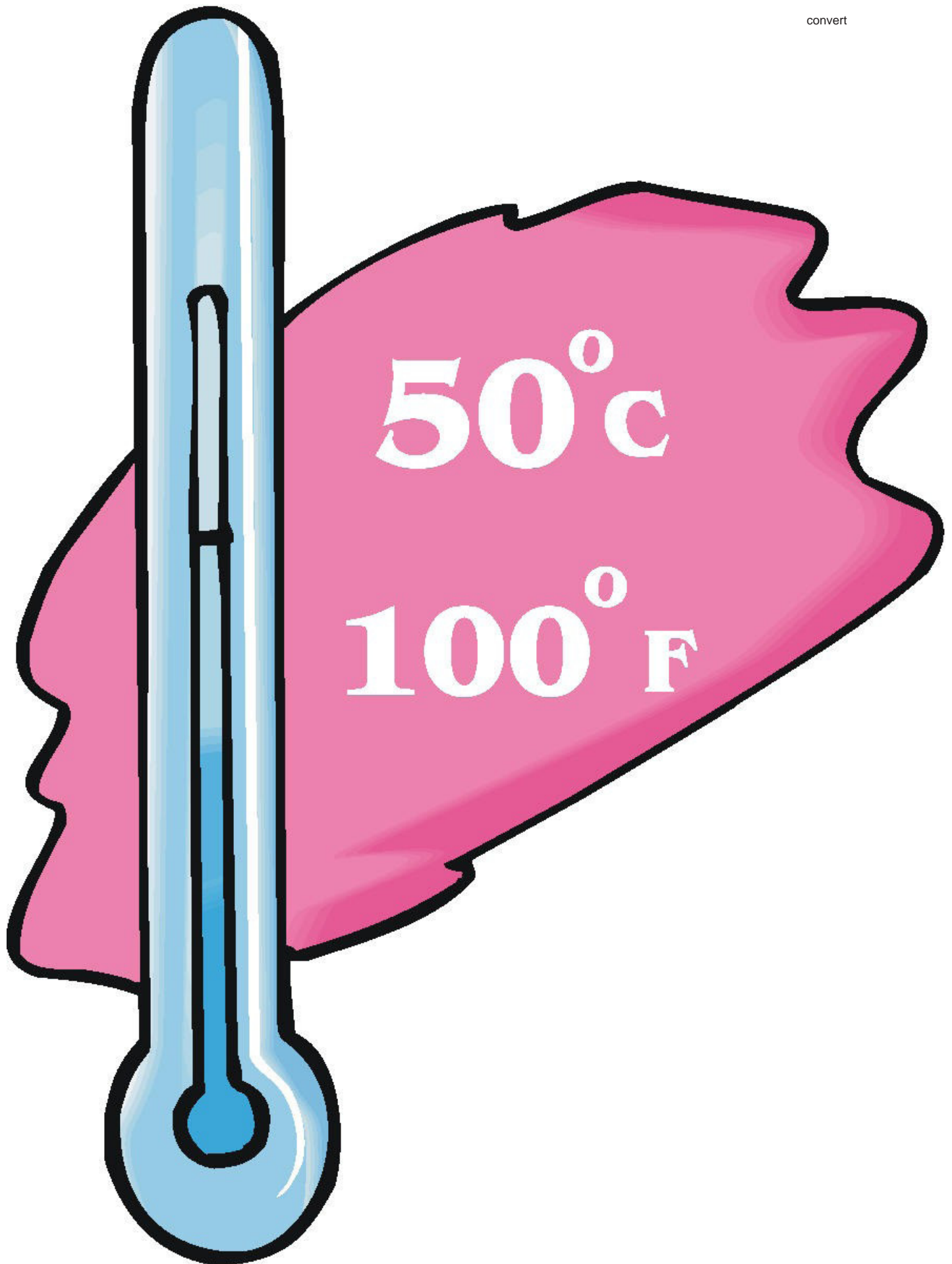
# Vocabulary Images





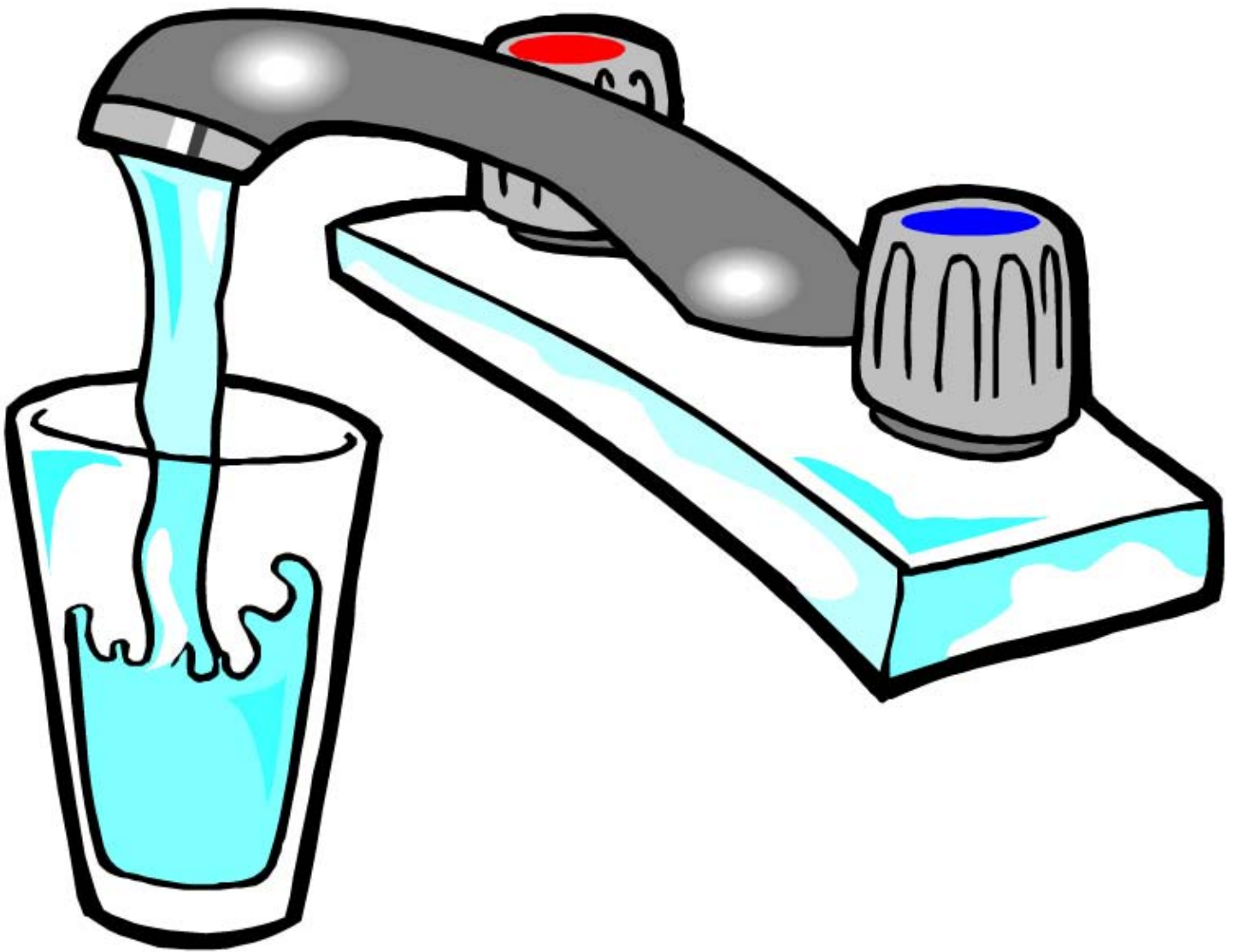




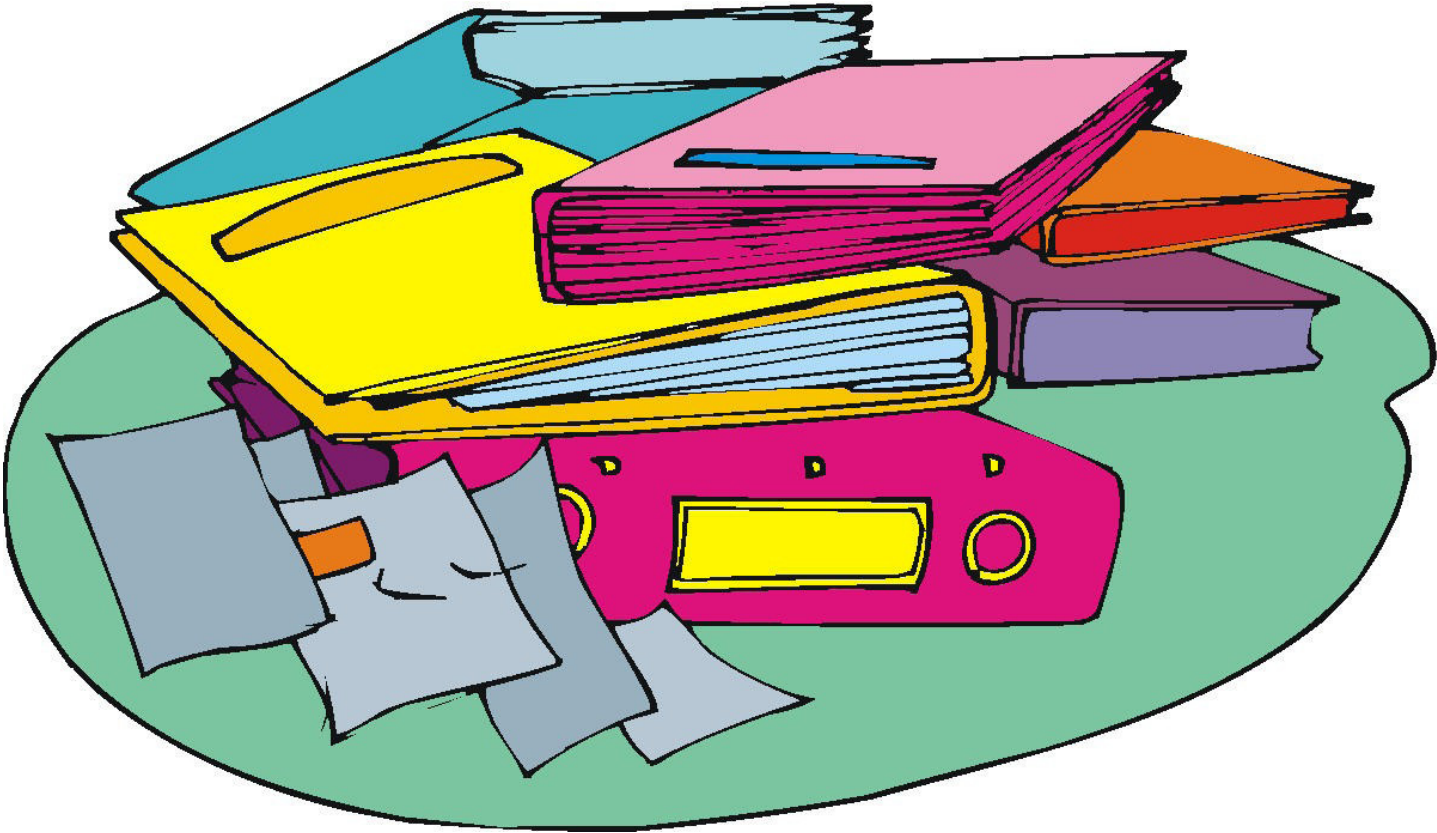






















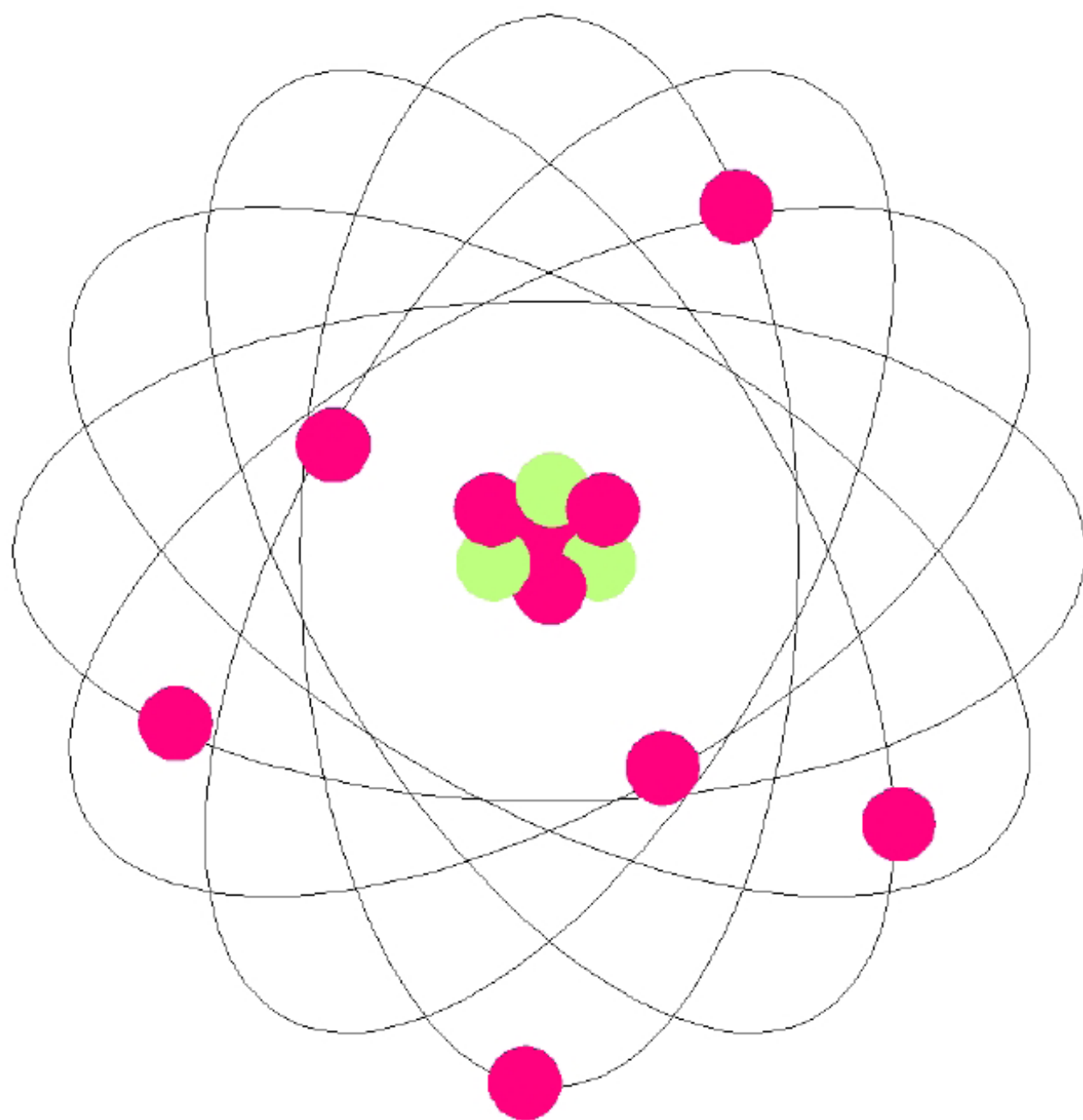






















STUDENT SUPPORT MATERIALS

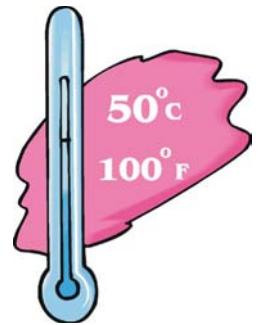
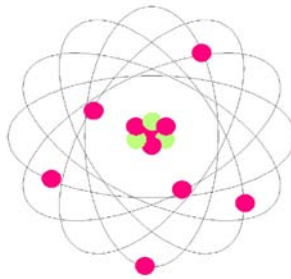
# Listening





Say these words to the students, and have students write the numbers of the words under the pictures.

1. property, 2. element, 3. exert, 4. verify, 5. entropy, 6. interact, 7. configuration, 8. matter  
9. convert, 10. reactivity



## Fill-in The Blanks

*Read the sentences to the students. The students should name the "missing words."*

Automobiles move when the tires \_\_\_\_1\_\_\_\_ with the road surface. Specifically, when the tires \_\_\_\_2\_\_\_\_ a force on the road and the road pushes back. The energy that is released is often from chemical potential energy found in gasoline. Gasoline, consisting of the \_\_\_\_3\_\_\_\_ Hydrogen and Carbon, has a high reactivity with the element Oxygen. The chemical potential energy of the gasoline is \_\_\_\_4\_\_\_\_ to heat – increasing \_\_\_\_5\_\_\_\_ only. The latter is useful to us, as anyone with a car will \_\_\_\_6\_\_\_\_. As the piston in the internal combustion engine moves, so do the tires – and hence the car moves!

The \_\_\_\_7\_\_\_\_ of any element has to do with the \_\_\_\_8\_\_\_\_ of the electrons in the atom. Hence, reactivity is a \_\_\_\_9\_\_\_\_ of all \_\_\_\_10\_\_\_\_.

### ANSWERS

1. interact, 2. exert, 3. element(s), 4. converted, 5. entropy, 6. verify, 7. reactivity 8. configuration, 9. property, 10. matter



# True Or False?

*Read the following sentences to the students. The students should write "true" or "false" for each of the sentences.*

- 1) **Property**  
a) Elements are the property of the scientist who finds them.
- 2) **Element**  
a) Elements can't be separated into simpler substances.
- 3) **Reactivity**  
a) I enjoy drinking root beer because of its reactivity.
- 4) **Verify**  
a) Sally verified the floor by using a scrub brush.
- 5) **Entropy**  
a) To increase randomness is to increase entropy.
- 6) **Interact**  
a) An interesting interaction between the vibrating lips of a trumpet player, and the air in the trumpet, produces sounds that many enjoy.
- 7) **Configuration**  
a) The configuration of water molecules in the solid state is farther apart than in the liquid state.
- 8) **Matter**  
a) The chemistry teacher explained many properties of matter to the class.
- 9) **Convert**  
a) The Law of Conservation of Energy states that energy can't be converted or destroyed.
- 10) **Exert**  
a) Moving the railcar by hand didn't require Billy to exert much force.

## ANSWERS

1. f, 2. t, 3. f, 4. f, 5. t, 6. t, 7. f, 8. t, 9. f, 10. f







STUDENT SUPPORT MATERIALS

# Sight Words





**property**

**element**

**reactivity**

**verify**

**entropy**

**interact**

**configuration**

**matter**

**convert**

**exert**



STUDENT SUPPORT MATERIALS

# Reading







# Word Find

Find the words in the grid. Words can go horizontally, vertically and diagonally in all eight directions.

T L Q D L H K Y M W C H N  
E Q T L V T J T B T P X O  
N V K Y R C R R N N Y Q I  
T Z E E Y M R E G K Q T T  
R M X R A K M P V M F B A  
O E N T I E Q O R N R W R  
P T T J L F M R R N O M U  
Y E K E B P Y P R M F C G  
R R E A C T I V I T Y T I  
D V T P M H Z L X Y R Z F  
N K D R T P Z N C M R P N  
C T C A R E T N I Y L T O  
M R K F F N Q V J K M D C

[www.WordSearchMaker.com](http://www.WordSearchMaker.com)

Configuration

Convert

Element

Entropy

Exert

Interact

Matter

Property

Reactivity

Verify

# Word Find Solution

T	L	Q	D	L	H	K	Y	M	W	C	H	N
E	Q	T	L	V	T	J	T	B	T	P	X	O
N	V	K	Y	R	C	R	R	N	N	Y	Q	I
T	Z	E	E	Y	M	R	E	G	K	Q	T	T
R	M	X	R	A	K	M	P	V	M	F	B	A
O	E	N	T	I	E	Q	O	R	N	R	W	R
P	T	T	J	L	F	M	R	R	N	O	M	U
Y	E	K	E	B	P	Y	P	R	M	F	C	G
R	R	E	A	C	T	I	V	I	T	Y	T	I
D	V	T	P	M	H	Z	L	X	Y	R	Z	F
N	K	D	R	T	P	Z	N	C	M	R	P	N
C	T	C	A	R	E	T	N	I	Y	L	T	O
M	R	K	F	F	N	Q	V	J	K	M	D	C

# Sight Words Activity Page

Have the students highlight or circle the words for the pictures.



property  
element  
reactivity  
verify  
entropy  
interact  
configuration  
matter  
convert  
exert



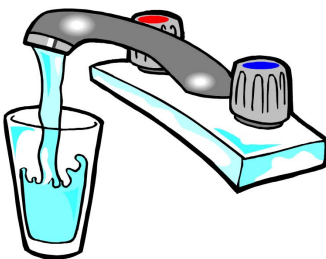
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entropy  
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property  
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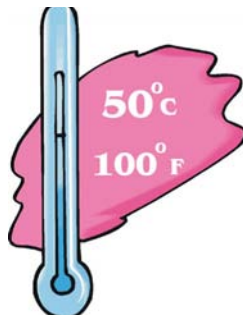
property  
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verify  
entropy  
interact  
configuration  
matter  
convert  
exert

# Sight Words Activity Page

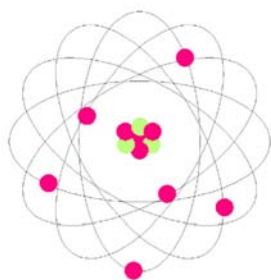
Have the students highlight or circle the words for the pictures.



property  
element  
reactivity  
verify  
entropy  
interact  
configuration  
matter  
convert  
exert



property  
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reactivity  
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entropy  
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configuration  
matter  
convert  
exert



property  
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configuration  
matter  
convert  
exert

## Sentence Halves

*Have the students write the numbers/letters for sentence halves that match.*

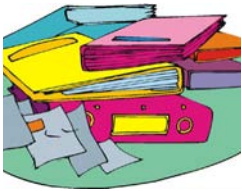
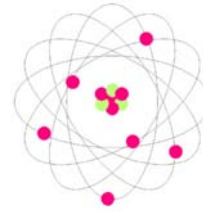
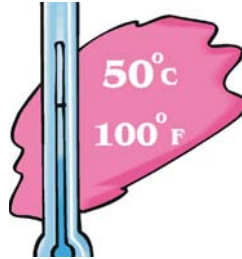
- |  |   |
|--|---|
| 1) A distinctive attribute of mass is  | A. <i>In the electron configuration.</i>  |
| 2) There are 112 known elements,   | B. <i>Life does not violate the Second Law of Thermodynamics.</i>                     |
| 3) The reason that striking a match in the presence of gasoline and oxygen                               | C. <i>Is comprised of particles and has mass.</i>                                     |
| 4) All scientific hypotheses undergo   | D. <i>All with unique properties.</i>   |
| 5) As all biological reactions result in a transfer of heat energy to the environment and hence entropy, | E. <i>By plants in photosynthesis to chemical potential energy.</i>                   |
| 6) In the interaction between liquid water and table salt,   | F. <i>Reduce the amount of force that must be exerted to accomplish a given task.</i> |
| 7) The farther away from the proton, the greater the energy of the electron                              | G. <i>Is dangerous is due to the reactivity of these two compounds.</i>               |
| 8) Matter refers to anything that  | H. <i>That it resists a change to its state of motion.</i>                            |
| 9) Electromagnetic radiation energy from the sun is converted  | I. <i>Water acts to separate sodium from chloride in the salt and dissolves it.</i>   |
| 10) People like simple machines as they  | J. <i>Verification before they become a theory.</i>                                   |

### ANSWERS

1/H 2/D 3/G 4/J 5/B 6/I 7/A 8/C 9/E 10/F

# Word & Definition Match

Have the students write the word numbers on their matching definitions.



1. property

2. element

3. reactivity

4. verify

5. entropy

6. interact

7. configuration

8. matter

9. convert

10. exert

## Which Belongs?

*Have the students circle/identify the word that is correct for each sentence.*

1. Alchemists worked for years in vain attempting to discover a way to exert/convert lead into gold.
2. When the hammer exerts/interacts with the nail, the nail moves forward into the wood.
3. "What can I do?" the chemist protested. "The reaction calls for the element/matter sodium and I have none!"
4. "Can you interact/exert just a little more of yourself? You must if we are to win," the basketball coach said to his team at half-time.
5. The particular location in which an electron can be found in an electron configuration/verify is not possible to determine.
6. "I warn you, this liquid is highly reactive/exertive," the cornered chemist said to the would-be kidnappers.
7. One of the primary properties/elements of matter is the resistance to a change in motion.
8. The reactivity/entropy of the universe continued to increase.
9. "Jumping into soft matter/element from a height is rather enjoyable," the circus trainer said.
10. "Let me just verify/configure your identification," the clerk said, suspecting that foulplay was afoot.

### ANSWERS

1. convert, 2. interacts, 3. element, 4. exert, 5. configuration, 6. reactive, 7. properties
8. entropy, 9. matter, 10. verify



## What's The Answer?

Have the students read the questions and then select the correct answer for them. They should fill-in the appropriate circles, beside the answers of their choice.

- 1) One important property of matter is
  - (a) Its temperature;
  - (b) The amount of heat it has;
  - (c) Its mass.
  
- 2) An element is
  - (a) Any ingredient in a recipe;
  - (b) An atom defined by the number of electrons it has;
  - (c) An atom defined by the number of protons it has.
  
- 3) How dangerous a chemical is,
  - (a) Is often related to its reactivity;
  - (b) Is based on its color;
  - (c) Is determined by how much of it there is.
  
- 4) An important step in the scientific process is verification,
  - (a) Where other scientists attempt to recreate the experiment and findings;
  - (b) Where a scientist redoes his own investigation to determine if it was done correctly;
  - (c) Where a scientist develops an initial experimentation protocol.
  
- 5) Entropy
  - (a) Means the types of bonds formed between atoms;
  - (b) Is a measure of disorder, or randomness, present;
  - (c) Is cited, correctly, as a means to reject evolution.
  
- 6) One concern doctors always consider when prescribing medications
  - (a) Is how two different medications will interact;
  - (b) is how much the patient can afford;
  - (c) is how the family will feel about the prescriptions.

## What's The Answer?

Have the students read the questions and then select the correct answer for them. They should fill-in the appropriate circles, beside the answers of their choice.

- 7) The configuration of electrons in an atom
- (a) Is best described as orbits – like the planets around the sun;
  - (b) Is best described as orbitals – areas where the electron may be found;
  - (c) Is such that the prediction of where an electron will be found at any given time is completely predictable.
- 8) Matter is best described as
- (a) Having inertia
  - (b) Having weight
  - (c) Occupying an equal amount of volume.
- 9) Energy can't be destroyed,
- (a) And it can't be converted to matter;
  - (b) But it can be created;
  - (c) But it can be transferred from one object to another in a collision.
- 10) When a force is exerted on an object
- (a) That object will always accelerate;
  - (b) That object may accelerate if friction is overcome;
  - (c) That object will always remain in one place.

### ANSWERS

1. c, 2. c, 3. a, 4. a, 5. b, 6. a, 7. b, 8. a, 9. b, 10. b





STUDENT SUPPORT MATERIALS

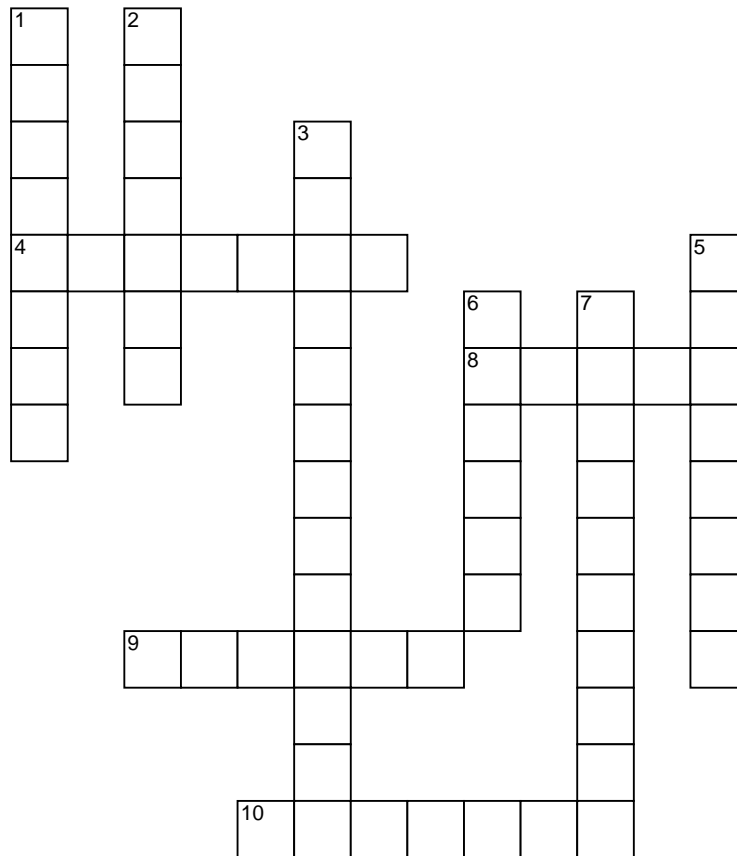
# Writing





# B-1 Concepts of Physical Science

11th Grade



www.CrosswordWeaver.com

## ACROSS

- 4** one of a class of substances that cannot be separated into simpler substances by chemical means
- 8** to put forth or into use, exercise vigorously
- 9** the substance of which any physical object is made
- 10** as measure of randomness

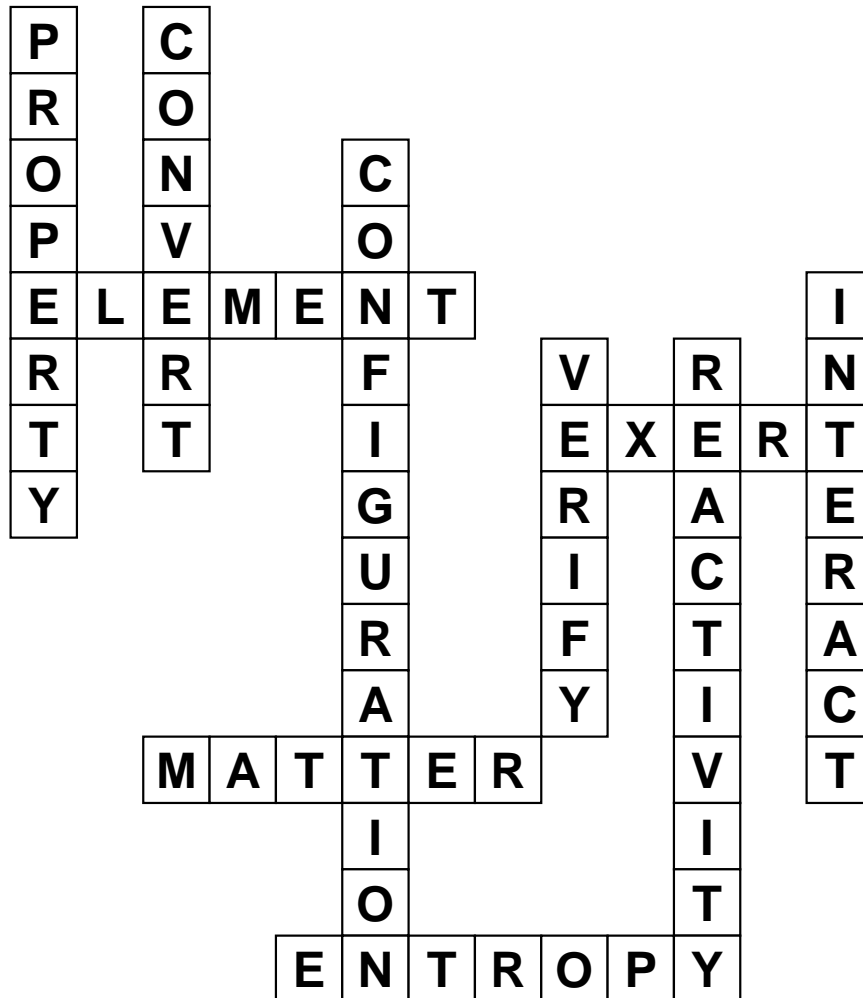
## DOWN

- 1** an essential or distinctive attribute or quality of a thing
- 2** to change
- 3** the relative disposition or arrangement of the parts or elements of a thing
- 5** to act upon each other
- 6** to prove the truth of, as by evidence; confirm, substantiate
- 7** the relative capacity of an atom, molecule, or radical to undergo a chemical reaction with another atom, molecule, or compound

# B-1 Concepts of Physical Science

11th Grade

Solution:



# Write The Words!



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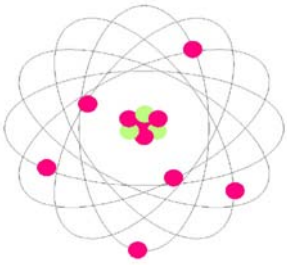
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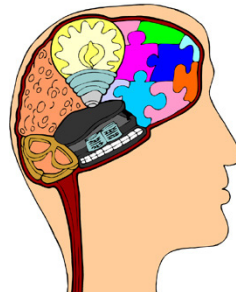
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# Creative Writing Activity Page

*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.*

**property**

---

**element**

---

**reactivity**

---

**verify**

---

**entropy**

---

**interact**

---

**configuration**

---

**matter**

---

**convert**

---

**exert**

---







STUDENT SUPPORT MATERIALS

# Reinforcement Activities





# States of Matter Experiment

When asked what the states of *matter* are, you probably respond solid, liquid, and gas. Of course you would be correct, but there are some materials that don't conform to these categories.

For this experiment you will need:

- corn starch (about 1/4 cup)
- water (about 1/4 cup)
- a bowl

Add 1/4 cup of dry corn starch to the bowl. Add about 1/8 cup (2 tablespoons) of water to the corn starch and stir slowly. Add water slowly to the mixture, stirring, until all of the powder is wet.

Continue to add water until the cornstarch acts like a liquid when you stir it slowly. When you tap on the liquid with your finger, it shouldn't splash, but rather will become hard. If your mixture is too liquid, add more cornstarch. Your goal is to create a mixture that feels like a stiff liquid when you stir it slowly, but feels like a solid when you tap it with your finger or on a spoon.

Scoop the cornstarch mixture into the palm of your hand, then slowly work it into a ball. As long as you keep the pressure on it by rubbing it between your hands, it stays solid. Stop rubbing, and it melts into a puddle into your palm. This state of matter is called suspension.

1. What *reactivity* does the suspension have to the physical *exertion* that is different than a solid or a liquid?
2. How is the *configuration* of the molecules in suspension affected by *entropy*?
3. Can you *verify* that other suspensions act in similar or dissimilar fashion?







# Unit Assessment

## Unit Quiz







## Grade 11 Science: Concepts of Physical Science B1-Quiz

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Word Bank

element

entropy

matter

Property

property

verifying

- 1) \_\_\_\_\_ is an essential or distinctive attribute or quality of a thing.
- 2) The substance of which any physical object is made is \_\_\_\_\_.
- 3) one of a class of substances that cannot be separated into simpler substances by chemical means is a/an \_\_\_\_\_.
- 4) An essential or distinctive attribute or quality of a thing is its \_\_\_\_\_.
- 5) When a scientist works to prove the truth of something using evidence, he is \_\_\_\_\_ its existence.

**Word Scramble: Unscramble the following key vocabulary words. Use the definition behind the word to help with your answer. Write the word correctly in the blank provided.**

- 6) YVIFREV: to prove the truth of, as by evidence; confirm, substantiate \_\_\_\_\_
- 7) TREVNO: to change \_\_\_\_\_
- 8) NITRECAT: to act upon each other \_\_\_\_\_
- 9) PENTYRO: a measure of randomness \_\_\_\_\_

**Multiple Choice: Complete each sentence in the items below by selecting the best answer. Circle the best answer.**

**Multiple Choice: Complete each sentence in the items below by selecting the best answer. Circle the best answer.**

- 10) The relative capacity of an atom, molecule, or radical to undergo a chemical reaction with another atom, molecule, or compound is called.....
- a) radioactivity
  - b) reactivity
  - c) nuclear reaction
- 11) A/an \_\_\_\_\_ is one of a class of substances that cannot be separated into simpler substances by chemical means
- a) particle
  - b) property
  - c) element
- 12) \_\_\_\_\_ is an essential or distinctive attribute or quality of a thing.
- a) Property
  - b) Entropy
  - c) Configuration
- 13) The relative disposition or arrangement of the parts or elements of a thing is known as its \_\_\_\_\_.
- a) property
  - b) entropy
  - c) configuration
- 14) A measure of randomness is \_\_\_\_\_.
- a) entropy
  - b) covert
  - c) exert
- 15) \_\_\_\_\_ means to put forth or into use, exercise vigorously.
- a) Exert
  - b) Covert
  - c) Verify

## Grade 11 Science: Concepts of Physical Science B1-Quiz

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Word Bank

element

entropy

matter

Property

property

verifying

- 1) Property is an essential or distinctive attribute or quality of a thing.
- 2) The substance of which any physical object is made is matter.
- 3) one of a class of substances that cannot be separated into simpler substances by chemical means is a/an element.
- 4) An essential or distinctive attribute or quality of a thing is its property.
- 5) When a scientist works to prove the truth of something using evidence, he is verifying its existence.

**Word Scramble: Unscramble the following key vocabulary words. Use the definition behind the word to help with your answer. Write the word correctly in the blank provided.**

- 6) YVIFREV: to prove the truth of, as by evidence; confirm, substantiate verify
- 7) TREVNOG: to change convert
- 8) NITRECAT: to act upon each other interact
- 9) PENTYRO: a measure of randomness entropy

**Multiple Choice: Complete each sentence in the items below by selecting the best answer. Circle the best answer.**

**Multiple Choice: Complete each sentence in the items below by selecting the best answer. Circle the best answer.**

10) The relative capacity of an atom, molecule, or radical to undergo a chemical reaction with another atom, molecule, or compound is called.....

a) radioactivity

**b) reactivity**

c) nuclear reaction

11) A/an \_\_\_\_\_ is one of a class of substances that cannot be separated into simpler substances by chemical means

a) particle

b) property

**c) element**

12) \_\_\_\_\_ is an essential or distinctive attribute or quality of a thing.

**a) Property**

b) Entropy

c) Configuration

13) The relative disposition or arrangement of the parts or elements of a thing is known as its \_\_\_\_\_.

a) property

b) entropy

**c) configuration**

14) A measure of randomness is \_\_\_\_\_.

**a) entropy**

b) covert

c) exert

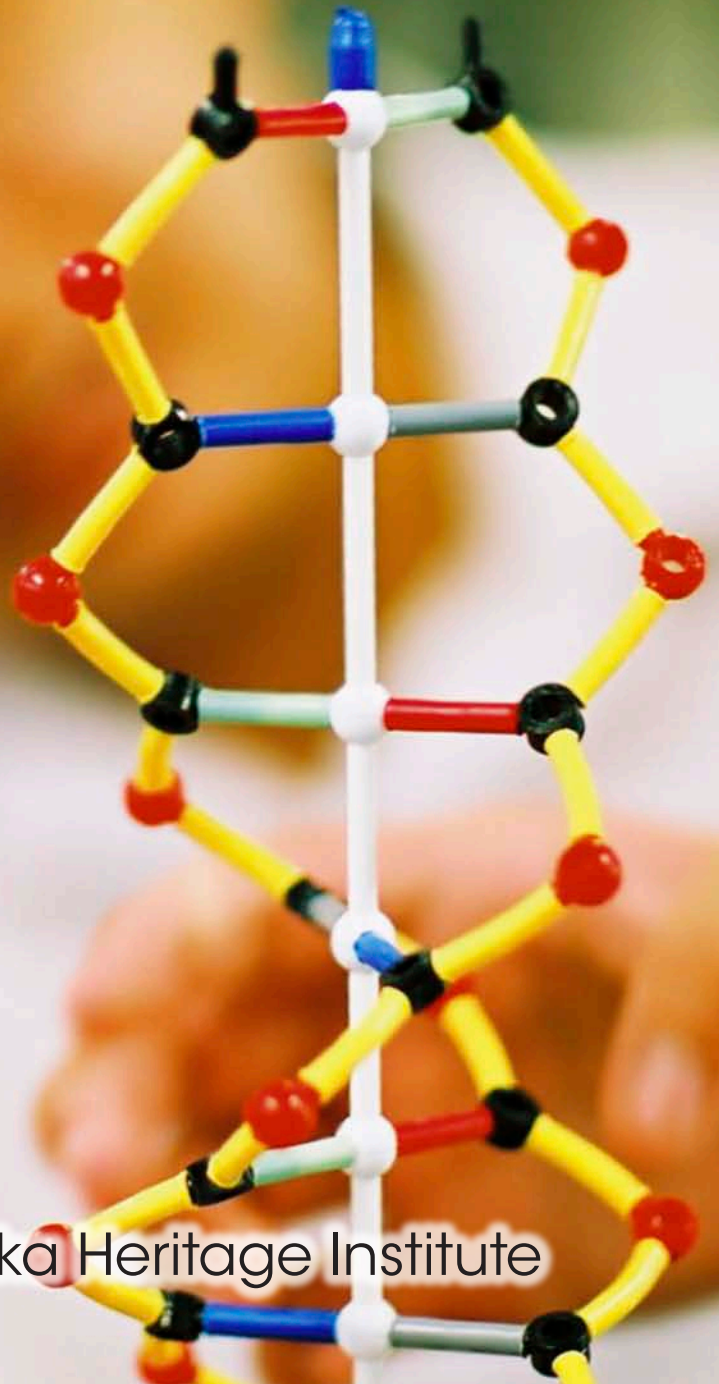
15) \_\_\_\_\_ means to put forth or into use, exercise vigorously.

**a) Exert**

b) Covert

c) Verify

# UNIT C-1



Sealaska Heritage Institute







INTRODUCTION OF

# Key Vocabulary







# Culturally Responsive & Place-based Perspective Introduction of Science Vocabulary

## Characteristics

### PLACE-BASED PERSPECTIVE

Discuss how scientists use the markings on whale flukes as distinguishing *characteristics* to tell individual whales apart.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### HERITAGE CULTURAL PERSPECTIVE

Art forms of Southeast Alaska Natives display a variety of *characteristics*. For example, the beadwork of the northern Southeast Natives is similar to the beadwork of the Interior Natives.

## Organism

### PLACE-BASED PERSPECTIVE

Write animal, plant, fungi, and bacteria on the board. Ask students to fill in the categories. Explain that *organisms* are living things.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### HERITAGE CULTURAL PERSPECTIVE

*Organisms* in Southeast Alaska are manyfold. They include plants and land and sea animals.

## Natural Selection

### PLACE-BASED PERSPECTIVE

If a giraffe “stretched” its neck to get leaves, it would not have offspring with longer necks. *Natural selection* requires mutation. Mutants that are able to survive by finding food or not becoming food, live to pass on their genes. So the mutant giraffes born with slightly longer necks were able to get to leaves that other shorter-neck giraffes could not get to and pass on their genes as the shorter-neck giraffes went extinct.



### HERITAGE CULTURAL PERSPECTIVE

Salmon returning to their ancestral streams and rivers is an example of *natural selection*.

# Culturally Responsive & Place-based Perspective

## Introduction of Science Vocabulary

### Species

#### PLACE-BASED PERSPECTIVE

Discuss how the word *sapiens* describes all the humans alive today as one *species* when used with the genus *Homo*, as in *Homo sapiens*.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

There are five *species* of Alaskan salmon. These include king, sockeye, pink, silver, and chum salmon.

### Conditioning

#### PLACE-BASED PERSPECTIVE

Discuss how *conditioning* prepares students to respond to the lunch bell at school differently than they respond to the bell to change classes.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

In a traditional song, children of a clan are *conditioned* to stand and dance and to acknowledge their father's clan.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.

### Imprinting

#### PLACE-BASED PERSPECTIVE

Discuss with students how salmon hatcheries use water from local streams to *imprint* the location that the salmon will come back to when they return from the ocean to spawn.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

Different animals in Southeast Alaska, including whales, fish, and geese, have migration routes *imprinted* in their memories.

# Culturally Responsive & Place-based Perspective

## Introduction of Science Vocabulary

### Trial and Error

#### PLACE-BASED PERSPECTIVE

Discuss with students how a baby learns to walk through much *trial and error*.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

Most traditional inventions were the products of *trial and error*.

### Interdependency

#### PLACE-BASED PERSPECTIVE

Show the students the graphics from this unit that represent *interdependency*. Have them discuss how the pictures relate to the key word.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

In Southeast Alaska, the clans and moieties are *interdependent*.

### Immune System

#### PLACE-BASED PERSPECTIVE

Show a picture of a flu shot and discuss how the dead or inactive proteins in the flu shot build up a person's *immune system* by building antibodies against those particular proteins.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

Many Native medicines benefitted the *immune system*. These included Devil's Club, various tree barks, roots, leaves, salmon eggs, oil, and pitch.

# Culturally Responsive & Place-based Perspective

## Introduction of Science Vocabulary

### Endocrine System

#### PLACE-BASED PERSPECTIVE

Show a glass of milk and discuss with students how warm milk helps people go to sleep. The *endocrine system* is similar in that the hormones released can make people tired or like coffee can make people hyper.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### Global

#### PLACE-BASED PERSPECTIVE

Show the students the graphics from this unit that reflect *global*. Have them discuss how the graphics relate to the key word.



#### HERITAGE CULTURAL PERSPECTIVE

The Native languages and cultures of Southeast Alaska reflect a *global* awareness. This is evidenced in their songs, music, and oratories.

### Climate

#### PLACE-BASED PERSPECTIVE

Show students a world map with weather patterns, such as El Nino. Discuss how weather is a small local event during a short period of time and *climate* is a global event that occurs over a long period of time.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



#### HERITAGE CULTURAL PERSPECTIVE

The Native peoples of Southeast Alaska adapted their lifestyles to the *climate* of the area. This included clothing, housing, transportation, and food gathering.

# Culturally Responsive & Place-based Perspective Introduction of Science Vocabulary

## Impact

### PLACE-BASED PERSPECTIVE

Show a picture of Albert Einstein. Discuss his *impact* on the modern world.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### HERITAGE CULTURAL PERSPECTIVE

Many factors have *impacted* the traditional lifestyles of Native peoples. These factors included laws, schools, religion, tools, economics, harvesting, and social interactions with one another.

## Habitat

### PLACE-BASED PERSPECTIVE

Discuss with students how beavers change the *habitat* for their own benefit by building dams and creating ponds.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### HERITAGE CULTURAL PERSPECTIVE

Southeast Alaska is a rich *habitat* with an abundance of natural resources.

## Cataclysm

### PLACE-BASED PERSPECTIVE

Show the students the graphics from this unit that reflect *cataclysm*. Have them discuss how the graphics relate to the key word.



### HERITAGE CULTURAL PERSPECTIVE

There have been *cataclysmic* events in Southeast Alaska as documented in oral narratives. This includes the Glacier Bay, Great Flood, and Great Landslide stories.

# Culturally Responsive & Place-based Perspective Introduction of Science Vocabulary

## Ecosystem

### PLACE-BASED PERSPECTIVE

Compare pictures of Juneau and a desert. Discuss the different *ecosystems* with students.

Show the students the picture from this unit for this key word. Have them determine how the picture relates to the word.



### HERITAGE CULTURAL PERSPECTIVE

The temperate rainforest in Southeast Alaska contains many *ecosystems*. Among these are marsh lands, forests, mountains and the ocean.





# Language Skills



# Language & Skills Development

## LISTENING

Use the activity pages from the Student Support Materials.



### Matching Halves

Cut each of the vocabulary illustrations in half. Mix all of the halves together and distribute them to the students. Say a vocabulary word. The two students who have the halves for the illustration that goes with the vocabulary word you said, should show their halves. You may have the students exchange illustration halves periodically during this activity.

## SPEAKING



### Roll 'em Again!

Mount the vocabulary illustrations on the chalkboard. Number each illustration using the numbers 1 to 6 (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 illustration on the chalkboard that has the same number. Repeat this process until all students have participated.

## READING

Use the activity pages from the Student Support Materials.



### Run-on Paragraph

Before the activity begins, prepare a paragraph related to the concept being studied. However, leave no spaces between the words and sentences of the paragraph; do not provide any punctuation. Provide each student with a copy of the paragraph. Each student must then circle the individual sentences in the run on paragraph and add the necessary punctuation. Afterwards, review the students' responses.

## WRITING

Use the activity pages from the Student Support Materials.



### What's the Title?

Before the activity begins, prepare a paragraph related to a concept being studied. Do not title the paragraph. Provide each student with a copy of the paragraph and a pencil/pen. The students should read the paragraph silently. Then, each student should create a title for it. They should write their titles at the top of the paragraph. When the students are finished, have each student read his/her title orally. Another way to do this activity is to give each student a different paragraph. Each student then develops a title for his/her paragraph. Have the students write their titles on the board. Then, have each student read his/her paragraph to the other students; they must determine the correct title for the paragraph. Continue, until all students have shared their paragraphs in this way.







# Vocabulary Images

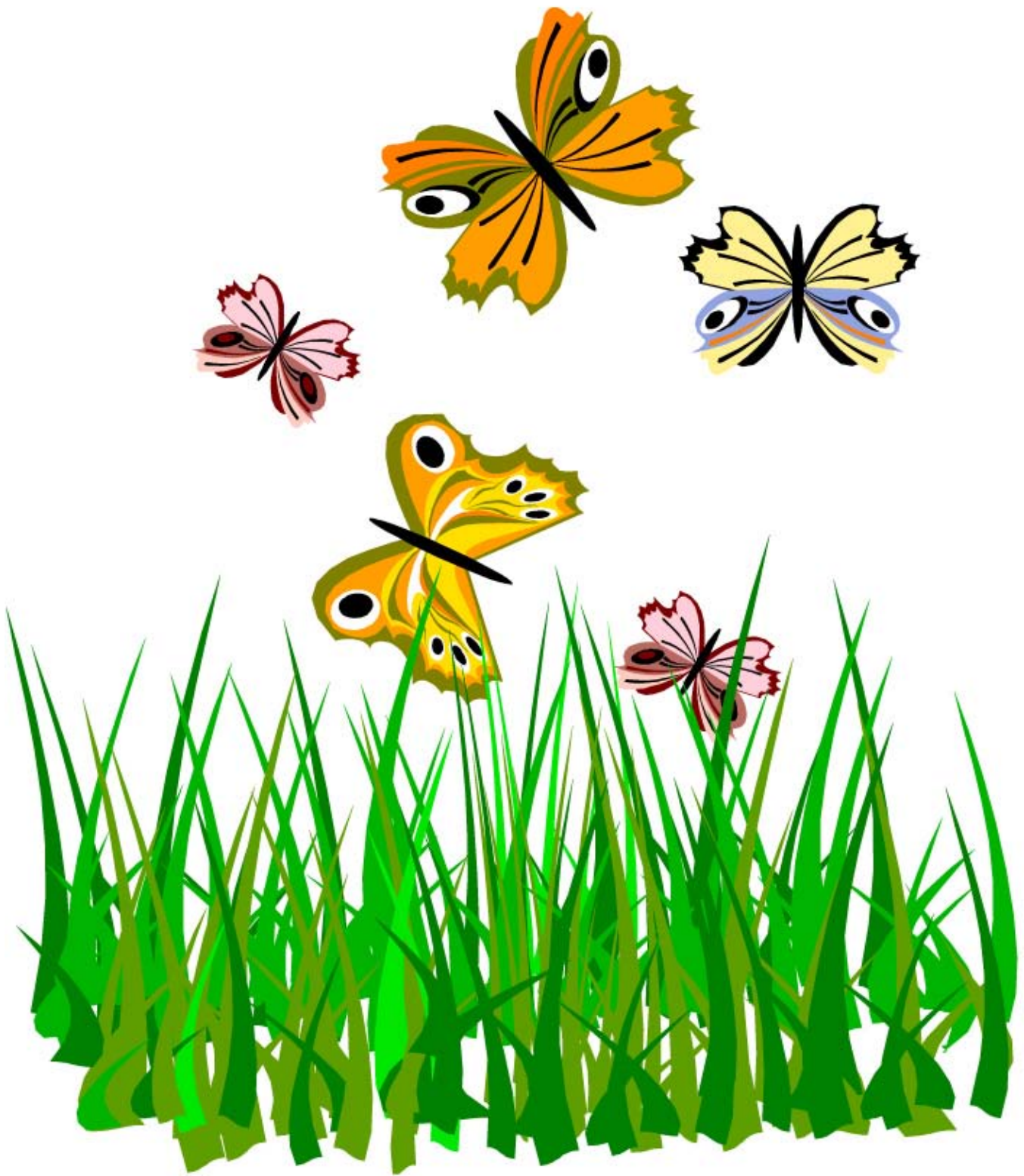


















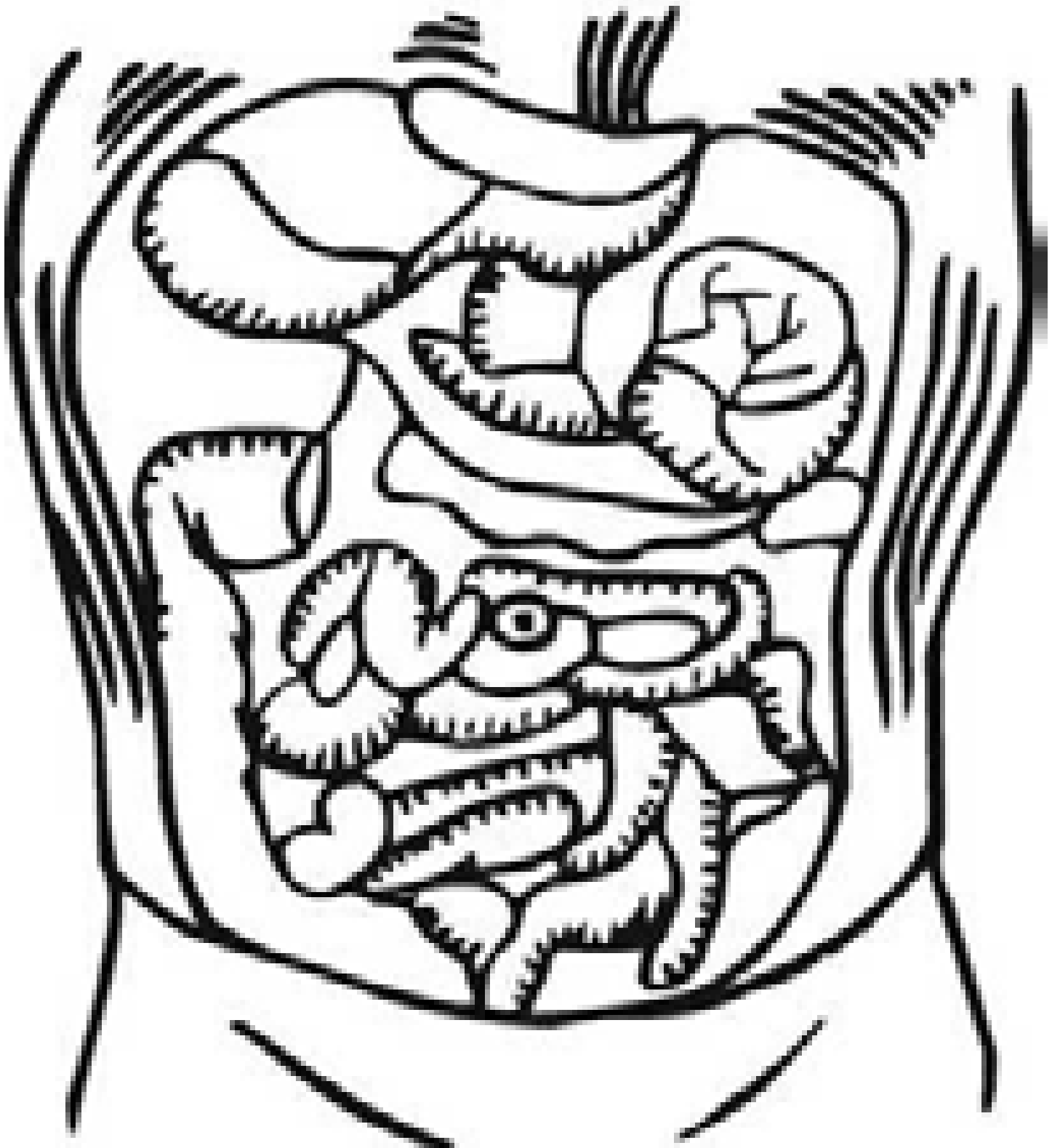














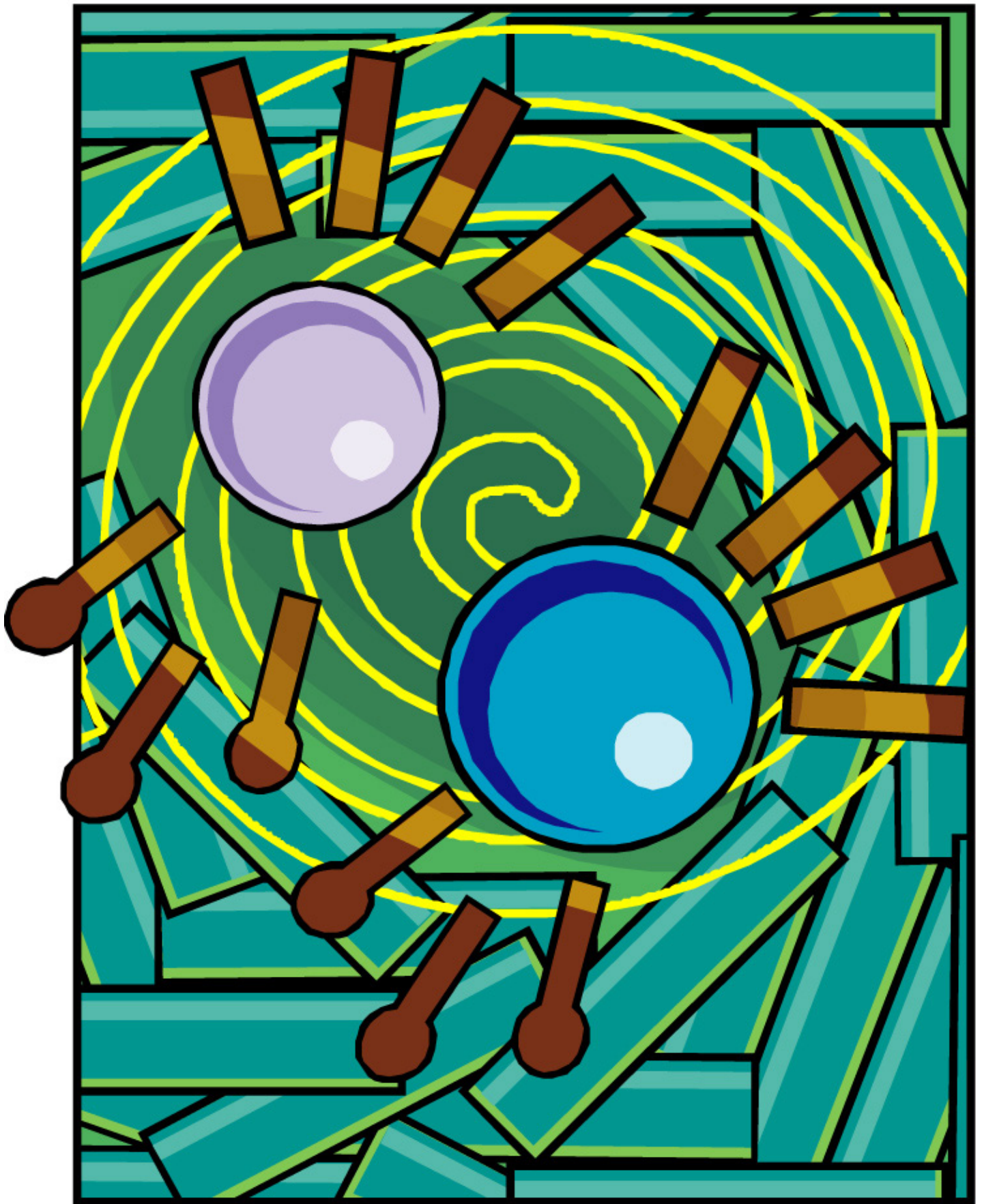




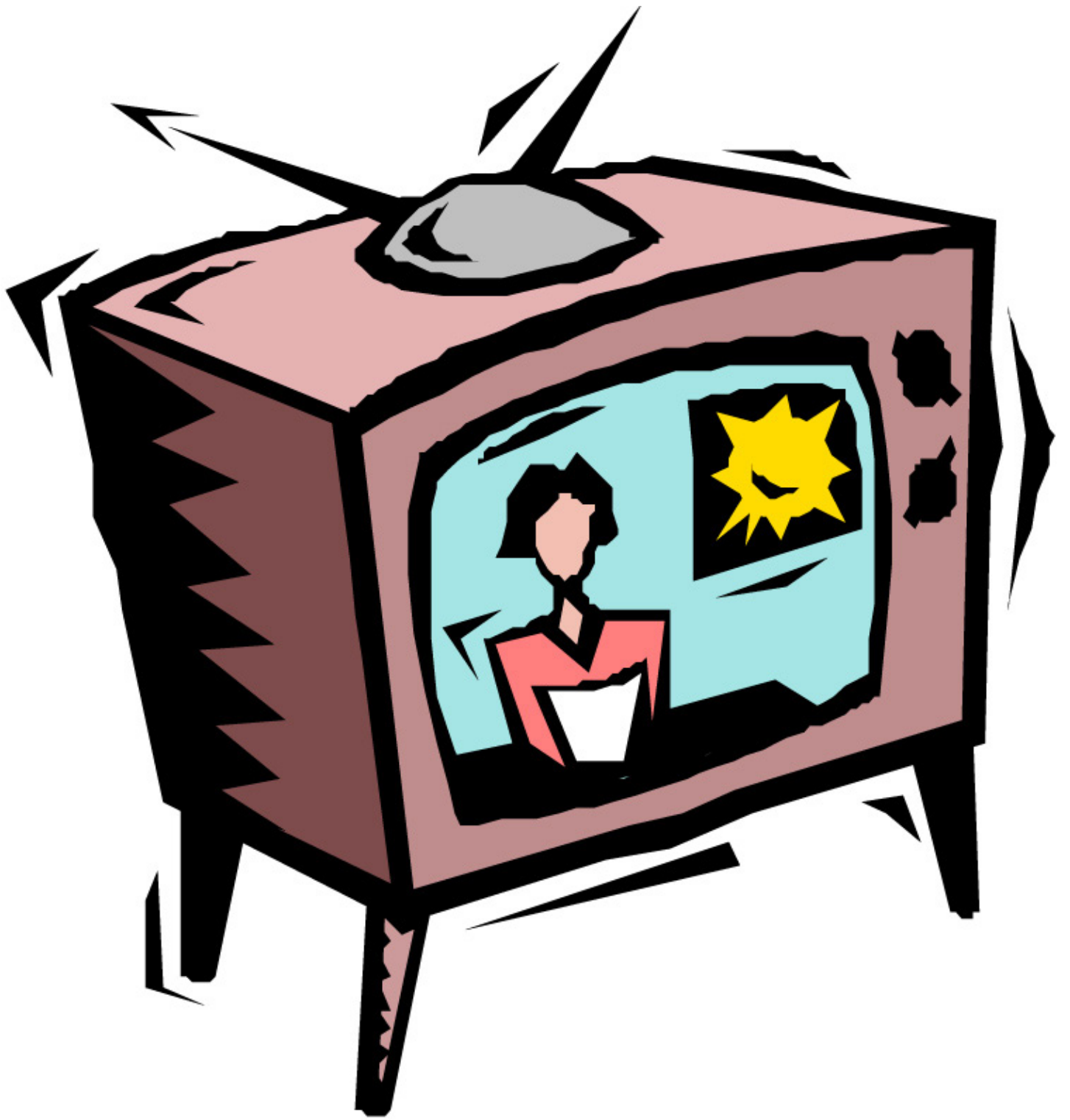




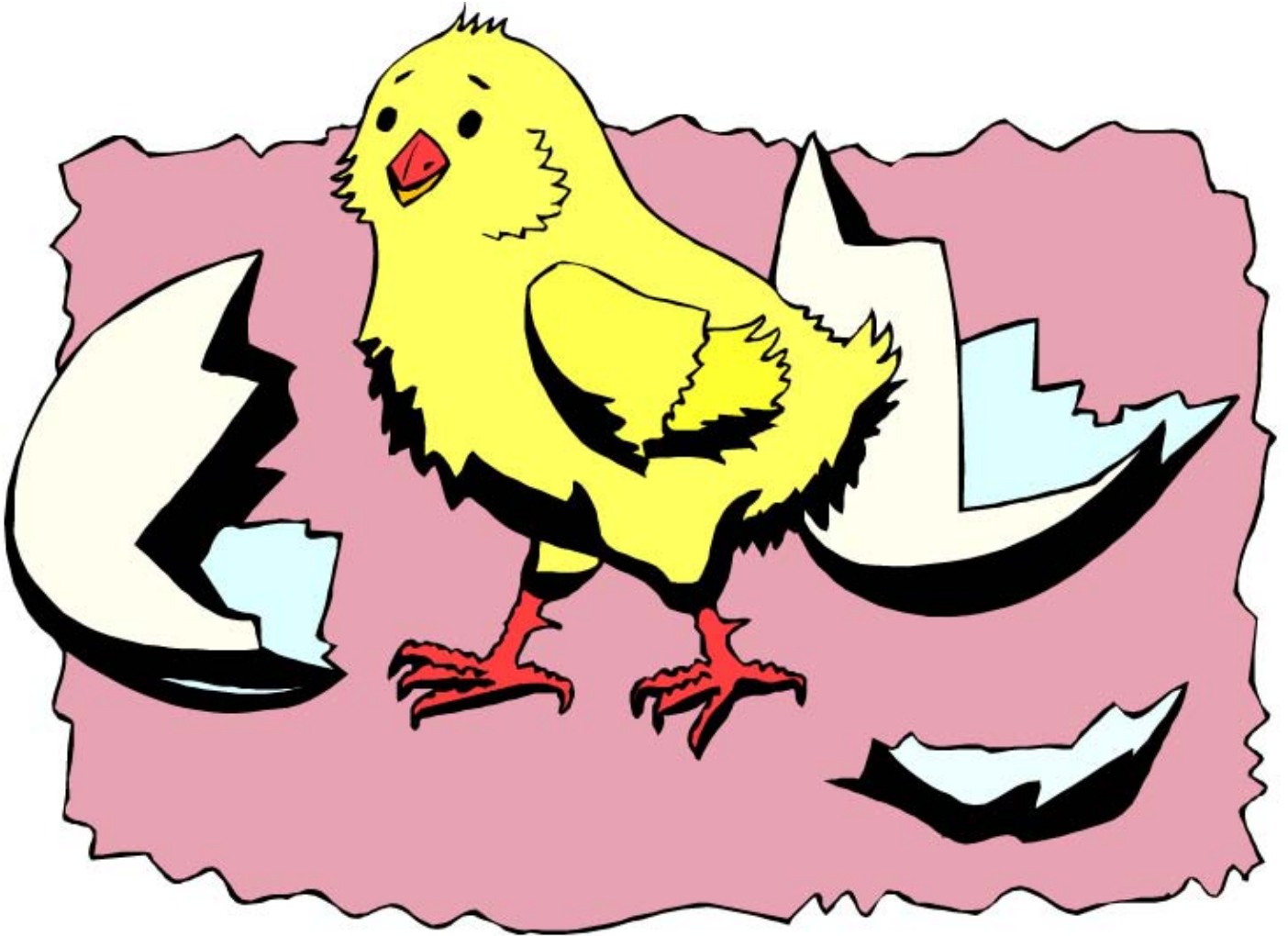










































STUDENT SUPPORT MATERIALS

# Listening







**Say these words to the students - they write the numbers of the words under the pictures.**

1. characteristics, 2. organism, 3. natural selection, 4. species, 5. conditioning, 6. imprinting
7. trial and error, 8. interdependency, 9. immune system, 10. endocrine system, 11. global
12. climate, 13. impact, 14. habitat, 15. cataclysm, 16. ecosystem











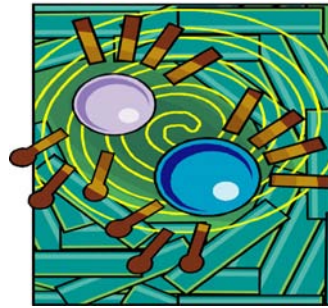








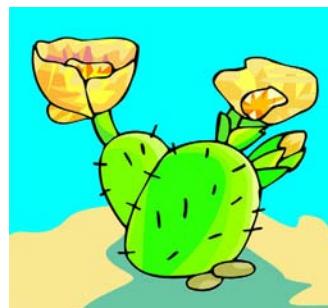


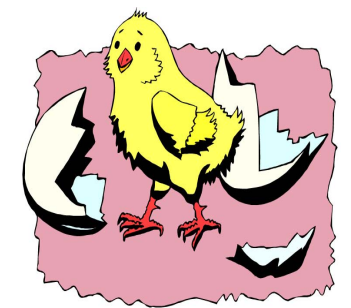












## Fill-in The Blanks

*Read the sentences to the students. The students should name the "missing words."*

1. A living thing is referred to as an \_\_\_\_.
2. The \_\_ population is now in excess of seven billion.
3. \_\_\_\_\_ results in the survival of the fittest.
4. With \_\_\_\_\_, a dog may be taught to follow many commands.
5. A(n) \_\_ consists of the interactions between living and non-living things.
6. Vaccinations stimulate the \_\_\_\_ to produce antibodies against specific diseases.
7. The human consumption of fossil fuels is having a huge \_\_ on the world's oceans.
8. Mass extinction was a \_\_\_\_ for the dinosaurs.
9. The process by where a bird forms an image of its parents immediately after hatching is called \_\_\_\_\_.
10. Proper scientific methodology does not involve \_\_\_\_.
11. Having six hearts and an open circulatory system are both \_\_\_\_ of hagfish.
12. Overwintering \_\_ is crucial for most wildlife.
13. The \_\_ of the computers was such that when the server crashed, so did access to the internet in all classrooms.
14. The definition of \_\_\_\_ usually includes a reference to a group of organisms that breeds together exclusively.
15. During puberty, the \_\_\_\_ is quite active.
16. Usually, when people talk about the \_\_ they are actually talking about local weather conditions.

### ANSWERS

1. organism, 2. global, 3. natural selection, 4. conditioning, 5. ecosystem, 6. immune system  
7. impact, 8. cataclysm, 9. imprinting, 10. trial and error, 11. characteristics, 12. habitat  
13. interdependency, 14. species, 15. endocrine system, 16. climate

# True Or False?

*Read the following sentences to the students. The students should write "true" or "false" for each of the sentences.*

- 1) **Characteristics**
  - a) Sally used the characteristics of a pencil to open the package.
- 2) **Organism**
  - a) Although two organisms may appear quite different, all living things share many characteristics.
- 3) **Natural Selection**
  - a) Farmer Brown chose the dairy cow to be entered into the fair by natural selection.
- 4) **Species**
  - a) Humans and chimpanzees are both primates and hence the same species.
- 5) **Conditioning**
  - a) With proper training, a golden retriever can be conditioned to lead a blind person.
- 6) **Imprinting**
  - a) Salmon imprint on the stream from which they were hatched.
- 7) **Trial and Error**
  - a) An infant learns by trial and error.
- 8) **Interdependency**
  - a) Because we are a separate nation, the U.S. is interdependent from other nations.
- 9) **Immune System**
  - a) The immune system transports blood in the body.
- 10) **Endocrine System**
  - a) Bobby grew tremendously as a result of secretions from the endocrine system.
- 11) **Global**
  - a) Recessions in one country don't usually have an effect on the global economy.
- 12) **Climate**
  - a) The length of seasons depends on the climate in a region.
- 13) **Impact**
  - a) One impact of technology has been global climate change.
- 14) **Habitat**
  - a) The habitat of the mouse consisted of the high canopy during the winter months.
- 15) **Cataclysm**
  - a) The development of life on the planet was a cataclysmic event.
- 16) **Ecosystem**
  - a) The only components of an ecosystem are the living factors in an environment.

## ANSWERS

1. f, 2. t, 3. f, 4. f, 5. t, 6. t, 7. t, 8. f, 9. f, 10. t, 11. f, 12. t, 13. t, 14. f, 15. f, 16. f







STUDENT SUPPORT MATERIALS

# Sight Words





**characteristics**

**organism**

**species**

**natural  
selection**

**conditioning**

**imprinting**

**trail and**

**error**

**interdependency**

**immune  
system**

**endocrine  
system**

**global**

**climate**

**impact**

**habitat**



**cataclysm**

**ecosystem**





STUDENT SUPPORT MATERIALS

# Reading





# Word Find

D Y C N R P L D I G L R V C K S V  
B C G C H K V K C M R T N F C C X  
M N X L W X L B O M P M R K T I X  
E E R O R R E D N A L A I R T T M  
T D L T F D C M D R K R C I T S E  
S N L A L R S A I Q Q K M T T I T  
Y E M J B I X N T C K P Z L C R S  
S P W H N O H G I A R H G X E E Y  
O E H A T C L Y O I C Z F T J T S  
C D G H K N Q G N M Z L A X J C E  
E R P A S C N T I B N M Y Q K A N  
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C N Q T G N Y C C F L H Z R J H M  
L I M A M N T X I T D N J D Y C I  
D N A T U R A L S E L E C T I O N  
H E N D O C R I N E S Y S T E M Z

[www.WordSearchMaker.com](http://www.WordSearchMaker.com)

Cataclysm	Immune System
Characteristics	Impact
Climate	Imprinting
Conditioning	Interdependency
Ecosystem	Natural Selection
Endocrine System	Organism
Global	Species
Habitat	Trial and Error

# Word Find Solution

D	Y	C	N	R	P	L	D	I	G	L	R	V	C	K	S	V
B	C	G	C	H	K	V	K	C	M	R	T	N	F	C	C	X
M	N	X	L	W	X	L	B	O	M	P	M	R	K	T	I	X
E	E	R	O	R	R	E	D	N	A	L	A	I	R	T	T	M
T	D	L	T	F	D	C	M	D	R	K	R	C	I	T	S	E
S	N	L	A	L	R	S	A	I	Q	Q	K	M	T	T	I	T
Y	E	M	J	B	I	X	N	T	C	K	P	Z	L	C	R	S
S	P	W	H	N	O	H	G	I	A	R	H	G	X	E	E	Y
O	E	H	A	T	C	L	Y	O	I	C	Z	F	T	J	T	S
C	D	G	H	K	N	Q	G	N	M	Z	L	A	X	J	C	E
E	R	P	A	S	C	N	T	I	B	N	M	Y	Q	K	A	N
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C	N	Q	T	G	N	Y	C	C	F	L	H	Z	R	J	H	M
L	I	M	A	M	N	T	X	I	T	D	N	J	D	Y	C	I
D	N	A	T	U	R	A	L	S	E	L	E	C	T	I	O	N
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# Sight Words Activity Page

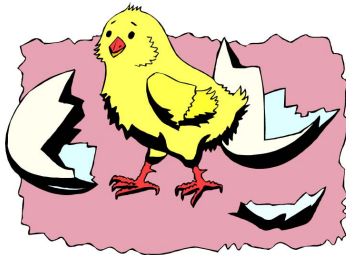
Have the students highlight or circle the words for the pictures.



characteristics  
organisms  
natural selection  
species  
conditioning  
imprinting  
trial and error  
interdependency  
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endocrine system  
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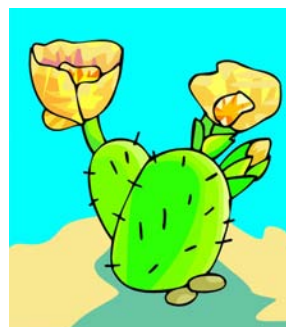
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# Sight Words Activity Page

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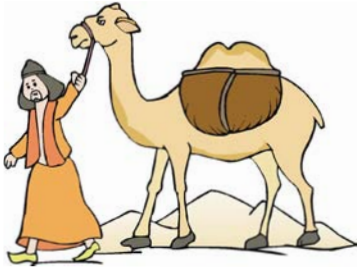


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# Sight Words Activity Page

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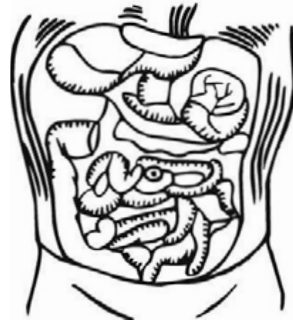
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## Sentence Halves

*Have the students write the numbers/letters for sentence halves that match.*

- |  |   |
|--|---|
| 1) Features used to identify an                                      | A. Organisms.   |
| 2) Plants, animals, bacteria, and all other living things are called | B. Food, shelter, space, and water.   |
| 3) The process that results in only some                             | C. Systematically address hypotheses.   |
| 4) When written out, the Genus                                       | D. Individuals reproducing in a population is called natural selection.                     |
| 5) The psychologist who experimented with                            | E. Was a cataclysmic event for the wildlife there.  |
| 6) Salmon always return to the same                                  | F. Behavior modification and defined condition was Dr. Ivan Pavlov.                         |
| 7) Trial and error is not a good way to                              | G. Organism are called characteristics.   |
| 8) The cyanobacteria and fungus that                                 | H. Stream that they originated from, as a result of imprinting.                             |
| 9) You are more likely to become sick                                | I. When you are stressed, as your immune system is weaker.                                  |
| 10) The pituitary gland is part of the                               | J. Made quite an impact in the scientific community.  |
| 11) GPS stands for   | K. Species is always italicized.  |
| 12) The climate worldwide  | L. Global Positioning System.   |
| 13) The breakthrough theory of evolution                             | M. Comprise a lichen are interdependent.  |
| 14) An animal's habitat includes                                     | N. Of all living and non-living factors present.  |
| 15) The eruption of Mount St. Helens in Washington State             | O. Is linked to how much heat the Earth receives, and how much heat it radiates into space. |
| 16) An ecosystem includes the interactions                           | P. Endocrine system.  |

### ANSWERS

1/G 2/A 3/D 4/K 5/F 6/H 7/C 8/M 9/I 10/P 11/L 12/O 13/J 14/B 15/E 16/N

# Word & Definition Match

Have the students write the word numbers on their matching definitions.

*overall conditions of a region averaged over a series of years*

*it's like salivation*

*features that help distinguish a person or thing*

*the natural environment of an organism*

*dependent on each other*

*a form of life considered as an entity*

*system in the body responsible for destroying infected cells*

*a system that makes and regulates hormones*

*a system formed by the interaction of a community of organisms*

*a distinct sort or kind*

*a devastating upheaval*

*strike*

*rapid learning that occurs during a receptive period*

*process where forms of life continue to have beneficial traits*

*worldwide*

*to try to do something repeatedly, while making mistakes*

1. characteristics

2. organism

3. natural selection

4. species

5. conditioning

6. imprinting

7. trial and error

8. interdependency

9. immune system

10. endocrine system

11. global

12. climate

13. impact

14. habitat

15. cataclysm

16. ecosystem

# Which Belongs?

*Have the students circle/identify the word that is correct for each sentence.*

1. It is a good thing we have strong immune systems/endocrine systems – otherwise we would be sick all the time!
2. To conserve wildlife species, it is best to manage the habitat/climate.
3. The organism/cataclysm oozed from the alien ship toward the screaming Earthlings.
4. The dog trainer made a living impacting/conditioning dogs.
5. The organism/ecosystem that is being impacted by poor watershed management the most is coastal wetlands.
6. When Billy forgot how to solve the problem algebraically, he solved it by trial and error/characteristics.
7. The most widely known, but not the only mechanism of evolution, is natural selection/artificial selection.
8. “The two have nothing to do with each other!” said the scientist, who made the discovery quite by accident. In fact, the two cellular pathways were interdependent/endocrine system.
9. “NOOOOOO! I don’t want to be a victim of that crazy shark species/organism,” the surfer screamed just before he was eaten.
10. During puberty, the endocrine system/immune system secretes a wide variety of hormones that result in body changes.
11. Hurricane Katrina was a(n) impact/cataclysm to New Orleans.
12. Gravity is a cataclysm/global phenomena.
13. One characteristic/habitat of good wintering grounds is that it is relatively free of snow.
14. Whereas some might be gleeful about potential long-term climate/habitat changes due to increased atmospheric heat retention, most wildlife will do poorly and/or go extinct because of it.
15. If humans could be imprinted/conditioned whenever they went into the woods like a salmon, nobody would ever get lost.
16. The impact/conditioning that Sir Isaac Newton had on science was huge and will continue forever.

## ANSWERS

1. immune systems, 2. habitat, 3. organism, 4. conditioning, 5. ecosystem, 6. trial and error  
7. natural selection, 8. interdependent, 9. species, 10. endocrine system, 11. cataclysm  
12. global, 13. characteristic, 14. climate, 15. imprinted, 16. impact

# What's The Answer?

Have the students read the questions and then select the correct answer for them. They should fill-in the appropriate circles, beside the answers of their choice.

- 1) Which of the following is not a characteristic of living organisms?
  - (a) Death;
  - (b) The presence of cells;
  - (c) The requirement to obtain and use energy.
  
- 2) All organisms on the planet
  - (a) Are dependent on other organisms for their food;
  - (b) Are dependent upon the sun for energy;
  - (c) Are completely independent of each other.
  
- 3) Which of the following is not an example of natural selection?
  - (a) A wolf pack that learns to eat fish survives while a pack that does not learn to eat fish when other prey becomes extinct dies.
  - (b) The male bird with the brightest display is selected by the female as a mate;
  - (c) A volcano erupts, wiping out all the tigers in the area.
  
- 4) Which of the following is not true regarding species?
  - (a) The designation refers to the lowest taxonomic level;
  - (b) The designation reflects a taxonomic level that includes numerous different organisms;
  - (c) Members of different species don't generally interbreed.
  
- 5) Conditioning, in which an organism learns a response, often involves
  - (a) A system of reward and punishment;
  - (b) Only one training instance;
  - (c) The use of devices that lowers the temperature.
  
- 6) The most famous instance that illustrated imprinting of a vertebrate was when
  - (a) A group of mice, raised by a researcher since birth, followed him about as adults;
  - (b) A group of geese, raised by a researcher since hatching, followed him about as adults;
  - (c) A dog returned to its home after being accidentally left behind in the woods.
  
- 7) Sally didn't know the answer to the algebraic equation,
  - (a) So she solved it using logic;
  - (b) So she arrived at an answer spontaneously;
  - (c) So she solved the problem by substituting values in by trial and error.
  
- 8) The interdependency of life and water
  - (a) Is evident when examining other solar bodies that are too hot for liquid water to exist;
  - (b) Is evident in that life appears to have originated in the water;
  - (c) Is clearly a false relationship as most animals live on land.
  
- 9) A person afflicted with the HIV virus
  - (a) Usually dies as a result of a weakened immune system and secondary infection;
  - (b) Usually dies as a result of a lack of will to survive;
  - (c) Usually has a strong immune system when they succumb to death – from failure of the heart.

# What's The Answer?

Have the students read the questions and then select the correct answer for them. They should fill-in the appropriate circles, beside the answers of their choice.

- 10) The changes brought about in a human at the onset of puberty – and during puberty – are the result of
- (a) Hormones secreted by the endocrine system;
  - (b) Hormones secreted by the liver;
  - (c) Growth.
- 11) Which of the following is not true?
- (a) There is a concern for food resources as the global population increases;
  - (b) There is a concern for energy conservation as global oil supply decreases;
  - (c) There is no limit to global biological productivity.
- 12) The climate is best described as
- (a) The local weather conditions present;
  - (b) The dominant meteorological conditions of the Earth as a whole;
  - (c) The change in temperature during the day.
- 13) Reducing the amount of water in the Colorado River by using water for irrigation
- (a) Has had a big impact on indigenous fishes in the river;
  - (b) Has had no impact on the estuary at the river mouth;
  - (c) Has not resulted in shortages of drinking water.
- 14) The survival of wildlife
- (a) Depends on our not hunting any of them;
  - (b) Will be determined by whether we maintain habitat for them;
  - (c) Is ensured only if we put them in zoos.
- 15) A cataclysm in science refers to
- (a) The migration of humans out of Africa;
  - (b) The beginning of life on Earth;
  - (c) Any event that significantly affected numerous species simultaneously.
- 16) The ecosystem that has been reduced most rapidly by human activities is
- (a) Estuaries;
  - (b) Grasslands;
  - (c) The desert.

## ANSWERS

1. a, 2. b, 3. c, 4. b, 5. a, 6. b, 7. c, 8. b, 9. a, 10. a, 11. c, 12. b, 13. a, 14. b, 15. c, 16. a





STUDENT SUPPORT MATERIALS

# Writing

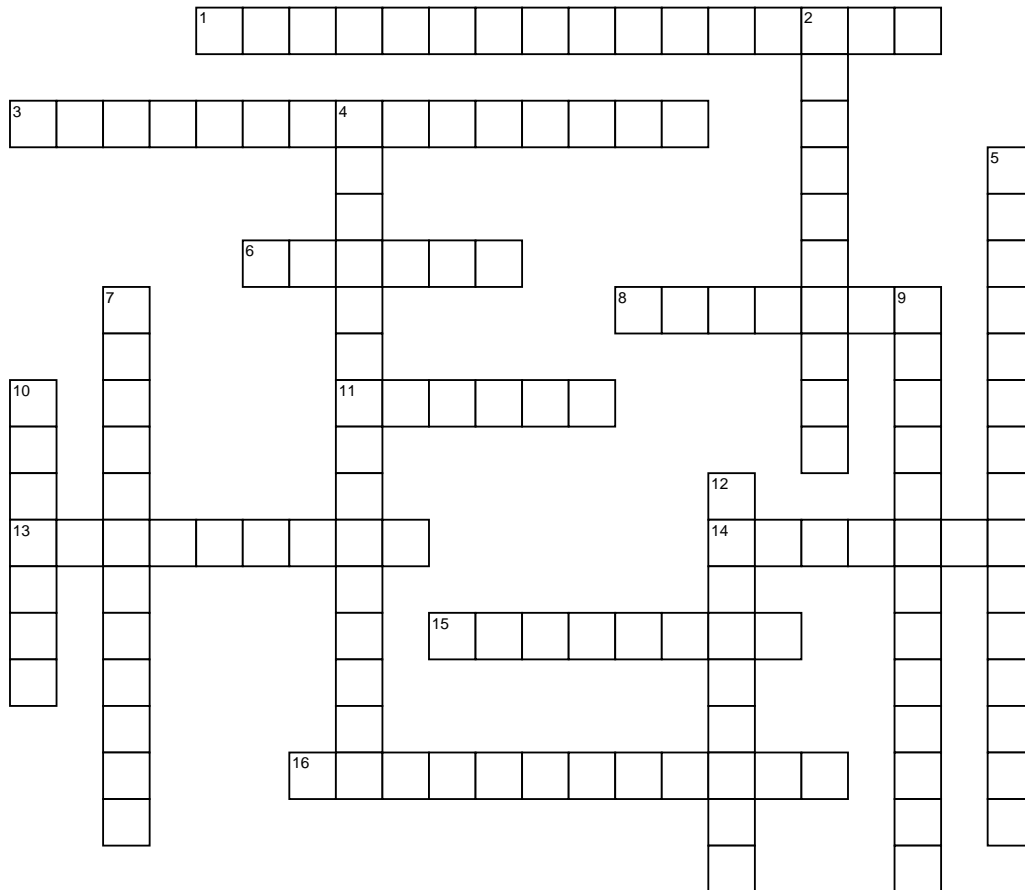






# C-1 Concepts of Life Science

11th Grade



www.CrosswordWeaver.com

## ACROSS

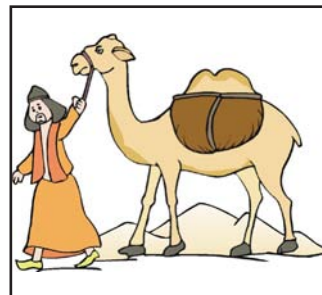
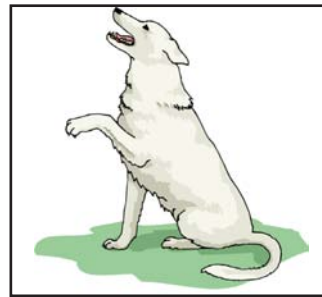
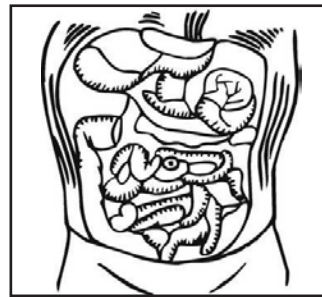
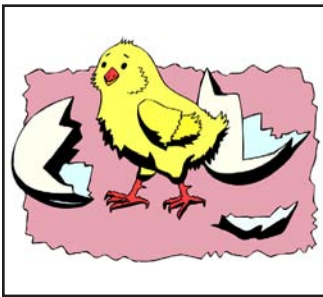
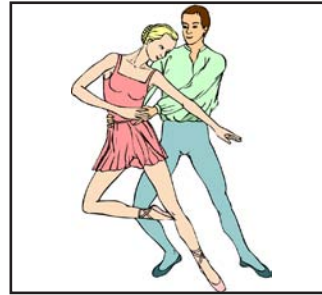
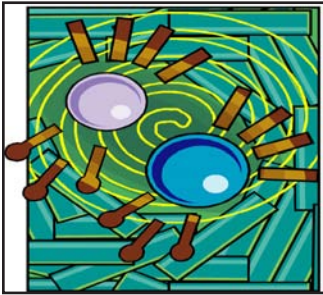
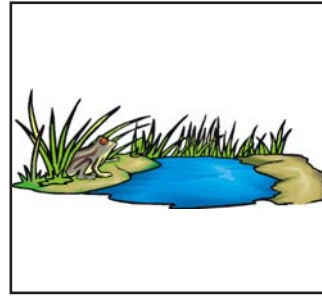
- 1 the process by which forms of life having beneficial traits will tend to survive and reproduce more frequently causing the next generation to have more of these beneficial traits
- 3 a feature that helps to distinguish a person or thing
- 6 pertaining to the world; worldwide
- 8 the natural environment of an organism
- 11 influence; affect; strike
- 13 a violent, devastating upheaval
- 14 the overall weather conditions of a region averaged over a series of years
- 15 a form of life considered as an entity
- 16 the system in the body that is responsible for destroying infected/malignant cells, removing cellular debris, and protecting the body from pathogens and foreign objects

## DOWN

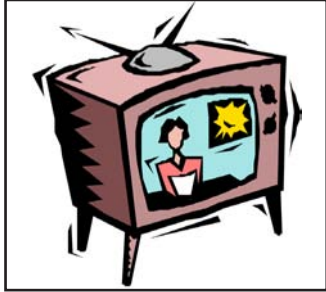
- 2 rapid learning that occurs during a brief receptive period, typically soon after birth or hatching, and establishes a long-lasting behavioral response to a specific individual or object
- 4 the system that makes and regulates hormones
- 5 mutually dependent; dependent on each other
- 7 a process in which a stimulus that was previously neutral comes to evoke a particular response
- 9 to try to do or learn something repeatedly, making mistakes along the way; experimentation in which various methods are tried and faulty ones eliminated
- 10 a distinct sort or kind; a major subdivision of a genus that is regarded as the basic category of biological classification
- 12 a system formed by the interaction of a community of organisms and their environment



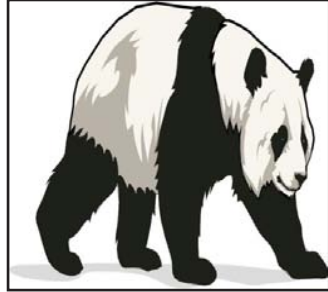
# Write The Words!



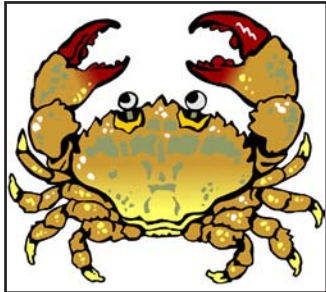
# Write The Words!



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## Complete The Sentence

*Have the students write the key words in the blanks.*

Salmon are an excellent example of an \_\_\_\_1\_\_\_\_ that migrates long distances during its lifetime. Upon hatching, they migrate to the ocean where they feed and grow. Eventually, their \_\_\_\_2\_\_\_\_ releases hormones that signal a return to the stream in which they hatched. It is not entirely known how they find their way to the coastal regions – although it is certainly not \_\_\_\_3\_\_\_\_. The sense of smell is used to navigate to the stream where \_\_\_\_4\_\_\_\_ of the scent of the stream occurred, .

Salmon have been subjected to \_\_\_\_5\_\_\_\_ for quite some time and are well adapted to the \_\_\_\_6\_\_\_\_ of the waters in which they spawn. However, as \_\_\_\_7\_\_\_\_ \_\_\_\_8\_\_\_\_ change occurs, these \_\_\_\_9\_\_\_\_ are changing. Salmon are \_\_\_\_10\_\_\_\_ with their \_\_\_\_11\_\_\_\_ – if the habitat. If the environment is \_\_\_\_12\_\_\_\_ faster than adaptation can take place, they will become extinct in certain areas. This is because adaptation is not a process of \_\_\_\_13\_\_\_\_ where a desired outcome can be learned, but a physiological one. Salmon are cold-temperate water fish.

A variety of problems occur when the water becomes too warm for salmon, from a reduction in the effectiveness of their \_\_\_\_14\_\_\_\_ to an inability to acquire sufficient oxygen. Thus, global climate change could be a \_\_\_\_15\_\_\_\_ for all \_\_\_\_16\_\_\_\_ of salmon.

### ANSWERS

1. organism, 2. endocrine system, 3. trial and error, 4. imprinting, 5. natural selection, 6. characteristics, 7. global, 8. climate, 9. ecosystems, 10. interdependent, 11. habitat, 12. impacted, 13. conditioning, 14. immune systems, 15. cataclysm, 16. species

# 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.*

## characteristics

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organism

---

## natural selection

---

species

---

conditioning

---

imprinting

---

trial and error

---

interdependency

---

immune system

---

# 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.

**endocrine system**

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**global**

---

**climate**

---

**impact**

---

**habitat**

---

**cataclysm**

---

**ecosystem**

---







STUDENT SUPPORT MATERIALS

# Reinforcement Activities





## Natural Selection of Popsicle Beak Birds

### NEED

60 popsicle sticks  
30 rubber bands  
30 pieces of 1/4" dowel cut into 1" lengths  
60 water balloons  
sand  
sawdust  
pan or dish at least 12" deep ( an aquarium works great)

### TEACHER PREP

#### Bird beaks

The goal is to create 15 long-beak and 15 short-beak birds.

Build 15 long beak birds by using 30 full length popsicle sticks. For each bird beak use 2 popsicle sticks and place a piece of dowel 1" from the end between the popsicle sticks and secure the rubber band until it is very tight around the dowel and the popsicle sticks. Your bird beak should be able to open and close by pinching the short end of the beak. Finish the other 14 beaks using the same procedure.

Build 15 short-beak birds using the same procedure, except cut the popsicle sticks in half before building. You should have 15 long-beak and 15 short-beak birds when you are done.

#### Balloon fish

The goal is to create 30 "top feeding" fish and 30 "bottom feeding" fish.

Build 30 bottom-feeding fish by fitting as much sand into a balloon as possible and then tying the balloon off.

Build 30 top-feeding fish by fitting as much sawdust into a balloon as possible and then tying the balloon off.

#### Creating the Habitat

Fill the pan, dish, or aquarium with water no deeper than the dowel of the long beak birds. You may want to use multiple pans for large groups.

#### Student Activity:

1. Students should choose between long and short-beak birds (or divide students into two groups and distribute the short-beak birds to one group and the long-beak birds to the other).
2. Spread the balloon fish into the pan(s).
3. Each student should "catch" a fish in their bird's beak by pinching the end of the popsicle stick. The only rule (other than not using their hands) is that their bird beak cannot go under water (i.e. they can't get their fingers wet). Explain to them that the bird's nostrils are where their fingers are.
4. Students should take turns one at a time to catch balloon fish.
5. If a student cannot catch a fish because it is too deep for the short beak bird they must pass their turn.
6. The game ends when all the fish are gone.
7. Students should count and record the number of fish they caught.

#### Post activity questions:

1. What is the biggest characteristic difference for the bird beak organisms?
2. Could these animals be considered different species? Why?
3. How could a change in the habitat impact the different types of birds?







# Unit Assessment

Unit Quiz and Test





## Grade 11 Science: Concepts of Life Science C1 Quiz

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Matching: Match the key vocabulary words on the left with the correct definition on the right. Place the letter from the definition in front of the word it matches.**

- |                          |   |
|--------------------------|---|
| 1) _____ Interdependency | a. a form of life considered as an entity   |
| 2) _____ Organism        | b. a major subdivision of a genus that is regarded as the basic category of biological classification |
| 3) _____ characteristics | c. the overall weather conditions of a region averaged over a series of years                         |
| 4) _____ Species         | d. mutually dependent; dependent on each other  |
| 5) _____ Climate         | e. a feature that helps to distinguish a person or thing  |

**Multiple Choice: Complete the sentence for the following items by selecting one of best choice. Circle the letter in front of the word(s) that correctly complete the sentence.**

- 6) Sometimes migratory birds hatch in captivity with no adult birds to mentor them about migratory patterns. When an Italian hang glider pilot had orphaned chicks (geese) hatch under the wing of his hang-glider, the chicks, with time, \_\_\_\_\_ him, and he taught them, with his glider, to fly and hunt.
- a) sat on
  - b) imprinted on
  - c) accustomed to
- 7) When the chicks were learning to fly, they would try to repeatedly to launch off the ground. Sometimes they would make mistakes, but by learning to use the methods they tried, they would eliminate the unsuccessful one, and learn to use the successful methods. This type of learning is known as....
- a) trial and error
  - b) conditioning
  - c) interdependency

- 8) The famous experiment conducted by Pavlov involved the implementation of a stimulus and a response. He \_\_\_\_\_ his dogs to salivate at the sound of a bell when the dogs connected the stimulus of the bell with being fed.
- a) forced
  - b) imprinted
  - c) conditioned
- 9) The \_\_\_\_\_ system in the body is responsible for destroying infected/malignant cells, removing cellular debris, and protecting the body from pathogens and foreign objects.
- a) immune
  - b) endocrine
  - c) lymphatic
  - d) digestive
- 10) The process of \_\_\_\_\_ happens when forms of life best adapt to the conditions under which they live, survive and produce young. They then eliminate the poorly adapted forms of life so that following generations become stronger and have more beneficial traits.
- a) natural selection
  - b) conditioning
  - c) independency

**Word Completion: Complete the spelling of the following key vocabulary words by writing the correct form of the word in the blank provided. Use the definition to help choose the best word.**

- 11) I N T \_ R \_ E \_ N E \_ C Y: mutually dependent; dependent on each other \_\_\_\_\_
- 12) H A \_ \_ I T \_ \_ T: the natural environment of an organism \_\_\_\_\_
- 13) C A \_ \_ A C \_ \_ Y S \_ \_ : a violent, devastating upheaval \_\_\_\_\_
- 14) E \_ \_ O S \_ \_ S T \_ \_ M: a system formed by the interaction of a community of organisms and their environment \_\_\_\_\_
- 15) S \_ \_ E C \_ \_ E \_ \_ : a distinct sort or kind; a major subdivision of a genus that is regarded as the basic category of biological classification \_\_\_\_\_



## Grade 11 Science: Concepts of Life Science C1 Quiz

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Matching: Match the key vocabulary words on the left with the correct definition on the right. Place the letter from the definition in front of the word it matches.**

- |                                 |   |
|---------------------------------|---|
| 1) <u>  d  </u> Interdependency | a. a form of life considered as an entity   |
| 2) <u>  a  </u> organism        | b. a major subdivision of a genus that is regarded as the basic category of biological classification |
| 3) <u>  e  </u> characteristics | c. the overall weather conditions of a region averaged over a series of years                         |
| 4) <u>  b  </u> species         | d. mutually dependent; dependent on each other  |
| 5) <u>  c  </u> climate         | e. a feature that helps to distinguish a person or thing  |

**Multiple Choice: Complete the sentence for the following items by selecting one of best choice. Circle the letter in front of the word(s) that correctly complete the sentence.**

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- a) sat on  
**b) imprinted on**  
c) accustomed to
- 7) When the chicks were learning to fly, they would try to repeatedly to launch off the ground. Sometimes they would make mistakes, but by learning to use the methods they tried, they would eliminate the unsuccessful one, and learn to use the successful methods. This type of learning is known as....
- a) trial and error**  
b) conditioning  
c) interdependency

8) The famous experiment conducted by Pavlov involved the implementation of a stimulus and a response. He \_\_\_\_\_ his dogs to salivate at the sound of a bell when the dogs connected the stimulus of the bell with being fed.

- a) forced
- b) imprinted

**c) conditioned**

9) The \_\_\_\_\_ system in the body is responsible for destroying infected/malignant cells, removing cellular debris, and protecting the body from pathogens and foreign objects.

- a) immune**
- b) endocrine
- c) lymphatic
- d) digestive

10) The process of \_\_\_\_\_ happens when forms of life best adapt to the conditions under which they live, survive and produce young. They then eliminate the poorly adapted forms of life so that following generations become stronger and have more beneficial traits.

**a) natural selection**

- b) conditioning
- c) independency

**Word Completion: Complete the spelling of the following key vocabulary words by writing the correct form of the word in the blank provided. Use the definition to help choose the best word.**

11) I N T \_ R \_ E \_ N E D \_ N C \_ : mutually dependent; dependent on each other \_  
**interdependency**

12) H A \_ \_ I T \_ \_ T : the natural environment of an organism **HABITAT**

13) C A \_ \_ A C \_ \_ Y S \_ \_ : a violent, devastating upheaval **CATACLYSM**

14) E \_ \_ O S \_ \_ S T \_ \_ M : a system formed by the interaction of a community of organisms and their environment **ECOSYSTEM**

**Grade 11 Science: A1/B1/C1 Test**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Matching: Match the key vocabulary words on the left with the correct definition on the right. Place the letter from the definition in front of the word it matches.

- |                          |   |
|--------------------------|---|
| 1) _____ interactions    | a. the relative disposition or arrangement of the parts or elements of a thing                      |
| 2) _____ credibility     | b. the capacity of an atom or molecule to undergo a chemical reaction with another atom or molecule |
| 3) _____ reactivity      | c. a feature that helps to distinguish a person or thing  |
| 4) _____ configuration   | d. a form of life considered as an entity   |
| 5) _____ characteristics | e. pertaining to the world  |
| 6) _____ organism        | f. the capability or power to elicit belief   |
| 7) _____ global          | g. influence or effect  |
| 8) _____ impact          | h. a reciprocal effect or influence   |

**Multiple Choice: Complete each sentence below by choosing the correct response from the choices provided for each item. Circle the correct response.**

- 9) The system of the body responsible for destroying infected or malignant cells and for protecting the body from pathogens and foreign objects is the \_\_\_\_\_ system.
- a) digestive
  - b) immune
  - c) endocrine
- 10) The system of the body that makes and regulates hormones is the \_\_\_\_\_ system.
- a) digestive
  - b) immune
  - c) endocrine

- 11) A process in which a stimulus creates a response is known as \_\_\_\_\_ .
- a) trial and error
  - b) imprinting
  - c) conditioning
- 12) Rapid learning that occurs during a brief period of time soon after birth or hatching, and establishes a long-lasting behavioral response to a person or an object is known as \_\_\_\_\_ .
- a) imprinting
  - b) conditioning
  - c) trial and error
- 13) When a persons does something repeatedly, making mistakes along the way, and chooses to continue by eliminating the procedures that don't work, he is using a kind of learning method called \_\_\_\_\_ .
- a) trial and error
  - b) imprinting
  - c) conditioning
- 14) The process where life forms survive and reproduce from one generation to the next because they have beneficial traits is known as \_\_\_\_\_ .
- a) natural selection
  - b) entropy
  - c) interdependency

**Fill in the Blank: Complete each of the statements with the correct word. Choose the word from the choices provided in the Word Bank.**

<b>Word Bank</b>		
cataclysmic	climate	habitat
Matter	reasoning	revise
source	species	verify

- 15) \_\_\_\_\_ is the substance of which any physical object is made.
- 16) A distinct sort or kind of a genus that is regarded as the basic category of biological classification is a \_\_\_\_\_ .

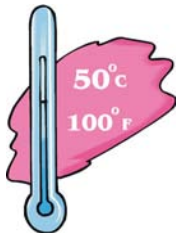
- 17) The overall weather conditions of a region averaged over a series of years is known as the \_\_\_\_\_ of the region.
- 18) The natural environment of an organism is its \_\_\_\_\_.
- 19) A violent, devastating upheaval is considered to be \_\_\_\_\_.
- 20) The process of forming conclusions, judgments or inferences from facts is known as \_\_\_\_\_.
- 21) When we amend or alter a situation in order to make correction, to update or improve, we are trying to \_\_\_\_\_ it.
- 22) When a scientist wants to prove the truth using evidence, she wants to \_\_\_\_\_ the solution or find an answer to the question.

**Illustrations: The following questions require the use of appropriate illustrations for the key vocabulary words.**

- 23) Label the following illustrations with key vocabulary words.



- 24) Label the following illustration with key vocabulary words.



25) Illustrate OR define the key vocabulary word, ECOSYSTEM in the space provided below.

## Grade 11 Science: A1/B1/C1 Test

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Matching: Match the key vocabulary words on the left with the correct definition on the right. Place the letter from the definition in front of the word it matches.

- |                                 |   |
|---------------------------------|---|
| 1) <u>  h  </u> interactions    | a. the relative disposition or arrangement of the parts or elements of a thing                      |
| 2) <u>  f  </u> credibility     | b. the capacity of an atom or molecule to undergo a chemical reaction with another atom or molecule |
| 3) <u>  b  </u> reactivity      | c. a feature that helps to distinguish a person or thing  |
| 4) <u>  a  </u> configuration   | d. a form of life considered as an entity   |
| 5) <u>  c  </u> characteristics | e. pertaining to the world  |
| 6) <u>  d  </u> organism        | f. the capability or power to elicit belief   |
| 7) <u>  e  </u> global          | g. influence or effect  |
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- 9) The system of the body responsible for destroying infected or malignant cells and for protecting the body from pathogens and foreign objects is the \_\_\_\_\_ system.
- a) digestive
- b) immune**
- c) endocrine



10) The system of the body that makes and regulates hormones is the \_\_\_\_\_ system.

a) digestive

b) immune

**c) endocrine**

11) A process in which a stimulus creates a response is known as \_\_\_\_\_ .

a) trial and error

b) imprinting

**c) conditioning**

12) Rapid learning that occurs during a brief period of time soon after birth or hatching, and establishes a long-lasting behavioral response to a person or an object is known as \_\_\_\_\_ .

**a) imprinting**

b) conditioning

c) trial and error

13) When a person does something repeatedly, making mistakes along the way, and chooses to continue by eliminating the procedures that don't work, he is using a kind of learning method called \_\_\_\_\_ .

**a) trial and error**

b) imprinting

c) conditioning

14) The process where life forms survive and reproduce from one generation to the next because they have beneficial traits is known as \_\_\_\_\_ .

**a) natural selection**

b) entropy

c) interdependency

**Fill in the Blank: Complete each of the statements with the correct word. Choose the word from the choices provided in the Word Bank.**



**Word Bank**

cataclysmic

climate

habitat

Matter

reasoning

revise

source

species

verify

- 15) Matter is the substance of which any physical object is made.
- 16) A distinct sort or kind of a genus that is regarded as the basic category of biological classification is a species.
- 17) The overall weather conditions of a region averaged over a series of years is known as the climate of the region.
- 18) The natural environment of an organism is its habitat.
- 19) A violent, devastating upheaval is considered to be cataclysmic.
- 20) The process of forming conclusions, judgments or inferences from facts is known as reasoning.
- 21) When we amend or alter a situation in order to make correction, to update or improve, we are trying to revise it.
- 22) When a scientist wants to prove the truth using evidence, she wants to verify the solution or find an answer to the question.

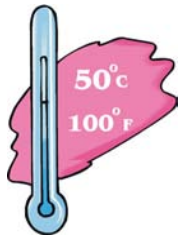
**Illustrations: The following questions require the use of appropriate illustrations for the key vocabulary words.**

- 23) Label the following illustrations with key vocabulary words.



property element

24) Label the following illustration with key vocabulary words.



convert

exert

25) Illustrate OR define the key vocabulary word, ECOSYSTEM in the space provided below.

Correct illustration OR system formed by the interaction of a community of organisms and their environment.

