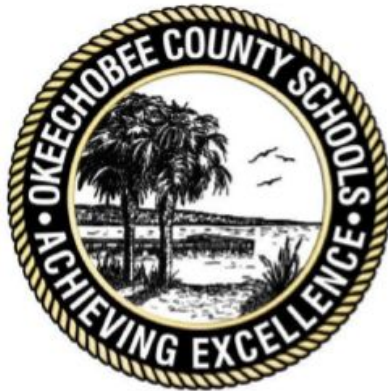


Sixth Grade

ELA & Mathematics

Week 2 Packet



First & Last Name: _____

Teacher: _____

Grade: _____

School: _____

Reading

Read the passage. Then answer the questions that follow.

Worth More Than Gold

by Amy Charles

1 Every summer, millions of acres of America are green with growing crops. American farmers grow wheat, soybeans, corn, and other foodstuffs, and it's an impressive sight. There's also something eerie about it, though. Each field grows an army of identical plants. Every cornstalk in the cornfield is exactly like its neighbors, with the same DNA. That means it has the same instructions for building itself. This kind of field is called a monoculture, *mono* meaning "one."

2 This is of some benefit to the farmer because each plant grows about as well as the next. The farmer is in trouble, however, if a pest or disease strikes. If one cornstalk in the field can be killed easily by an attacker, so can all the rest. This was a serious problem in Ireland long ago. The Irish potato famine in 1845 was caused by a fungus that is extremely harmful to potatoes. Because all the potatoes in Ireland at the time were so similar, most of the potato crop died. And because potatoes were the main food in Ireland at the time, people began to starve. The situation became even worse because the fungus stayed in the ground. When new potatoes were planted, the fungus killed them, too. Within 25 years, nearly half of Ireland's people had starved or moved away.

3 Why was the famine so destructive in Ireland? One problem was that we didn't have the science to know what had gone wrong; people didn't know about DNA. DNA tells the cell how to take atoms, the smallest pieces of matter, and make from them the smallest pieces of the body. These pieces, called molecules, are too small for us to see, but once they're made, the molecules work together to grow the body and keep it alive.

4 Some molecules are great at fighting disease. Unfortunately for those desperate farmers in Ireland, none of the potatoes they planted, year after year, could make the right molecules. Because of this, the potatoes weren't protected from the fungus.

5 Scientists now know how to solve that problem, and the answer lies in how DNA works. DNA is a molecule, too—a long molecule at the center of the cell. The cell can read DNA like a cookbook, finding recipes that tell how to make other molecules that it needs. We call the recipe for each molecule a gene. If you want molecules that will fight potato fungus, you need the genes for making those molecules. If a potato doesn't have those genes, that potato can't fight the fungus. One way to solve the problem is to give the potato the right genes. To find those genes, we look in other strains, or kinds, of potatoes. We look for a potato that can fight off the fungus. That potato has the genes for making the right molecules. Then all we have to do is put that plant's genes into the unprotected potato plants. And, roughly speaking, we know how to do that.

Go On

6 Here's the big question, though: Where do you find that super-strong potato when a fungus is attacking? The answer comes from scientists and farmers around the world who have built gene banks to keep our food supply safe. All over the world, scientists and farmers collect seeds from different crop plants—corn, potatoes, alfalfa, wheat, oats, rice, and every other grain, fruit, and vegetable; they collect them all. They record what diseases and pests each plant can fight off, and they record which plants can live well in certain conditions, such as limited water, high heat, floods, or poor soil. Then they store seeds from each plant in a safe place, a gene bank.

7 Now, when a pest attacks a wheat crop in Oklahoma, scientists don't wait. They look in gene banks for a strain of wheat that fights that pest well. They can use that wheat's genes to create a new wheat plant that will grow well in Oklahoma and will also fight off the pest.

8 There are more than 1,600 plant gene banks around the world, and one of the most famous gene banks is in Norway. It's an abandoned coal mine north of the Arctic Circle, in a group of islands called Svalbard. This bank stores backup copies of seeds that are in other banks around the world. The Svalbard bank now has copies of over half a million seeds. If crops are in trouble, what's in those vaults is worth more than gold.

9 That's the extent to which scientists and farmers around the world go to protect those crops growing all across the Midwest—and Brazil, and Russia, and China. Thanks to their work, the food supply for seven billion people is safer than it ever was before.

1 Which sentence from the passage **best** supports the idea that growing monocultures can be risky?

- A** "American farmers grow wheat, soybeans, corn, and other foodstuffs, and it's an impressive sight."
- B** "Every cornstalk in the cornfield is exactly like its neighbors, with the same DNA."
- C** "If one cornstalk in the field can be killed easily by an attacker, so can all the rest."
- D** "One problem was that we didn't have the science to know what had gone wrong; people didn't know about DNA."
- E** "The cell can read DNA like a cookbook, finding recipes that tell how to make other molecules that it needs."
- F** "They look in gene banks for a strain of wheat that fights that pest well."

The following question has two parts. First, answer part A. Then, answer part B.

Part A

What is one main idea of "Worth More Than Gold"?

- A** Gene banks protect the world's food supply.
- B** People have studied DNA for hundreds of years.
- C** Monocultures are often destroyed by pests.
- D** The Irish potato famine began in 1845.

Part B

Which sentence from the article **best** supports the answer to part A?

- A** "That means it has the same instructions for building itself."
- B** "Because all the potatoes in Ireland at the time were so similar, most of the potato crop died."
- C** "If you want molecules that will fight potato fungus, you need the genes for making those molecules."
- D** "If crops are in trouble, what's in those vaults is worth more than gold."

Which of the following would **not** belong in a summary of the passage?

- A** The Irish potato famine in the 1800s was made worse because people at the time did not know about DNA.
- B** To get molecules that will fight a potato fungus, you need to have the right materials.
- C** One solution to possible problems caused by monocultures lies in the field of genetics, in plant DNA.
- D** To protect the world's crops, a gene bank in Svalbard, Norway, has backup copies of more than half a million seeds.

4

What is the **main** purpose of paragraph 5?

- A** It introduces the topic of worldwide famine.
- B** It provides a definition of the key term "fungus."
- C** It shows how genes can solve the problem of crop disease.
- D** It poses and answers logical questions about DNA and genes.

5

Read the statement below.

The author of this passage has great respect for the scientists and farmers who have made gene banks possible.

How can you tell this statement is true? Use **two** details from the text to support your answer.

Read the passage. Then answer the questions that follow.

The Scent of Memory

by Christopher Ford

1 Scientists say that, more than sight, sound, touch, or taste, the sense of smell can trigger memory. For me, the smell of wood smoke always makes me think of autumn. One whiff, and I am twelve, at home on my family's farm, snuggled in bed as the smell of wood smoke snakes through my slightly-open bedroom window.

2 It is early autumn, and all around us, our neighbors are harvesting apples. We have been eating apple pie, applesauce, apple cakes, even apple stew. My family does not own an orchard, but we rejoice in the benefits of the harvest and our special neighbors.

3 It's Saturday morning. My father wakes me gently, saying, "Let's go, Chris, it's time." I stand up stiffly, shivering, the chill draft hurrying me over to pull on jeans and a shirt, my favorite old sweatshirt, and my warmest socks.

4 My mom is already up and at the stove, coffee cup in one hand, stirring a huge pot of oatmeal with the other. It's not my favorite breakfast in the world, but on a morning like this, with hard work ahead of me, I know I'll appreciate it later.

5 "Good stuff, Lynn," my dad says as he gives my mom a kiss on one cheek. He spoons out a huge bowl for himself and then one for me. Even with raisins and brown sugar, it's hard to swallow.

6 "Eat up, Chris," my dad teases. "It'll stick to your ribs!"

7 He and my mom talk as they drink their coffee and eat their breakfast. It's all bills and money talk, so I tune out, watching the leaves swirl outside. My little sister pads in after a while, all pink fluff and fuzzy curls. Even I have to admit she's kind of adorable. She crawls silently into my dad's lap and he nestles her right into the crook of his arm, as if the shape of his arm was made to fit the curve of her back. He manages this maneuver while continuing to sip his coffee and talk to my mom. After we finish breakfast, we say goodbye to the two of them and head out.

8 It is just past dawn, and in the east, a smattering of lacy clouds drifts slowly across the streaks of pink, orange, and red that forecast a cold day. The air smells lightly of wood smoke from the farmers who are burning brush in the nearby orchards. Crunch, crunch, crunch, my feet push easily through the carpet of fallen leaves on the way to the barn. The colors are outrageous: orange, red, yellow, and even greens that are bright and playful. I can't resist kicking a few piles into the air to watch them swirl.

9 In the barn, it's warmer, with animal breath and body heat creating a hazy fog. I scratch our old goat, Ginger, behind her ears, pat the orange tabby, Huck, and say good morning to Jessie and her three pups. They are still squirmy and warm, snuggling in for breakfast.

10 We feed the animals and then load up the truck with everything we need: axes, clippers, small saw, twine, gloves. Our neighbor has trees down and has offered the wood to anyone who wants to come and chop it up. With the winter weather we're expecting, we can use all the firewood he can spare. The more we can get by on fireplace heat this winter, the better.

Go On

- 11 “Woo-hoo, you feel that, Chris? Fall is here for sure!” my dad rubs his hands together and starts the truck.
- 12 I nod in agreement and reach up to tuck my nose into my sweatshirt collar, then my hands go into my sweatshirt pocket.
- 13 Dad laughs. “Don’t worry. In no time at all, you’ll be sweating.”
- 14 At Mr. Arnold’s place, there are three trees down: two apple trees and one huge old oak that got dragged down when the apples blew down in our first storm of the season. The holes their roots left behind are enormous, and I want to crawl into them and explore, but Dad has other plans for me.
- 15 “Okay, Chris, we’re going to start with the lower branches, here. We’ll strip the branches and work our way up the tree, then we can chop up the trunk.” We dig in, Dad correcting my axe strokes from time to time, interrupting my swing to show me where to hit the branch just right so that I’ll get a cleaner cut. He was right: in no time I’m sweating enough to take my sweatshirt off, but my breath comes out of my mouth steaming in the frosty air.
- 16 By noon we’ve stripped off the lower branches and have the truck full of wood, about a cord’s worth. We’ll need about four more to get through the winter, but we thank Mr. Arnold and promise to be back tomorrow.
- 17 On the ride home, I nearly fall asleep, so my dad reaches over and gives me a playful punch in the arm. “That went twice as fast today with your help, son. You’re getting pretty strong,” he says and I feel positively mighty.
- 18 I watch the orchards as we pass. There are so many shades of orange and red that I can’t possibly record them all, so I breathe deep and flood my nose to best recall the memories of this day.

6

The following question has two parts. First, answer part A. Then, answer part B.

Part A

What is one theme of "The Scent of Memory"?

- A** Scientists have proven that smell is an important scent.
- B** The harvest is an unpleasant time with big rewards.
- C** Life on a farm is better than life elsewhere.
- D** Thinking about the past is a powerful source of emotion.

Part B

Which sentence from the "The Scent of Memory" **best** supports the answer to part A?

- A** "Scientists say that, more than sight, sound, touch, or taste, the sense of smell can trigger memory."
- B** "For me, the smell of wood smoke always makes me think of autumn."
- C** "On the ride home, I nearly fall asleep, so my dad reaches over and gives me a playful punch in the arm."
- D** "There are so many shades of orange and red that I can't possibly record them all, so I breathe deep and flood my nose to best recall the memories of this day."

7

Select **three** sentences that should be included in a summary of "The Scent of Memory."

- A** A boy describes the many pleasures in his life on a farm.
- B** Thinking about the smell of wood smoke, a man recalls an autumn day in his youth.
- C** His best memories are of the barn, the goat, the cat, the dog, and chopping wood.
- D** His mother and sister stay at home, while he and his father share a harvest with neighbors.
- E** He wakes up early and has breakfast with his family before heading out with his father.
- F** He and his father feed the animals in the barn and then chop wood on a neighbor's farm.
- G** He sweats from working so hard, but his breath still looks like steam in the cold air.

Go On

8

Read this sentence from paragraph 5 of "The Scent of Memory."

Even with raisins and brown sugar, it's hard to swallow.

What does the phrase "hard to swallow" suggest about the narrator?

- A** He has a sore throat.
- B** He does not like oatmeal.
- C** He prefers plain oatmeal.
- D** He is not hungry.

9

In paragraph 17 of "The Scent of Memory," why does the narrator **most likely** say that he feels "positively mighty"?

- A** He recognizes that he has grown taller in the past year.
- B** He believes that his father would not have been able to do the work himself.
- C** He is pleased that his father recognizes his helpfulness and ability.
- D** He has accomplished something he thought was impossible.

10

How does the author develop the narrator's point of view in "The Scent of Memory"?

- A** by having the narrator recall a specific day from his childhood
- B** by having the narrator use only the sense of smell to describe a memory
- C** by having the narrator alternate between past and present to show the past's influence
- D** by having the narrator reflect on how his life has changed a great deal since his youth

Read the following poem about October:

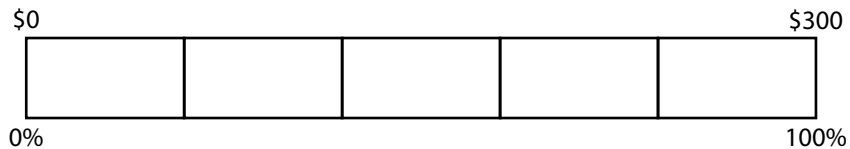
October is the lovely girl who draws her sisters' envy:
Mild in temper, fair of heart, and much admired by many.
Her sisters dress more modestly, but she is always bold,
clothed in red and violet, crowned with green and gold.

One theme of "The Scent of Memory" is that autumn is a special time of year with plentiful harvests and beautiful colors. The poem also shares this theme. Compare and contrast how "The Scent of Memory" and the poem present the theme stated above. Use details from the texts to support your answer.

Go On

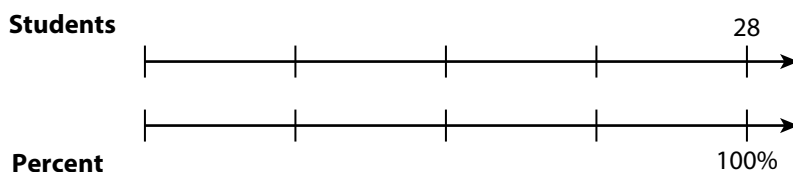
Understanding Percents

- 1 Emma is saving for a bicycle that costs \$300. This month, she reaches 60% of her goal. Label and shade the bar model to show her progress. How much money has she saved? Explain.



- 2 Justin needs to make 80 illustrations for an art book. He has made 40% of the illustrations. Make a bar model to show his progress. How many illustrations does he still need to make? Explain.

- 3 In a classroom of 28 students, 75% of the students have met their reading goal. Label the double number line. How many students met their reading goal? What fraction of 28 students met their reading goal? Explain.



Finding a Percent of a Quantity

► Find the percent of the number. The answers are mixed up at the bottom of the page. Cross out the answers as you complete the problems.

1 40% of 80

2 25% of 60

3 10% of 90

4 50% of 70

5 80% of 500

6 75% of 80

7 90% of 250

8 65% of 400

9 85% of 800

10 55% of 140

11 45% of 160

12 95% of 180

13 70% of 720

14 15% of 220

15 65% of 200

Answers

9	77	504	72	225
260	171	33	60	35
400	32	130	680	15

Finding the Whole

► Solve each problem.

1 25% of what number is 13?

2 50% of what number is 140?

3 10% of what number is 60?

4 5% of what number is 12?

5 30% of what number is 72?

6 70% of what number is 56?

7 95% of what number is 57?

8 75% of what number is 66?

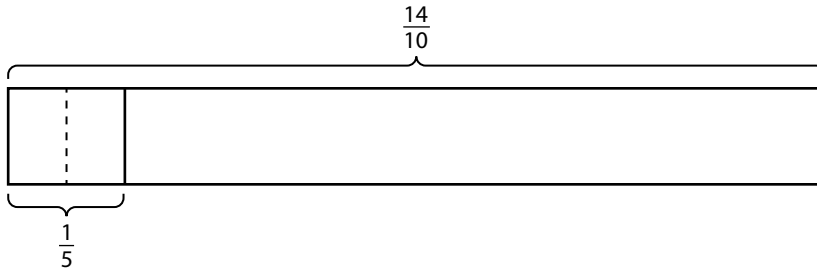
9 85% of what number is 102?

10 45% of what number is 63?

11 Explain how you could use 25% of a number to find the number.

Understanding Division with Fractions

- 1 Complete the bar model to show how many $\frac{1}{5}$ s make $\frac{14}{10}$.

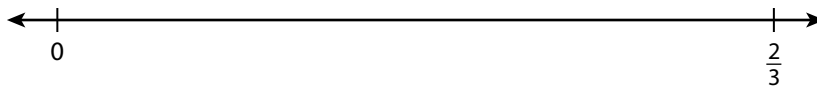


How many $\frac{1}{5}$ s make $\frac{14}{10}$? _____

Complete the equations.

$$\frac{14}{10} \div \underline{\hspace{2cm}} = 7 \qquad \underline{\hspace{2cm}} \cdot \frac{1}{5} = \frac{14}{10}$$

- 2 Use the number line to show $\frac{2}{3} \div \frac{1}{12}$.



What is the quotient? _____

- 3 Which type of model do you like better, the bar model or the number line? Explain.

Using Multiplication to Divide by a Fraction

► Write the missing digits in the boxes to make each equation true.

$$1 \quad \frac{1}{2} \div \frac{2}{3} = \frac{1}{2} \times \frac{\boxed{}}{2} = \frac{3}{\boxed{}}$$

$$2 \quad \frac{4}{5} \div \frac{1}{4} = \frac{4}{5} \times \frac{4}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$$

$$3 \quad \frac{2}{5} \div \frac{3}{4} = \frac{2}{5} \times \frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{15}$$

$$4 \quad \frac{5}{6} \div \frac{5}{12} = \frac{5}{6} \times \frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{30} = 2$$

$$5 \quad \frac{3}{4} \div \frac{5}{7} = \frac{3}{4} \times \frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$$

$$6 \quad 1\frac{1}{3} \div \frac{3}{7} = \frac{\boxed{}}{3} \times \frac{7}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$$

$$7 \quad 4\frac{\boxed{}}{2} \div \frac{2}{5} = \frac{9}{2} \times \frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$$

$$8 \quad 3\frac{1}{2} \div \frac{\boxed{}}{8} = \frac{7}{\boxed{}} \times \frac{8}{7} = \frac{\boxed{}}{\boxed{}} = \boxed{}$$

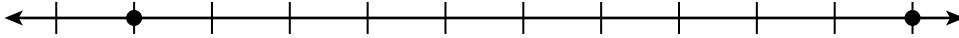
$$9 \quad 1\frac{2}{3} \div 2\frac{1}{4} = \frac{\boxed{}}{3} \times \frac{\boxed{}}{9} = \frac{\boxed{}}{\boxed{}}$$

$$10 \quad 3\frac{3}{5} \div 1\frac{3}{\boxed{}} = \frac{18}{\boxed{}} \times \frac{4}{7} = \frac{\boxed{}}{\boxed{}}$$

11 Write a word problem that could be solved by the equation in problem 8.

Understanding Positive and Negative Numbers

- 1 The points on the number line are opposite numbers. The tick marks represent intervals of 1 unit.



Label 0 at the correct spot on the number line.

Label the point plotted to the right of 0.

Label the point plotted to the left of 0.

- 2 Use this list of numbers to answer the following questions:

$0, 4, -2, \frac{2}{3}, -1.8, 16, 3.2, -\frac{5}{4}$

Which numbers are rational numbers that are not integers?

Of the remaining numbers, which are integers but not whole numbers?

Of the remaining numbers, which are whole numbers?

- 3 Use the following terms to complete the following statements: *integers*, *rational numbers*, and *whole numbers*. Use each term only once.

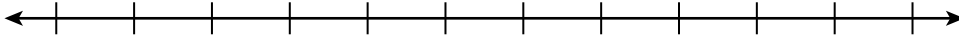
The counting numbers and zero are _____.

The counting numbers and their opposites, along with zero, are _____.

Integers and the decimal equivalents of fractions are _____.

Understanding Positive and Negative Numbers *continued*

- 4 Plot and label 4, -3 , 1, and their opposites on the number line.



- 5 If several points are graphed on a number line, is the point that is the farthest from 0 always the greatest? Explain.

Comparing Positive and Negative Numbers

► Write $<$ or $>$ to make each comparison true.

1 $7 \bigcirc 10$

2 $7 \bigcirc -10$

3 $-7 \bigcirc -10$

4 $\frac{2}{3} \bigcirc -1\frac{2}{3}$

5 $-50 \bigcirc 0.3$

6 $-12 \bigcirc -35$

7 $-5 \bigcirc 4.5$

8 $\frac{1}{2} \bigcirc -80$

9 $-\frac{1}{4} \bigcirc -1.4$

► Write each set of numbers in order from least to greatest.

10 $5, -2, -1, 4$

11 $3.4, 7, -3.5, -3$

12 $-2.1, -2, -3, 0$

13 $-\frac{3}{4}, -2, -\frac{1}{4}, 2$

14 $5, 0, -6, -0.1$

15 $7.5, -200, -1.5, -8$

16 $\frac{1}{2}, -\frac{1}{2}, -\frac{1}{3}, \frac{1}{3}$

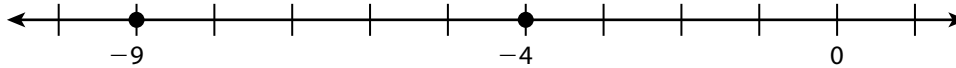
17 $1.2, -2.1, -21, 0.12$

18 $0.1, -0.2, 0.55, -0.31$

19 Describe how to determine which of two negative numbers is greater.
Give an example.

Understanding Absolute Value

- 1 Answer the questions about this number line.



Which is greater, -9 or -4 ? Explain.

Which is greater, $|-9|$ or $|-4|$? Explain.

- 2 A football team tries to move the ball forward as many yards as possible on each play, but sometimes they end up behind where they started. The distances, in yards, that a team moves on its first five plays are 2, -1 , 4, 3, and -5 . A positive number indicates moving the ball forward, and a negative number indicates moving the ball backward.

Which number in the list is the greatest?

What is a better question to ask to find out which play went the farthest from where the team started?

The coach considers any play that moves the team more than 4 yards from where they started a “big play.” Which play(s) are big plays?

- 3 When does it make sense to compare the absolute values of numbers rather than the numbers themselves?

Understanding the Four-Quadrant Coordinate Plane

- For problems 1–6, plot and label each point in the coordinate plane. Name the quadrant or axis where the point is located.

1 $A(-3, -2)$

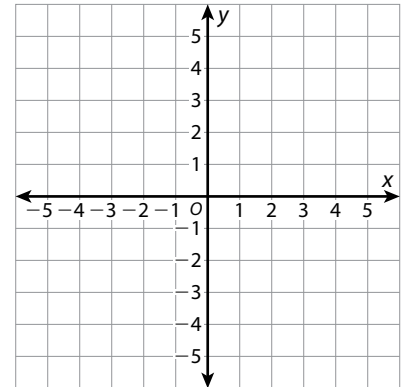
2 $B(4, -4)$

3 $C(2, 3)$

4 $D(-2, 4)$

5 $E(3, -3)$

6 $F(4, 0)$



- 7 If point E above is reflected across the x -axis, what would be the coordinates of the reflection? Explain.
- 8 Imagine that one of the points given in problems 1–6 has been reflected. The reflection is in Quadrant II. What are the possible coordinates of the reflected point? Explain.
- 9 Bradley says that if point B is reflected across the y -axis and its reflection is then reflected across the x -axis, the result is point D . Is Bradley correct? Explain.