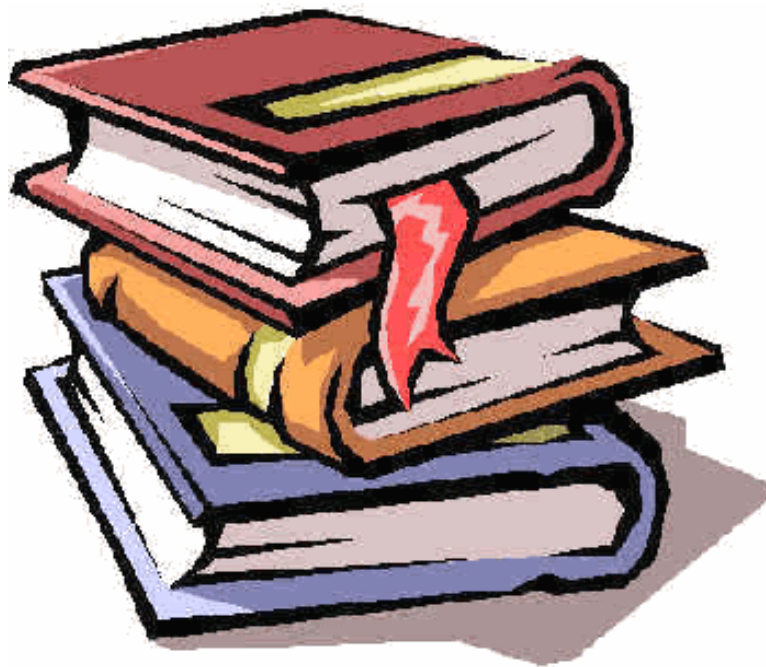


Destiny Awaits..



4th Grade AAP Supplemental Packet

Student's Name: _____

School: _____

Teacher: _____

Dear Richland One Families,

Thank you for your support, patience, and flexibility during what has proven to be a time marked with immense uncertainty. You truly are what makes our school district R1Strong!

In this packet, you will find AAP Extension activities for your child. These activities should be used as a supplement to the grade level packet your child receives. Your child's teachers may contact you regarding additional assignments. In that case, the teachers' assignments should be completed first, and the assignments in this packet should be completed as time permits.

Students should be able to complete some of the assignments independently; however, there will be some assignments that require your support. While we expect students to work hard each day, they may or may not complete all of the listed assignments. Children may return to a previous day's work to complete any missed assignments, or move ahead if they have completed assignments quickly. Furthermore, if your child qualifies for accommodations through either an IEP or 504, please connect with the teacher or other service provider to ensure accommodations are provided.

In the coming days, additional learning activities will be posted to the Richland One website (www.richlandone.org) as well as on our Richland One Television Channel (ROTV). You may contact your child's teachers for assistance using the already established communication protocol. Additionally, teachers will continue to provide office hours daily from 9:30 a.m. – 11:00 a.m. and 1:00 p.m. – 2:30 p.m.

In closing, while we have tried to provide academic activities to reinforce prior learning and to ensure your child continues to learn, what is most important during this difficult time is that you and your child have positive experiences together. As you take care of yourself and your family, we wish you the very best health and look forward to the time normal schedules resume and your child will be back with us.

Office of Elementary Education
Division of Teaching and Learning

AAP ELA Extension Activity 1

The New Colossus

by Emma Lazarus

Not like the brazen giant of Greek fame,
With conquering limbs astride from land to land;
Here at our sea-washed, sunset gates shall stand
A mighty woman with a torch, whose flame
Is the imprisoned lightning, and her name 5
Mother of Exiles. From her beacon-hand
Glowes world-wide welcome; her mild eyes command
The air-bridged harbor that twin cities frame.
"Keep, ancient lands, your storied pomp!" cries she
With silent lips. "Give me your tired, your poor, 10
Your huddled masses yearning to breathe free,
The wretched refuse of your teeming shore.
Send these, the homeless, tempest-tost to me,
I lift my lamp beside the golden door!"

AAP ELA Extension Activity 1

Name: _____ Date: _____

1. Who or what shall stand "at our sea-washed, sunset gates"?

- A. a mighty woman with a torch
- B. a huddled mass yearning to breathe free
- C. a homeless, tempest-tost person
- D. an air-bridged harbor

2. What structural elements can be found in the poem?

- A. stanzas and rhythm
- B. rhyme and rhythm
- C. rhyme and stanzas
- D. rhyme and parentheses

3. The Mother of Exiles stands near an entrance.

What lines from the poem support this conclusion?

- A. lines 1 and 2
- B. lines 3 and 14
- C. lines 5 and 8
- D. lines 9 and 12

4. What is the attitude of the Mother of Exiles toward poor people around the world?

- A. silly and childish
- B. kind and welcoming
- C. strict and businesslike
- D. impatient and unfriendly

5. What is the theme of the poem?

- A. There is a place in the world where people who need shelter can find it.
- B. Homelessness is a serious problem in Greece, and more should be done to address it.
- C. Ancient lands are full of people who enjoy visiting different countries around the world.
- D. Greek giants are more powerful than mighty women with torches of lightning.

AAP ELA Extension Activity 1

ReadWorks®

The New Colossus - Comprehension Questions

6. Read these lines from the poem:

. . . From her beacon-hand

Glowed world-wide welcome; her mild eyes command

The air-bridged harbor that twin cities frame.

What words here show that the Mother of Exiles is both gentle and powerful?

- A. "mild" and "command"
- B. "air" and "bridged"
- C. "harbor" and "cities"
- D. "twin" and "frame"

7. Read these lines from the poem:

"Keep, ancient lands, your storied pomp!" cries she

With silent lips. "Give me your tired, your poor,

Your huddled masses yearning to breathe free,

The wretched refuse of your teeming shore.

Send these, the homeless, tempest-tost to me,

I lift my lamp beside the golden door!"

Whom or what is the Mother of Exiles addressing in these lines?

- A. "ancient lands" (line 9)
- B. "storied pomp" (line 9)
- C. "huddled masses" (line 11)
- D. "wretched refuse" (line 12)

8. What does the Mother of Exiles ask be sent to her?

9. What information in the poem supports the description of the Mother of Exiles as "mighty"?

10. One meaning of "colossus" is "a statue of great size." Whom or what in this poem does the title refer to? Support your answer with evidence from the text.

Word Study: Context Clues

Use cause and effect relationships to determine the meaning of the unknown word.

1. John was **anxious** about moving to another state because he was nervous about living in a new place.
2. Her face **wrinkled** as she laughed, so that her cheeks scrunched up and lines appeared at the corners of her eyes.
3. Grandfather said that the code was a **triumph** because each message was sent and received with success.
4. Because autumn arrived, the leaves of the trees began to **wither**.
5. We **repeated** the lesson over and over so that it would be easy to remember.

Knit Your Bit

By Lisa Hart

Weather brought hardships to the soldiers of the First World War. The men needed more than the basic clothing they had been issued to endure winter in the trenches. Lucky for them, most of the girls back home knew how to knit.

Knitters of all ages picked up their needles to make sweaters, hats and scarves. Many on the home front who did not know how to knit learned. Knitters made custom

items to send to the troops, such as mittens with a divided trigger finger. Even medical supplies could be knit. A long strip of knitting made a good, stretchy bandage. Knitted eye patches held dressings in place. For those soldiers who had lost an arm or leg in battle, knitters made amputation socks.

Seeing the need, the Red Cross began to arrange knitting campaigns. They also helped to provide knitters with yarn and patterns. Most of the patterns were simple.

Quick and easy patterns allowed knitters of all skill levels to do their part and knit their bit for the boys at the front. Thousands of hours were given to create millions of pieces of clothing.

One of the more difficult patterns was the one for socks. Novice knitters often found the turning of the heel to be a challenge. But clean socks played a vital role in the good health of the soldiers. An infection called trench foot posed a constant danger in the cold, wet mud of the trenches. Fresh socks offered hope of avoiding an illness that could take a foot or a life.

These hand-knit items inspired the soldiers. They reminded the men of mothers, sisters and sweethearts sending them love with each stitch. For those left on the home front, knitting brought a way to support the troops and be involved.

Knitting never held so much passion or power.



State Library of NSW and National Library of Scotland

Bundling socks, 'War Chest' Sock Appeal, Sydney, May 1917, photographer G. A. Hills.



National Library of Scotland

A wintry scene on the Western Front.

AAP ELA Extension Activity 3

Knit Your Bit

By Lisa Hart



1. Why did women knit clothing for soldiers during World War I?
 - a. Soldiers did not have any clothing while at war so they asked women to knit.
 - b. Soldiers wanted their clothing to be made only from yarn and wool.
 - c. Soldiers paid women to make clothes and send them to the battlefield.
 - d. Soldiers did not have enough winter clothing and women wanted to help.
2. According to the article, why were socks difficult for novice knitters?
 - a. Most socks are large and require a lot of yarn.
 - b. A sock has a curve by the heel.
 - c. A pair of socks can only be worn a few times.
 - d. Knitters needed to use different patterns for right socks and left socks.
3. What is the author's purpose for writing this article?
 - a. To persuade readers to support soldiers
 - b. To teach readers how to knit
 - c. To entertain readers with an amusing story from history
 - d. To inform readers of one way women helped the war effort during World War I
4. Circle three words that best describe the women knitters in this article.

patriotic

dangerous

hard-working

curious

charitable

carefree

5. Reread the final sentence of the article

Knitting never held so much passion or power.

Explain how knitting became a passionate and powerful task during this time.

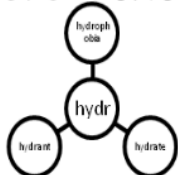
AAP ELA Extension Activity 4

Word Study Choice Board

Choose and complete three of the following activities on the choice board. Try to aim for 'three in a row.' Please use a separate sheet of paper to record your word study work.

Use the Greek and Latin Roots found on the next page.

Word Generator



Using one of the roots for this lesson, generate as many words as you can that contain this root.

Sentence Stalker



Try to find at least 3 sentences containing words that are derived from the root(s). If you can't find them, create them!

Pictionary Cards



Make five picture cards. Be sure to **divide and conquer** each word on the back of the card.



WORD HISTORY

Words have interesting histories. Do some research. Discover some interesting facts about a word we use every day. Write a paragraph.

Your Choice

(Teacher-approved Activity)



Word Find



Go on a hunt for as many words as you can find that contain the root. Be sure to list where you found the word.

MAKING WORDS

Use the letters in the word(s):

to make as many words as you can.

SYNONYM/ANTONYM Word Ladder

Create a **syno-/anto-** ladder for a word of your choice.

Word: say

Scream
Shout
Proclaim
Mumble
whisper

Root Word Riddles



Select three words containing the targeted root(s). Write riddles for these words. **Remember:** Do not give away too many clues.

AAP ELA Extension Activity 4

meter, metr	photo	phobia	rupt	graph	ject
diameter	photograph	aquaphobia	bankrupt	autograph	inject
odometer	telephoto	acrophobia	rupture	paragraph	objection
metric	photocopy	hydrophobia	disruptive	biography	interject
perimeter					



Comprehension

Independent Practice Passage

Problem and Solution • Set 5

Graphic Organizer

Name _____

Votes for Women!

When the United States formed, only white males who owned property could vote. In 1848, a group of women gathered in Seneca Falls, New York, to discuss women's rights. They decided that having the right to vote was one key goal that would help them gain equality with men. These women came together to protest and hold events promoting their cause.

The Fifteenth Amendment passed in 1870, gave African American men the right to vote. The law, however, did not give women voting rights. In 1872, Susan B. Anthony cast a vote in protest and was arrested. Yet she kept protesting and in 1878 wrote the Women's Suffrage Amendment, introducing it to Congress. Congress did not pass the bill.

Women continued fighting for the right to vote. They marched in Washington, D.C. They wrote letters and articles in local newspapers. By 1913, protests happened more often, despite arrests and other attempts to stop them. In 1917, President Woodrow Wilson announced his support for granting women the right to vote.

The Nineteenth Amendment became law on August 26, 1920. Almost fifty years later women had the right to vote.

Instructions: Identify four problems in the passage and write them in the column on the left. In the column on the right, write their solutions, according to the passage. Then use the information in the graphic organizer to write an essay on the back of this paper that summarizes the passage.

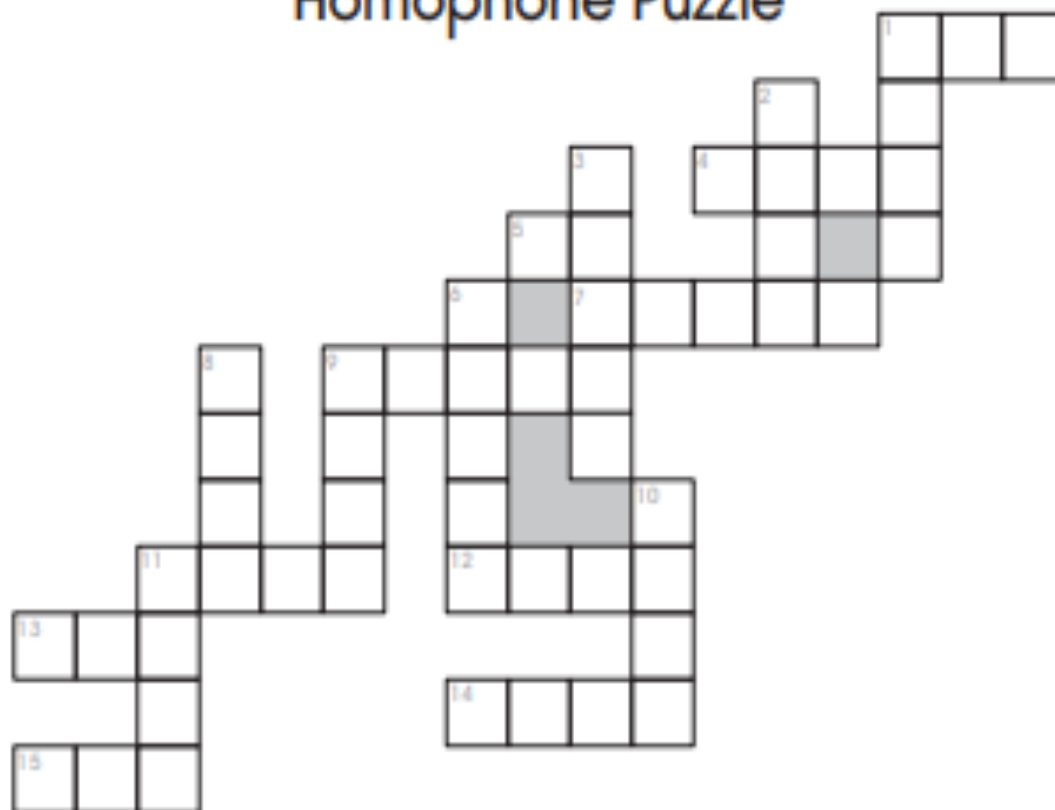
Problem	Solution

AAP ELA Extension Activity 6

Homophone Puzzle

V.008.SS2

Homophone Puzzle



ACROSS

1. What is the ____ of 53 and 64?
4. He put a white, canvas ____ on the boat to make it go.
5. I went ____ the baseball game.
7. What ____ you like to eat for lunch?
9. Please ____ your name on the top of the page.
11. After his injury, he was too ____ to lift the furniture.
12. Cinderella is a popular fairy ____.
13. One half of four is ____.
14. We drove down a long and winding ____.
15. The colors of the American flag are ____, white, and blue.

DOWN

1. Everything was half price at the big ____.
2. The dog was wagging his ____ because he was happy.
3. He ____ the boat with two oars yesterday.
6. He didn't miss any questions; he got them all ____.
8. If you can't drink all of it, drink ____.
9. There are seven days in a ____.
10. The teacher ____ the book to the whole class.
11. He chopped ____ for the fire.

HOMOPHONE WORD BANK

sale	read	wood	two
road	sail	red	sum
week	some	rowed	write
tail	to	tale	weak
would	right		



Since mosquitoes lay their eggs in and near standing water, it's a good idea not to leave water in bowls or buckets outside.

Zika Outbreak

Zika, a virus carried by mosquitoes, is spreading around the world.

Usually, the virus is not serious and only lasts a few days. Once people get Zika, they won't get it again.

However, Zika is a huge problem for unborn children. Babies whose mothers had Zika have been born with small skulls and brains that haven't developed completely.

Do You Know?

The best way to avoid getting Zika is not to get bitten by a mosquito in the first place! When you go outside, use bug spray and wear a long-sleeved shirt and pants.

Photo credits: Page 1: © CDC/BSPIBS/ISuperStock; background: © Teriana/Stodi/Thinkstock

Zika was first found in monkeys in Uganda in 1947. It spread to people soon after. The first large outbreak of Zika was on the island of Yap, in the Pacific Ocean, in 2007. In 2015 and 2016, an outbreak began in Brazil and spread to parts of North America, Central and South America, the Caribbean Islands, and the Pacific Islands. By 2018, risk of infection had spread to parts of Africa and Asia.

Zika is the biggest concern in Brazil, where more than four thousand babies with small skulls have been born to mothers with Zika.

In 2016, the World Health Organization (WHO) called the Zika outbreak a Public Health Emergency. WHO no longer calls Zika an emergency. However, travel alerts still warn pregnant women not to go to places with high numbers of Zika cases. They also warn those who want to become pregnant to avoid these areas.

Doctors can do tests to see if a person has Zika. A vaccine hasn't yet been made to stop a person from getting Zika, but scientists are working hard to make one.



AAP ELA Extension Activity 7



QUESTIONS

Zika Outbreak

Read 1
Zika Outbreak

1. What is Zika, and how can people become infected with it?

Read 1
Zika Outbreak

2. How has Zika spread since it was first discovered in 1947?

Read 2
Zika Outbreak

3. Why does the author include the "Do You Know?" box?

Read 2
Zika Outbreak

4. What words does the author use to describe the seriousness of the Zika virus?

Read 2
Zika Outbreak

5. Why do you think the author included the information about the World Health Organization?

Read 3
Zika Outbreak

6. What can people do to avoid becoming infected with Zika?

Read 3
Zika Outbreak

7. Does Zika continue to pose a great threat to people across the world? How do you know?

Read 3
Zika Outbreak

8. Will the creation of a vaccine solve the Zika crisis? Why or why not?

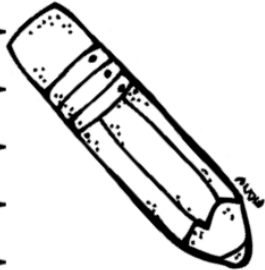


**Extension
Activity**
Zika Outbreak

What is the author's message?
Create a poster or advertisement to raise awareness about Zika that includes the author's message.

Choice Board

figurative language



Name: _____



Comic Strip

Create a comic strip using at least one onomatopoeia in each of your slides.

Super Similes

Fill in the blanks with an appropriate simile. Then create your own!

QUIZ TIME

Create a 10 question quiz using different types of figurative language. Have a friend take it. Grade it.

TONGUE TWISTERS

Tongue twisters use lots of alliteration! Create your own to try and stump yourself and your friends!

Skit Theater

Create a skit using different types of figurative language. Perform it in front of the class.

DETECTIVE

Read different hyperboles and write down their meaning. Draw a picture representing the hyperbole.

Poetry

Create a poem using lots of personification to bring your writing to life!

Mini-Book

Look up different idioms and create a 4-page mini-book explaining idioms.

Story Teller

Write a story using as many metaphors as you can. Highlight each metaphor.

AAP ELA Extension Activity 9

Shorty and String Bean



Page 1: © iStock.com/GoodLifeStudio; page 2: © iStock.com/Tayfik Goksel Arkan; page 3 (top): © iStock.com/dragance137; page 3 (bottom): © iStock.com/syntika; page 4: © iStock.com/lodliacobson; background: © iStock.com/INDECraft

Shorty

Javier is my real name,
but call me Shorty—it's the same.

Don't let that fool you. I'm not tame,
and listen up—I've got mad game.

I may be only five feet tall,
but I can still play basketball.

I was born to play the point,
to shake and bake this hardwood joint.
Don't think that I won't be seen
just because I'm small and lean.



I lead the team with my
assists and rebound
with mad, crazy twists.

Now no one even cares I'm
short because I'm so good
on the court.

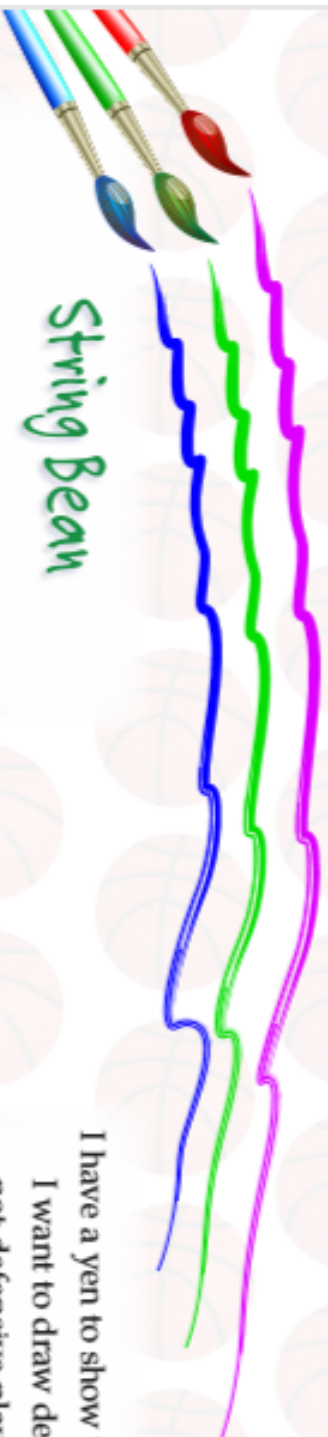
Watch me fly high off the ground
to grab another long rebound.
I am not big, I am not tall,
but I can still play basketball.

I dish and swish around the hoop.
I jump and leap and alley-oop.
You haven't seen a thing at all,
'til Shorty plays some basketball.

I'm never, ever in a funk.
I'm just like Jordan—BAM! Slam-dunk!
If Muggsy did it, so can I.
My hardwood wings will make me fly.

I may be only five feet tall,
but I can still play basketball.

AAP ELA Extension Activity 9



Back in the day when I was a shorty,
I'd draw on the sidewalk
with colored chalk.

My brother would pass on his way
to the court—jumping high
where pigeons fly and
slam-dunking the orange prize.

Now I'm older, my reflection
bolder, with shoulders
where tree limbs aspire to be.
I woke up one day
and was six foot three.
Did that really
happen to me?

Give me a canvas and some paint.
Give me a brush, give me a pen.



I have a yen to show you my world.
I want to draw defensive moats—
not defensive plays.
I want to pick paints and palettes—
not pick and roll.

I want solitude and time to think—
not stadiums of masses
and only twenty-four seconds
to make passes.

I have a yen to show you my world,
and not some fantasy
about the one-in-a-million who
get to play for the NBA.



AAP ELA Extension Activity 9



QUESTIONS

Shorty and String Bean

Read 1

Shorty and
String Bean

1. What is the first poem about?

Read 1

Shorty and
String Bean

2. What is the second poem about?

Read 1

Shorty and
String Bean

3. How are the two poems related?

Read 2

Shorty and
String Bean

4. What is the meaning of the word *solitude*, and how does it contrast with stadiums of masses mentioned in the very next line?

Read 2

Shorty and
String Bean

5. What imagery does the author use in the poems? How does this enhance the piece?

Read 2

Shorty and
String Bean

6. Why do you think the author chose to organize this piece as two poems instead of one?

Read 3

Shorty and
String Bean

7. Read the last stanzas of each poem again. What do these lines reveal about the author's point of view on the theme of this passage?

Read 3

Shorty and
String Bean

8. Do you think the ideas presented in these poems apply only to basketball?



Extension
Activity

Shorty and
String Bean

Do people sometimes form expectations about a person because of his or her physical attributes? What are the effects of this? Write a poem about yourself in response to this question.

AAP ELA Extension Activity 10

Complete 1 activity of your choice under each letter.

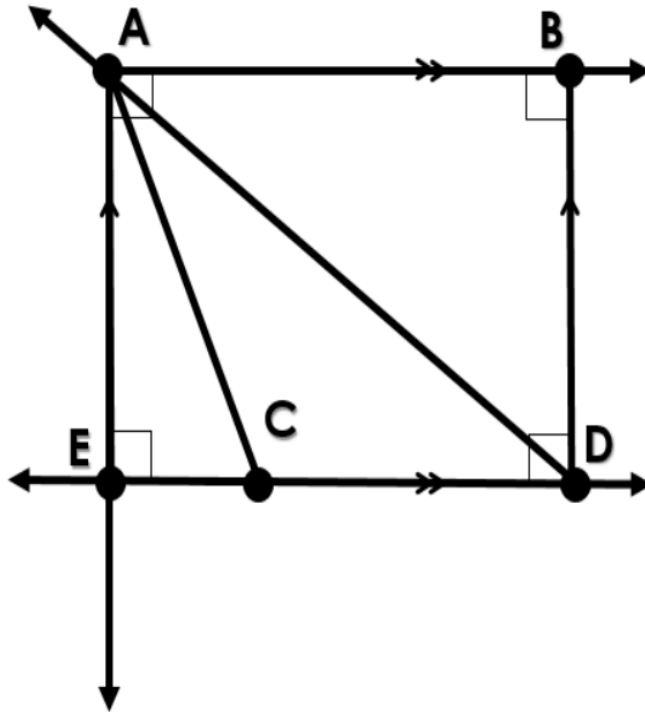
Opinion

W	R	i	T	e
Should students have a longer recess? Write an essay that clearly supports your opinion.	Would you rather attend school or be homeschooled? Write an essay that clearly supports your opinion.	Do you think schools should offer soft drinks in the cafeteria? Write an essay that clearly supports your opinion.	Should field trips be only educational or only fun? Write an essay that clearly supports your opinion.	What is the most interesting subject in school? Write an essay that clearly supports your opinion.
Do you think all students should be allowed to use calculators in math class? Write an essay that clearly supports your opinion.	Some people think students should wear uniforms. What do you think? Write an essay that clearly supports your opinion.	Computers are very important in today's society. Should it be a requirement that all schoolwork be completed on a computer? Write an essay that clearly supports your opinion.	Which do you think would be most helpful to humans: amazing eyesight or super hearing? Write an essay that clearly supports your opinion.	A community member in your town is suggesting that a park and recreation center be turned into a homeless shelter. What do you think? Write an essay that clearly supports your opinion.
Voting is an important process. When you turn 18, will you choose to vote in elections? Write an essay that clearly supports your opinion.	In your opinion, is it better to give or to receive gifts and compliments? Write an essay that clearly supports your opinion.	At what age should children be given their first cell phone? Persuade the reader to agree with your choice by providing reasons and details.	Write a letter to your school board requesting more vacations or time off from school this year.	Your principal is considering taking away recess from 4 th and 5 th graders because they don't "play." Write a letter to the principal with your opinion.

Math Challenge Activity 1

Geometry Maps

You are working for a mapping company to create maps. You have created the map below for a local county, which has six major roads.



Part 1:

Each town is labeled by a **point** on the map.

- How many towns are there? _____
- What are the "names" of these towns as shown on the map? _____

Which roads are shown as **line segments**? _____

Which roads are shown as **rays**? _____

Which roads are shown as **lines**? _____

Name two pairs of **perpendicular roads**. _____

Name two pairs of **parallel roads**. _____

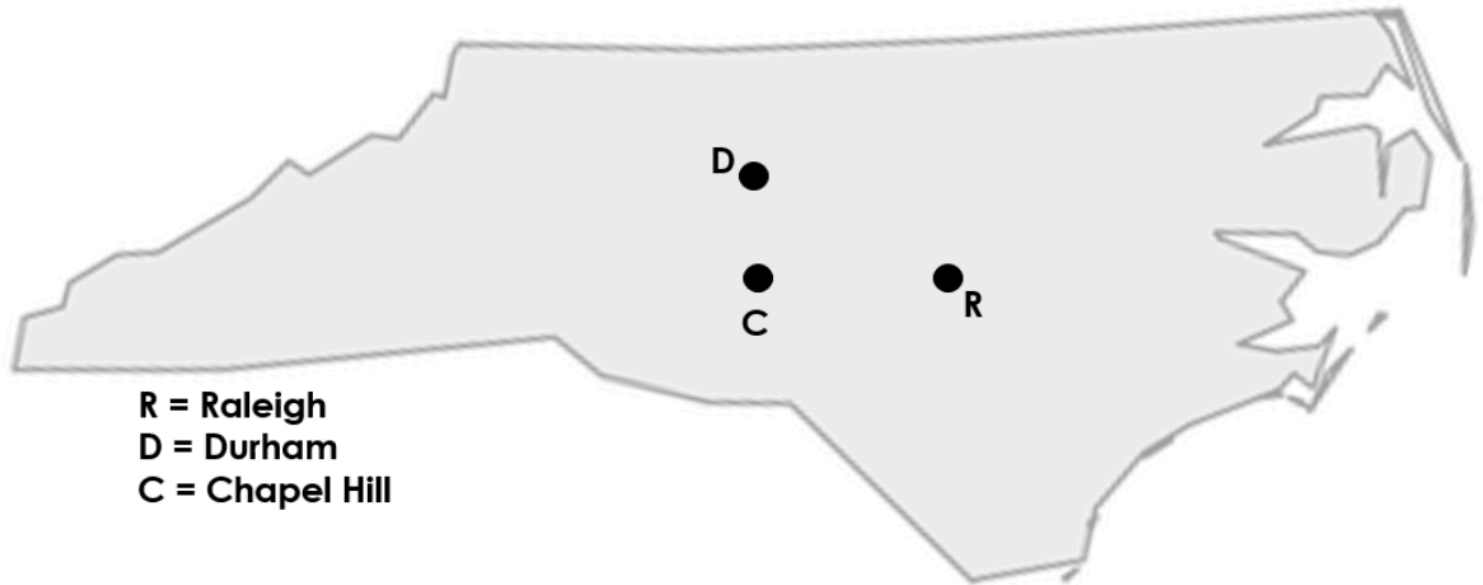
Part 2:

Write a few sentences to explain the differences between line segments, rays, and lines to others working at the mapping company.

Math Challenge Activity 2

North Carolina D.O.T.

The North Carolina Department of Transportation (D.O.T.) is working on improving the roads in our state. The map below shows three of our major cities, which make up Research Triangle Park. Help the NC DOT plan for a new highway system by answering the questions below.



Part 1:

- On the map, draw three highways to connect the 3 cities. These highways should include:
 - 1 line
 - 1 line segment
 - 1 ray
- Using a point, indicate the town of New Light (N), so that the road between D and N is perpendicular to the road between R and N. Indicate these roads as lines.
- Using points, indicate two more towns (A and B) on the map. Connect them to each other with a line, making sure that it is parallel to another highway you have already drawn.

Part 2:

The NC DOT knows that there may be a need for new roads to connect towns in the future. In planning for this, should most of the roads be line segments, lines, or rays?

Math Challenge Activity 3

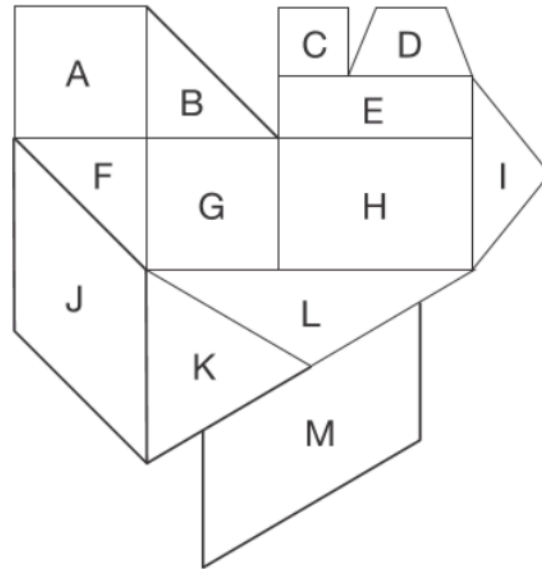
Name _____

Enrichment

16-3

Doodles

Darius made this doodle while talking on the phone. Name each shape Darius drew.



A _____

B _____

C _____

D _____

E _____

F _____

G _____

H _____

I _____

J _____

K _____

L _____

M _____

Math Challenge Activity 4

Is it a Rectangle?

Two students, DeeDee and Ralph, were sorting quadrilaterals. They disagreed where to place the square. Decide which student you agree with and justify your reasoning.



I think we should put the square in the rectangle pile. The square has four right angles, four sides, and four vertices just like the other rectangles.

I don't think we should put the square into the rectangle pile. The square has equal sides. A rectangle has two short sides and two long sides.



Math Challenge Activity 5

Symmetrical Letters

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

How do you know when a figure is symmetrical?

Use what you know about symmetry to sort the 26 capital letters into the following groups:

- 0 lines of symmetry
- 1 line of symmetry
- 2 lines of symmetry

As you sort the letters, **draw the lines of symmetry in red.**

0 lines of symmetry	1 line of symmetry	2 lines of symmetry

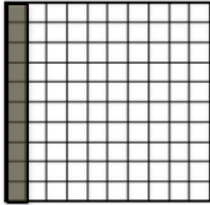
Math Challenge Activity 6



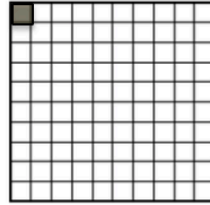
The Candy Company

The candy company is boxing up chocolates. A candy bar fills $\frac{1}{10}$ of a box.
A single piece of chocolate fills $\frac{1}{100}$ of a box.

A Candy Bar

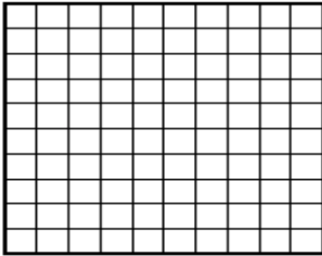


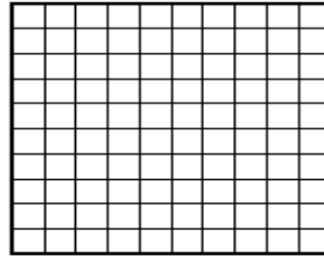
A Single Piece of Chocolate

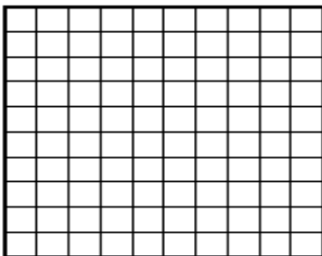


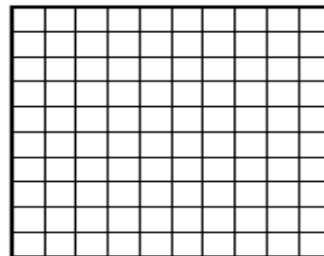
To pack an order, the candy company fills $\frac{87}{100}$ of a box.

How many candy bars and how many single pieces of chocolate might they include? Find at least 3 solutions.









Math Challenge Activity 7

Is the Tire Full Yet?



Part 1:

You are about to go on vacation with your family. Your tire is $\frac{78}{100}$ full of air.

- A) If you add air so that it 0.9 full, what fraction of the tire did you just fill with air?
- B) What fraction (and decimal) of the tire still needs to be filled with air?

Part 2:

Write an explanation explaining how you worked with equivalent fractions and decimals to solve this task.

Math Challenge Activity 8

Who Jumped Farther?



Tom, Steve, and Gio each jump in a jumping contest. They measure their jumps and then discuss who jumped farther.

Tom said, "I jumped 1 and 34 hundredths of a meter."

Steve said, "I jumped 1 and 43 hundredths of a meter."

Gio said, "I jumped 1 and 4 tenths of a meter."

Part 1:

For each of the following, model using decimal grids and write a comparison statement using $>$, $<$, or $=$.

A) Which boy jumped farther between Tom and Steve? How do you know?

B) Which boy jumped farther between Tom and Gio? How do you know?

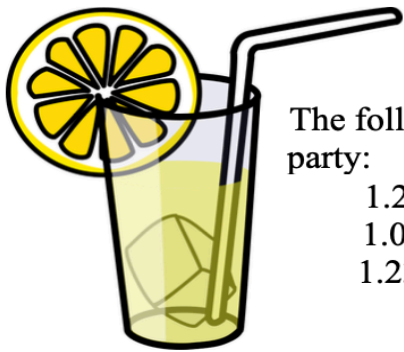
C) Which boy jumped farther between Steve and Gio? How do you know?

Part 2:

A) Mitch jumped a distance between Steve and Gio. How far could he have jumped? How do you know?

B) Alex jumped a distance between Tom and Gio. How far could he have jumped? How do you know?

Math Challenge Activity 9



Making Punch

The following ingredients are needed to make punch for a party:

1.2 Liters of Ginger Ale

1.02 Liters of Sprite

1.23 Liters of Fruit Juice

Part 1: Shade in the decimal grid to represent each ingredient.

Part 2: Compare the amounts.

Do you need more Ginger Ale or Sprite? Explain your reasoning.

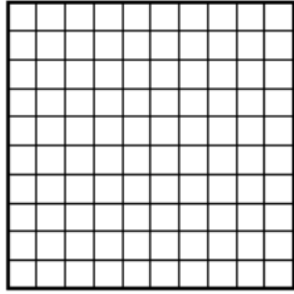
Do you need more Ginger Ale or Fruit Juice? Explain your reasoning.

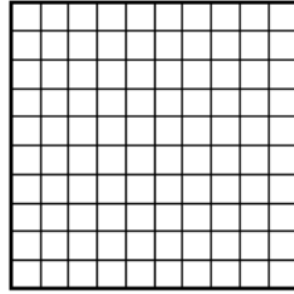
Do you need more Sprite or Fruit Juice? Explain your reasoning.

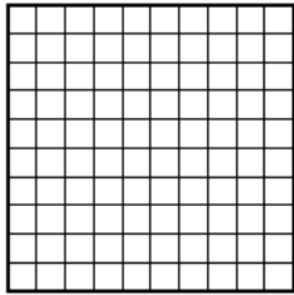
Part 3:

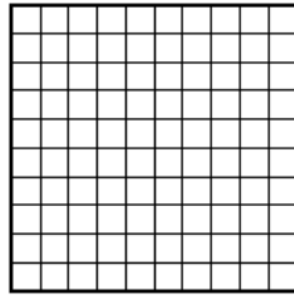
For a different recipe, frozen yogurt can be added. The amount of frozen yogurt is between the amount of Ginger Ale and Fruit Juice. How much frozen yogurt is needed? Explain how you found your answer.

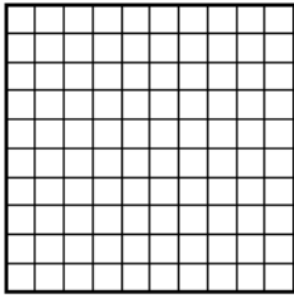
Math Challenge Activity 9

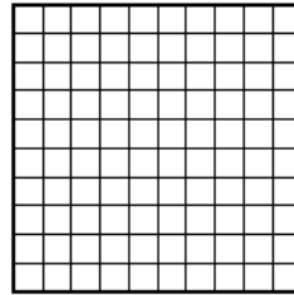










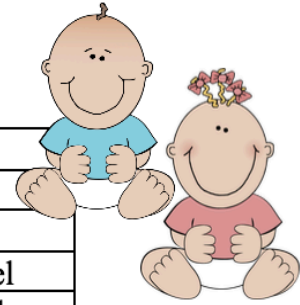


Math Challenge Activity 10

Baby Weights

Using the table below, answer the following questions:

Baby	Gender	Weight
Samuel	Boy	3 and $\frac{4}{10}$ kg
Nicole	Girl	3 and $\frac{57}{100}$ kg
TJ	Boy	1 and $\frac{3}{4}$ kg heavier than Samuel
Tyrette	Girl	1 and $\frac{5}{10}$ kg heavier than Nicole



Part 1:

What is the weight of each baby in grams?

Part 2:

What is the difference between the combined weight of the girls and the combined weight of the boys?

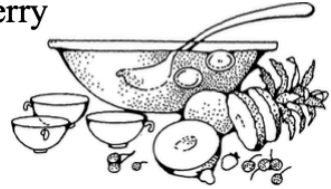
Part 3:

Explain how you converted the baby weights from kilograms to grams.

Math Challenge Activity 11

Birthday Punch

Diego was making punch for his birthday party. He mixed 3.25 liters of ginger ale, 750 mL of pineapple juice, and 675 mL of cranberry juice in a punch bowl.



Part One:

How much total punch did Diego make in milliliters?

Part Two:

If the punch bowl that Diego is using holds 6 liters, could he add 1.5 liters of orange juice to his punch recipe? Explain your reasoning.

Math Challenge Activity 12

Raleigh Field Trip

The fourth grade students at Garden Grove Elementary are taking a field trip to the capital area in Raleigh, North Carolina. While there, they will visit four attractions and have lunch. Below is the schedule for their trip.



Attraction	Arrive	Leave
NC Legislative Building	8:30 am	10:05 am
NC Museum of History	10:15 am	
Lunch		12:45 pm
NC State Capitol	12:55 pm	2:05 pm
NC Museum of Natural Sciences	2:15 pm	3:35 pm

Part One:

If the students spent 1 hour and 55 minutes in the NC Museum of History, what time did they leave?

Part Two:

The students need to arrive at the lunch area 3 hours and 15 minutes before they leave the NC Museum of Natural Sciences, what time should they arrive at the lunch area?

Part Three:

How long did the students at Garden Grove Elementary spend in Raleigh, NC?

Math Challenge Activity 13

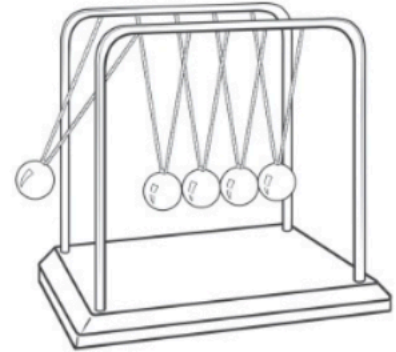
Name _____

enVision® STEM
Activity
12-4

Newton's Cradle

Did You Know? The figure to the right is known as Newton's Cradle. It is a series of identical steel balls suspended from a frame. The steel balls are carefully aligned so that each one is just touching the steel balls on either side.

When the ball on one end is raised and released allowing it to swing, it collides with the next ball. The energy from the first ball is transferred through each of the steel balls so that the last ball will swing with the same speed as the first ball that was released.



The fourth-grade class performed an experiment using Newton's Cradle. Each group of students lifted the first ball to a different height and then recorded their observations. The table shows the starting heights of the first ball for each group.

Height	A	B	C	D	E
Decimeters (dm)	0.33	$\frac{3}{10}$	$\frac{44}{100}$	0.36	$\frac{39}{100}$

- 1 Write the height of the first ball for Group A as a fraction.

- 2 Write the height of the first ball for Group B as a decimal.

- 3 What is the combined height of the lift of the first ball for Group B and Group C? Show your work.

- 4 **Extension** Michael says that the combined height of the lift of the first ball for Group D and Group E is $\frac{75}{10}$. Do you agree? Explain.

Math Challenge Activity 14

Name _____

enVision®STEM
Activity
8-5

Color Vision

Did You Know? A majority of humans can see all colors of the visible-light spectrum. These colors include violet, indigo, blue, green, yellow, orange, and red. Some animals can only see a portion of the visible-light spectrum. For example, rabbits are believed to see only blues and greens.

Color	Correctly Selected
Violet	$\frac{1}{3}$
Blue	$\frac{10}{12}$
Green	$\frac{7}{12}$
Yellow	$\frac{3}{5}$
Orange	$\frac{2}{5}$
Red	$\frac{1}{6}$

In order to determine which colors the animal can see, scientists show the animal three panels. Two of the panels are black and one panel is one color from the visible-light spectrum. If the animal touches the colored panel, then a piece of food is provided. The table above shows the results of a color-spectrum experiment for a squirrel. The **Correctly Selected** column indicates that the squirrel correctly identified the color panel that fraction of the 12 times it was tested. For example, the squirrel correctly identified the violet panel $\frac{1}{3}$ of the times it was tested.

- 1 Use a benchmark fraction to compare the fraction of times the squirrel correctly selected violet to the fraction of times the squirrel correctly selected red.

- 2 Use a benchmark fraction to compare the fraction of times the squirrel correctly selected green to the fraction of times the squirrel correctly selected red.

- 3 Use a benchmark fraction to compare the fraction of times the squirrel correctly selected violet to the fraction of times the squirrel correctly selected blue.

- 4 **Extension** An animal is believed to see a color when it correctly selects the colored panel greater than $\frac{1}{2}$ of the times it is tested. Which two colors is the squirrel believed to see?

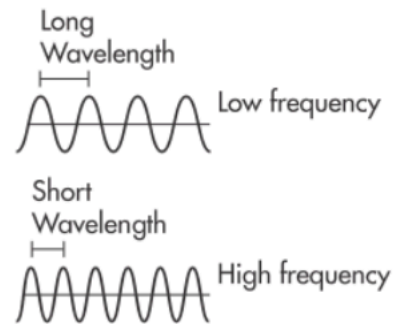
Math Challenge Activity 15

Name _____

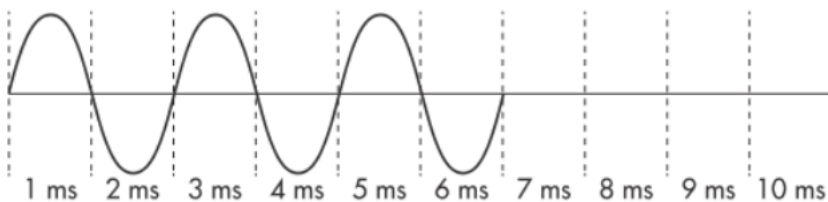
enVision® STEM
Activity
14-3

Sound Waves

Did You Know? Sound is a wave that is created by vibrating objects. Place your hand under your jaw on the side of your neck and hum. You can feel the vibration of your vocal cords as air passes through to create sound. The diagram at the right shows two different sound waves. The top one shows a longer wavelength, which corresponds to a lower pitch. The bottom one shows a shorter wavelength, which corresponds to a higher pitch.



Look at the sound waves below. Each section represents 1 millisecond. The wavelengths can be described as 'U-shaped.'



- 1 The sound wave is similar to a repeating pattern. Describe the sound wave pattern.

- 2 Complete the pattern through 10 milliseconds.

- 3 What shape will be at the 25th millisecond?

- 4 **Extension** Patrick says since 85 is odd, the shape will be an upside-down U-shaped curve during the 85th millisecond. Do you agree? Explain.
