Packet #4

LEARN

A NETWORK *of* COLLEGE PREP ELEMENTARY SCHOOLS

Grade 6

This student work packet is for Weeks 7 – 9 of home learning based on your District's School Schedule. Students should be completing this packet, along with completing lessons on their math/reading online programs daily. We will continue to work on providing online learning options for as long as school is not in session. Please continue to reach out to your child's teacher if you have any questions regarding this packet or any online programs.

Chicago Public Library Access

**Chicago residents only*

Don't Have a Chicago Public Library Card ** Children under 14 must have a guardian apply with them*	Already have a Chicago Public Library card
1.) Apply for an eCard at https://tinyurl.com/LEARNCPLcard 2.) Access eBooks, audible books, and other online resources 3.) Check out other resources at https://chipublib.overdrive.com/	1.) Go to: https://www.chipublib.org/ 2.) Select: "Browse" 3.) Choose "eBooks" under "By Format" 4.) Check out other resources at https://chipublib.overdrive.com/

North Chicago Public Library Access

http://www.ncplibrary.org/

Select: Kid's Corner

Select: TumbleBook Library

Waukegan Public Library Access

https://www.waukeganpl.org/temporary-library-card/

1.) Complete the temporary library card form

2.) Access online resources at: https://www.waukeganpl.org/eresources/

_____

(Student Name)

LEARN Charter Schools Reading Log

Name:_____Week Of: _____

Directions: Record the amount of time you read each day.

At home reading goal:

- I will read at least 45 minutes at home five times a week.

Day	Date	Title	Genre	Page Started	Page Finished	Total Time

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Weekly At-Home Reading Tally

Day	Number of Minutes
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	
Total Minutes This Week	

Teacher Initials for Meeting Weekly Goal: _____

☐ Your Weekly Goal is **225** minutes. Did you meet your goal? _____

☐ Did you exceed your goal? _____

If yes, by how many minutes? _____

☐ What is your favorite book you read this week? Why was it your favorite?

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Practice Using the Distributive Property to Write Equivalent Expressions

➤ **Study the Example showing how to use the distributive property to rewrite a product. Then solve problems 1–6.**

Example

Rewrite the expression $3(7a - 4b)$ as a difference.

You can use the distributive property to rewrite the product.

Multiply $7a$ and $4b$ by 3.	$3(7a - 4b)$
	$3 \cdot 7a - 3 \cdot 4b$
Use the associative property.	$(3 \cdot 7)a - (3 \cdot 4)b$
Multiply inside the parentheses.	$21a - 12b$

The difference $21a - 12b$ is equivalent to $3(7a - 4b)$.

1. You use the associative property of multiplication to change how factors are grouped. In the Example, why are the factors of the term $3 \cdot 7a$ regrouped as $(3 \cdot 7)a$?

2. Jesse says that the expressions $7(2x + 9)$ and $14x + 9$ are equivalent. Do you agree with Jesse? Explain.

3. Use the greatest common factor of 84 and 48 to write the sum $84 + 48$ as a product. Write a whole number in each blank.

$84 + 48$

_____ $\times (7 +$ _____$)$

Vocabulary

distributive property
for any numbers a, b, and c, $a(b + c) = ab + ac$.

equivalent expressions
two or more expressions in different forms that always name the same value.

greatest common factor (GCF)
the greatest factor two or more numbers have in common.

Blue Lightning

by A.P. Raj

Sondra loved cars more than anything else. When she was a kid, she begged her dad to let her join the Boy Scouts, just so she could build a car to race in the Pinewood Derby. Her car was a jagged spike of pinewood painted a glittery, electric shade of blue. She named that car "Blue Lightning."

Blue Lightning didn't win the Pinewood Derby, but it did come in 2nd place. Sondra had been so proud, and her dad was proud of her, too. She had doodled drawings of Blue Lightning all over her notebooks. She sometimes dreamt that Blue Lightning became a real car sitting out in her driveway, and she would get in and take it out for a drive. Even though she was too young, and had never driven a car, in those dreams she always knew exactly what to do. Driving Blue Lightning made her feel powerful and free.

Then one lazy Saturday in spring, Sondra was flipping through a car magazine she liked, when an ad caught her eye:

AMATEUR GO-KART RACERS, START YOUR ENGINES!

Do you LOVE cars? Do you have a passion for racing? Build your very own go-Kart and enter the Go-Go Derby! All experience levels welcome! Racers ages 13 and up may enter with parental supervision.

Sondra had just turned 13 that fall. She screamed with delight and immediately ran to her dad to beg him for permission to enter. She was ready to build Blue Lightning, Mark II.

Her dad read the magazine ad and frowned.

"I don't know, Sondra," he said. "Building a car for the Pinewood Derby was one thing, but a go-kart? That's a whole new level. It sounds kind of dangerous."

"Not if you help me!" she said.

"That's true. It could be a fun project. And we'd both learn a lot," he said.

"Exactly! So we can do it?" Sondra said.

"Well, I'll ask your mother what she thinks. And I want to know that you're serious about it. So how about this: you do some research into how we're actually going to build this thing, and come back to me in a week with a design."

Sondra jumped with joy. "You got it, Dad!" she said. She gave him a big hug and a kiss on the cheek, and went straight to her computer to start researching go-kart designs.

In a week, Sondra had a notebook full of drawings and notes about her project, from spending hours after school researching, thinking and planning. Blue Lightning, Mark II looked ready to go. Sondra's design was a lot like the original Blue Lightning, except instead of pinewood, it would be made of steel. And of course, it would be a real vehicle that she could drive. Thrilled at the thought of building it, Sondra brought her sketches and notes to her dad.

He put on his glasses and looked over her work, thinking. "These are some interesting ideas, honey," he said. "I see you've designed this a lot like your Pinewood Derby car from a few years ago, even down to the lightning bolt shape you love so much."

"That's right!" Sondra said, beaming.

"Well, it will certainly look unique," he said. "But how will it drive?"

"What do you mean?" Sondra asked.

"Well..." Her dad stopped to think. It seemed like he had something to say, but decided against it. "Tell you what. Instead of telling you what *I* think, why don't we build Blue Lightning, Mark II the way you've designed it?"

Sondra was a bit confused, but she wanted to build the go-kart more than anything, so she agreed.

They took a trip to the hardware store to buy all the parts they needed: a lot of metal, engines, cables, brackets, bolts and screws. They had to stop at a specialty hobbyist store to pick up the steering wheel and the materials they needed to build the steering block-the accelerator and brake pedals, and, of course, a comfy seat for Sondra to sit in. Finally, they stopped at a sporting goods store to buy a helmet and pads for her to wear when she was driving.

Back at home, they brought all their new stuff into the garage and went to work. Over two weekends of hard work, they turned Sondra's sketches and notes into a real, working go-kart. When they finally mounted the seat on Blue Lightning, Mark II, Sondra felt more proud than she had ever felt in her whole life.

"She looks great!" Sondra said. "All we have to do now is the paint job!"

"Before we do, why don't we take it for a test drive?" her dad said.

Sondra thought she heard some mischief in his voice and thought about how he had almost said something about her design, but had decided not to. What was he up to?

"Okay," she said. "Let's do it!"

So they took the second Blue Lightning out to a nearby parking lot, and Sondra took it for a spin. Her dad made sure she wore her helmet and pads, and watched her as she drove the go-kart around the lot. She noticed that when she tried to go fast, she felt a lot of resistance from the wind. When she slowed down, she didn't notice it as much.

After she had her fun, she drove back to where her dad was standing. He was smiling like he expected something from her.

"Well, that was fun!" she said. "But I think I know why you wanted me to take it for a test drive."

"Oh, do you?" he said. "Please share."

"I noticed that there was a lot of push-back when I would drive it fast," she said.

"Yes, and?"

"*And* I think it's because of the lightning bolt shape. The wind pushes in and kind of gets caught in the zigzagging part of the frame," she said.

"Very good!" her dad said.

"So, why didn't you tell me about that problem in the first place?" Sondra said. She was a little bit annoyed.

Her dad laughed. "Where's the fun in that? Didn't I ever tell you the story about teaching someone to fish?"

"'If you give a man a fish, he'll eat for a day,'" Sondra said, mimicking a very wise tone her parents used when they were teaching her lessons. "'But if you teach a man to fish, he'll eat for a lifetime.'"

"Exactly, kiddo," he said. "You may be annoyed now, but I promise, you'll thank me when you're older."

Sondra rolled her eyes. "You always say that!"

"It's always true," her dad said, laughing.

"So, now what?" she said.

"Now, we get ice cream. But after that, it's back to the drawing board for you."

Sondra smiled. "Sounds good to me. Designing is half the fun anyway!"

So Sondra went back to researching, sketching and taking notes. Her dad emailed her an article about aerodynamics: the science of how air interacts with solid objects. After she read it, she felt silly about her lightning bolt design. But her dad told her that sometimes, the only way we learn how to do something right is by doing it a few times first, and making silly mistakes along the way.

"You know who makes more mistakes than anybody?" he said. "Great inventors!"

That inspired Sondra and she worked harder than ever. Her next design wasn't shaped like a lightning bolt at all, but more like a Formula One racecar. She started to understand why they were designed the way they were.

She showed her dad her new design, and he nodded with pride. Once again, they went to work, taking apart the first go-kart they'd built and putting it back together again. When Sondra test-drove the newest Blue Lightning, it came a lot closer to living up to its name.

"What do you think, Dad?" she asked. "Do we need to go back to the drawing board again?"

"You can always make improvements on a design," he said. "But the race is in two weeks!"

So they decided that Blue Lightning, Mark II was in racing condition, and painted it with the electric blue paint Sondra loved. When the time came to race in the Go-Go Derby, Sondra wasn't worried about whether she came in first place - in her mind, she had already won, by building something better than she had ever built before.

Name: _____ **Date:** _____

1. What does Sondra build with the help of her dad?

A. a garage where her family can keep its cars

B. a go-kart named Blue Lightning, Mark II

C. a racetrack where she can test her go-kart

D. a hardware store that sells cables and brackets

2. Sondra notices a problem when she takes her go-kart for a test drive. The problem is that when she drives fast, she gets a lot of push-back from the wind. How does she solve this problem?

A. Sondra gets annoyed at her dad.

B. Sondra eats ice cream.

C. Sondra rebuilds her go-kart in a different shape.

D. Sondra designs her go-kart in the shape of a lightning bolt.

3. Read this sentence from the story: "When Sondra test-drove the newest Blue Lightning, it came a lot closer to living up to its name."

What can be concluded from this sentence?

A. Sondra does not like her second go-kart design as much as her first go-kart design.

B. Sondra hopes to finish in first place at the Go-Go Derby.

C. Sondra is upset with her dad.

D. Sondra's go-kart becomes a lot faster after she rebuilds it.

4. Why does Sondra's dad not tell her about the problem with the lightning-shaped design for her go-kart?

A. He does not notice the problem until it is too late.

B. He does not want Sondra to take part in the Go-Go Derby.

C. He is mad at Sondra and does not want her go-kart to work.

D. He wants Sondra to discover the problem on her own.

5. What is a theme of this story?

A. Parents should not let their children try new things.

B. Making mistakes can help you learn.

C. Females are better at building things than males.

D. People should always share their feelings with each other.

6. Read the following sentence: "'So how about this: you do some research into how we're actually going to build this thing, and come back to me in a week with a **design**.'"

What does the word **design** mean in this sentence?

A. a very dangerous idea

B. a place where people go to do research

C. a plan for building something

D. a company that sells cars

7. Choose the answer that best completes the sentence below.

Sondra learns from her mistake with the first go-kart, _____ her second go-kart is faster.

A. so

B. namely

C. initially

D. specifically

8. What mistake does Sondra make when designing her first go-kart?

Current Events Log
Day 1

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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Journal Entry 1

PART 1

During recent events, we have had to find ways to entertain ourselves. What has been your favorite form of entertainment lately? Write to explain it and how it has helped you.

4 Rewrite the expression $2(3 - 4k)$ as a difference. Show your work.

SOLUTION

5 Tell whether each pair of expressions is *Equivalent* or *Not Equivalent*.

	Equivalent	Not Equivalent
a. $5(3t - 6)$ and $15t - 30$	○	○
b. $16 + 72n$ and $(2 + 9n)(8)$	○	○
c. $4(6a + 8b)$ and $10a + 12b$	○	○
d. $7x - 9y$ and $(7x - y)(9)$	○	○

6 Kaley plans to increase the amount of food she feeds her puppy each day by x oz. The expression $3x + 18$ represents the total weight of food, in ounces, Kaley will need for her puppy for the next three days.

a. Rewrite the expression as a product of two factors. Show your work.

SOLUTION

b. How many ounces of food did Kaley feed her puppy each day before she increased the amount? Explain how you know.

The Film Editor

by ReadWorks

When deciding whether a movie is good or not, most people think about the storyline. They think about the quality of the acting. Some might even remark on how well the movie was directed. Almost no one says: "Boy, that movie was really well edited!"

This is a dilemma that every film editor faces. Their work, while crucial to the success of a film, is rarely celebrated. Many don't even know that the job title "Film Editor" exists. People win Academy Awards for Best Actor and Best Director. No one seems to care about the Best Editor.

"Everyone knows that Meryl Streep has won three Academy Awards for acting," says Marc Rodriguez, a professional film editor based in New York City. "Nobody knows that Michael Kahn has won three Academy Awards for film editing."

Rodriguez graduated from film school at New York University in Manhattan. As a teenager, he was always shooting footage of his friends on his family's video camera. He worshipped legendary directors like Martin Scorsese and Steven Spielberg. Someday, he thought, I will make films of my own.

So after graduating from film school, Rodriguez took a job as an editor of television commercials. The idea was to make some money to afford making a feature-length film. But as he got more involved in editing, he fell in love with it. At 37 years old, he still hopes to direct a film. But film editing has become both his passion and his full-time job.

Speaking over the phone from his office in Brooklyn, Rodriguez explained what exactly a film editor does.

"I don't want to take too much credit," says Rodriguez, a stocky guy with floppy red hair, "but we essentially bring the film to life. For a big feature film, a director will often shoot over 100 hours of footage. Documentary filmmakers tend to shoot even more hours, because they don't know what the story is when they start. As the editor, it is my job to cut all that footage down to an hour and a half."

"As you can imagine," Rodriguez adds, "this requires a lot of time and patience."

Luckily, Rodriguez is a patient man. Directors tend to have less patience. Their job involves gathering footage and making sure the actors get along. But after the film shoot is over, the director's job is pretty much done; he or she hands over the footage to the editor. The editor is then tasked with taking out everything that doesn't fit in the story.

Rodriguez works alone in a small, quiet office. His job requires intense amounts of concentration. On his desk, he keeps two computer monitors. One allows him to check the Internet and answer emails. The other is for editing films.

A typical day involves editing a 20 to 30 second scene of a movie. That's right: an entire day spent going over the same 20 or 30 seconds of a movie. In the end, this is how movies get made. As the editor, Rodriguez matches the sound with what is happening on-screen. He makes sure the storyline flows from scene to scene. He ensures that the stars of the film appear in as flattering a light as possible.

"For me, editing is like putting together a giant puzzle in which most of the pieces don't fit," he says with a laugh. "You look closely at all the footage. You examine it to see whether it should go into the final cut, as we call it. In the end, though, only a tiny percentage of the original footage makes it into the actual film."

Now and then, Rodriguez says, he decides that he does not have enough footage to make a film. In such cases, the director is forced to film new scenes. This can be stressful for everyone involved. The actors may already be acting in other films or TV shows. The camera operator-the person who holds the camera-may have moved on as well. And yet the director must get everyone back together to shoot the final scenes. Otherwise the movie may never be completed.

"You really don't want to tell directors that they have to shoot more footage," Rodriguez says. "It's something they really do not want to hear. Hopefully they understand it's for the sake of the film. After all, no one wants to get a bad review! If it comes down to shooting more footage or getting ripped apart by movie critics, most directors will gladly shoot more scenes."

Speaking of bad reviews, critics almost never mention the film's editor in their reviews. To the press, the director and the writer are responsible if a film fails. The editor is left blameless. Of course, when a film is praised and wins awards, the editor does not receive much credit either.

Rodriguez understands that his profession will remain underappreciated. But he does make a good living. And he enjoys the challenge of putting a movie together. Seeing the final product on screen can be a thrilling experience. Then again, seeing all his intricate editing work projected onto a giant movie screen before a crowd full of people can come as a shock, too.

"You always see a thousand little mistakes," he says. "But of course, the audience never notices, since they didn't put the thing together. And even if they did notice the mistakes, they probably wouldn't blame me. As I always say, no one blames the editor!"

Name: _____ **Date:** _____

1. What does a film editor do?

A. shoots footage for a film

B. raises money to produce a film

C. pieces together the footage into a finished film

D. directs the production of a film

2. How does the author contrast directors and editors?

A. Directors are brilliant artists while editors are just paid laborers.

B. Directors are the ones who make a movie good or not while editors don't do that much.

C. Directors are not as patient as editors.

D. Directors make a lot more money than editors.

3. A film editor can spend an entire day working on just twenty to thirty seconds of a film.

What can be concluded from this information?

A. Editing a film is simple.

B. Editing a film is a quick process.

C. Editing a film requires a lot of patience.

D. Editing a film can be boring.

4. Why is the job of an editor important to the success of a film?

A. The editor pieces together the director's footage into a story.

B. The editor has the final say in what the movie will look like.

C. The editor can make the movie stars look bad if he wants to.

D. The editor is the person who helps the director gather footage.

5. What is this passage mostly about?

A. the job of a film editor

B. all of the steps it takes to make a movie

C. the importance of a film director

D. the way to get into the film business

6. Marc Rodriguez uses a metaphor to compare editing a film to something else. What does he compare it to?

A. piloting a large plane with many passengers

B. writing a novel in a different language

C. making a map of an unexplored country where he has never been before

D. putting together a giant puzzle in which most of the pieces don't fit

7. Choose the answer that best completes the sentence below.

_____ a film editor begins his work, a director will shoot hundreds of hours of footage.

A. Finally

B. Before

C. After

D. However

8. Explain what happens if an editor decides that he does not have enough footage to make a film.

_____

_____

_____

9. What is the director's job?

10. Explain how the work of *both* the director and the editor is crucial to the making of a film. Use information from the text to support your answer.

Current Events Log
Day 2

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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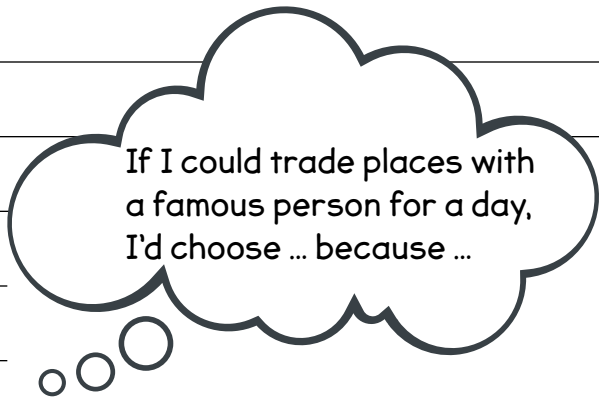
Journal Entry 2

PART 1

Imagine you could trade places for one day with someone famous. Who would you choose to trade places with? Write to tell about what you would do for that day. Then write what that person would do if they were you!



Practice Combining Like Terms

➤ **Study the Example showing how to combine like terms. Then solve problems 1–6.**

Example

The Woodworking Club is selling picture frames at the school craft fair. The frames sell for $11 each. Materials for each frame cost $6, and renting a booth costs $36. The expression $11f - 6f - 36$ represents the amount of money the club will make for selling f frames. Rewrite the expression with exactly two terms.

You can use the distributive property to combine like terms.

The terms $11f$ and $6f$ are like terms because both have the variable f.

$11f - 6f - 36$

$(11 - 6)f - 36$

$5f - 36$

The terms of $5f - 36$ are not like terms, so they cannot be combined.

The equivalent expression is $5f - 36$.

1 Look at the Example. Suppose the club increases the selling price of a frame to $13. Write an expression with exactly two terms for the amount of money the club will make for selling f frames. Show your work.

SOLUTION _____

2 Which expression is equivalent to $3a + 9a + 7b - b$?

A $12a + 7$

B $12a + 6b$

C $18ab$

D $19a$

Vocabulary

equivalent expressions
two or more expressions in different forms that always name the same value.

like terms
two or more terms that have the same variable factors.

perimeter
the distance around a two-dimensional shape.

Pick Your Portion

by Meredith Matthews

How to right-size your meals

It's an ordinary morning. You wake up and help yourself to a bowl of cereal. But do you ever stop to think about exactly how much you're pouring into the bowl? And if you have pancakes instead, how many should you eat?

For many people, the amount of food they eat-their *portion size*-is decided by their eyes, their stomachs, or both. They might put as much food on their plates as they think they want, and then eat it simply because it's there. Or they might decide to put their forks down only once they begin to feel full. But neither of those is the healthiest way to figure out portion sizes.

Serving Size vs. Portion Size

So how do you know what the right portion size is? Nutrition information on the package is a good place to start. The label shows how much of each nutrient is in a given amount of food, explains Tandalayo Kidd. She's a nutrition expert at Kansas State University in Manhattan. But the serving size on the label is one thing. The amount a person thinks is a portion size might be somewhat different. In other words, the serving size listed on the package may not be the same amount you actually eat.

For example, a 3-ounce package of chips may actually contain three 1-ounce servings. So what happens if you wolf down the whole bag? You guessed it: You've actually eaten three servings of chips, not just one. The same goes for a lot of foods.

Without a nutrition label, it can be hard to tell exactly how much food is the right amount. When you have a slice of lasagna at your grandma's house or a dish of ice cream at a sundae party, how do you know whether you're eating a healthy portion size or going overboard? Nutrition experts have come up with ways to figure out portion size at a glance. Those guidelines won't give you the exact amount for every food, but they are a good estimate.

Portion Distortion

Portion sizes have been getting bigger through the years. Today's 20-ounce soft drink is roughly double the size of the bottle of cola your parents might have had when they were your age. Those types of changes make it easy to ignore the serving size on the label and instead treat the whole package as one serving. (Have you ever put the cap back on a 20-ounce drink to save the rest for the next day?)

Eating or drinking more than one serving at a time means you're getting more calories, according to Kidd. "Increased portion sizes encourage *overconsumption*," she says. Larger portion sizes affect the amount people think they should eat. Brothers Jason J. and Patrick J., of Connecticut, have noticed

that restaurant portions are often a lot bigger than they need to be. Patrick, 11, had an enormous breakfast recently at a diner. It had large portions of pancakes, eggs, toast, and potatoes. "I ate it all, though," he said.

Jason, 9, knows what happens when you fall for that, though. "If you're real hungry, you would probably eat it all," he says. "Then it makes you feel stuffed." But most of the time, the boys agree, that extra food goes to waste.

Large portions are often the norm at fast food restaurants as well. So-called value-sized or supersized meals, which are usually just a few cents more than a regular-sized meal, sure are tempting. They make you think that you are getting more bang for your buck, says Kidd. People like to get the most food possible for the money they are spending. But if you opt for supersized foods and meals, you're also choosing more calories, fat, and carbohydrates. A healthier option is to take advantage of the "value" of a value meal. Order the larger size, but split it with a friend.

Sensible Choices

Whether you're getting takeout, grabbing a snack, or cooking at home, it helps to pay attention to portions. Aim for balance. "You don't always want to be eating big portions all the time, and you don't want to be eating just tiny little portions that give you no protein or nutrients," says Sabrina F., 15, of Missouri.

The solution? Right-size your portion sizes! Sabrina's favorite food is chili. But she makes sure not to pig out when it's on the menu. "I don't usually get too big of a portion," she says. "I don't want to get full before my brain is able to realize that I'm full." That takes about 20 minutes. Eating slowly can help your brain get the message before you've eaten way more than you should.

Knowing what's a healthy portion is helpful when it comes to all types of food, from breakfast to dessert and everything in between. Sabrina's classmate Rita W. knows that. "Serving sizes can make the difference between enjoying a little pie or gaining 5 pounds," Rita says.

A Healthy Portion Looks Like ...

Nutrition expert Tandalayo Kidd offers some serving size guidelines. Use the visual reminders to help you keep your portions in line.

Stephanie Wolfsteiner/Getty Images

Think About ItWhy, do you think, are portions at restaurants often larger than what one person should eat at a time? How can you eat the right amount when you're eating out?

Name: _____ **Date:** _____

1. What is portion size?

A. the amount of food someone eats

B. the amount of nutrients in a given amount of food

C. the number of items that someone orders at a restaurant

D. the number of people you can split a "value-sized" meal with

2. What does the author contrast with portion size?

A. waist size

B. shoe size

C. clothing size

D. serving size

3. Read this sentence from the text.

"Portion sizes have been getting bigger through the years."

What evidence in the text supports this statement?

A. "When you have a slice of lasagna at your grandma's house or a dish of ice cream at a sundae party, how do you know whether you're eating a healthy portion size or going overboard?"

B. "Today's 20-ounce soft drink is roughly double the size of the bottle of cola your parents might have had when they were your age."

C. "So-called value-sized or supersized meals, which are usually just a few cents more than a regular-sized meal, sure are tempting."

D. "Knowing what's a healthy portion is helpful when it comes to all types of food, from breakfast to dessert and everything in between."

4. Read these sentences from the text.

"Large portions are often the norm at fast food restaurants as well. So-called value-sized or supersized meals, which are usually just a few cents more than a regular-sized meal, sure are tempting. They make you think that you are getting more bang for your buck, says Kidd. People like to get the most food possible for the money they are spending. But if you opt for supersized foods and meals, you're also choosing more calories, fat, and carbohydrates. A healthier option is to take advantage of the 'value' of a value meal. Order the larger size, but split it with a friend."

Based on this paragraph, what can you infer about consuming calories, fat, and carbohydrates?

A. Consuming lots of calories and fat is healthy, but consuming lots of carbohydrates is unhealthy.

B. Consuming lots of calories, fat, and carbohydrates has no effect on a person's health.

C. Consuming lots of calories, fat, and carbohydrates is unhealthy.

D. Consuming lots of calories, fat, and carbohydrates is healthy.

5. What is the main idea of this text?

A. If you are eating food that comes in a package, you should look at the nutrition label to figure out what the right portion size is.

B. Nutrition experts have come up with ways for people to figure out portion size when eating food without a nutrition label.

C. People should pay attention to serving size as well as portion size to make sure they are eating a healthy amount of food.

D. So-called value-sized or supersized meals contain more calories, fat, and carbohydrates than regular-sized meals do.

6. Read these sentences from the text.

"Without a nutrition label, it can be hard to tell exactly how much food is the right amount. When you have a slice of lasagna at your grandma's house or a dish of ice cream at a sundae party, how do you know whether you're eating a healthy portion size or going overboard?"

What does the phrase "going overboard" mean here?

A. trying too hard
B. falling off the side of a ship
C. eating a healthy amount
D. eating too much

7. Read these sentences from the text.

"Whether you're getting takeout, grabbing a snack, or cooking at home, it helps to pay attention to portions. Aim for balance. 'You don't always want to be eating big portions all the time, and you don't want to be eating just tiny little portions that give you no protein or nutrients,' says Sabrina F., 15, of Missouri.

The solution? Right-size your portion sizes!"

How could the last two sentences best be combined?

A. The solution is right-size your portion sizes?
B. The solution being to right-size your portion sizes.
C. The solution was to right-size your portion sizes.
D. The solution is to right-size your portion sizes.

8. What have Jason and Patrick noticed about portions of food at restaurants?

9. Read these sentences from the text.

"Portion sizes have been getting bigger through the years. Today's 20-ounce soft drink is roughly double the size of the bottle of cola your parents might have had when they were your age. Those types of changes make it easy to ignore the serving size on the label and instead treat the whole package as one serving. (Have you ever put the cap back on a 20-ounce drink to save the rest for the next day?)"

Based on this paragraph, what can you conclude about the effect that bigger portion sizes have had on the amount that people eat and drink?

Current Events Log
Day 3

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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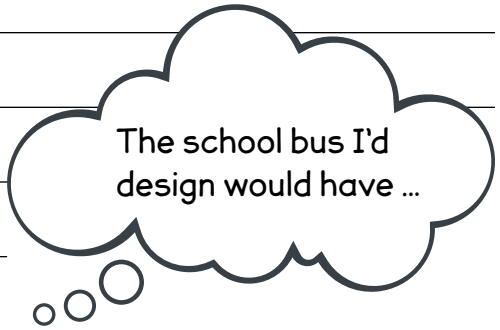
Journal Entry 3

PART 1

As a reward for working hard while at home, your school decides to let the students create a special school bus just for kids. What would the school bus look like? What would be inside? Write to describe what this special school bus would look like.



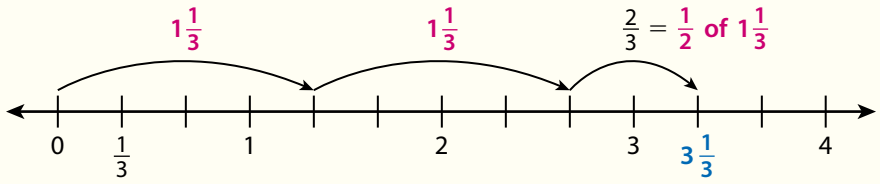
Practice Dividing Fractions

➤ **Study the Example showing how to divide fractions when the quotient is not a whole number. Then solve problems 1–5.**

Example

The jogging loop at Lake Park is $1\frac{1}{3}$ mi long. Brianna wants to jog $3\frac{1}{3}$ mi. How many times should she jog around the loop?

You can use a number line to show dividing $3\frac{1}{3}$ mi into lengths of $1\frac{1}{3}$ mi.



There are $2\frac{1}{2}$ lengths of $1\frac{1}{3}$ in $3\frac{1}{3}$. So, $3\frac{1}{3} \div 1\frac{1}{3} = 2\frac{1}{2}$.

Brianna should jog $2\frac{1}{2}$ times around the loop.

1 The number line model in the Example shows that $1\frac{1}{3}$ fits into $3\frac{1}{3}$ two times, with a remainder of $\frac{2}{3}$.

a. How is the remainder $\frac{2}{3}$ shown in the number line model?

b. How do you know that the remainder represents $\frac{1}{2}$ of the jogging loop?

2 Show that there is no remainder when you divide $2\frac{1}{2}$ by $\frac{5}{8}$.

Vocabulary

remainder
the amount left over when one number does not divide another number a whole number of times.

quotient
the result of division.

Practice Makes Perfect

by ReadWorks

Look around you. Most of the objects you interact with every day are the result of hundreds of years of tinkering. Your table is the way it is because someone thought they could make a better table than the ones that already existed. Your chair is how it is because someone had the idea to improve upon a previous version of a chair, taking some bits and leaving others behind. Your shirt, your telephone, all the result of someone (or a team of "someones") setting their minds to a particular design task, and working hard until they got the thing they set out to make.

This process of imagining something and then building version after version until you get it *just right* is called "iterative design." The term "iterative" refers to the different versions-or "iterations"-of a thing you produce on the way to making the right version. It is admitting, ahead of time, that you probably aren't going to get it right the first time. Rather, you know that designing something really great is going to take lots of tries. And you're committed to doing it over and over until you get it right.

Aisen Caro Chacin is very familiar with this process. When she was a student in a technology program at a design school in New York City, she had an unusual idea for her thesis project. She wanted to make a device you could wear in your mouth through which you could listen to music. She knew it would take many tries to get it just right.

She imagined the device as a cross between a video game controller, a stereo, and a "grill"-a kind of mouth jewelry. The device worked by using a small motor to vibrate the wearer's teeth-a process known as bone conduction, which, in this case, means the teeth and facial bones carry or "conduct" the sound. It looked like a mouth guard with a video game controller's directional pad: the plus-shaped part of a controller that moves up, down, left or right. She called her creation, "The Play-a-Grill."

There were many unanswered questions. What was the best way to assemble the device? How would a wearer control it? How big could it be? Chacin began her design process with that last question. She devised a simple test to determine how much room a person has, on average, on the roof of their mouth. She gave them as much gum as they could possibly fit onto the roof of their mouths, and had them spit the gum out, preserving its shape as much as possible. Taking that shape into account, she made a mold of the wearer's teeth using the same technique as dentists.

She then poured hot glue into the mold, and heated it to let it take its shape. She remembers with a laugh describing this dangerous, time-consuming, and decidedly low-budget process later to a horrified technology journalist. "He was like, 'uh, wait, what?'" she says. "It's not a material that's made for being inside the mouth for long periods of time." It was also bulky and uncomfortable. This first version connected to an audio source through a traditional headphone jack.

"The first version," she said, "was basically just to test the technology." Could a device like a mouthpiece made out of glue actually vibrate and let a wearer hear sound? As it turned out, it could. With one successful test under her belt, Chacin set about a major aesthetic and practical overhaul.

For the second version, Chacin changed virtually all of the grill's features. She used a different material to construct the grill itself, the same substance used to make tooth-whitening mouth guards. This made it more streamlined and comfortable. She added a microchip to the base of the device, so that it was self-contained. She also attached the directional pad to the part of the grill that covers the palate, which allows the wearer to control the volume of the music, as well as skip songs. She also made part of the front out of silver, to give it a classic jeweled aesthetic.

While this version was much more successful, Chacin knew it could be improved upon further. In her next version, she tried to improve the user interface, making it easier for a user to press the tongue controls. "You can apply more pressure with a finger than you can with the tongue." She also further refined the aesthetic, adding the word "TECH" in capital letters to the front.

Three versions and roughly three years from beginning her process, Chacin is still far from satisfied with her product, and plans to further refine several major areas in future iterations. The first is the electronics, the second are the motors, and the third is the Play-a-Grill's overall aesthetics.

Even in its latest iteration, Chacin acknowledges, the Play-a-Grill is too bulky. The primary reason for this is the electronics. Namely, the components which control the storage and playback of the MP3s, as well as the user tongue controls are too large, much larger than they would be in the final, consumer-focused iteration of the Play-a-Grill. "I probably need to get into a clean room to really get them small enough," Chacin says, referring to the static and (at least theoretically) dirt-free rooms staffed by scientists in hazmat suits that most professional electronics companies use to produce today's highly compact personal electronics. Until she can access a truly professional-grade facility like this, she feels her product won't be as advanced as it could be. She would also like to add a more professional grade lithium battery to her device. While it *does* currently contain a lithium battery (the same kind used in devices like pacemakers which are implanted in the body), it is consumer grade, and not the kind used by professional implant producers.

Chacin also wants to further refine the motors the Play-a-Grill uses. Again, the motors produce the vibrations that the wearer eventually perceives as music. In the first version, she used one motor. In the second and third, she used two, figuring this would produce a proportional increase in the volume and quality of the sound. This, as it turns out, was not the case.

"The new motors weren't as good of quality as the first one (I had changed the type of motor)," she explains, "and so I think that the first one worked better. It's a process! You think, 'Okay, let's change the design to make it more comfortable, this seems like it would work.' But then the component itself might not be as strong. And even though I added an amplifier to it, it still wasn't as good."

Finally, Chacin wants to improve the device's aesthetics. "The silver front of the actual grill, I chose not to do in silver, for the most recent version," she said. "I think that was kind of a mistake. It kind of took away from that rapper culture aesthetic the other one had."

While she may not be entirely satisfied, Chacin should be proud of what she's accomplished. She's gone from a relatively out-there idea-a piece of mouth jewelry that plays music by vibrating your skull-and turned it into a reality. Her device has been written about many times in the press, and featured on television. She's done this through hard work, and demonstrating a willingness to always go back to her piece and try again.

In making version after version of a device to get closer to a final thing she's happy with, Chacin is doing her work like countless other designers before her. Rockets, racecars, and smartphones were all designed in the same way. There's often no real way to get a true sense of how a design will perform without building and testing it. So, that is what people like Chacin have been doing for hundreds of years. Having an idea, building a version, testing it out, and seeing how it goes.

Name: _____ **Date:** _____

1. What is "iterative design"?

A. the process of building the same design over and over without any changes

B. building a product once and getting the design right on the first try

C. when multiple designers build a product and compete for the best design

D. the process of building versions of a product until the design is perfect

2. The passage describes the sequence of steps Chacin took to design The Play-a-Grill. What happened after Chacin came up with the idea for The Play-a-Grill?

A. She determined how big the device could be.

B. She determined the best way to assemble the device.

C. She determined how the wearer would control the device.

D. She determined the best motor to use for bone conduction.

3. Chacin did not initially have a large budget for The Play-a-Grill.

What evidence from the text best supports this conclusion?

A. The first model was bulky and uncomfortable.

B. The first model was used to test the technology.

C. The first model was made out of glue.

D. The first model let a wearer hear sound.

4. "You can apply more pressure with a finger than you can with a tongue."

What can be inferred about the tongue controls for the second iteration of The Play-a-Grill?

A. They were too small to press.

B. They were hard to press with the tongue.

C. They were unintuitive to use.

D. They were hard to reach.

5. What is this passage mainly about?

A. the iterative process Chacin used to design The Play-a-Grill

B. the role of mouth jewelry in rap culture

C. technological advances that made The Play-a-Grill possible

D. Chacin's experience at a New York design school

6. Read the following sentences:"Look around you. Most of the objects you interact with every day are the result of hundreds of years of tinkering."

Why does the author begin the passage in this way?

A. to give the reader an order and establish control

B. to make the reader understand the importance of everyday objects

C. to introduce the topic of iterative design

D. to give the passage historical context

7. Choose the answer that best completes the sentence below.

The Play-a-Grill was not designed all at once, _____ required multiple design iterations.

A. like

B. but

C. finally

D. particularly

8. What is a "clean room" as defined by the passage?

9. How does Chacin plan to refine The Play-a-Grill in future iterations? Give three examples from the text.

10. Does iterative design present any difficulties or have any flaws as a creative process? If so, what are they? Use information from the text to support your answer.

Current Events Log
Day 4

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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Journal Entry 4

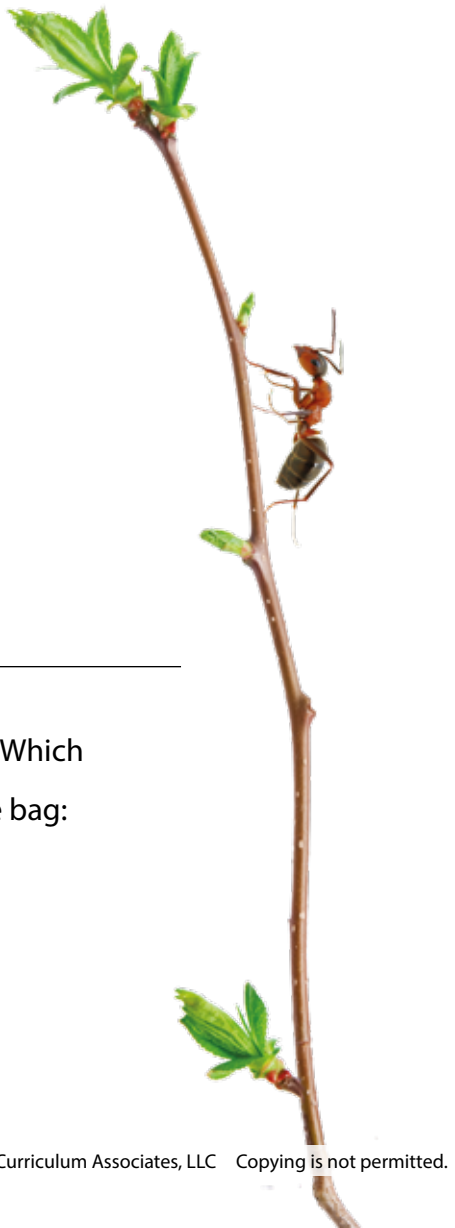
PART 1

Write a fiction story that starts with something falling from the sky.

3 Andre is comparing the weights of his pets. His gerbil weighs $\frac{1}{4}$ lb. His kitten weighs $\frac{7}{8}$ lb. How many times the gerbil's weight is the kitten's weight? Show your work.

SOLUTION

4 An ant walks along a stick. The stick is $1\frac{1}{2}$ ft long. The ant travels $\frac{3}{10}$ ft every second. How long does it take the ant to to walk the whole length of the stick? Show your work.



SOLUTION

5 A serving of dried fruit is $\frac{1}{5}$ cup. A bag contains $\frac{9}{10}$ cup of dried fruit. Which division expression can you use to find the number of servings in the bag: $\frac{1}{5} \div \frac{9}{10}$ or $\frac{9}{10} \div \frac{1}{5}$? Explain your reasoning.

Attacking Asthma

by Sandra J. Jordan

For kids with asthma, the air they breathe makes a difference.

Warm, stuffy, or dusty rooms are chancy for Alex D. of Fairview Heights, Ill. That's because hot air, smoke, and dust can cause him to feel as if something is sucking the wind out of him. "I start to run out of breath, and it's just hard to breathe," the sixth grader says. "Sometimes I kind of start wheezing."

Alex, 11, is one of an estimated 7.0 million children in the United States with *asthma.* Sometimes a person with asthma has a hard time breathing. Asthma is the most common *chronic,* or long-term, childhood illness in the nation.

When Asthma Strikes

When a person inhales, air fills the lungs. Blood carries oxygen from the air to the body's tissues. Then, as the person exhales, the lungs release the air that has already given oxygen to the body.

But when someone has an asthma attack, the bands of muscle surrounding the airways tighten, making it harder to breathe in and out. Mucus clogs and narrows the airways further. That causes shortness of breath, coughing, wheezing, and a feeling of pressure in the chest. An asthma attack can be serious-or even fatal.

Medicines to control asthma help most people with the condition lead normal lives. Alex, for example, takes medicine every day to control his symptoms. When he has trouble breathing while on the go, he has an inhaler to quickly get medicine into his airways. A special breathing treatment machine helps if Alex has trouble while at home.

When he was in elementary school, Alex had to go to the nurse's office whenever he needed his inhaler. Now that he is in middle school, he can keep his inhaler closer at hand. Usually it's in his locker, but during PE class he keeps it in his pocket, just in case.

Another way young people can control their asthma is by knowing what causes symptoms in the first place. Those things are known as asthma *triggers.* Everyone with asthma has his or her own set of triggers. The list can include smoke, cleaning products, and household items that collect dust, such as quilts, carpets, and mattresses. For kids living in the country, mold and pollen are often a problem. Kids who live in cities don't get a break, though. Cockroaches and rodents that often live in city buildings can give off allergens that cause asthma attacks even if you don't run into the creatures themselves.

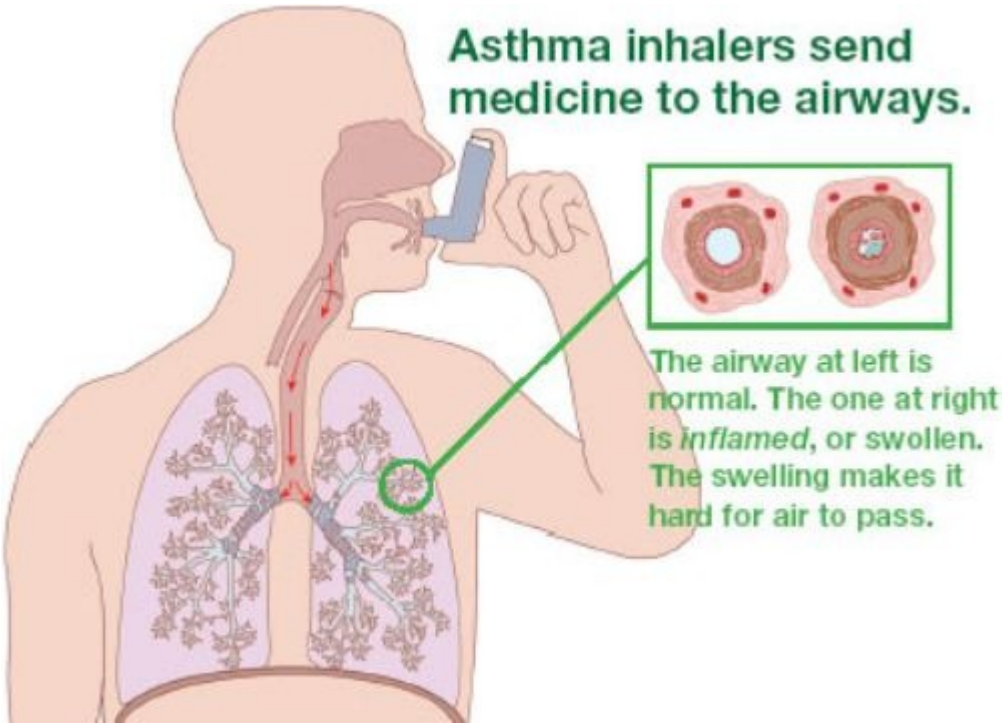


Photo Researchers, Inc.

Cigarette smoke is a common problem for kids with asthma no matter where they live, says Robert Simpson, a lung doctor and internal medicine specialist in St. Louis. It's a problem not only for kids who live with adults who smoke, but also for kids with asthma who give in to peer pressure to smoke.

Where You Breathe Matters

Alex is not a smoker, but he lives near St. Louis, named the worst place in the U.S. for asthma sufferers by the Asthma and Allergy Foundation of America in 2009. The group rated St. Louis low for having poor air quality and because it doesn't have as many laws as other places keeping indoor areas smoke free.

"We are not a very friendly place for people who are affected by asthma and lung disease. We have no public smokefree places," says Dr. Mario Castro. He's a professor of medicine and pulmonary and critical care medicine at the Washington University in St. Louis School of Medicine.

Alex and his family have run into problems at restaurants. "Whenever we go to St. Louis to eat, my parents always ask that we sit in the nonsmoking section because when we sit in the smoking section, then I will start to cough," Alex explains.

His mom and dad work to minimize dust at home. The family also has to avoid visiting homes that are too hot or dirty. They learned that the hard way after visiting a dusty house. Alex's mom, Daphne, had to give him his medicine right away. "You could see the dust particles floating," she says. "That's how bad it was."

No Need to Hold Back

Alex is not alone in living with asthma. In elementary school, he found out his best friend also had asthma when they passed each other going to and from the nurse's office to use their inhalers. Another friend told Alex about his asthma when he saw Alex had an inhaler. And Alex's father has asthma, too, although they each have different triggers.

Triggers can crop up at home, at school, or while Alex is playing sports, so he's always aware. But his asthma doesn't stop him. Not even when it comes to sports! Alex plays basketball in the winter, football in the fall, and baseball during the spring and summer. "One of the things we tell him is, don't be hindered by your asthma," Daphne says.

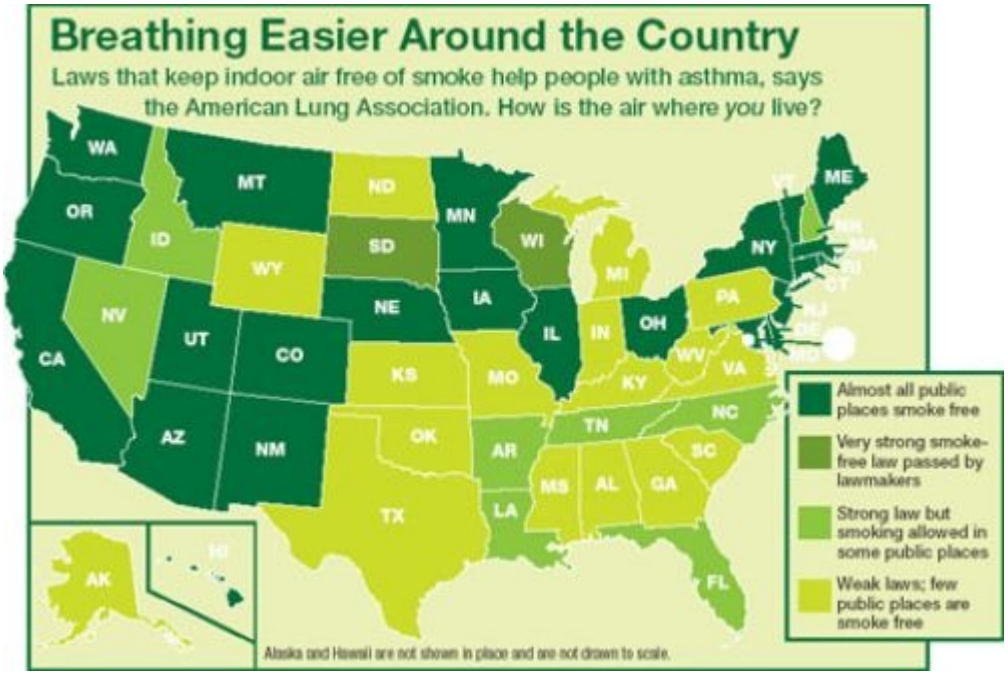
Now that he is old enough to keep his inhaler with him, Alex knows that it is his responsibility to remember it and use it if he needs to. "He understands the importance of carrying it with him at all times," his mother says, "because you never know when you might get into a situation."

Photolibrary

Keep School Trigger Free

Did you know that asthma triggers can lurk in classrooms? Researchers at Columbia University in New York studied dust samples from classrooms around the East Coast. The team, led by Ginger Chew, an assistant professor in environmental health sciences for the Mailman School of Public Health, was looking for cockroach allergens. But it found more traces of rodents, another asthma trigger.

To help keep those triggers at a distance, Chew says, students and staff should not eat in classrooms. Crumbs can feed roaches and mice. Signs of those critters stick around long after they have scurried away. Allergens from the animals can be very tiny particles that stay in the air for quite some time, Chew says.



Name: _____ **Date:** _____

1. According to the text, how many children in the United States have asthma?

A. 11 million

B. 7 million

C. 70 thousand

D. 200 million

2. What effect does an asthma attack have on a person's airways?

A. It creates more oxygen in the body.

B. It makes exhaling easier.

C. It opens up the lungs.

D. It tightens the airways.

3. Read these sentences from the text.

> Alex is not a smoker, but he lives near St. Louis, named the worst place in the U.S. for asthma sufferers by the Asthma and Allergy Foundation of America in 2009. The group rated St. Louis low for having poor air quality and because it doesn't have as many laws as other places keeping indoor areas smoke free.

Based on this evidence, what can you conclude about asthma sufferers in St. Louis?

A. St. Louis is the only city in the United States where asthma is common.

B. Poor air quality and indoor smoking can cause problems for asthma sufferers.

C. Poor air quality and indoor smoking have no effect on asthma sufferers.

D. There are more asthma sufferers in St. Louis than any other city in America.

4. Why does Alex most likely keep his inhaler in his pocket during PE class?

A. There is a lot of dust in the gym.

B. He is more active in PE and he may need it.

C. All the other students keep an inhaler.

D. He is allergic to cats and other animals.

5. What is this text mostly about?

A. how oxygen travels through the human body

B. the sports Alex plays at school

C. the effect of asthma on people's lives

D. the types of inhalers people with asthma can use

6. Read these sentences from the text.

But when someone has an asthma attack, the bands of muscle surrounding the airways tighten, making it harder to breathe in and out. Mucus **clogs** and narrows the airways further.

As used in these sentences, what does the word "**clogs**" mean?

A. dries

B. wets

C. blocks

D. hits

7. Choose the word that best completes the sentence.

Alex has asthma, _____ he doesn't let that stop him from playing sports.

A. after

B. before

C. but

D. because

8. According to the text, what are two common triggers for people with asthma?

9. Why should students and staff not eat in classrooms if there is a student who has asthma? Use evidence from the text to support your answer.

Current Events Log
Day 5

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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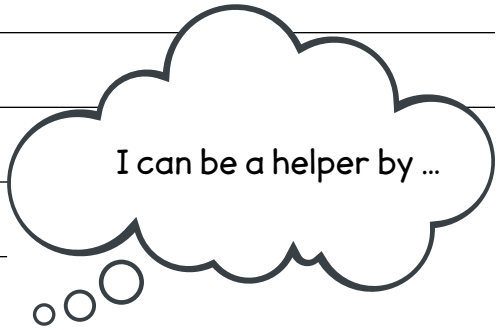
Journal Entry 5

PART 1

Helpers are all around us. They might be the police, doctors, or grocery store workers. Helpers can also be anyone who goes out of their way to help others. Think about ways you can be a helper right now. You may already be doing these things! Write to tell how you can be a helper and how it will make a difference.



Practice Using Multiplication to Divide by a Fraction

➤ **Study the Example showing how to use multiplication to divide by a fraction. Then solve problems 1–4.**

Example

Tyrone has $1\frac{1}{2}$ quarts of honey. He is pouring the honey into jars that each hold $\frac{3}{8}$ quart. How many jars can Tyrone fill?

You can divide the total quarts of honey, $1\frac{1}{2}$, by the number of quarts each jar can hold, $\frac{3}{8}$.

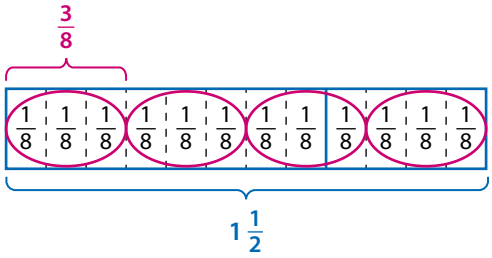
$1\frac{1}{2} \div \frac{3}{8} = 1\frac{1}{2} \times \frac{8}{3}$ ← To divide by $\frac{3}{8}$, multiply by its reciprocal, $\frac{8}{3}$.

$= \frac{3}{2} \times \frac{8}{3}$

$= \frac{24}{6} = 4$

Tyrone can fill 4 jars of honey.

1 The Example shows finding the quotient $1\frac{1}{2} \div \frac{3}{8}$ by multiplying $1\frac{1}{2}$ by the reciprocal of $\frac{3}{8}$, or $\frac{8}{3}$. You can relate multiplying by the reciprocal to a bar model that represents the division equation $1\frac{1}{2} \div \frac{3}{8} = 4$.



a. Explain why multiplying by $\frac{8}{3}$ gives the same result as first multiplying by 8 and then multiplying by $\frac{1}{3}$.

b. What is the value of the expression $\left(1\frac{1}{2} \times 8\right) \times \frac{1}{3}$? Explain how finding the value of the expression is related to the bar model.

Vocabulary

reciprocal

for any nonzero number a, the reciprocal is $\frac{1}{a}$. The reciprocal of any fraction $\frac{a}{b}$ is $\frac{b}{a}$.

Wesley Harris: An Account of Escaping Slavery

Excerpt from *The Underground Railroad: A Record of Facts, Authentic Narratives, Letters, &C.* by William Still

A friend by the name of C. Matterson, told me that he was going off. Then I told him of my master's writing to Mrs. Carroll concerning selling, etc., and that I was going off too. We then concluded to go together. There were two others-brothers of Matterson-who were told of our plan to escape, and readily joined with us in the undertaking. So one Saturday night, at twelve o'clock, we set out for the North. After traveling upwards of two days and over sixty miles, we found ourselves unexpectedly in Terrytown [in the state of Maryland]. There we were informed by a friendly colored man of the danger we were in and of the bad character of the place towards colored people, especially those who were escaping to freedom; and he advised us to hide as quickly as we could. We at once went to the woods and hid. Soon after we had secreted ourselves a man came near by and commenced splitting wood, or rails, which alarmed us. We then moved to another hiding-place in a thicket near a farmer's barn, where we were soon startled again by a dog approaching and barking at us. The attention of the owner of the dog was drawn to his barking and to where we were. The owner of the dog was a farmer. He asked us where we were going. We replied to Gettysburg-to visit some relatives, etc. He told us that we were running off. He then offered friendly advice, talked like a Quaker, and urged us to go with him to his barn for protection. After much persuasion, we consented to go with him.

Soon after putting us in his barn, himself and daughter prepared us a nice breakfast, which cheered our spirits, as we were hungry. For this kindness we paid him one dollar. He next told us to hide on the mow till eve, when he would safely direct us on our road to Gettysburg. All, very much fatigued from traveling, fell asleep, excepting myself; I could not sleep; I felt as if all was not right.

About noon men were heard talking around the barn. I woke my companions up and told them that that man had betrayed us. At first they did not believe me. In a moment afterwards the barn door was opened, and in came the men, eight in number. One of the men asked the owner of the barn if he had any long straw. "Yes," was the answer. So up on the mow came three of the men, when, to their great surprise, as they pretended, we were discovered. The question was then asked the owner of the barn by one of the

men, if he harbored runaway negroes in his barn? He answered, "No," and pretended to be entirely ignorant of their being in his barn. One of the men replied that four negroes were on the mow, and he knew of it. The men then asked us where we were, going. We told them to Gettysburg, that we had aunts and a mother there. Also we spoke of a Mr. Houghman, a gentleman we happened to have some knowledge of, having seen him in Virginia. We were next asked for our passes. We told them that we hadn't any, that we had not been required to carry them where we came from. They then said that we would have to go before a magistrate, and if he allowed us to go on, well and good. The men all being armed and furnished with ropes, we were ordered to be tied. I told them if they took me they would have to take me dead or crippled. At that instant one of my friends cried out-"Where is the man that betrayed us?" Spying him at the same moment, he shot him (badly wounding him). Then the conflict fairly began.

The constable seized me by the collar, or rather behind my shoulder. I at once shot him with my pistol, but in consequence of his throwing up his arm, which hit mine as I fired, the effect of the load of my pistol was much turned aside; his face, however, was badly burned, besides his shoulder being wounded. I again fired on the pursuers, but do not know whether I hit anybody or not. I then drew a sword, I had brought with me, and was about cutting my way to the door, when I was shot by one of the men, receiving the entire contents of one load of a double barreled gun in my left arm, that being the arm with which I was defending myself. The load brought me to the ground, and I was unable to make further struggle for myself. I was then badly beaten with guns. . . In the meantime, my friend Craven, who was defending himself, was shot badly in the face, and most violently beaten until he was conquered and tied. The two young brothers of Craven stood still, without making the least resistance.

After we were fairly captured, we were taken to Terrytown, which was in sight of where we were betrayed. By this time I had lost so much blood from my wounds, that they concluded my situation was too dangerous to admit of being taken further; so I was made a prisoner at a tavern, kept by a man named Fisher. There my wounds were dressed, and thirty-two shot were taken from my arm. For three days I was crazy, and they thought I would die. During the first two weeks, while I was a prisoner at the tavern, I raised a great deal of blood, and was considered in a very dangerous condition-so much so that persons desiring to see me were not permitted. Afterwards I began to get better, and was then kept privately-was strictly watched day and night. Occasionally, however, the cook, a colored woman (Mrs. Smith), would manage to get to see me. Also James Matthews succeeded in getting to see me; consequently, as my wounds healed, and my senses came to me, I began to plan how to make another effort to escape. I asked one of the friends . . . to get me a rope. He got it. I kept it about me four days in my pocket; in the meantime I procured three nails.

On Friday night, October 14th, I fastened my nails in under the window sill; tied my rope to the nails, threw my shoes out of the window, put the rope in my mouth, then took hold of it with my well hand, clambered into the window, very weak, but I managed to let myself down to the ground. I was so weak, that I could scarcely walk, but I managed to hobble off to a place three quarters of a mile from the tavern, where a friend had fixed upon for me to go, if I succeeded in making my escape. There I was found by my friend, who kept me secure till Saturday eve, when a swift horse was furnished by James Rogers, and a colored man found to conduct me to Gettysburg. Instead of going direct to Gettysburg, we took a different road, in order to shun our pursuers, as the news of my escape had created general excitement. My three other companions, who were captured, were sent to Westminster jail, where they were kept three weeks, and afterwards sent to Baltimore and sold for twelve hundred dollars a piece, as I was informed while at the tavern in Terrytown.

Name: _____ **Date:** _____

1. What do Wesley Harris and C. Matterson decide to do?

A. run away to Terrytown

B. fight against each other

C. escape from slavery

D. rebel against their masters

2. The cause of the slaves' discovery by the farmer is the dog barking at them. What is an effect of the slaves' discovery?

A. The farmer tells the slaves to hide in his barn.

B. Wesley Harris is mistrustful of the farmer.

C. The slaves are captured and arrested.

D. The slaves run away to the woods and hide.

3. Harris was not sent directly to Westminster jail because he was seriously injured. What evidence from the passage best supports this conclusion?

A. "After we were fairly captured, we were taken to Terrytown, which was in sight of where we were betrayed."

B. "I had lost so much blood from my wounds, that they concluded my situation was too dangerous to admit of being taken further."

C. "I was made a prisoner at a tavern, kept by a man named Fisher. There my wounds were dressed, and thirty-two shot were taken from my arm."

D. "Consequently, as my wounds healed, and my senses came to me, I began to plan how to make another effort to escape."

4. Why does the black man in Terrytown warn Harris and his companions about the danger of the town?

A. He thinks they don't know how to hide.

B. He wants to scare Harris and his companions.

C. He wants Harris's company to take him with them.

D. He doesn't want them to be caught.

5. What is this passage mostly about?

A. how one man tries to escape from slavery

B. the history of Terrytown, Maryland

C. how four slaves successfully escaped slavery

D. the Underground Railroad in Maryland

6. Read the following sentences: "He then offered friendly advice, talked like a Quaker, and urged us to go with him to his barn for protection. After much persuasion, we **consented** to go with him. Soon after putting us in his barn, himself and daughter prepared us a nice breakfast."

As used in this sentence, what does "**consented**" mean?

A. argued

B. declined

C. agreed

D. shouted

7. Choose the answer that best completes the sentence below.

Harris did not trust the farmer and felt that something was not right. _____, he could not fall asleep.

A. On the other hand

B. As a result

C. Finally

D. In particular

8. What happened to Harris's three companions who tried to escape with him?

_____

_____

_____

Current Events Log
Day 6

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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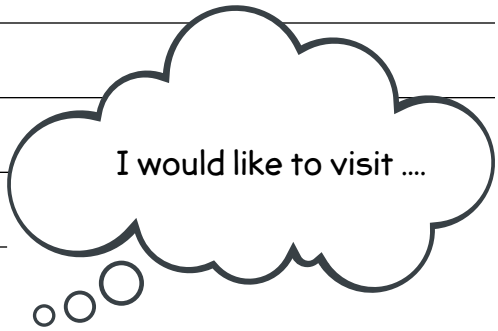
Journal Entry 6

PART 1

Think of three places in the world you would love to visit one day. Write to tell what those places are and why you'd like to go there.



Practice Comparing Positive and Negative Numbers

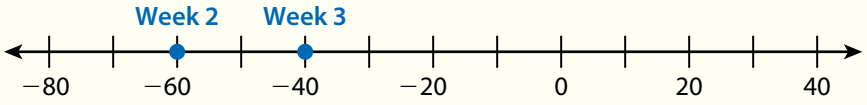
➤ **Study the Example showing how to compare two negative numbers. Then solve problems 1–5.**

Example

The table shows the amount of money Savanna either withdraws (−) or deposits (+) into her bank account over 5 weeks. Write an inequality to compare the withdrawals for Week 2 and Week 3.

Week	Week 1	Week 2	Week 3	Week 4	Week 5
Amount	+$40	−$40	−$60	+$100	−$80

Plot the amounts on a number line.

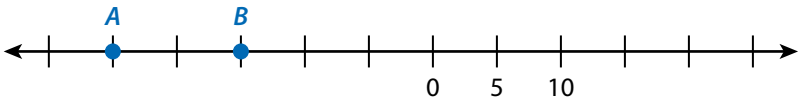


−60 is to the left of −40. So, $-60 < -40$.

1 **a.** Compare the two amounts in the Example using the symbol >.

b. Does using > for the inequality change which amount represents withdrawing more money? Explain.

2 Write an inequality that compares the value of point *A* and the value of point *B*. Show your work.



SOLUTION _____

Vocabulary

inequality
a mathematical statement that uses an inequality symbol to show the relationship between values of expressions.

Test Results

by Kirsten Weir

Could a new diagnostic machine help end one of the world's deadliest diseases?

The United States passed a medical milestone in 2011. In March of that year, the U.S. Centers for Disease Control and Prevention announced that the country's tuberculosis (TB) rate was at an all-time low.

Courtesy of Cepheid

Despite the good news, medical researchers have a long way to go in controlling the disease. In many developing countries, the infection rages. Doctors there can't screen people for TB quickly and accurately. Could a remarkable new machine made by a U.S. company change that situation?

'Forgotten Disease'

TB is a contagious bacterial infection. It usually attacks the lungs, but it can spread to other organs as well. Untreated, it can become deadly. TB sickens 9.4 million people and kills 1.7 million each year, according to the World Health Organization (WHO).

Believe it or not, one out of three people on the planet have been infected with TB. So why haven't you heard more about the disease? For one thing, not everyone who carries the TB bacterium becomes ill. People with *latent infections* have TB bacteria in their bodies, but their immune systems keep the germs at bay. They don't get sick, and they can't infect others. Most TB infections are latent, says Madhukar Pai, a TB researcher at McGill University in Montreal. Only about 10 percent of people with TB ever get sick.

There's another reason TB isn't discussed much in the United States. "TB is a forgotten disease of poor people," Pai explains. The infection thrives in poverty-stricken regions, especially where people live closely in unsanitary conditions. About 80 percent of all TB cases occur in 22 "high-burden" countries, including Brazil, China, Nigeria, Russia, and Afghanistan.

Abid Bhat/Photoshot/Newscom; Inset: AP Images

A nurse gives a shot to Asha Devi, 19, a tuberculosis patient in Gauhati, India. Left: A woman who has tuberculosis wears a surgical mask to keep her from infecting other people.

Despite efforts by groups such as the WHO, TB rates in high-burden countries are falling "painfully slowly," Pai says. Doctors are fighting the disease with old tools. A vaccine to prevent TB does exist, but it was designed in the 1920s and isn't very effective.

Drugs to treat people who are sick with the disease are available, too, but TB is a stubborn infection. Patients must take medications for six months to clear the bacteria from their systems. Worse, some strains of the bacterium are *drug resistant*. The drugs normally used to treat TB are powerless against

them. Patients with drug-resistant strains of TB must take other, more expensive drugs, and the course of treatment can last for a year or more.

Difficult Diagnosis

Before TB can be treated, it has to be diagnosed. To do that, doctors in poor countries usually rely on microscope exams of *sputum* samples. Sputum is a mixture of saliva and *phlegm* (mucus secreted in the airways). A medical worker examines the patient's sputum under a microscope to look for evidence of TB bacteria.

The sputum test is more than 100 years old and not very reliable. "It picks up maybe 50 to 60 percent of TB cases," says David Persing, the chief medical officer of Cepheid, a diagnostics company in Sunnyvale, Calif. "There are a lot of TB cases that go undetected."

Together with a Swiss organization, Cepheid has created a machine that can diagnose TB quickly and easily. It's called GeneXpert. A patient spits sputum into a small cartridge. The cartridge is then plugged into the GeneXpert machine, which scans the sample for bits of DNA that are unique to *Mycobacterium tuberculosis*, the bacterium that causes TB.

Alexander Khudoteply/AFP/Getty Images/Newscom

In the country of Ukraine, convicted criminals who have TB are treated in a special prison hospital while they serve time.

The GeneXpert test can accurately identify a case of TB in less than two hours. And it doesn't require special training; practically anyone can pop a cartridge into the machine and press the start button.

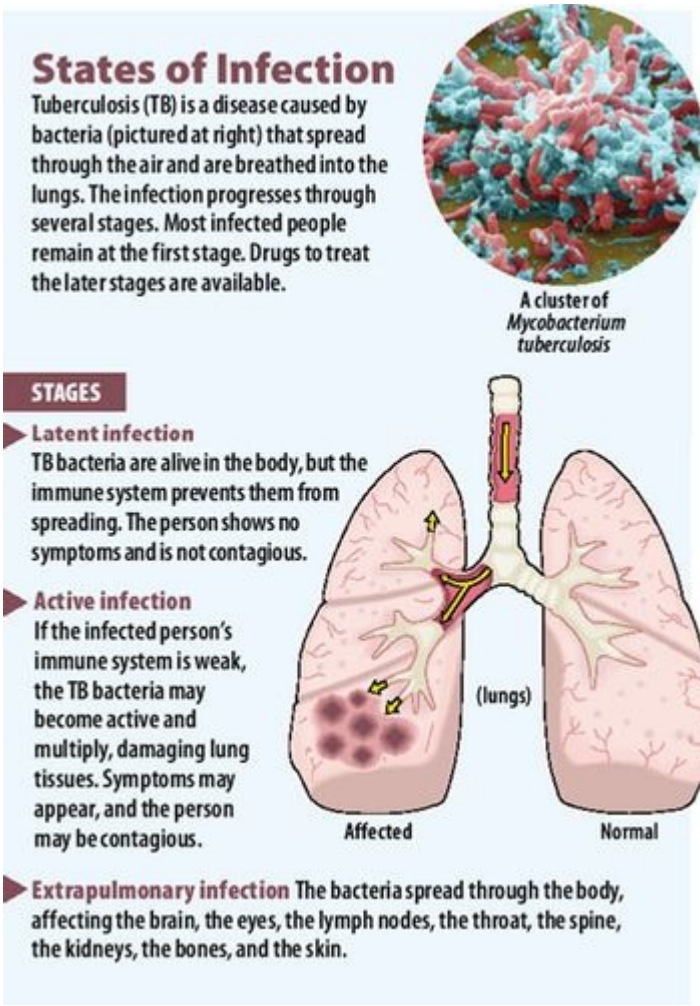
What's more, the test identifies whether a patient has a drug-resistant strain of TB. Previously, it took costly lab tests weeks to confirm drug-resistant infections. "Knowing it's drug resistant right off the bat is a huge advantage," Persing says. Patients can start taking the right drugs immediately, so they get better faster and infect fewer people.

Cost Control

The GeneXpert is one of the most exciting things to happen in the TB world in years, Pai says. There's a catch, though: it's expensive. In India, where TB kills 280,000 people a year, two-thirds of the population live on less than $2 a day. The WHO has worked with Cepheid to negotiate a special

lower price for the countries that need the machines most. Even then, a GeneXpert machine costs about $17,000, and every single-use test cartridge costs $17. In a poor country, that's a lot. Persing hopes that the price will drop even further as more countries order the machines.

Improving the diagnosis of TB is a critical step toward controlling the disease, but better drugs and an effective vaccine are also necessary, says Pai. "We need new technologies, and we need a lot more countries pitching in," he says. "We need to be more ambitious than we've ever been."



Sources: WHO/CDC; Graphic: AFP/Newscom; Inset: Eye of Science/Photo Researchers, Inc.

Name: _____ **Date:** _____

1. What is tuberculosis (TB)?

A. a group of medical researchers

B. a contagious bacterial infection

C. a medical milestone

D. a new diagnostic machine

2. The author contrasts the sputum test with the GeneXpert. What is one contrast between the two tests that the author draws?

A. the difference in how much time each method takes to diagnose TB

B. the difference in how much training it takes to diagnose TB

C. the difference in how well each method treats the symptoms of TB

D. the difference in how long it takes for each method to treat the symptoms of TB

3. Read these sentences from the text.

"The GeneXpert is one of the most exciting things to happen in the TB world in years, Pai says. There's a catch, though: it's expensive. In India, where TB kills 280,000 people a year, two-thirds of the population live on less than $2 a day. The WHO has worked with Cepheid to negotiate a special lower price for the countries that need the machines most. Even then, a GeneXpert machine costs about $17,000, and every single-use test cartridge costs $17. In a poor country, that's a lot."

Based on this information, what can you conclude about whether poor countries can afford GeneXpert machines?

A. Poor countries cannot afford GeneXpert machines because they are inexpensive.

B. Poor countries cannot afford GeneXpert machines because they are expensive.

C. Poor countries can afford GeneXpert machines because they are expensive.

D. Poor countries can afford GeneXpert machines because they are inexpensive.

4. The GeneXpert test is better than previous methods of diagnosing TB. What evidence from the text supports this statement?

A. Doctors are fighting the disease with old tools. A vaccine to prevent TB does exist, but it was designed in the 1920s and isn't very effective.

B. Patients with drug-resistant strains of TB must take other, more expensive drugs, and the course of treatment can last for a year or more.

C. The GeneXpert test identifies whether a patient has a drug-resistant strain of TB. Previously, it took costly lab tests weeks to confirm drug-resistant infections.

D. In India, where TB kills 280,000 people a year, two-thirds of the population live on less than $2 a day.

5. What is the main idea of this text?

A. TB is the forgotten disease of poor people because it thrives in poor regions.

B. A vaccine to prevent TB does exist, but it isn't very effective.

C. Some strains of TB can be resistant to drugs.

D. A new machine that diagnoses TB may help to end the spread of the disease.

6. Read this sentence from the text.

"Could a new diagnostic machine help end one of the world's deadliest diseases?"

Why might the author have begun the passage with this question?

A. to introduce tuberculosis as one of the world's deadliest diseases and the GeneXpert as a possible solution

B. to compare tuberculosis with one of the world's deadliest diseases

C. to introduce the GeneXpert as one of the world's deadliest diseases and tuberculosis as a possible solution

D. to contrast tuberculosis with one of the world's deadliest diseases

7. Read these sentences from the text.

"The GeneXpert is one of the most exciting things to happen in the TB world in years, Pai says. There's a catch, though: it's expensive."

What word or phrase could replace the word "though" without changing the meaning of the text?

A. for instance
B. however
C. as an illustration
D. namely

8. How much does a GeneXpert machine cost?

9. What makes using the GeneXpert a better way to diagnose TB than using sputum samples?

Support your answer with evidence from the text.

Current Events Log
Day 7

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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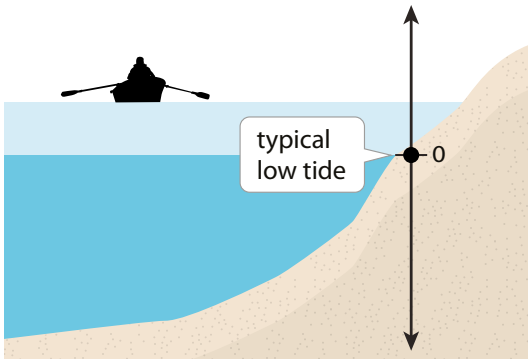
Journal Entry 7

PART 1

Imagine you walk into school one day and a sign is hanging in the window that says, "Due to the events yesterday, there will no longer be cookies allowed at school." Write a fiction story to tell what happened yesterday to make this sign necessary.

3 The typical level of a low tide at a beach is the 0 point on a number line. Each day's high and low tides are measured relative to the typical low tide. On Monday morning, low tide is at -0.8 ft. On Tuesday morning, low tide is at -0.4 ft.



a. Write an inequality to compare the low tides on Monday and Tuesday mornings. Show your work.

SOLUTION

b. Which day has a higher low tide? Explain.

4 Consider the inequality $-3 < -2\frac{1}{2}$. What does the inequality tell you about the location of -3 compared to the location of $-2\frac{1}{2}$ on a horizontal number line? Use *to the right* and *to the left* in your answer.

5 In golf, the winner is the person with the lowest score. At the end of a round of golf, Jada's score is positive. Isabel's score is negative. Can you determine who wins? If so, tell who wins and why. If not, explain why not.

Railroad Bridge, Argenteuil

This text and image are provided courtesy of the Philadelphia Museum of Art.

Philadelphia Museum of Art: John G. Johnson Collection, 1917, cat. 1050

1874 Oil on canvas 21 x 28 inches (54.3 x 73.3 inches) CLAUDE MONET French, 1840-1926

A small sailboat drifts along the water in this tranquil scene. Warm, golden light brightens the bridge's white pillars and the boat's sail. Their reflections in the water add pink, yellow, and orange **hues** to the blue of the river. Along the top of the bridge, a train chugs along, letting out puffs of smoke that drift across the sky. A gentle wind pushes the boat across the calm river below.

Claude Monet (clahd MOE-nay), the French artist who created this work of art, enjoyed painting the outdoors directly from observation. He appreciated the variety of colors in the sky, water, plants, and trees, especially those seen at sunrise and sunset. Notice the deep greens, blues, and purples in the grassy riverbank, and the blues and yellows in the train's smoke. Monet had to work quickly to capture the color and light as he saw it, since both frequently change as time passes. Look closely and you'll see the many short, quick **brushstrokes** that make up the grass, trees, water, and clouds. This style of painting is known as **Impressionism.**

This painting shows the Seine River in the town of Argenteuil (ar-jen-TOY), located just outside Paris. Monet lived there when he painted this picture, so he didn't have to travel far to observe this scenic spot. At that time, the railroad service was expanding, and it became easier for city dwellers to take weekend trips to the nearby countryside. Perhaps the tiny figures in the boat are enjoying time away from the faster pace of urban life.

Name: _____ **Date:** _____

1. Which artist painted The Bridge at Argentuil?

A. Mary Cassatt

B. Winslow Homer

C. Edouard Manet

D. Claude Monet

2. Which three topics does the text address?

A. The painting's use of color, Impressionist brushstroke style, and the expansion of the railroad service

B. The history of the Seine River, the founding of Argenteuil, and city life in France

C. The founding of Impressionism, the popularity of sailing, and the personal life of Claude Monet

D. Famous Impressionist painters, techniques for painting nature images, and the Paris art scene

3. Read this sentence from the text.

"A gentle wind pushes the boat across the calm river below."

What evidence from the painting supports the author's suggestion that there is a gentle wind?

A. The brushstrokes are short and quick.

B. The right side of the painting is full of shadows and varying shades of green.

C. The boat's sail is full while the water remains calm.

D. The figures in the boat are far-off and tiny.

4. Based on the information in the text and the painting, how could the mood of the painting best be described?

A. Scary and threatening

B. Calm and peaceful

C. Wild and disturbing

D. Exciting and fun

5. What is the main idea of the text?

A. Claude Monet's appreciation of natural light and color is reflected in his painting of a calm outdoor scene near a river in Argenteuil.

B. Impressionist painters such as Claude Monet preferred depicting natural scenes over scenes of urban life.

C. The railroad bridge over the Seine River at Argenteuil inspired many Impressionist painters.

D. The Seine River was typically calm and tranquil, making it a popular location for sailing among the people who lived in Argenteuil.

6. Read these sentences from the text.

"...the railroad service was expanding, and it became easier for city dwellers to take weekend trips to the nearby countryside. Perhaps the tiny figures in the boat are enjoying time away from the faster pace of urban life."

Why might the author have included this suggestion that the figures in the boat are taking relaxing time away from the city?

A. To highlight the importance of the Seine River to French industry

B. To highlight the sense of calm in the painting

C. To suggest that the growing railroad service negatively affected quality of life in France

D. To suggest that Monet preferred painting images of nature

7. Choose the answer that best completes the sentence.

Light and color change frequently throughout the day. _____, Monet had to work quickly to capture the color and light as he saw it.

A. Still

B. Because

C. Therefore

D. However

8. According to the text, what did Claude Monet appreciate about the outdoors?

9. Read this sentence from the text.

"A gentle wind pushes the boat across the calm river below."

What characteristics of the painting suggest that the wind is gentle?

Support your answer with evidence from the text and images.

10. What characteristics of the painting create a feeling of calm in the scene?

Support your answer with evidence from the text and images.

Current Events Log
Day 8

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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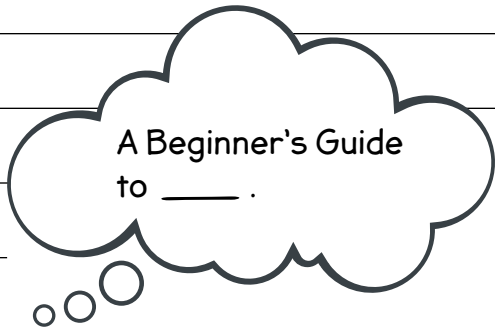
Journal Entry 8

PART 1

We all have hobbies that we enjoy. Think of one of your hobbies that you're really good at doing. Write a beginner's guide to your hobby. Include things like materials needed, step-by-step instructions, and the amount of time needed to complete the project.

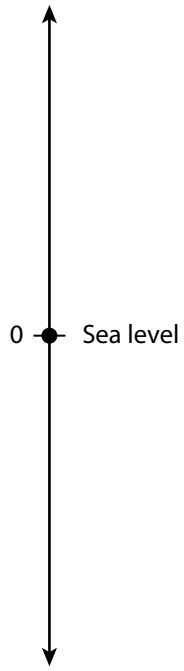


Day 9

➤ **Complete problems 3–5.**

3 The table shows the elevations of four objects relative to sea level.

Object	Elevation (km)
Mountain cabin	2
Submarine	−10
Sunken ship	−6
Airplane	10



a. Use the number line to show the elevations of the four objects. Label each object at its elevation.

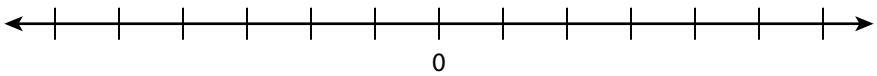
b. Circle the two objects on your number line that are the same distance from 0.

4 The notation $|40|$ means *the absolute value of 40*.

a. $|40| =$ _____ because the distance from 0 to 40 is _____.

b. $|-40| =$ _____ because the distance from 0 to −40 is _____.

5 **a.** Plot and label the numbers −2, −4, −6, and −8 on the number line. Do the values of the numbers *increase* or *decrease* as the numbers go from −2 to −8?



b. Find the absolute value of each number. Do the absolute values of the numbers *increase* or *decrease* as the numbers go from −2 to −8?

$|-2| =$ _____ $|-4| =$ _____ $|-6| =$ _____ $|-8| =$ _____

Vocabulary

absolute value

a number's distance from 0 on the number line. Absolute value is never negative.

Water from the Air: Cloud Forests

by Alden Wicker

Mindo Cloud Forest

In the Americas, Asia, and Africa, there's a special kind of forest. It's rare, beautiful, and incredibly important to the animals and plants living there, and the humans who live nearby.

It's called the cloud forest. Cloud forests, like the name implies, can be found in the clouds on the slopes of mountains. Because they are often shrouded in warm mist, cloud forests are very humid and wet places. But that's what makes these forests so valuable.

Like rainforests, cloud forests experience rainfall, but they also capture water straight from the air. Water condenses on the leaves of the plants (sort of like dew on the grass in the morning) and drips through the canopy to the floor. If you stand in a cloud forest, you'll hear the constant drip of water, even if it's not raining. The water captured is pure and unpolluted, and flows through the ground into streams and then rivers.

Some people call cloud forests "water towers," because they are so important for providing water to nearby villages and cities. In the capital of Honduras, Tegucigalpa, four out of 10 people get their water from La Tigre National Park. That's about 340,000 people drinking cloud forest water! And there are a lot of other big cities that get some of their water from cloud forests, like Quito, Ecuador; Mexico City, Mexico; and Dar es Salaam, Tanzania.

In Guatemala, most of the water comes from the Sierra de las Minas Biosphere Reserve. More than 60 permanent streams flow from the reserve downhill to settlements, villages, and cities. People drink the water, use it for cooking, and irrigate their farm fields with it. In Kenya, people rely on the water from cloud forests to provide electricity by harnessing the energy of rivers that flow from Mount Kenya.

But it's not just humans who rely on cloud forests. While they only make up 2.5 percent of the world's forests, they are home to a stunning array of animals and plants. There are more species of hummingbirds in cloud forests than anywhere else in the world. Colorful birds, lizards, moss, and ferns live here; plus plants that grow on trees, called bromeliads. There's even a bear called the spectacled bear, named for the markings on its face. It's the only bear that lives in South America, and there are only a few thousand remaining because of habitat destruction and hunting.

We don't even know all of the plants, animals, and insects that live in cloud forests, yet we keep discovering new ones. In the 1990s, scientists discovered two bird species that only live in cloud forests. One is the Jocotoco Antpitta, or *Grallaria ridgelyi*, which lives in Ecuador in a small patch of cloud forest. Another is the Scarlet-banded Barbet, or *Capito wallacei*, which was discovered in Peru living on just one mountain. Scientists also discovered a new type of cow and barking deer in the cloud forests of Laos and Vietnam.

As you can see, cloud forests are extremely special places. But they are also very fragile and face a wide array of threats. Local poor people clear the forest so that they can grow subsistence crops. They also hunt endangered and threatened animals for meat, and cut down trees to heat their homes and cook. Commercial farmers convert the land so that they can grow fruits, vegetables, and coffee beans. Cloud forests are cleared and turned into pasture for cattle. Building roads and gem mines also severely damages the cloud forests.

Once cloud forests are cleared, the damage can be irreversible. The cloud cover, which is so essential to the growth of these forests, disperses. The soil degrades and erodes, washing down the mountain slopes. Many species vital to the ecosystem die off. What is left behind is a barren, dusty slope unsuitable for farming and unable to support animals, plants, or even people.

You can think of cloud forests sort of like little habitat islands, bounded by other types of forests and habitats on all sides. Many species are unable to leave one patch to travel to another. Once one patch is completely cleared, many species of plants and animals can go extinct, without ever being seen or studied by people like us. Some of the plant species lost could have been a new medicine or edible crop.

Scientists estimate that each year, 1.1 percent of the world's total cloud forest land is cleared for logging and timber falling. But even more worrying is the threat of climate change. Cloud forests form at very specific altitudes and rely on certain temperatures to thrive. If world temperatures rise, cloud forests would have to move up to a higher altitude where the temperatures are cooler in order to adjust. Some cloud forests are on mountain peaks with nowhere to climb and would die out. Climate change could also lessen cloud cover, which cloud forests rely on to grow. Because of this, the rate of loss could double.

As you can see, cloud forests are essential, providing water, food, and medicine to the people living in, around, and near them. So why would local people destroy them? To understand why, you have to put yourself in the shoes of a poor local farmer.

Imagine that you have no electricity or gas to heat your home or cook your meals. You do not have an oven or stove, so you get wood from the forest to build a fire. You also need food, and you cannot find a job that pays enough to buy any. There might not be a grocery store anywhere nearby, either. Therefore, you clear some forest next to your home so that you can plant fruits, vegetables, and grains. You also hunt local animals to eat. You would probably be excited to have a road built through the forest to your village, so you can easily go to a nearby city, or reach a hospital if you or someone in your family has an emergency.

If only a few people did these things, it might not be a problem. But the population is growing fast, and when thousands of people clear the forest and hunt animals, it becomes a crisis. Scientists fear we might lose cloud forests altogether, along with the water and other services they provide.

To combat the problem, some governments have designated certain stretches of cloud forest as protected, and it's illegal to clear or log them. This can help preserve cloud forests against mining companies and large commercial farmers. But it can be hard to enforce these rules against local populations. To work with local populations of people is more effective, providing them with other ways to get food and energy so that they can leave the cloud forests intact.

It is also effective to educate the local population on how cloud forests provide fresh water and what happens when they are cleared. For example, in the indigenous community of Loma Alta in Ecuador, once the people understood that the cloud forest is necessary to provide water for farms at lower altitudes, they worked together successfully to protect it.

Cloud forests are too valuable of a natural resource to lose. With laws to protect them, education, and economic support for local people, we might be able to save them-plus the animals and plants they support-before it's too late.

Name: _____ **Date:** _____

1. What are cloud forests?

A. forests that are made out of clouds and float through the earth's atmosphere

B. forests of oak and maple trees found in the northeastern United States

C. pine forests that live in cold climates without much animal life

D. humid forests that live among clouds on mountain slopes

2. What does this article try to persuade the reader of?

A. Governments should not interfere with businesses.

B. It is too late to save cloud forests.

C. Protecting cloud forests is important.

D. Commercial farming is more important than cloud forests.

3. The loss of cloud forests is harmful to the surrounding ecosystem.

What evidence from the passage supports this statement?

A. When cloud forests are cleared away, the soil degrades and erodes. What is left behind is a dusty slope that is unable to support animals, plants, and people.

B. Cloud forests live among the clouds on the slopes of mountains. They are often surrounded by warm mist, which makes them very humid and wet places.

C. The Jocotoco Antpitta, or*Grallaria ridgelyi*, lives in Ecuador. The Scarlet-banded Barbet, or *Capito wallacei*, lives in Peru. Barking deer live in Laos and Vietnam.

D. Commercial farmers sometimes clear cloud forests so that the land can be used as pasture for cattle. Other times, cloud forests are cleared to build roads.

4. Why might providing economic support to people living near cloud forests help save the forests?

A. People living near cloud forests would be less likely to care about protecting animals like the Jocotoco Antpitta and the Scarlet-banded Barbet.

B. People living near cloud forests would be less likely to clear away parts of the forest to try to support themselves.

C. People living near cloud forests would be more likely to buy cars and build roads through the forest to drive on.

D. People living near cloud forests would be more likely to buy gems dug from the ground by mining companies.

5. What is this passage mainly about?

A. how people in Tegucigalpa, Quito, Mexico City, and Dar es Salaam get their water

B. the history of the Sierra de las Minas Biosphere Reserve in Guatemala

C. the mining companies and commercial farms that threaten cloud forests around the world

D. cloud forests, the threats they face, and what can be done to save them

6. Read the following sentences: "It is also effective to educate the **local** population on how cloud forests provide fresh water and what happens when they are cleared. For example, in the indigenous community of Loma Alta in Ecuador, once the people understood that the cloud forest is necessary to provide water for farms at lower altitudes, they worked together successfully to protect it."

What does the word "**local**" mean?

A. shrinking slowly over a long period of time

B. turning out differently from what was expected

C. having to do with a particular place or area

D. causing people to feel extremely happy

7. Choose the answer that best completes the sentence below.

Cloud forests are home to unusual animals, _____ spectacled bears and barking deer.

A. previously

B. such as

C. as a result

D. third

8. Name an animal that is found only in cloud forests.

9. How are cloud forests valuable to human beings? Support your answer with evidence from the passage.

10. Are cloud forests too valuable of a natural resource to lose, as the author claims? Explain why or why not, using evidence from the passage.

Current Events Log
Day 9

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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Journal Entry 9

PART 1

Write a fiction story where one of the main characters says, "But if anyone asks, tell them we're fine!"

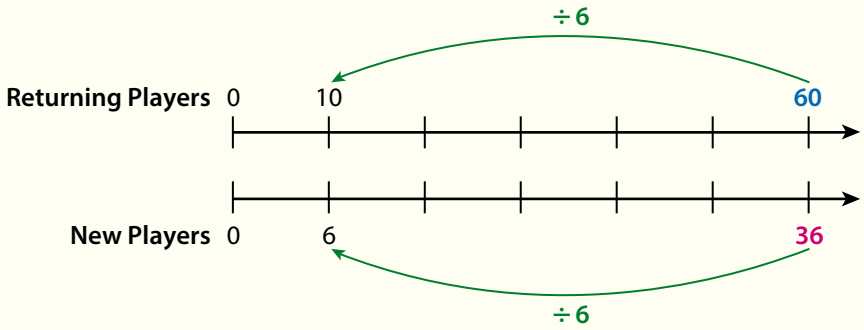
Practice Finding Equivalent Ratios

➤ **Study the Example showing how to find equivalent ratios. Then solve problems 1–5.**

Example

A soccer league has 60 returning players and 36 new players. Each team will have the same ratio of returning players to new players as the league has. How many new players will a team with 10 returning players have?

You can use a double number line to find ratios equivalent to 60 : 36.
Number pairs that line up vertically represent equivalent ratios.



You can divide each quantity in 60 : 36 by 6 to find the equivalent ratio 10 : 6.

A team with 10 returning players will have 6 new players.

1 Sophia says that you can solve the problem in the Example by multiplying both quantities in the ratio 60 : 36 by $\frac{1}{6}$. Is Sophia correct? Explain.

2 Which ratios are equivalent to 8 : 12? Select all that apply.

A 4 : 6

B 12 : 8

C 16 : 20

D 24 : 36

E 56 : 84

Vocabulary

equivalent ratios
two ratios that express the same comparison.
Multiplying both numbers in the ratio $a : b$ by a nonzero number n results in the equivalent ratio $na : nb$.

Music and Your Mind

by Debbie Nevins, Kirsten Weir

Listen up! Music has you in its power-physically and mentally.

New Orleans resident Ashton C., 13, likes to rock out. When he's not practicing guitar or drums, he's often listening to Led Zeppelin, AC/DC, or The Beatles. "I listen to the music over and over and just let it get into my system," he says.

Ashton is more right than he may know. Music really does get into our systems. It affects us physically-loud music can harm our ears, while soft music can help put us to sleep. And it affects us mentally-music can improve our moods. It can also help us memorize information. Think of the ABC song you learned as a child. There's a good reason the alphabet was made into a song. Without the melodic cue, you would have had a much harder time remembering it.

Music: It's Only Human

Why does music have such power over us? After all, it isn't essential as food, water, and air are. We might enjoy it, but we don't need music to live. Or do we?

Music has been important to people as long as humankind has been around. Scientists have discovered ancient flutes made of animal bones that date to prehistoric times. Some researchers think early humans might have made music even before they developed language and speech.

And music exists everywhere humans do, says Diana Deutsch, an expert in music and memory. "People have not found a culture where there isn't music."

Likewise, you won't find music where there aren't people. Wait-are you wondering about birds? It's true that birdsong sounds musical to our ears. But to the birds, the calls are simply their way of communicating.

In general, all members of a given species make the same sounds. A robin speaks robin. A blackbird speaks blackbird. A sparrow doesn't create its own tone, melody, or pitch. Those chirps, pretty as they are, aren't music.

Only humans make music-it is literally part of us. Our brains are hardwired for it. Scientists don't know why. Perhaps it has to do with music's ability to communicate emotion. Studies have shown that even infants as young as eight months old can tell "happy" music from "sad" music.

Pump It Up, Slow It Down

Music has the power to affect the body. Listening to fast, upbeat songs can make a person's heart rate and breathing rate speed up. That's why fast music is perfect for a workout-as Sarah S., of Deerfield, Ill., knows. "If I have a basketball game, I'll listen to music that will get me pumped up," the 14-year-old says.

Soothing music does the opposite. It brings down heart and breathing rates. Listening to gentle, slow music before bed helps people get a better night's sleep. Music can even reduce pain and depression.

A Sound Track in Your Mind

As the ABC song shows, music is tied to memory. One study in China found that kids who took lessons on musical instruments did better on certain memory tests than kids who didn't play instruments.

And if the sound of an organ playing reminds you of that time your Uncle Mike took you to a big-league baseball game, you know how powerfully music can trigger memories-sometimes even long-lost ones.

"What seems to happen is that a piece of familiar music serves as a sound track for a mental movie that starts playing in our head," says Petr Janata. He is a scientist who studies music and the brain. "It calls back memories of a particular person or place, and you might all of a sudden see that person's face in your mind's eye."

Scientists are trying to solve the mystery of music's power. They are working to piece together a picture of what happens in the brain when people listen to or play music. So far, they know there's no one music center in our heads-music activates many areas of the brain.

Right now, while your brain is still growing, music plays an important role. Catriona Morrison, a researcher with the University of Leeds in England, found that music leaves its most lasting impression on people around age 14. And the songs you listen to in your teens will probably influence the type of music you listen to for the rest of your life.

Attack of the Earworms

Do songs ever get "stuck in your head"? Those tunes have a name: earworms.

What makes certain jingles so catchy? Nobody knows for

Getty Images

sure, but James Kellaris-also known as "Dr. Earworm"-is trying to find out. Kellaris is a researcher at the University of Cincinnati. He says that almost any song can become an earworm. But simple, repetitive, or surprising songs are the usual culprits.

Kellaris says earworms are more likely to strike if you're stressed or fatigued. So play some calming tunes and get a good night's rest-or you might wake up with a tune such as Subway's "$5 Footlong" song playing on an endless loop in your head!

What's Your Earworm?

Kellaris says some songs, such as "Y.M.C.A.," are common earworms. Sarah S. says she gets jingles from TV commercials stuck in her head. Ashton C. says the singer Lady Gaga is responsible for some of his worst earworms. Michael P., 12, of New Jersey gets tunes from *Hannah Montana* commercials lodged in his brain-and he hates that show. Clearly, earworms are all in the ear of the beholder!

Name: _____ **Date:** _____

1. What is something that only humans make?

A. sound

B. music

C. loud noise

D. soft noise

2. What is an effect of listening to gentle, slow music before bed?

A. getting a better night's sleep

B. falling asleep later than usual

C. waking up early the next morning

D. having pleasant, soothing dreams

3. Music has been around as long as humans have.

What evidence in the article supports this statement?

A. "Scientists have discovered ancient flutes made of animal bones that date to prehistoric times."

B. "In general, all members of a given species make the same sounds."

C. "Studies have shown that even infants as young as eight months old can tell 'happy' music from 'sad' music."

D. "Music has the power to affect the body."

4. What is an example of music affecting people mentally?

A. Music can make a person's heart rate speed up.

B. Music can help people memorize information.

C. Music can harm people's ears.

D. Music can make a person's breathing rate slow down.

5. What is the main idea of this text?

A. All members of a given species make the same sounds.

B. Listening to fast songs can make a person's heart rate speed up.

C. Music is connected to memory.

D. Music affects people physically and mentally.

6. Read these sentences from the text.

"Why does music have such power over us? After all, it isn't essential as food, water, and air are. We might enjoy it, but we don't need music to live. Or do we?"

Based on these sentences, what does the word "essential" mean?

A. strong
B. unimportant
C. necessary
D. enjoyable

7. Choose the answer that best completes the sentence.

There's no one music center in our heads. _____, music activates many areas of the brain.

A. In particular
B. On the contrary
C. Previously
D. In the end

8. According to the text, what can reduce pain and depression?

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9. The authors state that music can "help us memorize information." What evidence in the text supports this statement?

10. The authors claim that music is "important to people."

Support this claim with evidence from the text.

Current Events Log
Day 10

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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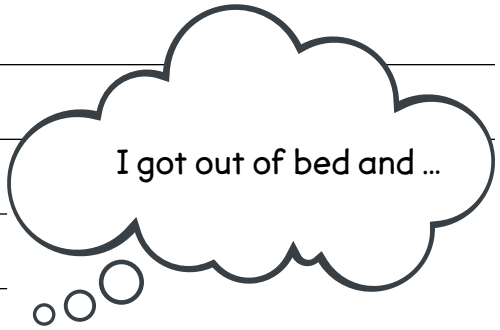
Journal Entry 10

PART 1

You get out of bed in the morning and walk into an invisible wall! You discover your whole house has an invisible maze in it. What do you do? How do you figure out where the walls are? Write to explain the situation and how you resolve it.



Day 11

3 A football field is 300 ft long. A sloth moving very quickly travels 60 ft every 5 min. Based on this ratio, how many minutes would it take a sloth to travel the length of a football field? Show your work.

SOLUTION _____

4 At a summer camp, the ratio of campers to adults is kept equivalent to 7 : 1.

a. Use equivalent ratios to complete the table.

Campers	7		28	
Adults	1	2		30

b. Next week, there will be 63 campers. How many adults should the camp have next week? Show your work.

SOLUTION _____

5 A manager of a clothing store always orders 2 small T-shirts and 3 large T-shirts for every 4 medium T-shirts. The manager plans to order 24 medium T-shirts. How many small T-shirts and large T-shirts should the manager order? Show your work.

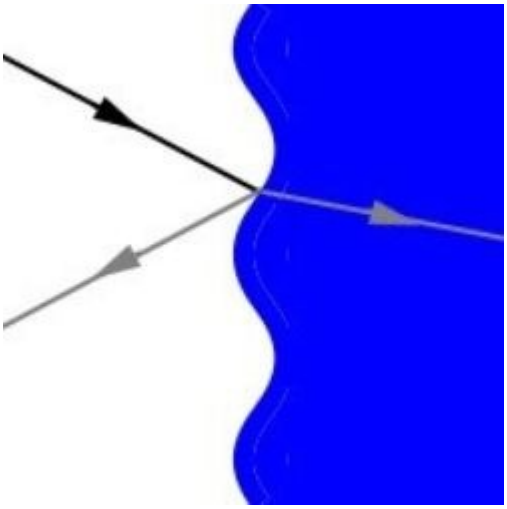
SOLUTION _____

Why Do Things Look Darker When They Are Wet?

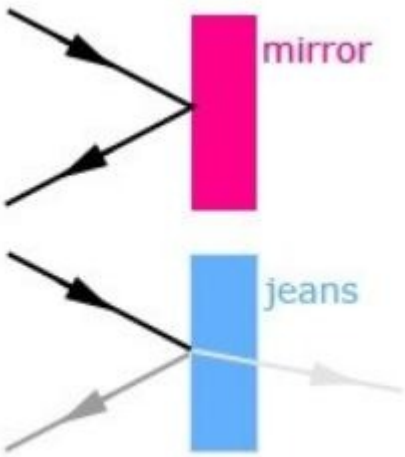
by Dr. Hany Farid

When light strikes an object, some of it penetrates the object, and some of it is reflected and reaches your eye. When an object is wet, more light penetrates the object, so less light is reflected. As a result, less light reaches your eye and so the wet object looks darker. Read on for a more detailed explanation.

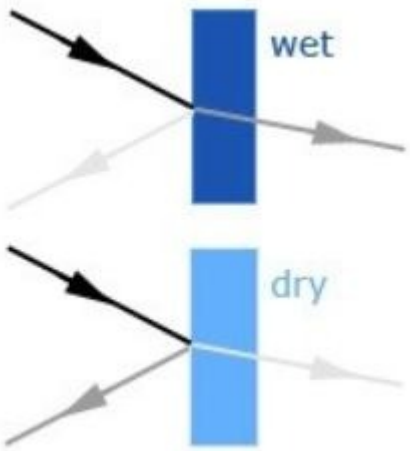
Fact 1. When light moves from air to water, some of the light reflects and some refracts. The reflected light "bounces" off the water, and the refracted light bends at the air/water boundary and passes through the water.



Fact 2. When light strikes any object, some of the light is reflected and some is refracted and transmitted through or absorbed by the object. The relative amounts of which depend on the material properties of the object, its index of refraction.



Fact 3. When a material gets wet and absorbs water, the material's index of refraction is effectively changed, making it so that more light penetrates and less light is reflected.



The light that is reflected from an object is the light that we perceive. How light or dark an object appears depends on how much light that strikes an object reflects back to our eye. For an object whose material has an index of refraction close to that of air very little light is reflected. For an object whose material has an index of refraction different than air, most of the light that strikes it is reflected.

When an object gets wet and absorbs water, its index of refraction effectively moves closer to that of air. When light strikes a wet object, therefore, less light is reflected than when it is dry. A pair of wet pants, a wet sidewalk, and a wet beach, therefore, reflects less light, and therefore looks darker. Steel, glass or plastic doesn't look darker when it is wet because it doesn't absorb any water, and therefore the same amount of light is reflected whether it is dry or wet.

This photo shows a person's t-shirt partly wet. The wet part looks darker than the dry part.

Name: _____ **Date:** _____

1. When light strikes an object, what happens to some of the light?

A. Some of the light turns into sound.

B. Some of the light becomes brighter.

C. Some of the light is reflected.

D. Some of the light becomes less bright.

2. What is an effect of an object getting wet?

A. More light is reflected by the object.

B. Less light penetrates the object.

C. More light penetrates the object.

D. The object looks lighter.

3. Read Fact 1 and look at the image next to it.

When light moves from air to water, some of the light reflects and some refracts. The reflected light 'bounces' off the water, and the refracted light bends at the air/water boundary and passes through the water.

Based on this information, what can you conclude about the image next to Fact 1?

A. The image shows light being refracted but not reflected by water.

B. The image shows light being reflected but not refracted by water.

C. The image shows light being reflected and refracted by water.

D. The image shows light striking water from different directions.

4. Read Fact 2 and look at the image next to it.

When light strikes any object, some of the light is reflected and some is refracted and transmitted through or absorbed by the object. The relative amounts of which depend on the material properties of the object, its index of refraction.

Based on this information and the image next to it, what is a difference between jeans and a mirror?

A. Jeans refract less light than a mirror does.

B. Jeans absorb less light than a mirror does.

C. Jeans refract more light than a mirror does.

D. Jeans reflect more light than a mirror does.

5. What is the main idea of this text?

A. Steel, glass, and plastic do not look darker when they are wet.

ct.

B. If an object is wet, it reflects less light and looks darker.

C. When light strikes an object, some of it is reflected by the object.

D. When light strikes an object, some of it penetrates the object.

6. Read these sentences from the text.

When light moves from air to water, some of the light reflects and some refracts. The reflected light 'bounces' off the water, and the refracted light bends at the air/water boundary and passes through the water.

What is the meaning of the word "refracts" as it is used here?

A. bounces

B. reflects

C. moves

D. bends

7. Read these sentences from the text.

When light strikes any object, some of the light is reflected and some is refracted and transmitted through or absorbed by the object. The relative amounts of which depend on the material properties of the object, its index of refraction.

Which word does the pronoun "its" refer to?

A. material
B. properties
C. which
D. object

8. What does how light or dark an object appears depend on?

9. What is an object's index of refraction?

Current Events Log
Day 11

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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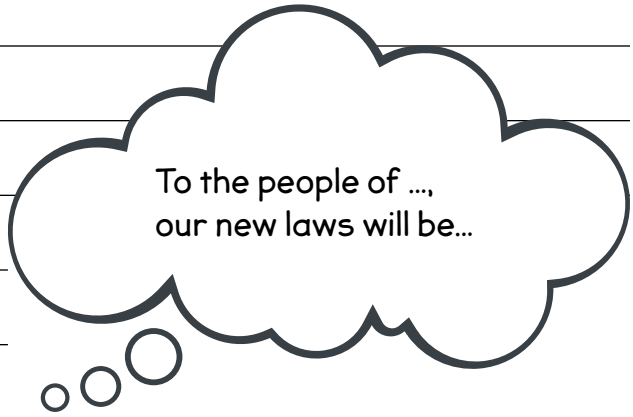
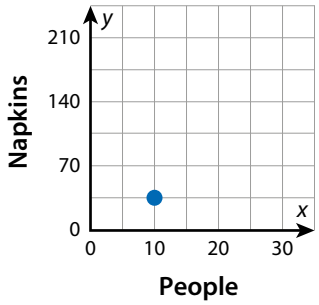
Journal Entry 11

PART 1

Today you woke up and were told you are the president of a new country. You can name the country anything you'd like and make all the laws. What decisions would you make? Write an announcement to the people of your country explaining everything to them.



3 Jordan and Mia are bringing napkins to a back-to-school picnic. They decide to bring 35 napkins for every 10 people who plan to attend. The point on the graph represents this ratio.



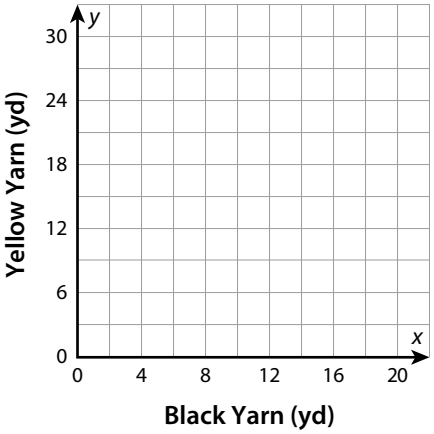
a. Plot another point that represents an equivalent ratio. Explain how you found the coordinates of this point.

b. What do the coordinates of the point you plotted represent in this situation?

4 Allen is making a scarf for charity. He uses 4 yd of black yarn for every 6 yd of yellow yarn.

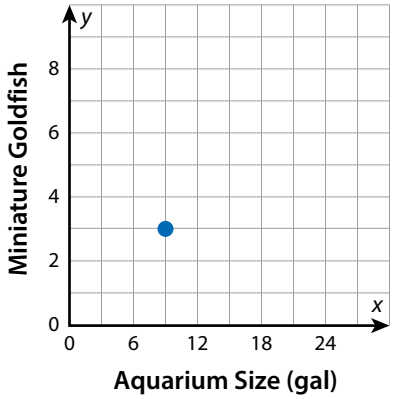
a. Complete the table of equivalent ratios.

Black Yarn (yd)	2	4	12	
Yellow Yarn (yd)		6		30



b. Plot ordered pairs on the graph to represent the ratios.

5 An aquarium that holds 9 gal is the correct size for 3 miniature goldfish. The point on the graph represents this ratio relationship. Which ordered pairs represent equivalent ratios that would also be on the graph? Select all that apply.



A (1, 3)

B (3, 1)

C (12, 6)

D (15, 9)

E (18, 6)

Group Behavior

by Michael Stahl

The word "social" means: "relating to society or its organization." There is a special type of science that studies how human beings interact with each other and it is called "sociology." One quality of our society that sociologists, the type of scientists who study society, have looked closely at is mankind's desire to be a part of different groups. Sociologists call this "group behavior."

Sociologists believe that group behavior began in mankind a long time ago when man was more primitive. Back then, people did not have big homes made of concrete or brick to protect them from dangerous animals. People slept in caves and were out in the open during the day a lot more. They would look all around for food so that the species could continue living. Eventually, people began to realize that if they traveled and worked together, they could find more food and would be able to more effectively battle animals that threatened them. Bigger quantities of food and a better sense of safety helped humans survive and prosper.

As time went on, people began to see the benefits of being a part of a group. Groups provide companionship. People simply get to be around other people, which we as a species began to enjoy. Usually, this sense of companionship would be stronger felt if the group as a whole had a common purpose. This could also lead to members of a group feeling extra proud of themselves when they accomplish something, especially if it benefits the rest of the group. Some people also began to become leaders within their groups, which created a higher level of appreciation and respect for them from their peers. This marked the beginning of roles within a group.

A "role" is another word for a job within a group. Individuals in a group either naturally created a purpose for themselves or might have been given one by the group's leader. Some men of a group had the role of hunter, for example. Others may have been the builders of campfires.

Group behavior also included the creation of "norms" and "values." Norms are examples of what a group normally does over a period of time. Members of a group might all wake up at the same time and begin to carry out their various duties during the day, but repeat those same activities day after day. Values are a summary of what the group's goals might be or a general idea of what is acceptable behavior. Some groups might strongly believe in honesty and dislike theft.

There are actually some negative things that can come along with group behavior. From time to time, if a person is not accepted within a group, they might feel rejected and saddened. Other times, a group might find itself fighting a "common enemy," which is another group that is disliked as a whole because it may have different norms or values. Group behavior also makes it more likely that all of the members of a group will believe something just because one member says so, even if it is not true or favorable.

Group behavior is the basis for so much of what we see in our society today. Cities, towns, and countries were built because of a group behavior that created common values. The same can be said for all of the large organized religions of the world, not to mention little after-school clubs that focus on art or the game of chess.

Name: _____ **Date:** _____

1. What is "group behavior"?

A. mankind's desire to study sociology

B. mankind's desire to be part of one group

C. mankind's desire to not be part of different groups

D. mankind's desire to be part of different groups

2. Being part of a group is an effect. What caused people to become part of a group a long time ago?

A. People wanted to believe something just because one member said it was so.

B. People wanted to be able to better survive and prosper.

C. People wanted to be alone.

D. People wanted to have big homes made of concrete or brick to protect them from dangerous animals.

3. Groups accept certain behaviors according to what their members believe to be correct. Which sentence from the passage best supports this conclusion?

A. "Individuals in a group either naturally created a purpose for themselves or might have been given one by the group's leader."

B. "Group behavior is the basis for so much of what we see in our society today."

C. "Group behavior also makes it more likely that all of the members of a group will believe something just because one member says so."

D. "Norms are examples of what a group normally does over a period of time."

4. Based on the passage, what might the identity of a group be based on?

A. the group's values

B. the group's location

C. the group's "common enemy"

D. the group's size

5. What is the passage mostly about?

A. how to use group behavior to better interact with other people

B. how to be accepted in a group

C. groups in different societies

D. group behavior

6. Read the following sentences: "Eventually, people began to realize that if they traveled and worked together, they could find more food and would be able to more effectively battle animals that threatened them. Bigger quantities of food and a better sense of safety helped humans survive and **prosper**."

Based on the passage, what does the word "**prosper**" most nearly mean?

A. to move

B. to fight

C. to die out

D. to succeed

7. Choose the answer that best completes the sentence below.

Values are a summary of what the group's goals might be or a general idea of what is acceptable behavior; _____, some groups might strongly believe in honesty and dislike theft.

A. otherwise

B. on the contrary

C. however

D. for example

8. Describe at least two advantages of being in a group by using information from the passage.

9. Group behavior also makes it more likely that all of the members of a group will believe something just because one member says so. Explain why this may be a negative aspect of group behavior by using information from the passage.

10. Explain whether a group fighting a "common enemy" is a positive or negative thing. Use information from the passage to support your argument.

Current Events Log
Day 12

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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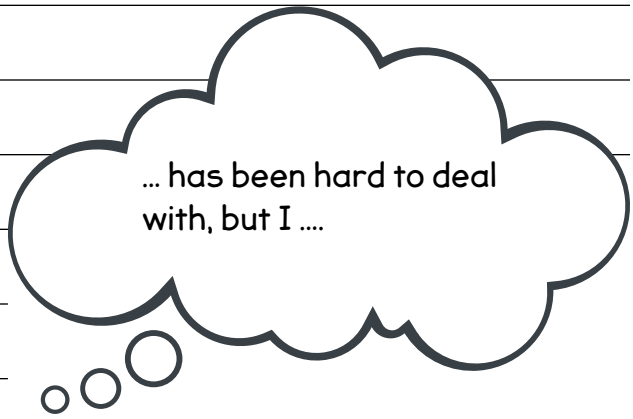
Journal Entry 12

PART 1

What has been the most challenging thing you've had to deal with while staying at home? How have you managed? Write advice to share with friends who are dealing with similar challenges.



Practice Finding the Median and Quartiles

➤ **Study the Example showing how to summarize a data set with a single number. Then solve problems 1–5.**

Example

Abran recorded the price of his favorite granola bar at 9 different stores. What is the median cost of the granola bar at these stores?

$0.85, $0.99, $1.15, $1.27, $1.28, $1.30, $1.30, $1.84, $1.89

Order the values from least to greatest. Find the middle value.

0.85, 0.99, 1.15, 1.27, (1.28), 1.30, 1.30, 1.84, 1.89

The median cost for the granola bar is $1.28.

1 **a.** Look at the Example. What is the lower quartile (Q1) and upper quartile (Q3) of the granola bar prices? Show your work.

SOLUTION _____

b. What do these values tell you about the cost of the granola bars?

2 Abran sees his favorite granola bar from the Example in a vending machine at an airport. The cost is $2.75. What are the new values of the median, lower quartile, and upper quartile? Show your work.

SOLUTION _____

Vocabulary

median
the middle number, or halfway point between the two middle numbers, in an ordered set of numbers.

lower quartile
the middle number between the minimum and the median in an ordered set of numbers.

upper quartile
the middle number between the median and the maximum in an ordered set of numbers.

Apples: The Health Benefits

You know that apples are juicy, sweet, and tasty. They are often thought of as a treat or dessert. But apples are an important part of your daily diet. Exciting research has shown that apples have the power to help keep you healthy! Scientists have also discovered that the more of them you eat, the healthier you can be.

They Can Do That?

It's hard to believe that one fruit can pack such a punch. The truth is, many fruits and vegetables do. But lately scientists have been pretty excited about apple research. Eating apples has been shown to lower the risk of cancer, stroke, and heart disease. There really is truth to that old saying, "An apple a day keeps the doctor away." Here are some facts from research done throughout the world:

· *Cancer*: Laboratory work at Cornell University in Ithaca, New York, found that certain nutrients in apples slow the growth of colon and liver cancer cells. And researchers in Hawaii studied lung

cancer patients and another group that was cancer-free. They found that eating apples kept the risk of lung cancer low.

- *Stroke*: Researchers in Finland studied more than 9,000 men for 28 years and found that those who ate lots of apples had a low risk of stroke. A stroke happens when a blood clot in the brain causes damage or when there is bleeding in the brain.

- *Heart disease*: At the University of California- Davis, researchers found that eating apples kept "bad," or LDL, cholesterol from harming the body. LDL cholesterol causes changes in the arteries. These changes are the buildup of *plaque* (PLAK) on the inside walls of the arteries. Plaque can lead to blood clots and heart attacks. A heart attack is like a stroke, only the damage occurs in the heart.

Other studies showed that people who ate apples regularly had better lung function. Their risk of dying from a heart attack was lower too.

Apples also help in digestion because they contain enzymes to help break down the food you eat. A fat-free food, one medium-size apple has only about 80 calories.

They also have fiber--a medium-size apple has about 5 grams of fiber if you eat the skin too. Dietitians recommend we get from 20 to 25 grams of fiber per day. The type of fiber in apples is called *pectin* (PECK-tin). Studies in Italy, Ireland, France, Finland, and the United States proved that this type of fiber is what helps reduce cholesterol in the blood.

And if that's not enough, munching on apples helps you clean your teeth and massages your gums for a healthy mouth. Can't brush your teeth after lunch? Eat an apple!

Full of Phytochemicals

What is the "magic" nutrient in apples? It's actually more than one nutrient. Apples are rich in *phytonutrients* (fy-toe-NEW-tree-ents), also called *phytochemicals* (fy-toe-KEM-ih-kulz). Phyto means they come from plants. So phytochemicals are natural chemicals found in plants. They are found in the flesh and the skin of apples, but are more highly concentrated in the skin. Apple juice is also rich in phytochemicals, but it doesn't have the benefit of fiber.

Apples are loaded with vitamins and minerals, including *potassium* (puh-TASS-ee-um) and vitamin C. Phytochemicals are *antioxidants* (an-tee-OX-i-dents). They reduce or prevent cell and tissue damage from molecules in your body called free radicals. Free radicals form in the body every day as you breathe, eat, and exercise.

These phytochemicals are important; one has been especially linked to a reduced risk of cancer and heart disease.

Apples alone can certainly pack a nutritional punch. But together with other fruits, they can do even more. In a French study, scientists found that apples and oranges work well together, because the apples help the body use more of the vitamin C in the oranges. Your best bet is to eat lots of different fruits and vegetables each day. The recommended daily amount is at least five servings. An apple is

one serving, so do try to eat at least one each day.

The Core of the Matter

Studies on apples are still being done. We already know a lot about their benefits. In the future, we'll know even more, including how to combine them with other foods for the maximum nutritional wallop. Until then, eat as much of this healthy grab-and-go food as you can!

Recipes

Here are two easy recipes that will make it even easier to eat an apple (or more) a day.

Apple Sandwich

1. Cut an apple into very thin slices.

2. Spread peanut butter on slices of bread.

3. Place the apple slices on the peanut butter.

4. Add a slice of mozzarella cheese.

5. Sprinkle with cinnamon (optional).

6. Put the slices of bread together.

7. Eat your apple sandwich!

The Frost Apple

1 pint of frozen vanilla yogurt

1 quart naturally sweet apple cider

Freshly ground nutmeg

Let frozen yogurt soften at room temperature, or microwave it for 20 seconds. Put the yogurt and cider into a blender or food processor and blend until frothy and well mixed. Stir in nutmeg. Pour into tall glasses. Sprinkle nutmeg on top. Makes six 1-cup servings.

Go Apple "Picking"

See how many different kinds of apples you can pick out at the grocery store. Check off the ones you find on the list below. How many different kinds did you find? How many have you tried? Which is

your favorite? How many different kinds did the class find?

Braeburn
Cameo
Cortland
Crispin
Empire
Fuji
Gala
Ginger Gold
Golden Delicious
Granny Smith
Honeycrisp
Ida Red
Jonagold
Jonathan
McIntosh
Pink Lady
Red Delicious
Rome Beauty
Winesap
York Imperial

Name: _____ **Date:** _____

1. According to the text, what is a reason that apples are an important part of a healthy diet?

A. Apples contain vitamin K, which you can't get from any other food.

B. Apples have enzymes that help break down food.

C. Apples clean your teeth so you never need to brush them.

D. Apples have all of the fiber that a person needs in a day.

2. What is a way that the author asks the reader to analyze the list of apple types?

A. See how many kinds of apples grow in the reader's state.

B. See which kind of apples taste the best in homemade pie.

C. See how many kinds of apples the reader can find in the store.

D. See how many kinds of apples the reader can taste at school.

3. Apples can provide several different beneficial vitamins and minerals to the body when you eat them.

What evidence from the text supports this conclusion?

A. "Researchers in Finland studied more than 9,000 men for 28 years and found that those who ate lots of apples had a low risk of stroke."

B. "Other studies showed that people who ate apples regularly had better lung function. Their risk of dying from a heart attack was lower too."

C. "Apples alone can certainly pack a nutritional punch. But together with other fruits, they can do even more."

D. "Apples are loaded with vitamins and minerals, including potassium (puh-TASS-ee-um) and vitamin C."

4. If given the choice between eating a whole apple and drinking a glass of apple juice, which would be healthier?

A. the apple juice, because it tastes better

B. the whole apple, because the skin contains fiber

C. the apple juice, because it has phytochemicals

D. the whole apple, because it is a fat-free food

5. What is the main idea of this text?

A. Apples are the best food in the world and should be eaten at every meal and snack.

B. Apples come in over 50 types, each with unique benefits to your health.

C. Apples keep doctors away, so people that eat them never worry about getting sick.

D. Apples are an important part of a healthy diet and can prevent some diseases.

6. Read this sentence from the text.

> Other studies showed that people who ate apples regularly had better lung **function** .

In the sentence, what does the word "**function**" mean?

A. sleep

B. event

C. food

D. activity

7. Choose the word that best completes the sentence.

Apples are an important part of your daily diet, _____ they should not be the only food you eat!

A. because

B. when

C. so

D. but

8. Explain why there is truth to the saying, "An apple a day keeps the doctor away." Use evidence from the text to support your answer.

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Current Events Log
Day 13

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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Journal Entry 13

PART 1

Write a short story that has a classmate as the main character, the setting as a place in the world you'd like to visit, and these objects: spaghetti, a pet of your choice, and a video game.

Day 14

3 The table shows the lengths of various musicals in hours.

Musical Lengths (hours)								
2.8	2.8	2.5	2.5	2.3	2.9	2.5	2.6	2.3
2.5	2.5	2.5	2.3	2.6	2.3	5.3	2.5	

a. What are the lower quartile and upper quartile? Show your work.

SOLUTION

b. What do the lower and upper quartiles tell you about the middle 50% of the data?

c. Suppose Elias removes the outlier of 5.3 hours. How do the median, Q1, and Q3 change?

4 The data show the number of hours a part-time waiter works each week.

7, 11, 8, 10, 11, 8, 13, 9, 10, 9, 9

Tell whether each statement about the data is *True* or *False*.

	True	False
a. He works more than 9 hours about 50% of the time.	○	○
b. He works 8 or fewer hours about 25% of the time.	○	○
c. He works 10 or more hours about 75% of the time.	○	○

5 Each day for 9 days, a school principal records the number of 6th graders who are absent. Hai says the upper quartile for the data below is 5. Is Hai correct? Explain.

0, 1, 0, 2, 4, 3, 5, 12, 9

Shock Waves

by Kirsten Weir

A new theory explains a surprise series of earthquakes.

Beds shook suddenly across New York City the night of Dec. 16, 1811, rousing people from their sleep. The cause of the rude awakening was an earthquake whose *epicenter* (point of origin) was halfway across the country near New Madrid, MO.

The earthquake was one of a series in 1811 and 1812 that uprooted trees, triggered landslides, and toppled log cabins across the Midwest. Scientists have evidence that huge quakes also hit the same region around the years 1450 and 900. The cause of the New Madrid earthquakes has long mystified scientists. Have they now found an answer?

The Granger Collection; Waves: Shutterstock

These old illustrations of thrashing waves and a ruined building depict the destruction caused by the 1811 and 1812 New Madrid earthquakes.

Puzzle Pieces

Most earthquakes happen at the boundaries of *tectonic plates.* Tectonic plates are enormous pieces of Earth's crust and upper mantle that fit together like pieces in a jigsaw puzzle. Wherever two plates meet, they either pull apart, press together, or slide past each other. Those movements cause large *faults* (cracks) to appear in the crust near the plate boundary.

The ground on either side of a fault moves very gradually. But sometimes the two sides get hung up on each other, unable to move. Stress builds to a point at which the two sides eventually snap apart, sending shock waves through the ground. Those shock waves are better known as earthquakes.

North Wind Picture Archives

California is the country's most quake-prone state. It lies atop a boundary where the Pacific Plate meets the North American Plate. Those plates are sliding past each other in opposite directions. That movement has created a lot of faults.

The New Madrid faults are different. They lie in the center of the North American Plate, far from any plate boundary. Why would huge earthquakes occur there? Earth scientists have been asking that question since 1812. Now a team of researchers that includes Andrew Freed, a professor of earth sciences at Purdue University, has a theory.

Losing Weight

The New Madrid faults lie atop the *Reelfoot Rift.* A rift is a region where Earth's crust is being pulled apart by the slow movement of tectonic plates. Hundreds of millions of years ago, tectonic forces almost pulled the North American Plate in two. For some reason, Freed says, that action stopped. The North American Plate is no longer cracking apart. But the Reelfoot Rift remains as evidence of that ancient upheaval. It's a "dead rift," says Freed, "a zone of weakness."

The New Madrid faults lie along that weak zone in the crust. But the presence of a weak zone doesn't fully explain the New Madrid quakes. In California, stress builds up in the rocks because the two tectonic plates there are constantly in motion. How could so much stress build up such a long way from any plate boundaries?

To find out, Freed and his colleagues studied the New Madrid faults for 10 years. They used Global Positioning System (GPS) sensors to track any tiny movements of the Earth's crust. "It's just like the GPS in your car or in your cell phone, but it's a much more precise measurement," Freed says.

They expected to see the ground slowly twisting and turning, causing stress to build up in the rocks. That's not what they found. "After 10 years, we realized there's nothing happening," he says. "No force is building up. So why do you get earthquakes?"

The stress, Freed now believes, must have been left from geological processes that happened long ago. It had probably been stored underground for millions of years-until something let it out.

Freed and his colleagues have an idea what that "something" was. During the last Ice Age, the northern half of North America was covered by an enormous ice sheet. Between 16,000 and 10,000 years ago that ice sheet melted, sending torrents of water down the Mississippi River. The river has carried bits of rock with it ever since. In time, says Freed, "it removed a lot of rock from the surface."

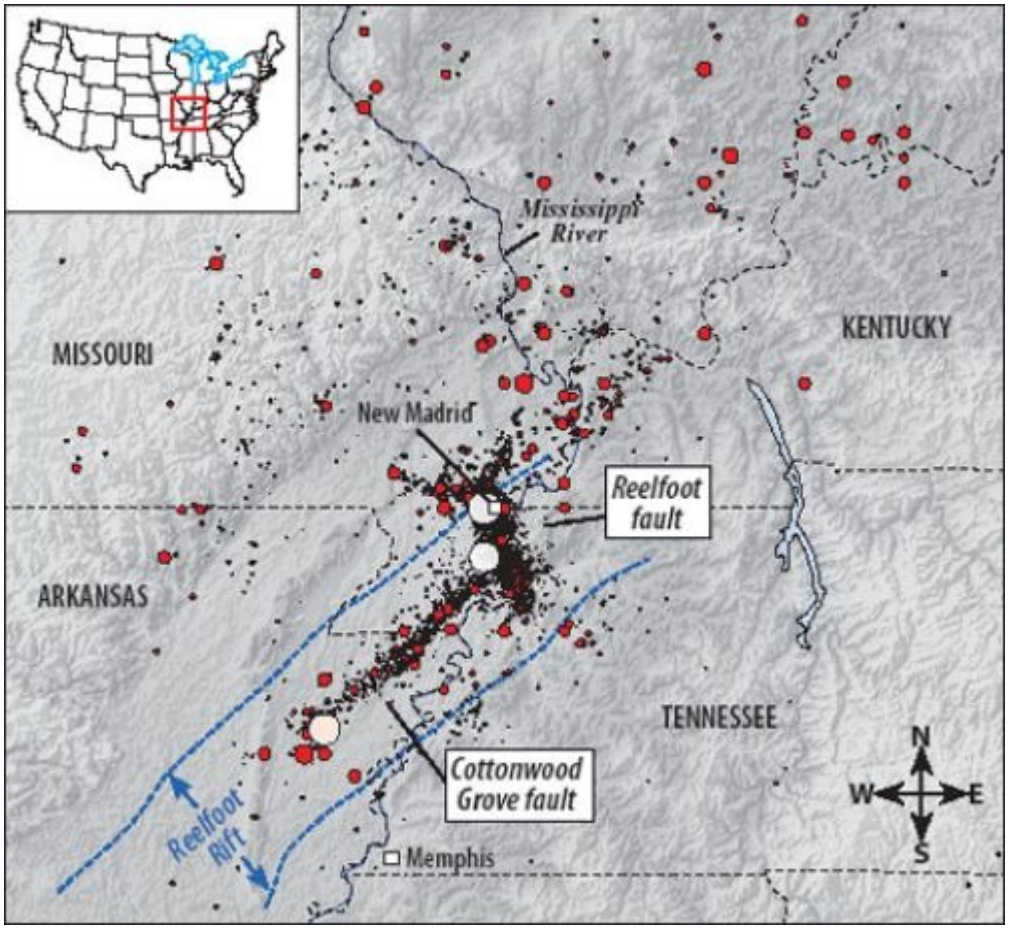
That removal was significant, he says, because the Reelfoot Rift lies right below the Mississippi River. The weight of the ground above the rift had been pressing down on the New Madrid faults, holding back the stored-up stress for millions of years. As the river washed away the ground, a huge weight was lifted from Earth's crust. As that pressure eased, the faults slipped several times, triggering the New Madrid quakes.

High-Risk Zones

Finding solid proof for that theory is difficult, Freed says. Still, the theory goes a long way toward explaining earthquakes that happen in the middle of North America.

There's good reason to understand such a system. For one thing, Freed says, the Mississippi is still changing Earth's crust. More earthquakes could strike the New Madrid area as more age-old stresses are released. Similar changes could be happening elsewhere. "We know there are other rifts under other river valleys around the country," he says.

Many of those places haven't experienced earthquakes in recent history. If Freed's theory is correct, other faults may be lying quietly, getting ready to rock.



Andrew Freed/Purdue University

The major earthquakes that have rattled the Midwest several times in history can be traced to a region, the Reelfoot Rift, where the ground is weak and riven by large faults (cracks). Sudden movements of those faults have triggered many small quakes over the years. The epicenters of those quakes are indicated by the black and red dots on the map. The big white dots indicate the epicenters of the monster quakes that happened in 1811 and 1812.

Name: _____ **Date:** _____

1. What are tectonic plates?

A. enormous earthquakes that uprooted trees and triggered landslides in the Midwest from 1811 to 1812

B. enormous pieces of Earth's crust and upper mantle that fit together like pieces in a jigsaw puzzle

C. enormous shock waves caused by large cracks on the Earth moving together and snapping apart

D. enormous sensors with which Freed and his colleagues would track any tiny movements of the Earth's crust

2. The formation of faults in Earth's crust is an effect. What causes faults to form in the crust?

A. Global Positioning System sensors

B. beds shaking across New York City

C. the movement of tectonic plates

D. landslides across the Midwest

3. The New Madrid earthquakes did not happen in a place that is earthquake-prone, or likely to have earthquakes.

What evidence in the text supports this conclusion?

A. The New Madrid faults lie far from any plate boundary.

B. Faults are cracks in Earth's crust.

C. The ground on either side of a fault moves very gradually.

D. Tectonic plates fit together like pieces in a jigsaw puzzle.

4. Read these sentences from the text.

"Freed and his colleagues studied the New Madrid faults for 10 years.

"They expected to see the ground slowly twisting and turning, causing stress to build up in the rocks."

Why did Freed and his colleagues expect to see the ground slowly twisting and turning?

A. because tectonic plates fit together like pieces in a jigsaw puzzle

B. because most earthquakes happen at the boundaries of tectonic plates

C. because California lies atop a boundary where the Pacific Plate meets the North American Plate

D. because the movement of the ground on either side of a fault is usually what causes stress to build up in rocks

5. What is the main idea of this passage?

A. Tectonic plates can cause large faults to appear in the crust near plate boundaries.

B. California lies atop a boundary where the Pacific Plate meets the North American Plate.

C. The movement of the Mississippi River has caused a lot of damage in the Midwest.

D. The New Madrid earthquakes might have been caused by the release of pressure from the ground above the Reelfoot Rift.

6. To organize this text, the author divides it into sections with subheadings. Why might have the author given the subheading "High-Risk Zones" to the final section?

A. to argue that Freed's theory does not have solid proof and is at risk of being proven false

B. to compare and contrast the earthquakes in the New Madrid area with the earthquakes in California

C. to introduce the idea that if Freed's theory is confirmed, other areas could be at risk of earthquakes

D. to show that places without a recent history of earthquakes aren't at risk for more earthquakes in the future

7. Choose the answer that best completes the sentence.

Rifts under river valleys haven't experienced earthquakes in recent history. _____, those faults may be lying quietly, getting ready to rock.

A. However
B. Instead
C. Namely
D. Primarily

8. Read these sentences from the text.

"The weight of the ground above the rift had been pressing down on the New Madrid faults, holding back the stored-up stress for millions of years. As the river washed away the ground, a huge weight was lifted from Earth's crust."

What do Freed and his colleagues think happened as that pressure eased?

_____

_____

_____

9. According to Freed's theory, why might the New Madrid area be at risk for more earthquakes?

Support your answer with evidence from the text.

_____

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_____

10. If Freed's theory is confirmed, how might it be helpful outside of the New Madrid area?

Current Events Log
Day 14

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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Journal Entry 14

PART 1

You awake from a strange dream. You hear your pets talking to each other. The crazy thing is that you can understand what they are saying. Write a dialogue between your pets.

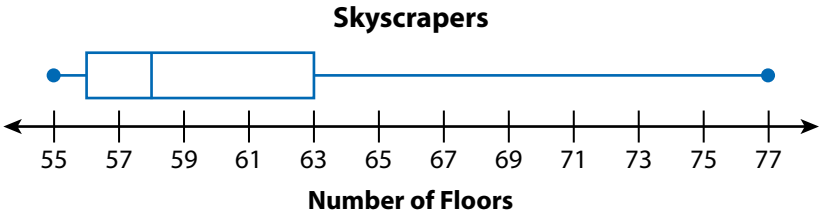
2 Students measure the heights, in centimeters, of the plants in two different gardens.

Garden A Plant Heights (cm)								
0	5	6	6	5	5	5	7	8
10	8	7	8	8	8	8	11	7

a. The table shows the data for Garden A. Display the data in a box plot.

b. Garden B has plant heights with an IQR of 1.5 cm. Which garden has less variability in its plant heights? Explain.

3 The box plot shows the number of floors of some skyscrapers in the U.S. Which statements about the box plot are true?



A The range of the data is 22.

B The median number of floors is 58.

C The greatest number of floors is 63.

D About half of the buildings have 56 to 63 floors.

E There are 15 buildings in the data set.

4 Two airlines report their number of delayed flights each month for one year. Airline A has an IQR of 83.5 and Airline B has an IQR of 22. Which airline is the most consistent in not having delays? Explain.

Cracking Up

Splitting Up

A new ocean will one day separate Africa.

A group of nomads got a shock several years ago in a desert in Ethiopia. A series of earthquakes rattled the ground one night, making a deafening noise. The next morning, the nomads discovered that a 3-foot cliff had risen from the ground behind them.

C. Ebinger/University of Rochester

A scientist inspects one of many fissures, or narrow cracks, that opened during a series of earthquakes in Ethiopia several years ago.

The event wasn't just any earthquake. It was one step in a geological process that is slowly building a new ocean in eastern Africa.

Spreading Apart

Earth's shell is made up of enormous pieces that fit together like those in a jigsaw puzzle. Called **tectonic plates,** the pieces are moving very slowly. Some plates are crashing together. Some are pulling apart. In the long course of Earth's history, the movements of plates have created mountains, oceans, and continents.

In eastern Africa, two large tectonic plates-the African Plate and the Arabian Plate-are pulling away from each other. "There's true plate spreading going on there," Cindy Ebinger, an Earth scientist at the University of Rochester in New York, told *ScienceSpin.*

That's not all. As the two plates pull apart, the African Plate is splitting into two pieces. One tectonic plate is becoming two plates.

Joe LeMonnier

An ocean will one day fill the Great Rift Valley, where Africa is pulling apart.

Recently, that tectonic activity has gotten dramatic. In 2005, the cracking of the African Plate triggered a volcanic eruption in Ethiopia. That was followed by a series of earthquakes-the same ones the nomads felt. The earthquakes occurred as **magma** (liquid rock) rose from deep within Earth, splitting the ground wide open. A series of crevices, some as wide as 10 feet, opened along a 35-mile stretch of desert in Ethiopia. Since then, the cracks have continued to grow.

A Natural Lab

Africa's tectonic activity has been going on for 30 million years. The spreading and cracking is what formed the Red Sea, as well as a deep depression known as the Great Rift Valley. The rift runs south from the bottom of the Red Sea through eastern Africa.

As the two sides of the rift valley pull even farther apart, the entire area will someday fall below sea level. Eventually, water from the Red Sea will rush in to fill the rift, spawning a new body of water. A million years from now-possibly sooner-the Great Rift Valley will lie at the bottom of an ocean that divides Africa in two.

Name: _____ **Date:** _____

1. According to the text, what created moountains, oceans, and continents in Earth's history?

A. a series of earthquakes

B. plates crashing together

C. plates pulling apart

D. the movements of plates

2. Based on the sequence of the geological process described in the text, when will the Great Rift Valley fill with water?

A. after 30 million years

B. after the area falls below sea level

C. after the area is flooded by rain

D. never

3. Read this paragraph from the text.

> A group of nomads got a shock several years ago in a desert in Ethiopia. A series of earthquakes rattled the ground one night, making a deafening noise. The next morning, the nomads discovered that a 3-foot cliff had risen from the ground behind them.

What can you conclude about earthquakes based on this information?

A. Earthquakes are always strong enough to create cracks or cliffs in the earth that weren't there before.

B. Earthquakes can sometimes cause disruptions so big in earth that they form new cliffs.

C. Earthquakes typically only happen in the desert, so they rarely impact people in any serious way.

D. When an earthquake occurs, it takes several days for a new cliff to appear.

4. Based on the text, how often are new oceans created?

A. whenever an earthquake happens

B. every year

C. very often, because tectonic plates move fast

D. not often, because it takes millions of years

5. What is this text mostly about?

A. tectonic plates creating a new African ocean

B. how nomads live in Ethiopia

C. continents and how they are created

D. how tectonic plates move under the ocean

6. Read this sentence from the text.

A series of **crevices**, some as wide as 10 feet, opened along a 35-mile stretch of desert in Ethiopia.

As used in the sentence, what are **crevices**?

A. liquid magma from volcanic eruptions

B. shaking during earthquakes

C. large cracks in the ground

D. open spaces in the desert

7. Choose the word that best completes the sentence.

One day the Great Rift Valley will become an ocean, _____ it falls below sea level.

A. after

B. finally

C. although

D. before

8. According to the text, what are two ways tectonic plates move?

9. Why don't we usually feel it when tectonic plates are crashing together and pulling apart? Use evidence from the text to support your answer.

Current Events Log
Day 15

On the lines below, draw and write about something interesting you learned about by reading the newspaper, watching local news, or watching an educational TV show (PBS, Disney Channel, Discovery Channel, Newsela Kids, Informational YouTube Program, etc.) Describe who, what, where, when, why, and how of what you learned. What facts or information are most interesting to you and why?

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Journal Entry 15

PART 1

Your town is building a treehouse. You and several friends have been asked to help. Write about the experience of building a treehouse for your community. Be sure to tell how you felt.


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Family


Thank you
first responders
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