

# 4-5 At-Home Learning Resources

## (Blue Packet)

### Week #10

The Richland School District cares deeply about the well-being of our students and families. We highly encourage our students and families to set a daily routine that includes the following:

**For our elementary families:**

- Read daily with your child
- Play family games (board games, cards, puzzles, charades, pictionary, etc.)
  - Engage in an outside activity
  - Cook/bake with your child
- Maintain relationships with your child's teacher

*These supplemental activities, readings, and other resources are available to students and families to continue learning and exploring while schools are closed in response to the novel coronavirus.*

*Students are not required to complete and/or turn in any assignments nor will any of these materials be used to assess students academically. Please feel free to use these optional resources as needed. Additional resources are available at:*

<https://www.rsd.edu/programs/at-home-learning/pre-k-elementary-resources>



### Objective

The student will identify the meaning of homographs.



### Materials

- ▶ Homograph meaning cards (Activity Master V.006.AM1a - V.006.AM1c)
- ▶ Student sheets (Activity Master V.006.SS1a - V.006.SS1b)  
*There are two different student sheets.*
- ▶ Pencils



### Activity

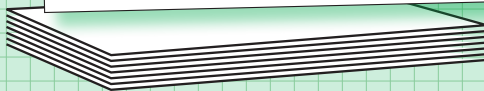
Students read two meanings and write a matching homograph.

1. Place homograph meaning cards face down in a stack. Provide each student with a different student sheet.
2. Taking turns, students select a card from the stack and read it (e.g., ribbon decoration for a gift and used to launch arrows).
3. Look for meanings on student sheet. If found, write homograph in the corresponding column on the student sheet (i.e., bow). Trace over corresponding letter in the word HOMOGRAPH found in the left column.
4. If meanings are not found, place meaning card at the bottom of the stack.
5. Continue activity until all meanings on student sheets are found.
6. Teacher evaluation

"The two meanings on my card say 'ribbon decoration for gift' and 'used to launch arrows.' The word 'bow' is the homograph!"

1. ribbon decoration for gift
2. used to launch arrows

homograph meanings



Name \_\_\_\_\_

V.006.SS1a Homograph Hoorah!

Homograph Hoorah! #1

	HOMOGRAPH	MEANINGS
H	bow	1. ribbon decoration for gift 2. used to launch arrows
O		1. container for pouring liquid 2. baseball player position
M		1. space around a house 2. 36 inches
O		1. land along a river 2. where you keep money
G		1. round 2. game with knock over 10 pins
R		1. speedy 2. go without food
A		1. large bird that quacks 2. bend down suddenly
P		1. conceal; keep out of sight 2. animal skin
H		1. belonging to me 2. hole made in the earth to get ores



### Extensions and Adaptations

- ▶ Make other homograph meaning cards (Activity Master V.006.AM2) and complete student sheets (Activity Master V.006.SS2).
- ▶ Write sentences using homographs. Partner reads the sentences, identifies the homograph, and tells the meaning.

# Vocabulary

Homograph Hoorah!

V.006.AM1a

1. ribbon decoration for gift
2. used to launch arrows

homograph meanings

1. container for pouring liquid
2. baseball player position

homograph meanings

1. space around a house
2. 36 inches

homograph meanings

1. land along a river
2. place where you keep money

homograph meanings

1. rounded dish
2. game with a ball to knock over 10 pins

homograph meanings

1. speedy
2. go without food

homograph meanings

answers: bow, pitcher, yard, bank, bowl, fast



1. large bird that quacks
2. bend down suddenly

homograph meanings

1. conceal; keep out of sight
2. animal skin

homograph meanings

1. belonging to me
2. hole made in the earth to get ores

homograph meanings

1. opposite of right
2. did leave

homograph meanings

1. fail to hit
2. unmarried girl or woman

homograph meanings

1. not cooked much
2. unusual

homograph meanings

answers: duck, hide, mine, left, miss, rare



# Vocabulary

Homograph Hoorah!

V.006.AM1c

1. instrument for locking and unlocking
2. low island

homograph meanings

1. circle
2. bell sound

homograph meanings

1. did see
2. tool for cutting

homograph meanings

1. sleep; nap
2. what is left

homograph meanings

1. small piece
2. tool for drilling

homograph meanings

1. not dark
2. not heavy

homograph meanings

answers: key, ring, saw, rest, bit, light



Name \_\_\_\_\_

V.006.SS1a

Homograph Hoorah!

## Homograph Hoorah! #1

	HOMOGRAPH	MEANINGS
H		1. ribbon decoration for gift 2. used to launch arrows
O		1. container for pouring liquid 2. baseball player position
M		1. space around a house 2. 36 inches
O		1. land along a river 2. place where you keep money
G		1. rounded dish 2. game with a ball to knock over 10 pins
R		1. speedy 2. go without food
A		1. large bird that quacks 2. bend down suddenly
P		1. conceal; keep out of sight 2. animal skin
H		1. belonging to me 2. hole made in the earth to get ores

# Name \_\_\_\_\_

Homograph Hoorah!

V.006.SS1b

## Homograph Hoorah! #2

	HOMOGRAPH	MEANINGS
H		1. opposite of right 2. did leave
O		1. fail to hit 2. unmarried girl or woman
M		1. not cooked much 2. unusual
O		1. instrument for locking and unlocking 2. low island
G		1. circle 2. bell sound
R		1. did see 2. tool for cutting
A		1. sleep; nap 2. what is left
P		1. small piece 2. tool for drilling
H		1. not dark 2. not heavy

# Vocabulary

V.006.AM2

Homograph Hoorah!

1. \_\_\_\_\_

2. \_\_\_\_\_

homograph meanings

1. \_\_\_\_\_

2. \_\_\_\_\_

homograph meanings

1. \_\_\_\_\_

2. \_\_\_\_\_

homograph meanings

1. \_\_\_\_\_

2. \_\_\_\_\_

homograph meanings

1. \_\_\_\_\_

2. \_\_\_\_\_

homograph meanings

1. \_\_\_\_\_

2. \_\_\_\_\_

homograph meanings

blank meaning cards





# Comprehension



## Monitoring for Understanding

C.037

### Question Cards



#### Objective

The student will answer questions to comprehend text.



#### Materials

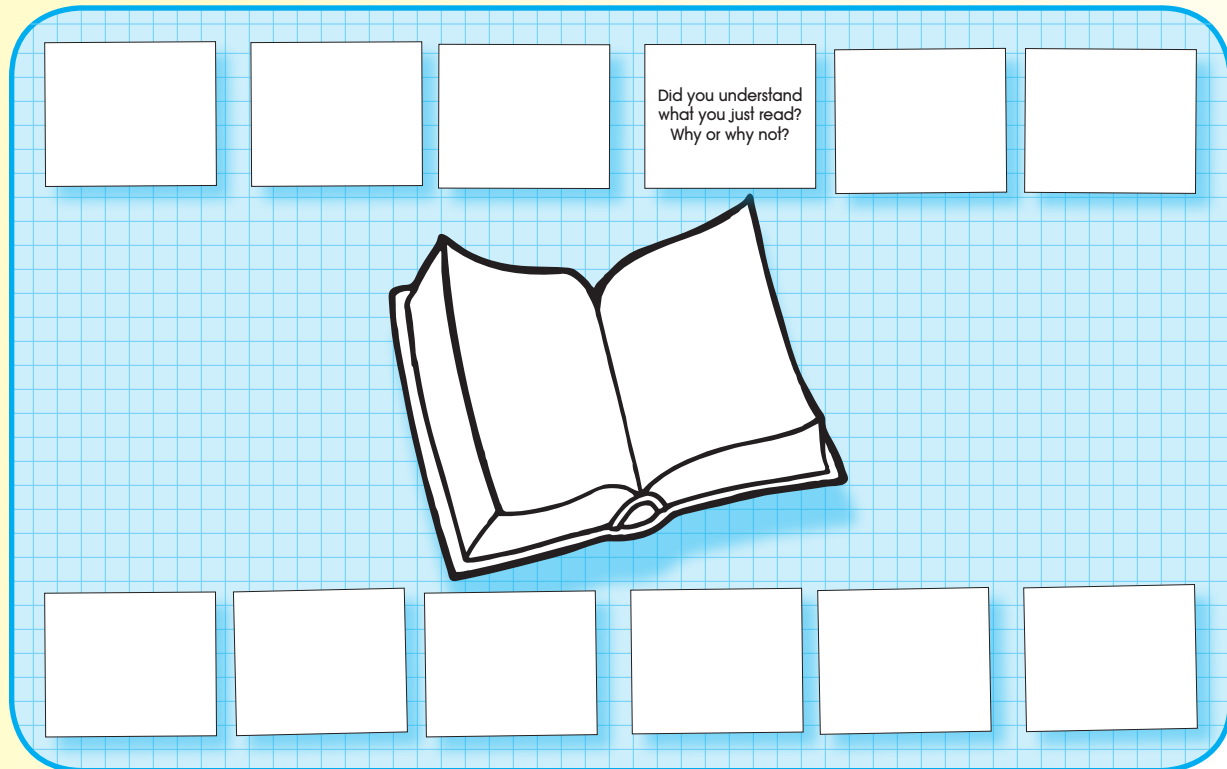
- ▶ Narrative or expository text  
*Choose text within students' instructional-independent reading level range.*
- ▶ Question cards (Activity Master C.037.AM1a - C.037.AM1b)



#### Activity

Students discuss text by using question cards.

1. Place question cards face down in a stack. Provide each student with a copy of the text.
2. Taking turns, students select six cards from the stack and place face down in a row within reach.
3. Student one reads the first paragraph aloud. Selects a card randomly from his row and reads the question.
4. Answers the question. Discusses answer with partner.
5. Continue the activity until all the questions cards are face up, the questions are answered, and the text is read. Use questions twice, if necessary.
6. Peer evaluation



#### Extensions and Adaptations

- ▶ Record page numbers, questions, and answers on paper.
- ▶ Use question cube to ask questions (Activity Master C.037.AM2).
- ▶ Make other cards or cubes with new questions (Activity Master C.008.AM3 or C.037.AM3).
- ▶ Read text and answer questions (Activity Master C.037.SS).

# Comprehension

C.037.AM1a

Question Cards

What do you think is going to happen next?

Is something inferred in the text?  
What is it?

Discuss any words that you may not have known.

Did you understand what you just read?  
Why or why not?

Based on what you read, what are you curious or interested in knowing more about?

How does what you just read relate to your own life?

question cards



# Comprehension

Question Cards

C.037.AM1b

Could the author  
have written the text  
more clearly?  
If so, how?

What are some  
significant details?  
What are some  
minor details?


What is the  
main idea?

Summarize what  
you just read in 20  
words or less.

Ask a question  
based on the text  
that you just read.  
What do you think  
is the answer?

Paraphrase what  
you just read.



	<p>Summarize what you just read in 20 words or less.</p>	
<p>How does what you just read relate to your own life?</p>	<p>Discuss any words that you may not have known.</p>	<p>What do you think is going to happen next?</p>
	<p>Based on what you read, what are you curious or interested in knowing more about?</p>	
<p>glue or velcro</p>	<p>Did you understand what you just read? Why or why not?</p>	<p>glue or velcro</p>
	<p>glue or velcro</p>	

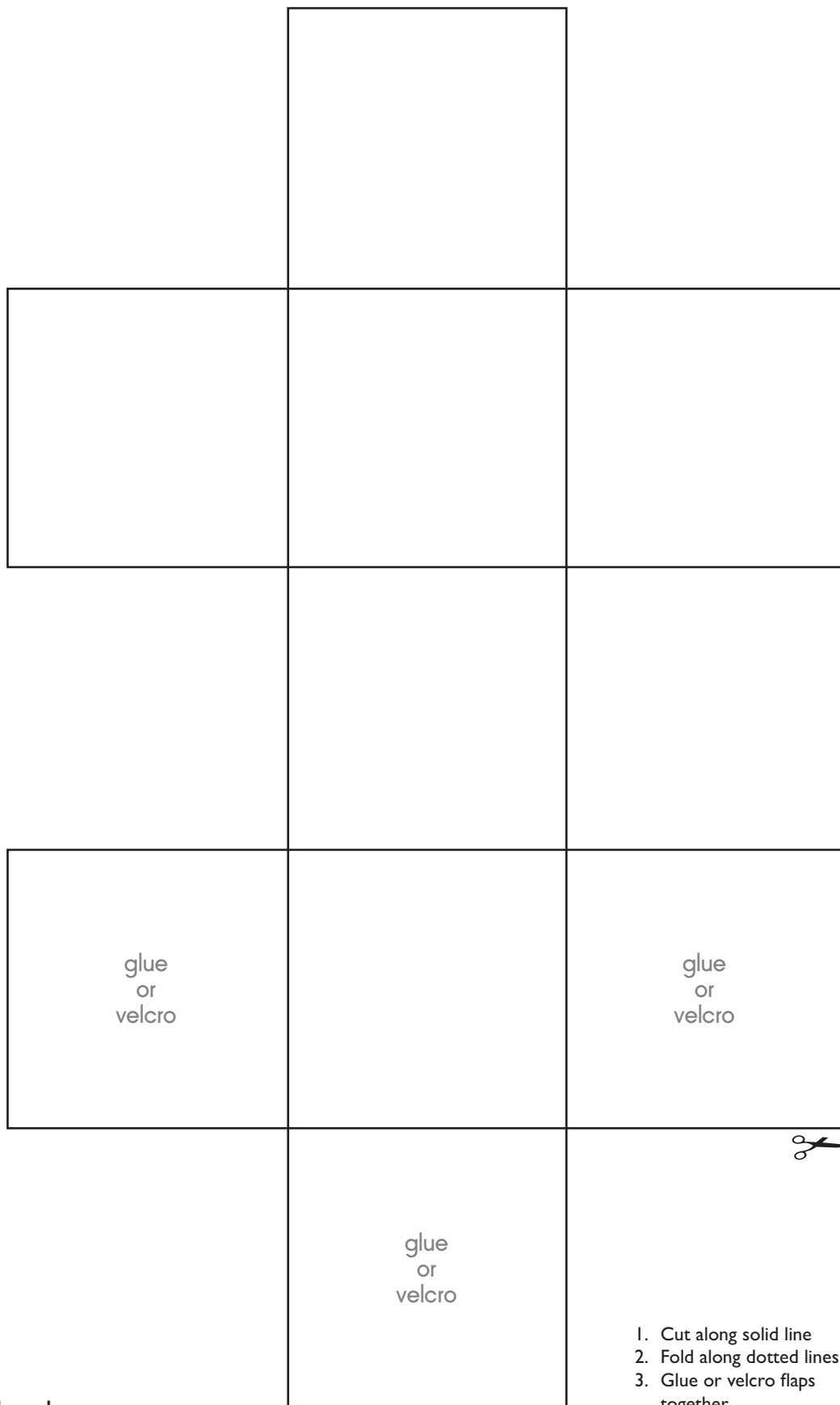
1. Cut along solid line
2. Fold along dotted lines
3. Glue or velcro flaps together.

question cube

# Comprehension

Question Cards

C.037.AM3



blank cube

# Name \_\_\_\_\_

**C.037.SS**

Question Cards

Did you understand  
what you just read?  
Why or why not?

Discuss any words  
that you may not  
have known.

How does what you  
just read relate to  
your own life?

Summarize what you  
just read.

Could the author  
have written the  
text more clearly?  
Why or why not?

Based on what you  
read, what are you  
curious or interested  
in knowing  
more about?

# Questions to Ask Before, During, and After Reading

These are questions to help engage students in discussions and conversations about reading. These questions are just suggestions and other questions can be added to this list based upon the type of reading students are involved in.

## **Before Reading**

- What is the title of the book or text?
- What does this title make you think about?
- What do you think you are going to read about? (Make a Prediction)
- Does this remind you of anything?
- Are you wondering about the text or do you have any questions before reading?
- Skim through the article. Do any pictures, key words, and/or text features stand out to you?

## **During Reading**

- What is happening so far?
- What does the word \_\_\_\_\_ mean on this page?
- What do you think the author is trying to communicate in this part?
- What do you think was important in this section? Why do you think it was important?
- What can you infer from this part of the text?
- Where is the story taking place?
- Who are the characters so far?
- What do you think will happen next?
- What does this part make you think about?
- What questions do you have?
- What words help you visualize what the author is saying?
- Is there a word that you struggled with? What is the word? Let's break the word into parts and look at context clues.

## **After Reading**

- What was this text about?
- What was the main idea? What details from the text helped you determine the main idea?
- What did you learn from this text?
- How did the author communicate his/her ideas?
- What does this text remind you of?
- What was your favorite part and why?
- Did this text have a problem? If so, what was the problem and what was the solution?
- What is your opinion about this text? What are some parts that helped you make that opinion?
- What are some questions you still have about the text?
- Does this text remind you of other texts you have read? How are they alike and/or different?
- What is a cause and effect from the text you read?

# Evaluating Efficiency

## Cross-Curricular Focus: Mathematics



There are many ways to solve the same math problem. The method you choose depends on how well you know math. How comfortable are you with using addition, subtraction, multiplication and division? Can you apply math properties easily? There may be only one correct answer to a problem, but many different ways to solve it.

Any method that works for a student is a good method. You can use repeated addition if you don't remember the multiplication facts. You will still reach the correct answer. Sometimes students rely on one way because it is the only way they have ever seen. They don't consider that there may be a different way to do the same problem.

The way most people in the same culture solve a certain problem is called the standard algorithm for that kind of problem. However, the standard algorithm for the same kind of problem is often different from one culture to the next.

A math congress or math meeting can be very valuable for students. In the meeting, students share how they solved a math problem. The rest of the class watches and listens. Students share every method that someone used to solve the problem. All the methods are discussed. There are a couple of reasons why this kind of meeting is beneficial. First, each student's thinking is presented and honored. Second, students learn to talk about and explain their thinking processes. Third, students are introduced to new ways of solving problems. The teacher can even learn new ways from the students. Finally, students can evaluate the methods to see which method is the most efficient.

An **inefficient** method may give the correct answer. If it takes too long to get there, though, it is not practical to use. It can also be inefficient if it leads to an **inaccurate** answer. An efficient method is one where a student gets a correct answer with the least amount of effort. The method has to be repeatable with the numbers of any similar problem. The student also needs to understand why the method works.

Learning to evaluate different methods of solving math problems is important. It is one of many steps you must take in order to mature as a mathematician.

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

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) Have you ever considered trying to solve a math problem in more than one way? Why, or why not?

\_\_\_\_\_

2) Have you ever thought you were "doing it wrong" because you were doing something different than other students, but then you got the correct answer? Explain.

\_\_\_\_\_

3) Would you be willing to share an unusual method of solving a problem if you were given the opportunity? Why, or why not?

\_\_\_\_\_

4) What makes a method of solving a problem inefficient?

\_\_\_\_\_

5) How do you know if a method is efficient?

\_\_\_\_\_

\_\_\_\_\_



# The Apprentice System

Cross-Curricular Focus: History/Social Sciences



European colonists left behind all the comforts of home to come to North America. There was no longer a corner store where they could shop for groceries or get a newspaper. If their tools or equipment broke, there was no place to buy new ones. This was a harsh reality in a world where they had to fight for their own survival.

More settlers came to the English colonies than to the French or Spanish colonies. When the settlers arrived, they were ready to work hard for themselves and their community members. They had to help each other, or they would surely die. Families up to that point were mostly self-sufficient. All of the family members helped each other get what they needed. In the colonies, they had to reinvent some of that family-style teamwork and join together for the good of the entire group.

It was not long before people began to take on new work responsibilities. Those who knew how to make things by hand were called **artisans**. Their work on things such as nails, horseshoes, barrels and even homes was critical to the success of their colony. Because their skilled work was so necessary, they began to train younger workers. They needed others who could take over their duties if death, disease or old age made them unable to continue. Artisans often had several such helpers of different ages. These helpers were called **apprentices**.

Apprentices were commonly be sent to live with the artisan. The young apprentices provided their labor in exchange for food, shelter, clothing and training in the craft. Experienced apprentices became artisans and took apprentices of their own to train. In this way, the colony would have skilled workers long into the future.

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

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) Most apprentices were between eight and 10 years old when they went to live with an artisan. How would you feel about becoming an apprentice now? Why?

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2) What is an artisan?

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3) What did an apprentice receive in exchange for his labor?

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4) What was the goal for an apprentice?

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5) How did the apprentice system help the community?

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# TARZAN OF THE APES

*Published in 1914, Edgar Rice Burroughs' Tarzan of the Apes was the first of a series of very popular novels about a boy raised by apes. In the story Tarzan's English parents had been stranded in a jungle of West Africa. It is there that Tarzan was born. When he was very young both of his parents died. He was adopted by a female ape named Kala who had just lost her own infant. Because he was just a baby when his human parents died, he remembered nothing about his life with them.*

*In the passage below Tarzan, who is now ten years old, has discovered the cabin where he and his human parents lived. Kerchak and Tublat are other apes in the tribe.*

*from Chapter VI*

## JUNGLE BATTLES

Among other things he found a sharp hunting knife, on the keen blade of which he immediately proceeded to cut his finger. Undaunted he continued his experiments, finding that he could hack and hew splinters of wood from the table and chairs with this new toy.

For a long time this amused him, but finally tiring he continued his explorations. In a cupboard filled with books he came across one with brightly colored pictures—it was a child's illustrated alphabet—

A is for Archer  
Who shoots  
with a bow.  
B is for Boy,  
His first name  
is Joe.

The pictures interested him greatly.

There were many apes with faces similar to his own, and further over in the book he found, under "M," some little monkeys such as he saw daily flitting through the trees of his primeval forest. But nowhere was pictured any of his own people; in all the book was none that resembled Kerchak, or Tublat, or Kala.

At first he tried to pick the little figures from the leaves, but he soon saw that they were not real, though

he knew not what they might be, nor had he any words to describe them.

The boats, and trains, and cows and horses were quite meaningless to him, but not quite so baffling as the odd little figures which appeared beneath and between the colored pictures—some strange kind of bug he thought they might be, for many of them had legs though nowhere could he find one with eyes and a mouth. It was his first introduction to the letters of the alphabet, and he was over ten years old.

Of course he had never before seen print, or ever had spoken with any living thing which had the remotest idea that such a thing as a written language existed, nor ever had he seen anyone reading.

So what wonder that the little boy was quite at a loss to guess the meaning of these strange figures.

Near the middle of the book he found his old enemy, Sabor, the lioness, and further on, coiled Histah, the snake.

Oh, it was most engrossing! Never before in all his ten years had he enjoyed anything so much. So absorbed was he that he did not note the approaching dusk, until it was quite upon him and the figures were blurred.



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

# TARZAN OF THE APES: READING COMPREHENSION

## Part I. Short Answer

Answer each question below.

1. Who are the “many apes with faces similar to his own” that Tarzan sees in the book?

\_\_\_\_\_

2. What are the little bugs in the book?

\_\_\_\_\_

3. Why did the pictures of trains, boats, cows and horses have no meaning to Tarzan?

\_\_\_\_\_

4. What was one picture of an animal that Tarzan saw that was familiar to him?

\_\_\_\_\_

5. The passage says, “But nowhere was pictured any of his own people.” Who are Tarzan’s people?

\_\_\_\_\_

## Part II. Order of Events

Place the following actions in the story in the correct order by writing 1 in front of the first thing that happened, 2 in front of the second thing that happened, and so on.

A. \_\_\_\_\_ Tarzan used the knife on the chair and table.

B. \_\_\_\_\_ Tarzan saw little bugs on the page.

C. \_\_\_\_\_ The light faded as evening approached.

D. \_\_\_\_\_ Tarzan cut himself.

E. \_\_\_\_\_ Tarzan saw pictures of apes who looked like him

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

# VOCABULARY IN TARZAN OF THE APES

## I. Vocabulary Match

Match each word in Column B with its meaning in Column A.

### Column A

1. \_\_\_\_\_ faintest or slightest
2. \_\_\_\_\_ moving quickly and nimbly
3. \_\_\_\_\_ looked like
4. \_\_\_\_\_ interesting; consuming
5. \_\_\_\_\_ brave or not discouraged
6. \_\_\_\_\_ confusing
7. \_\_\_\_\_ evening or twilight
8. \_\_\_\_\_ cut down
9. \_\_\_\_\_ without understanding
10. \_\_\_\_\_ ancient; in an original state

### Column B

- A. baffling
- B. hew
- C. primeval
- D. remotest
- E. meaningless
- F. engrossing
- G. flitting
- H. dusk
- I. undaunted
- J. resembled

## Part II. Which Meaning?

Below are words from the passage. Each word has at least two meanings; circle the meaning of each word as it is used in the passage.

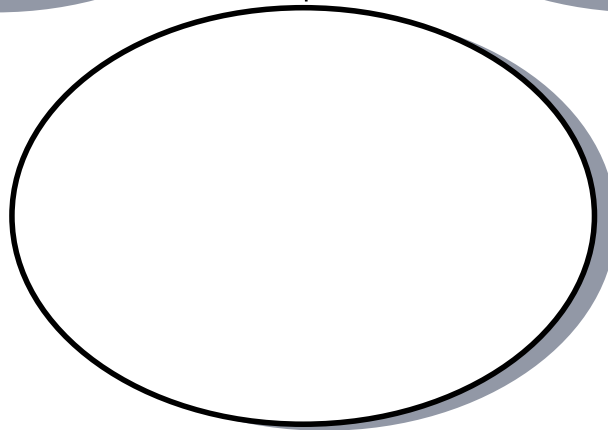
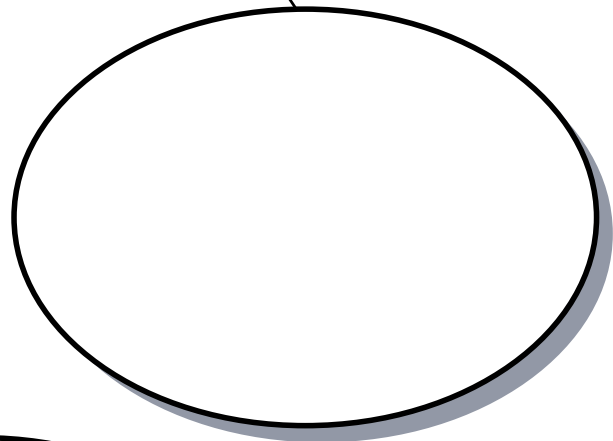
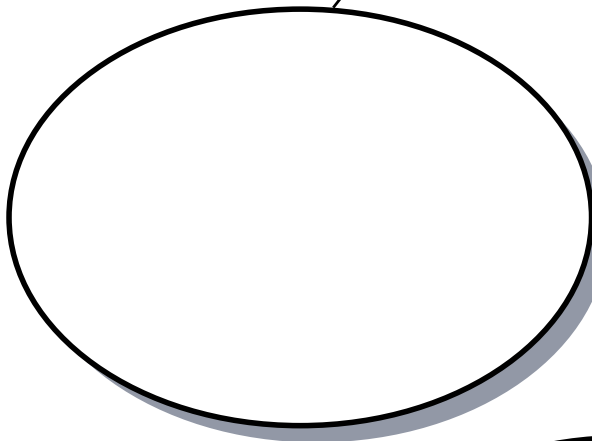
- |             |  |                                   |
|-------------|--|-----------------------------------|
| 1. absorbed | A. soaked up, as in liquid with a sponge | B. totally occupied or interested |
| 2. hack     | A. chop or cut                           | B. dry cough                      |
| 3. wonder   | A. surprise                              | B. to be curious                  |
| 4. leaves   | A. green structures on plants            | B. pages in a book                |
| 5. keen     | A. sharp                                 | B. cry or wail                    |

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

## TARZAN OF THE APES: FIND THE SUPPORTING EVIDENCE

Below is one of the main ideas of the passage. Write three quotations from the passage that support this main idea.

Even though he couldn't read,  
Tarzan was fascinated with  
the book.



Name:

TARZAN OF THE APES:  
INTERESTING THINGS

In the passage Tarzan discovered a book and a knife which he had never seen before. He was confused and fascinated by what he saw. Write about another human object Tarzan would be interested in. It can be from his time or something modern. How would he react to it? How would he try to use it or work it? Why would he be interested in it?

## TARZAN OF THE APES: INTERESTING THINGS

In the passage Tarzan discovered a book and a knife which he had never seen before. He was confused and fascinated by what he saw. Write about another human object Tarzan would be interested in. It can be from his time or something modern. How would he react to it? How would he try to use it or work it? Why would he be interested in it?

[illegible]



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

# TARZAN OF THE APES WORD SEARCH

Circle each word from the list in the puzzle. The words can go in any direction.

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

ALPHABET  
APE  
BOOK

BUG  
ENGROSSING  
JUNGLE

KALA  
KNIFE  
LETTERS

LIONESS  
MONKEYS  
PRIMEVAL

SNAKE  
TARZAN  
TRAINS

## Find the Main Idea

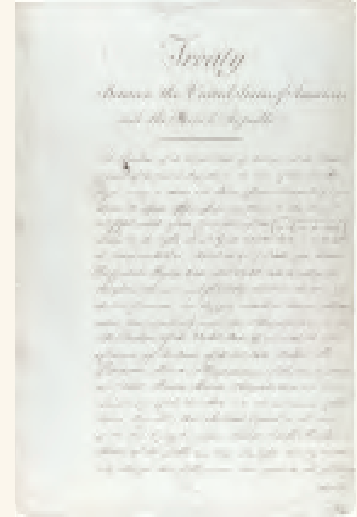
# THE LOUISIANA PURCHASE

In 1803, President Thomas Jefferson completed a treaty with the French government to purchase a large section of land in North America. This land is now known as the Louisiana Purchase. The purchase was important to the future of the U.S. It was the first major expansion of the U.S. since it had won its independence from Great Britain 20 years earlier. The territory gained in the Louisiana Purchase was the largest in U.S. history, totalling 828,000



*1903 map of the Louisiana Purchase from the U.S. Department of the Interior*

squares miles, about 23% of the current U.S. land area. The Louisiana Purchase also secured the U.S.'s right to passage along the Mississippi River and allowed access to the important port of New Orleans.



*Treaty transferring the Louisiana Purchase from France to the U.S.*

## Find the Main Idea

Write the main idea of the paragraph in your own words.

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Write two supporting ideas for the main idea.

1. \_\_\_\_\_

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2. \_\_\_\_\_

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# Time Machine (1906): Earthquake and fire leave San Francisco in ruins

By The Call-Chronicle-Examiner, adapted by Newsela staff on 05.15.16

Word Count **747**

Level **950L**



Looking down Sacramento Street at the destruction of San Francisco by earthquake and fire on April 18, 1906. Arnold Genthe, Library of Congress

*This article was originally published on April 19, 1906, in a combined edition of the San Francisco Call, Examiner and Chronicle. The 1906 San Francisco earthquake struck Northern California on April 18. Devastating fires broke out in the city, lasting for several days. As a result, about 3,000 people died. Over 80 percent of San Francisco was destroyed. To deal with the situation, federal troops were sent to patrol the city. However, the article is incorrect in stating that San Francisco was placed under military rule.*

Death and destruction have been the fate of San Francisco. The city was shaken by an earthquake at 5:13 yesterday morning, with a shock lasting 48 seconds. Flames raged in all directions, leaving the city a mass of smoking ruins. At 6 o'clock last evening, the flames appeared to move more vigorously, threatening to destroy the areas they had spared earlier in the day. They spread out as the day waned. They left the devastated business section and skipped in a dozen directions to the neighborhoods where people live. As night fell, the flames made their way over into the North

Beach section. Springing anew to the south, they reached out along the shipping section down the bay shore. From there, they spread over the hills and across toward Third and Townsend streets.

Warehouses, shops and factories fell in their path. The fires completed the destruction of the district known as the "South of Market Street." How far the flames are reaching to the south across the channel cannot be known, for this part of the city is shut off from San Francisco papers.

### **Desperately Seeking Shelter**

After darkness, thousands of the homeless were making their way to Golden Gate Park and the beach to find shelter. Those in the homes on the hills just north of the wrecked Hayes Valley section piled their belongings in the streets. Express wagons and automobiles were hauling the things away to areas with few people. Everybody in San Francisco is prepared to leave the city. The belief is firm that San Francisco will be totally destroyed.

Downtown, everything is in ruin. Not a business house stands. Theaters are crumbled into heaps. Factories and trade houses lie smoking on their former sites.

All of the newspaper offices have been rendered useless. The Call and the Examiner buildings, excluding the Call's newsrooms on Stevenson Street, were entirely destroyed.

### **Death And Injuries**

It is estimated that the loss in San Francisco will reach from \$150 million to \$200 million. These figures are not official, and nothing can be told until some accounting is taken.

On every side, there was death and suffering yesterday. Hundreds were injured, either burned, crushed or struck by falling pieces from the buildings. One person died on the operating table at Mechanics' Pavilion. This arena was used as a hospital for the comfort and care of the injured.

The exact number of dead is not known, but it is estimated that at least 500 met their death in the horror.

At 9 o'clock, under a special message from President Theodore Roosevelt, the city was placed under military rule. Hundreds of troops patrolled the streets and drove the crowds back. Others were sent to assist the fire and police departments. The strictest orders were issued, and in true military spirit, the soldiers obeyed. During the afternoon, three thieves were shot to death looting the ruins. Onlookers were driven back by cavalymen, and all the crowds were forced from the level district to the hilly section beyond to the north.

### **Efforts To Save The City**

The water supply was entirely cut off. It may be it was just as well, for the lines of the fire departments would have been absolutely useless at any stage. Assistant Chief John Dougherty supervised the work of his men. Early in the morning, it was seen that the only possible chance to save the city lay in an effort to stop the flames by using dynamite.

During the day, blasts could be heard in every district at brief intervals, and buildings not destroyed by fire were blown to atoms. But through the gaps made, the flames continued to jump. Although the failures of the brave efforts of the police, firemen and soldiers were at times

sickening, the work was continued with a desperation that will live as one of the features of the terrible disaster. Men worked tirelessly to combat the laughing, roaring, onrushing fire demon.

## Quiz

- 1 Which developments MOST likely caused the San Francisco fires? 1. thieves 2. arsonists 3. the earthquake 4. use of dynamite
- (A) 1 and 2
- (B) 2 and 3
- (C) 3 and 4
- (D) 1 and 4
- 2 Which sentence from “Desperately Seeking Shelter” BEST supports the idea that many people believed San Francisco could not be saved?
- (A) After darkness, thousands of the homeless were making their way to Golden Gate Park and the beach to find shelter.
- (B) Those in the homes on the hills just north of the wrecked Hayes Valley section piled their belongings in the streets.
- (C) Everybody in San Francisco is prepared to leave the city.
- (D) All of the newspaper offices have been rendered useless.
- 3 The article states that earthquake caused San Franciscans to leave. Which factors MOST likely influenced their perspectives? 1. the fear of lawlessness 2. a mandatory evacuation 3. availability of temporary shelter 4. danger from an uncontrolled fire
- (A) 1 and 2
- (B) 2 and 3
- (C) 3 and 4
- (D) 1 and 4
- 4 Read the section “Death And Injuries.”
- Select the paragraph in that section that suggests people in the city were trying to help the injured or dying.
- 5 Based on the article, which historical development would MOST likely be considered an example of change?
- (A) San Francisco growing to become one of the largest cities in the world.
- (B) The U.S. military helping cities respond to major disasters.
- (C) The establishment of volunteer firefighter organizations.
- (D) Firefighters training to respond to local emergencies.
- 6 Which of the following words, if it replaced the word “vigorously” in the sentence below, would CHANGE the meaning of the sentence?
- At 6 o'clock last evening, the flames appeared to move more vigorously, threatening to destroy the areas they had spared earlier in the day.*
- (A) powerfully
- (B) forcefully
- (C) fiercely
- (D) gradually

- 7 Why might the response to the fire be considered an example of continuity?
- (A) There is still little that firefighters can do to extinguish a major fire.
  - (B) Local emergency response teams are still poorly trained.
  - (C) Communities still work together to respond to major disasters.
  - (D) Firefighters still use dynamite to control major fires.

- 8 Read the following sentence from the article.

*Onlookers were driven back by cavalymen, and all the crowds were forced from the level district to the hilly section beyond to the north.*

Which word or phrase from the sentence helps define the meaning of the word “onlookers”?

- (A) cavalymen
- (B) crowds
- (C) district
- (D) section

# Issue Overview: Earthquake readiness

By Bloomberg.com, adapted by Newsela staff on 04.30.18

Word Count **700**

Level **870L**



Image 1. A building leans on a collapsed first floor following an earthquake in Hualien, Taiwan, February 7, 2018. Photo: Central News Agency via AP

Almost two-thirds of the world's population is expected to live in cities by 2050.

At least half of large cities are at risk of being hit by a major earthquake. Some such cities are Tokyo, Japan; Mexico City, Mexico; and San Francisco and Los Angeles in California.

These places must prepare for earthquakes. However, these places also have leaders who are only elected for short periods. They may not be thinking about such long-term problems.

It is impossible to predict when major earthquakes will happen. An earthquake might strike once in a lifetime, or not at all. What steps should be taken today to protect people and buildings from such a threat?

## The Situation

Cities have different ways of preparing for earthquakes.



In 2011, a devastating earthquake hit Japan. This made cities more eager to plan for such a disaster.

The quake in Japan caused a tsunami, a set of huge ocean waves. The tsunami overtook the coast, destroying nuclear power plants in Fukushima. In all, the tragic event killed more than 15,000 people.

Los Angeles is requiring owners of about 15,000 weak buildings to strengthen them against earthquakes. San Francisco has done something similar.

In Peru, the capital city of Lima has a dangerous combination of unsteady housing built on unstable soil. Peru's government holds nationwide earthquake drills to prepare.

Japan, Taiwan, Italy and Mexico are among the earliest users of earthquake warning systems. These detect the first waves of a quake and send out rapid warnings through radio and TV, and text messages to cell phones. These systems can automatically shut down transportation systems that might be in danger, like trains. A similar warning system will get tested this year on the U.S. West Coast.

After a horrible 1985 earthquake, Mexico City greatly improved its public buildings. These preparations led to fewer deaths when a quake struck there again in September 2017. Yet it still killed almost 400 people.

## The Background

Shaking is a fact of life. Earth experiences several hundred minor earthquakes daily. A major one happens more than once a month on average. Humans can even cause earthquakes, such as when trying to drill for oil or natural gas.

Some cities are considered to be in the "Ring of Fire," including Tokyo, San Francisco and Jakarta, Indonesia. These places are close to both fault zones and volcanoes. Faults are cracks in the earth where earthquakes often happen. These places also have soft soil that can worsen the destruction of a quake.

In 1985, an earthquake caused more than 5,000 deaths around Mexico City. This startled seismologists, who study earthquakes. The quake's center was more than 200 miles away.

## DEFINITIONS

### fault zone

The area around a series of fractures, or faults, in Earth's crust.

### warning system

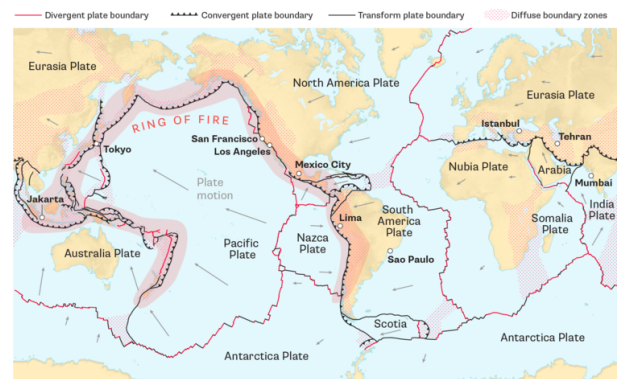
A system of devices, such as seismometers and computers, used to notify the population of an ongoing earthquake.

### seismic retrofitting

Modification of buildings to make them more resistant to earthquakes.

### Earthquake Zones

The earth's crust deforms as plates pull away, dive under or slide past each other



Scientists say major earthquakes are not increasing in frequency. Still, the possibility for damage is getting higher as cities grow. There are 283 million people in city areas at some risk of being killed, hurt or forced to flee due to an earthquake, says a study.

### **The Argument**

"Retrofitting," or updating and fixing the problems of cities, is happening across the world. However, retrofitting cities that are hundreds of years old isn't cheap or easy. It's not always proven to work, and progress can be slow.

Los Angeles is giving owners of risky buildings up to 25 years to make improvements. San Francisco is letting its buildings grow taller and hold more people, even though one of the city's skyscrapers is sinking and leaning. In India, efforts to improve buildings have mostly not happened. There's worry as well in Turkey. The government there had promised to make changes after a 1999 quake killed at least 17,000 people. Now, it is being criticized for undoing some earthquake-preparation plans.

All that may explain the move toward early-warning systems. These could give people seconds or maybe over a minute to get away from buildings at risk.

Technology may soon give us cheaper ways to warn people in danger. One way is with smartphones. Most smartphones can sense motion, meaning they can feel rumbles. Experts are exploring how to use smartphones to create a huge network. It would automatically detect earthquakes and send out warnings.



## Quiz

1 Read the section "The Situation."

Select the sentence that shows that some countries are working on ways to help people get to safety before an earthquake strikes.

- (A) The tsunami overtook the coast, destroying nuclear power plants in Fukushima.
- (B) In Peru, the capital city of Lima has a dangerous combination of unsteady housing built on unstable soil.
- (C) Japan, Taiwan, Italy and Mexico are among the earliest users of earthquake warning systems.
- (D) After a horrible 1985 earthquake, Mexico City greatly improved its public buildings.

2 Read the paragraph from the section "The Background."

*Scientists say major earthquakes are not increasing in frequency. Still, the possibility for damage is getting higher as cities grow. There are 283 million people in city areas at some risk of being killed, hurt or forced to flee due to an earthquake, says a study.*

What is the MOST accurate explanation of this paragraph?

- (A) Earthquakes can cause more harm now because there are more people living in cities.
- (B) The growth of cities has caused the earthquakes underneath them to become stronger.
- (C) Scientists did not measure the number of major earthquakes before there were cities.
- (D) People who do not live in cities do not need to worry about an earthquake striking.

3 The section "The Situation" uses a compare and contrast structure.

WHY did the author use this structure?

- (A) to explain how different cities plan for earthquakes
- (B) to describe the ways various cities have been affected by earthquakes
- (C) to outline what kinds of damage earthquakes cause in different cities
- (D) to suggest that some preparations are more effective than others

4 Read the article's introduction [paragraphs 1-3] and its final section, "The Argument."

What is the connection between these two sections?

- (A) Both sections offer solutions to cities' problems with earthquake preparation.
- (B) Both sections show how feelings about earthquake preparation have changed over time.
- (C) The introduction poses a question about what cities should do to prepare for earthquakes, and the final section predicts that early-warning systems are most likely to be the answer.
- (D) The introduction explains what has caused many cities to explore earthquake preparation options, and the final section describes the effects of earthquakes on these cities now.

**English Language Learner Supplement 4-5**

Excerpt from **Foreign Lands**

By Robert Louis Stevenson

Up into the cherry tree,

Who should climb but little me?

I held the trunk with both my hands,

And looked abroad on foreign lands.

I saw the next door garden lie,

Adorned with flowers, before my eye,

And many pleasant places more

That I had never seen before.

**Reading:** Read the poem by yourself or with someone at home. Circle any words in the poem that are new to you and look up their definitions.

**Speaking:** Read the poem aloud to someone at home. Tell them what the poem means in your own words.

**Listening;** Have someone at home read the poem aloud to you. Close your eyes and try to make pictures in your mind to match the words in the poem.

Poem in the Public Domain

**Writing:** What do you think the author means by “And looked abroad on foreign lands”?

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## **Suplemento para**

### **Estudiantes que Aprenden Inglés 4-5**

Extracto de **Tierras Extranjeras**

Por Robert Louis Stevenson

Arriba en el cerezo,  
¿Quién debería escalar sino el pequeño yo?  
Sostuve el baúl con ambas manos,  
Y miró al extranjero en tierras extranjeras.

Vi la mentira del jardín de al lado,  
Adornado con flores, ante mis ojos,  
Y muchos lugares agradables más  
Eso nunca lo había visto antes.

Poema en el Dominio Público

Se recomienda que los niños completen la página en inglés para practicar las habilidades en inglés.

**Lectura:** Lee el poema solo o con alguien en casa. Encierra en un círculo cualquier palabra del poema que sea nueva para ti y busca sus definiciones.

**Hablando:** Lea el poema en voz alta a alguien en casa. Diles lo que significa el poema en tus propias palabras.

**Escuchando;** Haz que alguien en casa te lea el poema en voz alta. Cierra los ojos y trata de hacer dibujos en tu mente para que coincidan con las palabras del poema.

**Escritura:** ¿Qué crees que el autor quiere decir con "Y miró al extranjero en tierras extranjeras"?

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## Writing Ideas 4-5 Elementary Week #9

Students can compose one or multiple paragraphs to respond to the prompts and ideas below. This will vary depending on their age/grade level.

### **Narrative**

- What does it mean to be kind? Think of a time when you or someone you know did something kind. Write a personal narrative to tell about that time. You should include when and where it happened and who and/or what was involved. Be sure to include a sequence of events, details, descriptions, and the setting. Establish an introduction, middle, and conclusion. .

### **Opinion/Argument**

- What is or would be your favorite pet? Write an opinion piece on your favorite pet and why that pet is the best pet to have. Add reasons, examples, and/or details to support your opinion. Be sure to have an introduction and a conclusion that relates to the opinion stated.

### **Informational/Explanatory**

- Did you know there are many different bodies of water! Oceans, lakes, and ponds are just a few! Talk to someone in your family or do some research to find out more about bodies of water. Pick your favorite body of water and write an informational piece about it. Learn as much as you can about that body of water. Be sure to add enough facts, information, and/or details. Introduce your topic and have a conclusion.

## Writing in Response to Reading Bingo

Complete the Bingo board by engaging in various writing ideas from this week's reading selections. Try to get 3-in-a row!

Want to learn more about the apprentice system? Conduct some research and find out more information. Are their jobs today where there are apprentices? Write an informative piece about your findings.

Looking at the 1903 map of **The Louisiana Purchase**, what states would have been part of this? Do some additional research about this treaty and write an informational piece on it. For more fun, watch the video at <https://bit.ly/3ehE261>

What was something important that you learned from this week's readings? Write about what you thought was important and why. Use details from the reading to help explain why you think it is important

What would it be like to discover text for the time at 10 years old? In **Tarzan of the Apes**, Tarzan sees books for the first time. How do you think he feels and what do you think he might be thinking? Use evidence from the text to support your reasoning.

### **WRITER'S CHOICE**

Being efficient in math is important for solving problems quickly. Think of a math problem that you have solved in more than one way. Which way was more efficient? In writing, explain to someone how you solved the problem and which way was more efficient.

Write about how the two reading selections **Time Machine (1906): Earthquake and fire leave San Francisco in ruins** and **Issue Overview: Earthquake readiness** are similar and/or different.

Want to learn more about earthquakes? Conduct some research and find out more information. Write an informative piece about your findings. For additional fun, watch the video at <https://bit.ly/2WZrWsx>

Vocabulary words are fun! Write a story, song, or poem using some of the words from this week's reading! Want additional fun, create your own game like bingo or memory using this week's words!











# Build a Fraction Wall

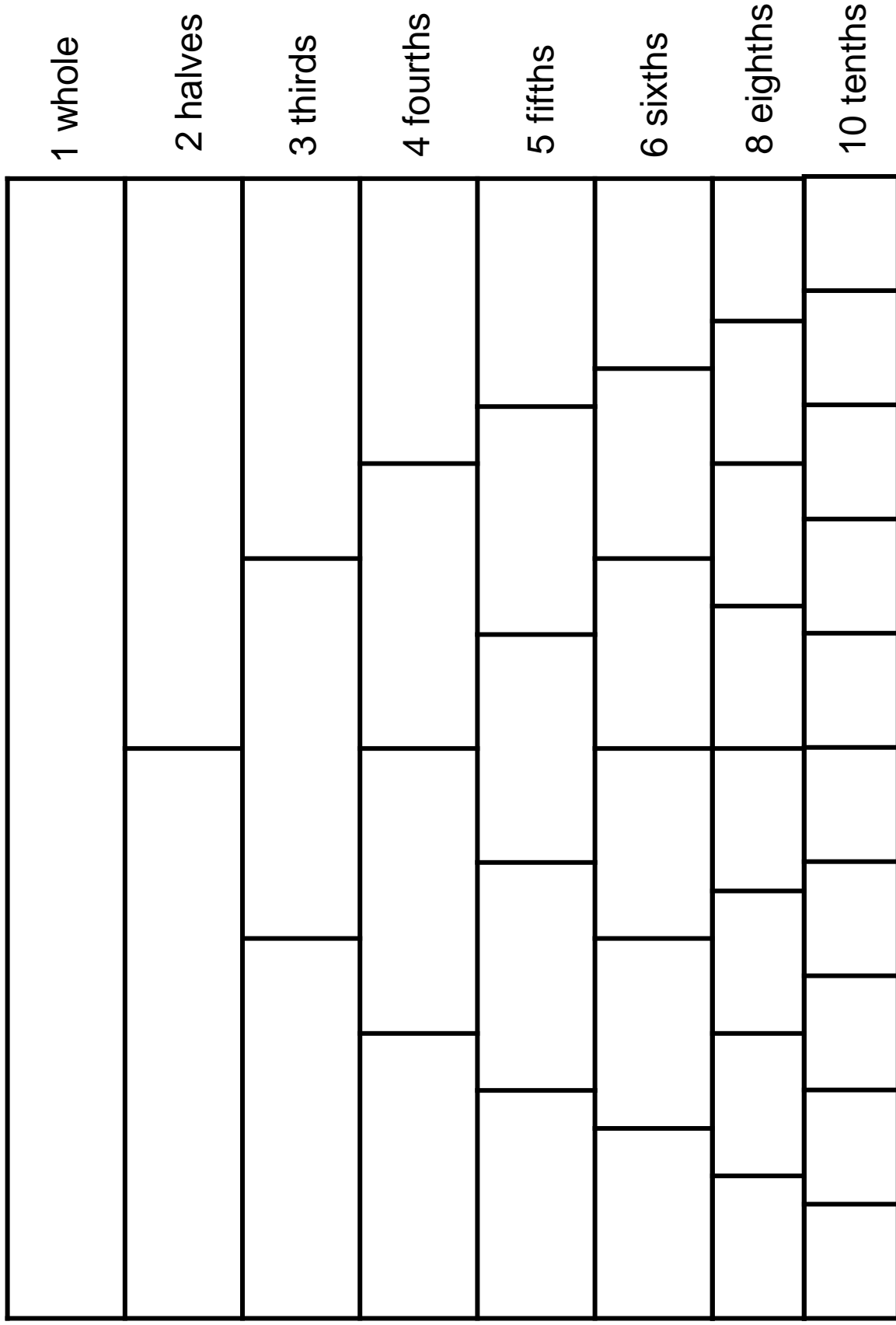
**Materials:** gameboard per player, Build a Fraction Wall cards

**Number of Players:** 2

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1. Place the cards facedown in two piles. Put all the numeral cards in one pile and the fraction word cards in another pile.
2. Take turns to turn over one card from each pile to create a fraction. Write your initials on a brick, or bricks, on your fraction wall with that value. You may use equivalent fractions. For example, if you turn over 2 thirds you can write your initials on 2 one-third bricks or 4 one-sixth bricks because  $\frac{2}{3} = \frac{4}{6}$ .  
If you use an equivalent fraction explain your thinking.
3. If you do not have bricks on your wall to match the fraction on your cards you must wait until your next turn. If you turn over a card marked 'Free Choice Denominator' you may choose any denominator.
4. Continue playing until all cards have been picked up. The player with the greater number of completed rows of bricks on the wall (wholes) wins the game.

# Build a Fraction Wall



1

2

3

4

5

1

2

3

4

5

2

2

Free  
Choice  
Denominator

Free  
Choice  
Denominator

half/  
halves

third/s

fourth/s

fifth/s

sixth/s

eighth/s

tenth/s

third/s

fourth/s

fifth/s

# Magic Squares: Fractions

Magic Number:  $7\frac{1}{2}$

1		2	
		$2\frac{1}{2}$	

**Materials:** Magic Squares: Fractions cards

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1. Work with a partner. Choose a magic square. Draw the square in your notebook, or on a sheet of paper.
2. Use addition to complete the puzzle. The sum of each row, column, and main diagonal must be equal. Write an equation for each row, column and main diagonal.
3. After completing the puzzle, check your work with your partner.
4. Repeat with other magic squares from the pack.

**Challenge:** Create your own 3x3 magic square using fractions. Swap with a friend and solve one another's puzzles. **Clue:** The sum of a 3x3 magic square is three times the number in the center square.

1A

Magic Number:  $7\frac{1}{2}$

1		2
	$2\frac{1}{2}$	

1B

Magic Number:  $10\frac{1}{2}$

	$3\frac{2}{4}$	
4		5

1C

Magic Number: 12

$2\frac{1}{2}$	6	
		$5\frac{1}{2}$

1D

Magic Number:  $40\frac{1}{2}$

12		
	$13\frac{1}{2}$	$12\frac{2}{4}$

Place the following on the magic square:

$\frac{1}{2}$ , 1,  $1\frac{2}{4}$ , 2,  $2\frac{1}{2}$ , 3,  $3\frac{3}{6}$ , 4,  $4\frac{4}{8}$

Each row, column and main diagonal must have a **sum of  $7\frac{1}{2}$** .


Place the following on the magic square:

$\frac{1}{6}$ ,  $\frac{1}{3}$ ,  $\frac{2}{3}$ ,  $\frac{1}{2}$ ,  $\frac{5}{6}$ , 1,  $1\frac{1}{6}$ ,  $1\frac{2}{6}$ ,  $1\frac{1}{2}$

Each row, column and main diagonal must have a **sum of  $2\frac{3}{6}$** .


3A

Place the following on the magic square so that each row, column, and main diagonal has an **equal sum**:

$$\frac{2}{6}, \frac{2}{3}, 1, 1\frac{3}{9}, 1\frac{2}{3}, 2, 2\frac{1}{3}, 2\frac{4}{6}, 3$$

What is the magic number?


3B

Place the following on the magic square so that each row, column, and main diagonal has an **equal sum**:

$$\frac{1}{4}, \frac{1}{2}, \frac{9}{12}, 1, 1\frac{1}{4}, 1\frac{3}{6}, 1\frac{3}{4}, 2, 2\frac{2}{8}$$

What is the magic number?


# Magic Squares – Fractions: Answer Key

<div>1A</div> <table><tr><td>1</td><td><math>4\frac{1}{2}</math></td><td>2</td></tr><tr><td><math>3\frac{1}{2}</math></td><td><math>2\frac{1}{2}</math></td><td><math>1\frac{1}{2}</math></td></tr><tr><td>3</td><td><math>1\frac{1}{2}</math></td><td>4</td></tr></table>	1	$4\frac{1}{2}$	2	$3\frac{1}{2}$	$2\frac{1}{2}$	$1\frac{1}{2}$	3	$1\frac{1}{2}$	4	<div>1B</div> <table><tr><td>2</td><td><math>5\frac{1}{2}</math></td><td>3</td></tr><tr><td><math>4\frac{2}{4}</math></td><td><math>3\frac{2}{4}</math></td><td><math>2\frac{1}{2}</math></td></tr><tr><td>4</td><td><math>1\frac{1}{2}</math></td><td>5</td></tr></table>	2	$5\frac{1}{2}$	3	$4\frac{2}{4}$	$3\frac{2}{4}$	$2\frac{1}{2}$	4	$1\frac{1}{2}$	5	<div>1C</div> <table><tr><td><math>2\frac{1}{2}</math></td><td>6</td><td><math>3\frac{4}{8}</math></td></tr><tr><td>5</td><td>4</td><td>3</td></tr><tr><td><math>4\frac{3}{6}</math></td><td>2</td><td><math>5\frac{1}{2}</math></td></tr></table>	$2\frac{1}{2}$	6	$3\frac{4}{8}$	5	4	3	$4\frac{3}{6}$	2	$5\frac{1}{2}$	<div>1D</div> <table><tr><td>12</td><td><math>15\frac{5}{10}</math></td><td>13</td></tr><tr><td><math>14\frac{4}{8}</math></td><td><math>13\frac{1}{2}</math></td><td><math>12\frac{2}{4}</math></td></tr><tr><td>14</td><td><math>11\frac{3}{6}</math></td><td>15</td></tr></table>	12	$15\frac{5}{10}$	13	$14\frac{4}{8}$	$13\frac{1}{2}$	$12\frac{2}{4}$	14	$11\frac{3}{6}$	15
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# Lesson 14: Songwriting

## Overview

One of the most magnificent structures in the computer science world is the function. Functions (sometimes called procedures) are mini programs that you can use over and over inside of your bigger program. This lesson will help students intuitively understand why combining chunks of code into functions can be such a helpful practice.

## Purpose

The use of functions helps simplify code and develop the student's ability to organize their program. Students will quickly recognize that writing functions can make their long programs easier to read and easier to debug if something goes wrong.

## Agenda

- [Warm Up \(20 min\)](#)
  - [Vocabulary](#)
  - [Sing a Song](#)
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## Teaching Guide

### Warm Up (20 min)

#### Vocabulary

This lesson has one new and important word:

- Function - Say it with me: Func-shun

A piece of code that you can call over and over again.

#### Sing a Song

- Let the class know that today is song day!
- We're going to learn a song together.

- Start with a simple song, either written out or projected on the screen.
- Point to the chorus and be sure that the class knows how it goes before you begin on the song.
- Blast through the song, singing it with them in the beginning, then see what happens when you get to the part where it calls the chorus.

## Teaching Tip

Little Bunny Foo Foo is being used here as an example only. If your students know this song, feel free to use it. Otherwise, choose an appropriate song that they might be more familiar with (either from music class or the radio.)

Chorus:

Little bunny Foo Foo  
Hopping through the forest  
Scooping up the field mice  
And bopping 'em on the head  
Down came the Fairy  
And she said  
"Little bunny Foo Foo  
I don't wanna see you  
Scooping up the field mice  
And bopping 'em on the head"\*

Song:

Chorus

I'll give you 3 chances.  
Then I'll turn you into a goon!  
The next day. . .

Chorus

I'll give you 2 chances.  
Then I'll turn you into a goon!  
The next day. . .

Chorus

I'll give you 1 chance.  
Then I'll turn you into a goon!  
The next day. . .

Chorus

"I gave you two chances.  
Now I'll turn you into a goon!"  
(POOF!)  
And the moral of the story is:  
Hare today, goon tomorrow!

- It's quite likely that the majority of the class will sing the lyrics for the chorus when you point to that bit.
  - Stop the song once that happens, and explicitly highlight what just happened.
    - You defined the chorus.
    - You called the chorus.
    - They sang the chorus.
- Ask the class why they suppose you only wrote the chorus once at the top of the paper instead of writing it over and over in each place where it is supposed to be sung.

- What are other benefits of only writing the chorus once when you sing it many times?

## Lesson Tip

To hit this point home, you can look up the lyrics for some popular songs on the Internet. Show the students that the standard for repeating lyrics is to define the chorus at the top and call it from within the body of the song.

Now, imagine that this song is a computer program. Defining a title (like "chorus") for a little piece of code that you use over and over again is called creating a function.

This is helpful to computer scientists for some of the same reasons that it is helpful to songwriters.

- It saves time not having to write all the code over and over in the program.
- If you make a mistake, you only have to change it one place.
- The program feels less complicated with the repeating pieces defined just once at the top.

We are going to play with songs a little more, to try to really understand how often this technique is used!

## Main Activity (20 min)

### Functions Unplugged: Songwriting - Worksheet

A fantastic way to compare functions to something we see in our everyday lives is to look at songs. Songs often have certain groups of lyrics that repeat over and over. We call such a group a "chorus."

Directions:

## Lesson Tip

It's most exciting for students to do this lesson with popular music from the radio, but if you're having a hard time finding appropriate songs where the lyrics repeat exactly, here are a few timeless options:

- [You Are My Sunshine](#)
- [Boom, Boom, Ain't it Great](#)
- [How Much Is That Doggie in the Window](#)
- [I Love Trash](#)
- Divide into groups of 4, 5, or 6.
- Give each group several copies of the Songwriting Worksheet.
- Play a short song for the class that contains a clear chorus that does not change from verse to verse.
- Challenge the class to identify (and write down) the chorus.
- Compare results from each group.

Did everyone get the same thing? Sing your choruses together to find out! Play this game over and over until the class has little trouble identifying the choruses.

- It is often easier just to have the class listen to (or watch) the song, then vote on what the chorus is by singing it together, rather than writing the whole thing down. If you choose this method, consider having the class do a written chorus for the final song selection to be sure that the visual learners get proper reinforcement.

## Wrap Up (5 min)

### Flash Chat: What did we learn?

#### Lesson Tip

Flash Chat questions are intended to spark big-picture thinking about how the lesson relates to the greater world and the students' greater future. Use your knowledge of your classroom to decide if you want to discuss these as a class, in groups, or with an elbow partner.

- Would you rather write lyrics over and over again or define a chorus?
- Do you think it's possible to make multiple choruses for the same song?
- Does it make sense to make a new chorus for every time it's needed in a song?

### Journaling

Having students write about what they learned, why it's useful, and how they feel about it can help solidify any knowledge they obtained today and build a review sheet for them to look to in the future.

#### *Journal Prompts:*

- What was today's lesson about?
- How do you feel about today's lesson?
- What is a function and how do you use it?
- Can you think of another activity where you might want to call a special group of instructions several times?

## Assessment (5 min)

### Functions Unplugged: Songwriting - Assessment

Hand out the assessment worksheet and allow students to complete the activity independently after the instructions have been well explained. This should feel familiar, thanks to the previous activities.

## Extended Learning

Use these activities to enhance student learning. They can be used as outside of class activities or other enrichment.

Functional Suncatchers Visit the [CS Fundamentals Unplugged Table](#) or click on the link for [Functional Suncatchers](#). This activity does take a few supplies from the craft store, but it helps students to see the value of calling multiple functions.

#### Create Your Song

- Start by creating a chorus together, then repeat it between verses of a song that you develop around it.
- Make a change to the chorus, and ponder how much easier it is to change in just one place.
- Change the chorus again, making it much longer than it was originally.
- Add a second chorus and alternate between them in your verses.

#### Songwriting a Program

- What if we acted out songs instead of singing them? All of a sudden, our chorus would be a function of repeated actions, rather than words.
- Use the concepts of the arrows from the Graph Paper Programming lesson and create a program with lots of repeating instructions.
  - Circle those repeating actions so that the class can see where they are.
  - Define a function called "Chorus" above the program.
  - Cross out everywhere the repeating actions appear in the program and write "Chorus" instead.
- Repeat until the class can go through this process with little direction.

# Songwriting

Using Lyrics to Explain Functions



One of the most magnificent structures in the computer science world is the function. Functions (sometimes called procedures) are mini programs that you can use over and over inside of your bigger program.

A fantastic way to compare functions to something we see in our everyday lives is to look at songs. Songs often have certain groups of lyrics that repeat over and over. We call such a group a “chorus.”

## Directions:

- 1) Divide into groups of 4, 5, or 6.
- 2) Give each group several copies of the Songwriting Worksheet.
- 3) Play a short song for the class that contains a clear chorus that does not change from verse to verse.
- 4) Challenge the class to identify (and write down) the chorus.
- 5) Compare results from each group. Did everyone get the same thing?

## New Word!

# Function

*Say it with me: Func-shun*

A piece of code that you can call over and over again

Let's make a **function** for the bits that we use most often so that we don't need to write so much as we go.

Name(s) \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

# Songwriting Worksheet

Using Lyrics to Explain Functions



Song 1 Name:

Chorus:

Song 2 Name:

Chorus:

# Songwriting

Using Lyrics to Explain Functions - Assessment



Look at the lyrics for the two songs below.

If it were your job to write these songs as computer programs, what chunk of code from each would you turn into a function so that you could use it over and over again with just one word?

**Circle the segments of each program that repeat most often.** Is everything that you circled exactly the same? If so, that can be your chorus!

Finish by writing the chorus for each song on the Songwriting Worksheet and give it a name. Those are your functions!

## Song: The Candy Man

Who can take a sunrise,  
Sprinkle it with dew?  
Cover it in chocolate and a miracle or two

The candy man, the candy man can,  
The candy man can cause he mixes it with love  
and makes the world taste good

Who can take a rainbow,  
Wrap it in a sigh?  
Soak it in the sun and make a groovy lemon  
pie

The candy man, the candy man can  
The candy man can cause he mixes it with love  
and makes the world taste good

The candy man makes  
everything he bakes  
Satisfying and delicious.  
Talk about your childhood wishes.  
You can even eat the dishes!

Who can take tomorrow,  
Dip it in a dream?  
Separate the sorrow and collect up all the  
cream

The candy man, the candy man can  
The candy man can cause he mixes it with love  
and makes the world taste good

## Song: Skip to my Lou

Lou, Lou, skip to my Lou,  
Lou, Lou, skip to my Lou,  
Lou, Lou, skip to my Lou,  
Skip to my Lou, my darlin'

Fly's in the buttermilk,  
Shoo, fly, shoo,  
Fly's in the buttermilk,  
Shoo, fly, shoo,  
Fly's in the buttermilk,  
Shoo, fly, shoo,  
Skip to my Lou, my darlin'.

Lou, Lou, skip to my Lou,  
Lou, Lou, skip to my Lou,  
Lou, Lou, skip to my Lou,  
Skip to my Lou, my darlin'.

Cows in the cornfield,  
What'll I do?  
Cows in the cornfield,  
What'll I do?  
Cows in the cornfield,  
What'll I do?  
Skip to my Lou, my darlin'.

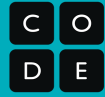
Lou, Lou, skip to my Lou,  
Lou, Lou, skip to my Lou,  
Lou, Lou, skip to my Lou,  
Skip to my Lou, my darlin'.



Name(s)\_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

# Songwriting

Using Lyrics to Explain Functions - Assessment



Song 1 Name:

Chorus:

Song 2 Name:

Chorus: