MCMS
6th Grade
NTI Packet
Day 19

Day 19 6th Grade Math

Name _____

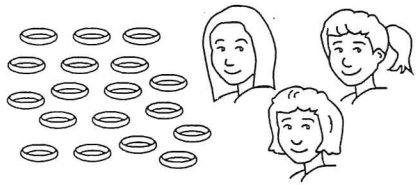
Reteaching
12-3

Understanding Rates and Unit Rates

A rate is a ratio in which the two terms are measured in different units.

Example: 18 bracelets for 3 girls.

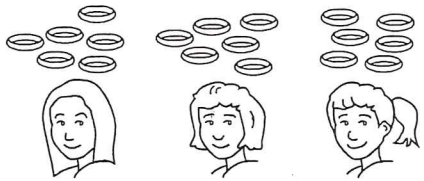
$\frac{18 \text{ bracelets}}{3 \text{ girls}}$



In a unit rate, the second number is 1.

Example: 6 bracelets for 1 girl.

$\frac{6 \text{ bracelets}}{1 \text{ girl}}$



Remember that the fraction bar shows division.
If you know a rate, you can divide to find the unit rate.

Example: 17 goals in 5 games is written as $\frac{17 \text{ goals}}{5 \text{ games}}$.

$5\overline{)17.0}$ $\quad\frac{3.4}{}$ The unit rate is 3.4 goals per game. (Per means "for each".)

Write the rate and the unit rate.

1. 25 flowers for 5 vases _____
2. 32 games in 8 weeks _____
3. 144 pencils in 12 packages _____
4. 252 students in 9 classes _____
5. $13.20 for 6 pounds _____
6. 34 minutes for 8 pages _____
7. **Number Sense** If a car travels 350 miles in 7 hours, what is its rate per hour? _____
8. **Estimation** Bare root plum trees are on sale at 3 for $40. To the nearest dollar, what is the cost per tree? _____

Name _____

Practice
12-3

Understanding Rates and Unit Rates

Write the rate and the unit rate.

1. 42 bricks laid in 2 hours _____
2. 15 points scored in 4 quarters _____
3. 225 chairs in 15 rows _____
4. 24 trees pruned in 5 days _____
5. 480 miles in 12 hours _____
6. $6.50 for 10 pounds _____
7. 72 plants in 9 square feet _____
8. 357 miles on 14 gallons _____
9. **Estimation** Over 5 days, 8,208 people visited an amusement park. About how many people visited the park per day? _____
10. **Writing to Explain** Explain how you could convert a rate of 18,000 miles per hour to miles per second. _____
11. **Critical Thinking** Matt makes 5 bookcases in 8 days. What is his unit rate? _____
12. A space shuttle orbits Earth 1 time in 90 minutes. How many times does it orbit Earth in 6 hours? _____
13. Which is the unit rate for 39 people in 3 vans?
    - **A** 39 people per van
    - **B** 13 vans per person
    - **C** 13 people per van
    - **D** 3 people per van

Basic Skills with Decimals Name_____ Day ID:19

DO NOT USE A CALCULATOR

Date_____ Period____

Find each sum.

1) 69.6 + 450.1

A) 519.7 B) 711.3
C) 544.5 D) 289.42

2) 281.3 + 205.5

A) 712.1 B) 970
C) 500.425 D) 486.8

3) 2.4 + 26.69

A) 29.09 B) 80.59
C) 256.89 D) 146.79

4) 199.8 + 499.6

A) 699.4 B) 959.3
C) 1025.1 D) 934.8

Find each difference.

5) 152.3 – 33.2

A) 125.697 B) 192.1
C) 345.6 D) 119.1

6) 364.2 – 258.8

A) 413 B) 105.4
C) 158.6 D) 466

7) 289 – 103.6

A) 30.1 B) 150.9
C) 185.4 D) 37.6

8) 426.8 – 318.1

A) 238.7 B) 373.8
C) 226.8 D) 108.7

Find each quotient.

9) 6.3 ÷ 0.6

A) 1 B) 6.9
C) 5.7 D) 10.5

10) 0.3 ÷ 7.5

A) 25 B) 7.7
C) 0.04 D) 7.8

11) 7.6 ÷ 3.8

A) 2 B) 2.2
C) 28.88 D) 1.9

12) 5.2 ÷ 2

A) 0.2 B) 10.4
C) 2.6 D) 0.3

Find each product.

13) 6.8 × 9.9

A) 67.32 B) 16.7
C) 72.22 D) 3.7

14) 8.16 × 5.14

A) 41.9424 B) 40.2424
C) 39.3424 D) 9.3874

15) 0.33 × 7.5

A) 9.875 B) 7.375
C) 5.625 D) 2.475

16) 7.7 × 3.4

A) 33.48 B) 26.18
C) 36.08 D) 23.08

The Mystery of the Whistling Building

by ReadWorks



In the fall of 2012, the government of New York City began receiving unusual complaints from the residents of a small strip of land in the borough of Staten Island. People who lived around a section of Father Capodanno Boulevard, in the South Beach neighborhood, claimed that, when the wind was up, they could hear a noise that sounded something like whistling. Where the sound came from was a big mystery. The noise had never been around before, but it had suddenly appeared and was often very loud. When the wind was blowing especially hard at night, some residents even had difficulty sleeping.

Residents had many descriptions for the noise, which was decidedly eerie. One resident told a local paper, *The Staten Island Advance*, that it sounded like "100,000 people with unlimited air in their lungs blowing through Coke bottles." Others said it was more like the sound a UFO makes in a movie when it lands. The noise was not consistent. It would get louder and softer depending on the wind. Sometimes, it would change pitch. Every so often, more than one note would play at the same time. To many residents, it sounded like a giant musical instrument. The sound could be heard more than a mile away.

The whistling, it turns out, was caused by a building. The Ocean Breeze Athletic Center, an indoor running track, was in the middle of construction when the noise first started. The construction crew had just finished assembling the giant metal skeleton that would form the building's frame. Because the building was next to the water, it got a lot of wind that blew off of the Atlantic Ocean. Some of this wind blew through parts of the building called "acoustic baffles"-devices designed, ironically, to reduce sound produced inside the center. However, when the baffles were exposed to wind, they made a whistling sound. This was the noise the locals were hearing.

The athletic center was not the first building in New York to make a whistling noise. In the late 1980s, another building in the Midtown neighborhood of Manhattan also produced whistling noises. Whistling happens when a stream of air moves through a small hole. The kind of whistling sound produced depends on the size and shape of the hole. The skyscrapers in Midtown had architectural features on their exteriors which contained small holes that wind could pass through. This was how the noise was produced.

When they figured out what was wrong, the New York City government, which was responsible for building the athletic center, quickly apologized to the residents of South Beach, Staten Island, for the annoying noise. They had not expected that the building would produce a whistling sound, and promised the problem would be quickly fixed when the building was completed and the acoustic baffles were protected from the wind.

"We sincerely regret any annoyance the wind noise may be causing for residents of the area," the city told residents in a written statement. "We expect to complete the roof by mid-November and the exterior shell by early December."

However, this estimate was, unfortunately for the people who had heard the noise, not correct. A few weeks later, Hurricane Sandy hit New York City. Much of Staten Island was flooded. Construction crews that had been building other buildings before the storm were dispatched to help with the cleanup. The site of the arena was also briefly flooded during the storm. Both of these factors delayed construction of the arena by several months, leaving the poor residents of South Beach to put up with the noise for all that time.

One afternoon in December of 2012, a reporter went out to see the arena and listen to the noise. He brought with him a musical composer. The composer made modern music-music that often uses many different types of sounds, not just the instruments of a traditional orchestra. He brought a large recording device with him, which he set up 100 yards from the building. The wind was blowing, and the building was whistling loudly. For a long time, the reporter and the musical composer listened to the building. Finally, the composer reached over and turned off the recording device.

"That was beautiful," he said. "The building was like a giant organ."

As the reporter and the composer were walking back to their car, they noticed that a psychiatric hospital-a place where people with mental disorders can get treatment-was located just a few blocks from the building. The two of them got curious and walked over to the hospital. What would the people with mental disorders think of the noise? They walked into the building and asked the receptionist what the patients thought of the whistling.

"Some of them hate it, but some of them love it," she said. "There's one man who's been here six months. He was ill-tempered, angry at everyone, until that whistling started. Now he's pleasant as can be. I don't know what that is. It soothes him, I suppose."

As of August 2014, construction of the athletic center was nearing completion. The building stopped whistling. However, the sound it made had been preserved on several recordings. The musical composer was thinking of turning the whistling into a new song.

4. Read the following sentences: "When they figured out what was wrong, the New York City government, which was responsible for building the athletic center, quickly apologized to the residents of South Beach, Staten Island, for the annoying noise. They had not expected that the building would produce a whistling sound, and promised the problem would be quickly fixed when the building was completed and the acoustic baffles were protected from the wind."

How did the residents of South Beach likely feel about this "solution"?

A. satisfied with the apology

B. reassured that the government was doing all they could

C. annoyed that nothing could be done sooner

D. embarrassed that they had complained so much

5. What is this passage mostly about?

A. the effect of Hurricane Sandy on New York

B. the cause and effects of a whistling noise

C. construction methods used to build skyscrapers

D. problems faced by the Ocean Breeze Athletic Center

6. Read the following sentences: "Some of this wind blew through parts of the building called 'acoustic baffles'-devices designed, **ironically**, to reduce sound produced inside the center. However, when the baffles were exposed to wind, they made a whistling sound."

The author uses the word "**ironically**" to refer to the baffles. Why is it **ironic** that the acoustic baffles were causing the whistling sound?

A. because the residents found the noise created by the baffles humorous

B. because the baffles were made of iron and other metals

C. because the baffles were fulfilling the purpose they were created for

D. because the baffles were designed to reduce noise but were creating noise instead

Name: _____ **Date:** _____

1. Residents of South Beach, Staten Island were complaining about what?

A. the lack of nearby athletic centers

B. Hurricane Sandy

C. the long commute to Manhattan

D. a loud whistling noise

2. One effect of the loud whistling noise was that South Beach residents could not sleep. What was the cause of the loud whistling noise?

A. athletes running on an indoor running track

B. wind blowing through parts of a building called "acoustic baffles"

C. a UFO landing nearby

D. wind blowing between skyscrapers in Manhattan

3. The whistling noise was disruptive to the people in South Beach, Staten Island. What evidence from the text supports this statement?

A. People had difficulty sleeping, and the noise could be heard more than a mile away.

B. At first no one knew where the whistling sound was coming from, and people were annoyed that they didn't have an answer.

C. The noise was not consistent and would sometimes change pitch.

D. Residents had many different descriptions for what the noise sounded like.

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

The New York City government expected that construction would be finished by early December, _____their estimate proved incorrect after the city was hit by Hurricane Sandy.

A. but

B. so

C. soon

D. like

8. How did the musical composer respond to the whistling noise?

_____

_____

_____

9. Many of the residents in South Beach complained about the whistling noise and had trouble sleeping. How did the whistling affect the man at the psychiatric hospital?

_____

_____

_____

10. The composer who makes modern music that uses different types of sounds might turn the whistling into a new song. How might different people from the passage react to this song? Support your answer with details from the text.

_____

_____

_____

6th English
NTI Day# 19

Directions
Read this story. Then answer question 45.

On her first venture into the woods of her new home town, Taylor makes an unexpected discovery.

Excerpt from *Summer Hawk*

by Deborah Savage

It rose above everything, a giant white crack against the blue sky. Solitary in the middle of the clearing, dwarfing the forest growth, the white tree was split down the middle. Black, charred wood contrasted with the pale bark so distinctly it looked as though someone had painted it.

The tree had been dead a long time before the lightning struck last night. No leaf clung to the maze of branches. Half of the tree rose into the sky fifty or sixty feet, every twig etched in white against searing blue. The other half lay smashed on the ground, flattening the grass for an area the size of a small house. Whole, the trunk must have been ten feet in diameter. I never knew until that moment how one could stand truly frozen with awe.

And with the awe came also sorrow. I would never see this tree whole. I touched the outer twigs lightly with my fingertips. Perhaps I alone had seen the moment of this tree's fiery division. I pushed deeper in until I was laced around by the branches. There was a sudden piercing shriek so close to me I gasped and stumbled back.

The shrieking came from the impenetrable center of the broken branches. It was impossible to see anything through the latticework of tangled twigs. The screeching increased frantically whenever I moved. Angry . . . and afraid. I worked my way around the outer branches and climbed cautiously up on the broken half of the trunk. My hands turned black from the burned wood, and I felt the warmth. I was touching lightning.

I crawled out as far as I could and stood up, holding tight to a protruding branch. I peered down into the mass below me, and there was the ugliest bird I had ever seen.

It was huge, bigger than a chicken, covered in soot-matted tufts of gray down. Clumps of feathers stuck out unevenly on the wings and tail. Its head was almost bare, comprised of not much more than two great, fierce-browed eyes and a curved beak so sharp and powerful-looking I was sure it could take my finger off. The beak was open so wide I could see the tongue, and the bird lunged awkwardly at me while it screamed. It clung precariously to a branch with oversized, yellow, taloned feet. When I moved closer, the bird lurched at me so violently it toppled, flapping and squawking, into the tangle below. It clawed its way back onto the branch and continued to scream at me.

It might have been the most pathetic thing I'd ever seen. But despite the scrawny neck and naked head, despite the twigs and dirt caught in the ragged down, somehow the bird was magnificent. Beautiful. Brave. The eyes, dark as a dreamless sleep, glared straight into my own. Powerful, unfinished, wild. The bird clung defiantly to its branch and I clung to mine. Sunlight glinted off the knife-sharp beak. To my surprise, when I knelt to straddle the branch, the bird stopped shrieking, and for a long time we were both still.

I don't know how long I sat there. The bird never took its attention from me. If I brushed the hair from my sweaty face or slapped a mosquito, it followed my movement with an alert dart of its eye. Gradually I began to think more carefully. This bird was obviously too young to fly. So it must have been in its nest when the tree was struck by lightning. If it was too young to fly, it would die here. Starve. Or get eaten by something else. But if I tried to rescue it, even if I could get through those jagged twigs which reminded me of barbed wire, I would face a creature who could rip the nose off my face.

It wasn't just that I couldn't do it. I *shouldn't* do it. I had to remain objective. Reporters couldn't get involved in the disasters they came upon. Their job was just to report them. I would simply go home and tell someone about it.

But what if something killed it in the meantime? What if it was already close to starving? I sat up abruptly and the bird hissed at me. Again I looked into those frightened, defiant eyes, and suddenly I remembered the hawk lady. With that thought, I was already scrambling backwards on my stomach down the trunk. I would go home and call her. This bird had to be a hawk or eagle or something like that—what else would be so big? And that's what the hawk lady did: saved hawks. I jumped to the ground and started across the clearing.

And stopped. In every direction, the encircling woods looked exactly the same. I turned slowly around. The bird was silent, but I could feel it watching me from the branches. I was abandoning it. I closed my eyes and took a deep breath. I told myself that this wasn't wilderness. It was Uncle Fred's and Aunt Grace's old farm. I was sure to come upon civilization no matter what direction I chose. I opened my eyes and began to walk, and did not look back at the shattered tree.

The woods no longer felt like a warm nest. Something crashed in the dark undergrowth, and I jumped back with a startled yell, as defiant as the bird had been. My hands were curled as tight as the bird's talons. For a long time I made my way through the sifting, leafy shadows of the woods, slipping down slopes, tripping over roots. I kept going downhill. I twisted my ankle jumping across a stream. Then, all at once, I scrambled down a steep incline choked with thick hemlocks and slid to a stop on a dirt road.

45 How does Taylor feel about exploring the woods at the beginning, middle, and end of the story? What causes her feelings to change? Use details from the story to support your response.

In your response, be sure to

- explain how Taylor feels about exploring the woods at the beginning, middle, and end of the story
- explain what causes her feelings to change
- use details from the story to support your response

STOP

Quebec's Sugar Season

by ReadWorks



sugar house in Quebec, circa 1900

From the end of February straight through the spring, Quebec, Canada's largest province, will celebrate the flowing of sap from its maple trees. The "sugaring off" season-when maple syrup producers begin to fill their buckets-is one long holiday of sorts, commemorated by locals and tourists alike. During these months, the small cabins where the sap is boiled open themselves up to visitors. Known as "sugar shacks," "sugar houses," "sap houses," or "*cabanes à sucre*," (in French) these shacks are typically located in the woods on the same territory as the trees being tapped.

Visitors are invited to take sleigh rides through the forest and roll Popsicle sticks in pure, hot syrup that's been poured over snow to form sticky lollipops. The experience usually ends in a traditional French Canadian supper-served in a reception hall-of pea soup, baked beans with lard, maple-cured ham, fried strips of salt pork, omelettes, sugar pie, crêpes, and poached dumplings.

Though he had no experience in producing maple syrup, renowned Quebecois chef Martin Picard, whose restaurant, Au Pied de Cochon, is beloved by gourmets, chose to begin operating his own sugar shack in 2009. "We were using a lot of maple syrup at the restaurant, and in consuming so much, we realized that it might be a good idea to take on the challenge of producing the product from scratch," he said. Au Pied de Cochon is famous for its over-the-top fare: a lobster served in a pig's mouth; a dish of French fries, gravy, and curd cheese smothered in goose liver; a pork chop the size of a small table. Picard is happy to have brought his love of excess to the maple forest. His shack is about an hour's drive from the city of Montreal.

"Some places have truffles, others olive oil," Picard said. "I love the idea of maple being *our* product, something that we can share with people all over the world. You don't really find maple syrup, that taste, outside of North America. It's the type of thing that you eat, and you want more-you need a

second try."

It took some time for the chef and his team to learn to turn sap into syrup and integrate the syrup into the recipes they had in mind. "You need to understand how to work with maple syrup on its own terms," Picard said. "You can't use it in the same ways you would use white sugar, simply replace the sugar with the syrup, just as you can't translate French words directly into English. To learn English, you need to start thinking in English, dreaming in English." The Au Pied de Cochon crew has indeed been dreaming in syrup. In 2012, they released a 386-page cookbook (all but one of its recipes involve maple syrup!) that records the results of their experiments in the kitchen. Picard and his helpers used more than 100 gallons of the sweet liquid in trying out all of the dishes that appear in the book.

"When you have a sugar shack," said Picard, "and you don't quite know what to do with it, but there are people lining up to eat there, you need to figure it out-and quickly! You make a ton of syrup and learn how to use it, the different ways you can use it. Our maple nougat took fifteen tries before we got it right. By trial and error, we finally put our finger on the recipe, and now it's the product that we're most proud of." He added: "We bought this sugar shack in part to do research. Maple's potential as an ingredient hasn't been fully exploited yet."

Increasingly, though, chefs are realizing how versatile this syrup can be. It has become very popular on restaurant menus and is being added even to appetizers and drinks. Maple butter and maple cream can be used for cooking all kinds of dishes to give them a sweet kick. Not only do diners love its taste, but syrup appeals to people looking for natural and local food products.

New technologies for tapping trees are always being developed so that producers can extract more and more sap. However, some things are beyond their control. The amount of sap that a maple producer is able to collect in any given year is largely dependent on the weather. During a particularly cold winter, the sap freezes and doesn't run freely. A producer might, in this case, wind up with empty buckets on some days. Picard has had some rough, very chilly seasons, but he hasn't let that stop him.

So exciting is the prospect of a chef who produces his own syrup that it generally takes just half a day for Picard's shack to be booked for dinner for the entire sugaring off season. The Au Pied de Cochon Sugar Shack is a wooden mess hall where, outside, wild pigs run free. (The pigs are fed syrup, too.) The supper served inside is one capable of sending eaters into hibernation. In 2012, the meal began with dessert: maple nougat, maple cotton candy, and tiny maple pastries. Many meat-heavy courses followed, and every one of them involved some form of syrup. Said Picard: "There doesn't exist a food that you can't mix with this stuff." He hopes that other chefs in the province will follow his lead and promote local products and culture by venturing into the forest. "The more this is done, the more people will know that in Quebec, at this time of year, you can come and eat something you can't get anywhere else."

Name: _____ Date: _____

1. What is Quebec's "sugaring off" season?

A. the season when people in Quebec bake many sweet treats

B. a holiday celebrated only by tourists in Quebec

C. a celebration of the flowing of sap from maple trees

D. the season when people in Quebec eat no sugar

2. What does the passage describe?

A. Martin Picard's sugar shack business

B. a variety of cultural traditions in Quebec

C. the history of Au Pied de Cochon

D. recipes that incorporate maple syrup

3. Maple syrup is versatile. What evidence from the passage best supports this conclusion?

A. Visitors of sugar shacks are invited to take sleigh rides through the forest and roll Popsicle sticks in pure, hot syrup.

B. Maple syrup has become very popular on restaurant menus and is added to appetizers and drinks.

C. The amount of sap that a maple producer is able to collect in a given year is largely dependent on the weather.

D. The maple nougat created by Martin Picard and his crew took fifteen tries before they got it right.

4. Why is Picard's sugar shack so popular?

A. because maple syrup is a popular food

B. because the restaurant is inexpensive

C. because it is the only sugar shack in Quebec

D. because it provides an interesting dining experience

5. What is this passage mostly about?

A. how to use maple syrup in all of your cooking

B. Martin Picard's restaurant Au Pied de Cochon

C. Picard's sugar shack and how he uses maple syrup in his restaurant

D. activities held during Quebec's "sugaring off" season

6. Read the following sentences: "'You can't use it in the same ways you would use white sugar, simply replace the sugar with the syrup, just as you can't translate French words directly into English. To learn English, you need to start thinking in English, dreaming in English.' The Au Pied de Cochon crew has indeed been **dreaming in syrup**."

What does the author mean by "**dreaming in syrup**"?

A. seeing syrup in their dreams

B. thinking a lot about syrup

C. eating too much syrup

D. speaking the language of syrup

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

Visitors to Quebec during the "sugaring off" season can participate in a number of activities, _____ sleigh rides, making lollipops out of maple syrup, and a traditional French Canadian supper.

A. including

B. however

C. therefore

D. especially

8. What does Picard say hasn't been fully exploited?

9. Why does Picard want other Quebecois chefs to promote local products?

10. Why is making his own maple syrup from scratch important to Picard? Use information from the passage to support your answer.