March 16, 2020

Dear families,

Thank you for your continued support, especially during this time.

We want you to know your children are still our priority.

To help your child keep up with his or her education, we have compiled a packet of academic work. These assignments are targeted for most important 5th grade standards. We are not giving boring worksheets, we are providing learning opportunities. Please encourage your child to take his or her time and devote careful effort.

Following are a list of websites that also offer meaningful learning opportunities for your child.

www.shcolastic.com/learnathome

https://www.k5learning.com/

https://www.curriculumassociates.com/supporting-students-away-from-school/online-instruction-family-guidance

https://kids.nationalgeographic.com/

https://www.nasa.gov/kidsclub/index.html

If you have questions regarding **these academic packets**, please email your child's homeroom teacher.

iMontes-Sosa@riverside.k12.az.us

pfioravante@riverside.k12.az.us

kperez@riverside.k12.az.us

Thank you again,

Your Kings Ridge 5th grade team

★ ELA! ★

Remember...
Be safe
Be respectful
Be responsible

Hi students!

While we are away, I hope you're staying safe and making healthy choices. Here are some reading packets to help all of us continue with our learning!

Instructions: Read <u>one</u> packet a day and complete the questions that follow.

***Be careful, some require reading <u>two</u> passages to answer questions.

As long as you go in order, you will be okay. :)

I miss you all and hope to see you soon!

♡ Ms. Montes-Sosa

Partial Eclipse

by Alizah Salario

Marcus tilted the telescope toward the sky. He was excited to watch the sun. He remembered that it is dangerous to look at the sun with the naked eye because it can damage unprotected eyes. So he placed a special glass filter on the front end of the telescope that would protect his eyes from the sun's rays. Then he carefully looked through the eyepiece and adjusted the focus so that the sun was smack in the middle of the lens. The first solar eclipse in years was about to darken the skies of Bloomfield, in the middle of a sunny Saturday afternoon, and Marcus wasn't going to miss it for the world.

He'd firmly planted the telescope tripod in the earth a few yards from the edge of the baseball diamond, not far from where his high school's junior varsity team was warming up for a game. Technically he was in the outfield, but the grass became wet and mushy further out in the park. Severe thunderstorms had nearly flooded every basement in town that week, but thankfully the sun came out again on the day of the eclipse.

A few geese had migrated from a nearby pond and squatted at the edge of the field. They flapped restlessly. Marcus knew animals had a sixth sense about nature's movements and wondered whether the geese were aware the sun would soon be stamped out from the sky.

As the JV players tossed pitches back and forth and practiced sliding into first base, Marcus did his best to ignore them. Yet he couldn't help but watch as they torqued their pitching arms back and let the balls go whizzing forth, then land softly in the cushion of a catcher's mitt. So what if he hadn't made the baseball team? Anyone could swing a bat, but not everyone could stare at the heavens and decipher the movement of planets. Thanks to his geometry teacher, Marcus finally felt like he was better at something than everyone else.

He thought back to Thursday's geometry class, when Mr. Baker had turned the lesson into an impromptu astronomy lecture. He'd even brought in an old telescope and was explaining the power of its usage.

"Eclipses are all about parabolas and angles," he'd explained. Half the class yawned as Mr. Baker waxed on about the elliptical shape of Earth's orbit and the penumbra and umbra-concentric circles of dark shadows created by an eclipse. Even though they'd had an official astronomy unit in fifth grade, by high school, most of his peers couldn't even recall what a solar eclipse was. That's when Marcus got annoyed. He raised his hand but spoke without being called on.

"Don't you remember? It's when the moon passes between the sun and Earth. So the moon blocks the sun, which means that light can't get to Earth, so a certain area of the earth will get dark as night in the middle of the day. Well, in this case only semi-dark. It's a partial eclipse," he said knowingly.

Taylor, the girl sitting in front of him, turned around and gave him a dirty look.

"What's your problem?" he whispered to her under his breath. He didn't know why he said it. He was secretly glad she even looked at him.

Marcus didn't understand why people seemed to find him annoying because he was smart. He wasn't trying to show off or anything. He was genuinely interested in learning just about everything, which was why he'd spend his lunch period talking to Mr. Baker.

"I'm glad at least one of my students takes an interest in the finer points of geometry-no pun intended," said Mr. Baker. "Marcus, if you promise to be careful, I'll let you borrow the telescope this weekend. I'll also lend you a special glass filter so that you can look at the sun safely. An eclipse is an incredible sight with this level of magnification."

For once, Marcus didn't have anything to say-besides thank you. He nodded heartily and watched as Mr. Baker pulled the tripod out from behind his desk. Even though there was a box for the telescope, Marcus wrapped the delicate instrument in his hooded sweatshirt and

held it protectively to his chest. He felt like he was harboring an important secret.

When he walked out of the classroom, Taylor was standing by the lockers, staring off into space. Her music was playing so loudly that he could hear it pulsing from her ear buds.

"What's in your sweatshirt?" she asked suspiciously, as she took out her headphones.

Marcus felt his cheeks grow warm. He probably did look ridiculous, cradling a telescope like a newborn.

"It's nothing. Just something that Mr. Baker let me take home."

"It's not that telescope, is it?" she asked.

Marcus nodded meekly.

"That's cool," she said. "But you know there's a smartphone app that calculates the circumference of both solar and lunar eclipses, right?"

"No," thought Marcus. He didn't know. He didn't have a smartphone.

"Who cares?" he told Taylor. His words came out harsher than he'd intended. Taylor put her ear buds back in her ears.

"I'm going to ignore you now," she said matter-of-factly.

Marcus thought back to the moment by the lockers as he stood in the field and began the five-minute-countdown until the eclipse. He wished, for a moment, that Taylor was there with him. An eclipse seemed so momentous, so awe-inspiring, it seemed a shame not to have anyone to share the experience with. No one else seemed to think it was anything more than a distraction. He glanced at the bleachers filling with parents and younger siblings, fans and groupies, all bubbling with anticipation for the big game. Marcus pushed the thought out of his head and checked the time on his boring old phone. Two minutes left.

"Attention in the outfield!" Coach Bernardi's booming voice echoed through a loudspeaker, and jolted Marcus out of his reverie.

Bernardi was waving his arms wildly above his head, trying to get his team members to pay attention.

"Due to a solar eclipse, the game will be delayed approximately 30 minutes. I repeat: the JV baseball game will be delayed 30 minutes due to a solar eclipse."

The team stopped for moment, collectively shrugged, and then returned to whatever they'd been doing before.

Marcus was so distracted he hardly realized the eclipse had begun. He snapped back to the filtered telescope to watch the moon inch its way in front of the sun, making the sun look like a crescent.

As soon as he looked at the sky up-close through the telescope, the world around him went quiet. The moon crept on, covering a quarter and then nearly half of the sun. In mere minutes, the sky darkened. The sudden change felt odd and eerie, like a celestial power was using a remote control to shift the moon across the sky. But Marcus wasn't scared. He felt excitement surge through him, right down to his toes. "This is what I've been waiting for," he thought.

Marcus hardly blinked. He felt instantly transported high up into the heavens, floating across the clouds. The remaining crescent of sun was blazing while the moon seemed to be moving faster and faster. Then the darkness of the moon appeared closer and closer. Closer and closer until Marcus realized he was no longer looking at the moon, but something else fast-moving and round. He heard a startling crack. The telescope jolted and the eyepiece pressed hard against his socket. Marcus fell backwards onto his behind.

It was over before he realized what had happened. Marcus scrambled to his feet and held tightly to the tripod. When he looked through the eyepiece again, he only saw jagged shards. The lens was broken. Marcus began combing through the grass, searching frantically for whatever pieces of glass he could recover. That's when he came across the baseball.

"How could you do this to me?" he yelled at no one in particular. He grabbed the baseball and slammed it into the earth. What idiot had thrown a baseball at him? Then he picked up the ball again and headed toward the diamond. By that point, Marcus had all but forgotten about the eclipse.

His stomach lurched as he thought about telling Mr. Baker what had happened. Sure, it wasn't his fault, but he had positioned the telescope just so. He'd set up in a baseball field and been so focused he failed to notice an object heading toward him, even as he looked right at it. He should've been quicker, faster, and better. But he wasn't skilled enough to make the team, and he certainly wasn't fast enough to avoid the assault.

As Marcus stepped onto the baseball field, he realized he was the only one moving. Fans and players all stood still as statues. They were crowding around another filtered telescope that a parent brought to watch the eclipse. Each person was trying to get a chance to look through the telescope. There was still a sliver of sunshine remaining, but to Marcus, the moment felt

like the depths of night.

Marcus squeezed the baseball in his hand and lifted it above his shoulder. It didn't matter whom he threw it at. He just needed a target, someone who-

"Hey man, you okay?" Marcus hardly noticed the first baseman jogging toward him. "Did I do that? Did we?" he asked, looking at the telescope by Marcus. "Bummer."

"Well, I certainly didn't do it myself," said Marcus.

"It...uh...was an accident. I guess we kind of weren't paying enough attention, with the eclipse happening and all. It's pretty awesome, isn't it?"

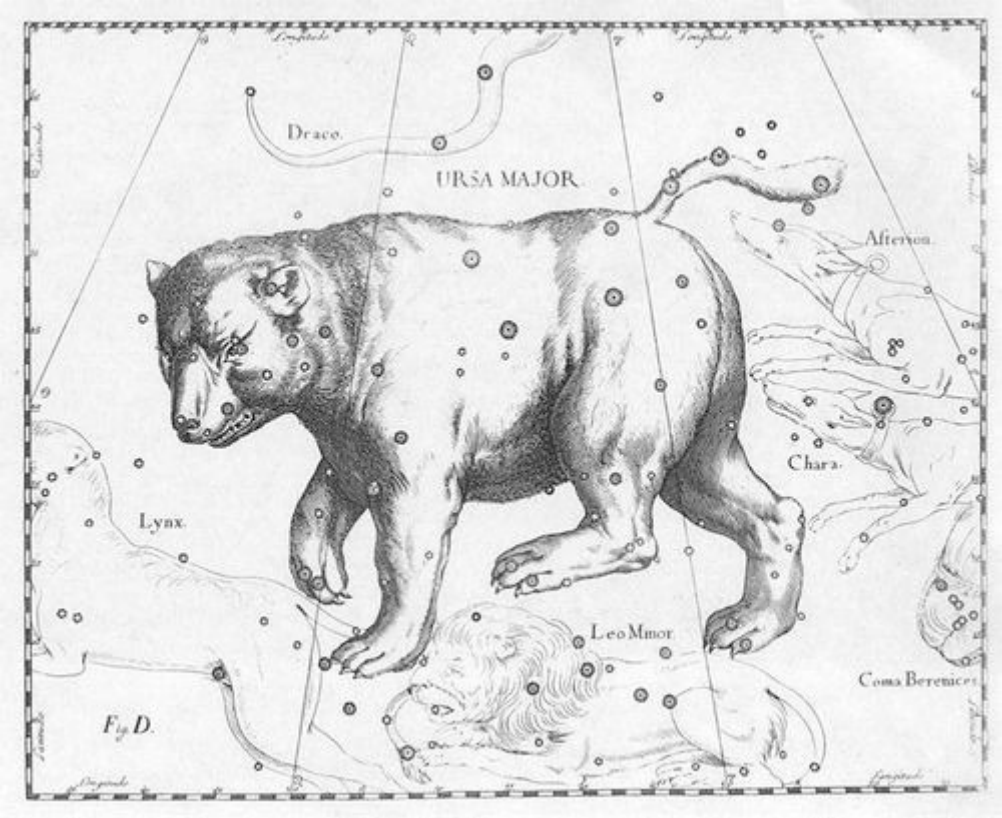
With that, they both joined the crowd, wanting their own chance to see the eclipse. Marcus softened. He was tired of getting wrapped up in petty problems when there were plenty of things in life that were far more important. He knew accidents happened. So much was beyond his control.

"Yeah," he said to the first baseman. "The eclipse is unbelievable."

As the moon blanketed the sun, Marcus's chance came up to look through the telescope, but he let the first baseman look through it first. And then, minutes later, everyone looked on as the moon moved past, letting the Saturday afternoon sun shine bright, once again.

Field Trip

by Aditi Sriram



Jeremy couldn't believe his luck. The morning of his 6th grade field trip to the Rose Center for Earth and Space at the Museum of Natural History, he fell ill. "This can't be," he thought. "Science is my favorite subject, and I'm not going to be able to go to the Museum with Mr. Connolly and my friends?" He pleaded with his parents to let him go to school anyway, but they were firm in their refusal. "The sooner you rest at home, the sooner you'll get better," his mother said. "Don't be so hard on yourself, champ," his father said. "We can always go another time."

"I won't be with Mr. Connolly and my science class if I go another time," Jeremy protested. "It won't be the same."

"It won't be the same if you're feeling ill at the museum either," his mother said, trying to reason with him. "Now take this medicine and go lie back down."

Jeremy closed his eyes as he swallowed the white tablet with a gulp of water. "What if I feel

better before the field trip begins?"

"We'll decide then," his mother said, while his father nodded.

Jeremy returned to his bed, fuming. Even though it was sunny outside, he felt a black cloud hovering over his head, threatening stormy weather inside his brain and making him angry. But soon after he lay in bed, the medicine his mother had given him began working, and he fell asleep almost right away.

When Jeremy awoke, his room was bathed in darkness. Outside his window it was dark, too. What time was it? Had he slept through the day? Was it the next day? Was it the middle of the night? Jeremy was completely confused. "Mom!" he called out.

Jeremy's dad walked into his room with a smile on his face, and wearing his hiking shoes. "Champ! You're awake," he said.

"What time is it? Did I miss everything?"

Jeremy's dad put a hand on his forehead and checked for a temperature. Nothing. "Not at all, in fact, you're just in time for your field trip. If you're feeling better, that is."

Jeremy jumped out of bed, stretched, and did a little dance. His energy was back. "I'm feeling fine," he said.

"Great. Now put on a sweater and lace up your shoes and follow me."

Jeremy checked the time as he was getting dressed. 8:05 p.m. It didn't make any sense. Where could he possibly be going with his father so late in the day? Surely the museum was closed, and Mr. Connolly had gone home. But Jeremy didn't slow down. He dressed and met his father in the living room, where he was sitting with a man he had never met before, and a peanut butter and jelly sandwich, his favorite.

"I have a surprise for you," his father said. "Jeremy, meet Professor Helfand. He is a professor of astronomy at Columbia University, where they have an observatory. Do you know what an observatory is?"

Jeremy nodded. "Mr. Connolly described them to us in class when we began the chapter on planetary science. It's a viewing tower from where you can observe the planets and galaxies through high-powered telescopes, track their movements, and study their behavior." Jeremy was talking so fast, he could barely chew on his sandwich.

"That's absolutely right," Professor Helfand said, impressed. "And because you missed your field trip this morning, we're going to pay a little visit to the observatory tonight so that you can have a field trip of your own."

Jeremy couldn't believe his ears. "I'm ready!" he shouted at his dad.

"Not so fast, champ. Finish your sandwich, and then we'll go. You haven't eaten anything all day, remember?"

"I can't believe I slept all day-but this is the best night of my life!" Jeremy said with a laugh.

Jeremy, his dad, and Professor Helfand took the subway to Columbia University, where they walked to the Physics Building and took the elevator to the top floor. There were many rooms with all kinds of computers, some big and others small, some that looked like really old machines and others that looked brand new. Most had notebooks next to them, which were filled with charts, numbers, even little drawings of orbits. Professor Helfand explained that each computer was connected to a specific telescope, and that there was one person in charge of each telescope, and observing the movement of one planet, or star.

Jeremy noticed that some of the charts showed patterns: numbers that repeated, timings separated by exactly one hour. The professor showed him that the repeating numbers were distances between planets, or between planets and their moons, or distances between stars, and showed him how the orbits of these planetary bodies created patterns of collective behavior. "Because of gravitational forces," he said, "the planets and their moons have fixed orbits, and so they end up being the same distance from each other every so often. Once we have enough of these numbers written down, and have been tracking these planets' trajectories for enough time, we can create models that predict where these planets, and their moons, are going to be one month from now, or one year from now-how far from each other, how far from planet Earth, our moon and our sun."

"I keep forgetting that there is more than one sun in the universe," Jeremy said after a pause. "How many suns are there?"

"That's a great question, and not one that we have the answer to," Professor Helfand replied. "What we know so far is that planet Earth, and the seven other planets in our solar system, are part of the Milky Way galaxy, which is one of many galaxies in the universe. The farther we can see with our telescopes, and the more patterns and behaviors we can predict and detect of all the celestial bodies we know so far, the more galaxies we can discover, and the more suns we can identify. But it's going to take a lot of work to get there."

"How exciting," Jeremy said, marveling at the possibilities of discovery in front of them.

Jeremy's father called Jeremy over to the central observation deck, where an enormous telescope had been set up and positioned on a specific constellation in the sky. "Can you identify it?" his father asked him.

"I think so. The Big Dipper?"

"Absolutely right!" Professor Helfand said. "It's part of one of the brightest constellations we can see, called Ursa Major. Here's a little trick about Ursa Major and the North Star. See the two stars on the extreme right, at the bottom of the constellation?"

Jeremy looked carefully into the telescope and trained his eyes slowly to the right, where the handle of Big Dipper sank downwards and turned into a trapezoid. "Yes, I see the base of the constellation," he said.

"Perfect. Now, imagine a line connecting those two stars-they're called Merak and Dubhe-and extend it all the way up into the top of the lens."

Jeremy imagined a bright white line connecting the two stars, and stretching past them. It felt like he was connecting the dots in an art book from 2nd grade, only this was way cooler. "O-k-a-y,' he said slowly. He could feel his father's hands on his shoulders, keeping him steady.

"What do you see, champ?" his father asked.

Jeremy stared into the lens, trying to stay focused. "Oh!" he shouted. "I think I see another star, but it looks bigger than all the others! Is it really a star?" Jeremy squirmed with excitement.

"Well done," Professor Helfand said. "You just located the North Star in our humongous sky. You know, Jeremy, maybe when you're older, you can join our team and help us look for more constellations and galaxies in the sky. There's so much out there that we have no idea about. Would you be interested?"

Jeremy thought about Mr. Connolly and his friends walking around the Rose Center and playing with the kiddie exhibits, while he stood here at the top of the world, looking deep into the sky. "I can't wait," he said, with a smile on his face as bright as a hundred suns.

Name: _____ **Date:** _____

Use the article "Field Trip" to answer questions 1 to 2.

1. What is one fact Jeremy learns about Ursa Major when he is at the observatory?

_____

_____

_____

2. Astronomy is the scientific study of stars, planets, and other objects in outer space. How does the story teach the reader about astronomy?

_____

_____

_____

Use the article "Partial Eclipse" to answer questions 3 to 4.

3. What does Marcus see the moon do as he watches the solar eclipse through the telescope?

_____

_____

_____

4. How does the story teach the reader about what happens during a solar eclipse?

Use the articles "Field Trip" and "Partial Eclipse" to answer questions 5 to 6

5. Compare the ways that the two stories teach the reader about astronomy. Support your answer using details from both stories.

6. Contrast the ways that the two stories teach the reader about astronomy. Support your answer using details from both stories.

Stargazing

by ReadWorks

After the sun sets, take a look at the night sky. On a clear night, you'll be able to see stars scattered across the black expanse that we call our universe. If you're lucky, you might be able to spot some stars that look bigger than others-they shine brighter and attract our attention more than their smaller neighbors do. You might wonder: why are some stars brighter than others?

After much observation, scientists discovered the way stars appear to us depends on more than their actual size-it's also about how far they are from us. Therefore, the farther a star is from Earth, the smaller it will appear to us. The closer it is, the bigger it will look.

Try to think of the biggest star you've seen in the sky. An easy one, right? The sun! That's because the sun is closest to us compared to all other stars, located at just a short 150 million kilometers from Earth.

The next one? That's a tougher question. Many people answer Alpha Centauri, but some don't know that it's actually a cluster of three stars-Alpha Centauri A, Alpha Centauri B, and Proxima Centauri. Proxima Centauri is 4.24 light-years away and closest to our sun. A light-year is the distance that light travels in one year. We use this measurement because light is

the only thing in the universe that maintains a constant speed. However, even though Proxima Centauri is the closest star to the earth after the sun, you can only see it with a very powerful telescope. That doesn't make sense-didn't we just say that closer stars appear larger and more visible?

Well, Proxima Centauri is what we call a red dwarf. Red dwarf stars are very small, typically having less than half the mass of the sun. That means they generate less energy than the sun. Most stars burn hydrogen for fuel. Similar to the way a car uses gas for power, a star uses hydrogen for energy. Red dwarfs burn hydrogen very slowly, which means they generate little light compared to stars like the sun.

Proxima Centauri is the closest star after the sun, but that doesn't necessarily mean it's what we consider close in our minds. To completely understand how far away this star is, let's think about traveling 4.24 light-years away. NASA has built one of the fastest spacecrafts in existence, called New Horizons, which travels at about 60,000 kilometers per hour. Even at this speed, it would take the spacecraft 78,000 years to reach Proxima Centauri from Earth.

Sadly, the first few closest stars are not visible to the naked eye at night, which means we can't see them while we're stargazing from our homes or backyards. The closest star we can see at night is called Sirius, or the Dog Star. While Proxima Centauri is only 4.24 light-years away, Sirius is 8.6 light-years away. However, since Sirius is so large (almost twice the size of the sun), we can see it in the night sky.

So go outside and see what you can find up there!

The Brightest Sky

by Aditi Sriram

Emine had grown up in New York City and thought she could handle anything. No street was too crowded, no skyline too bright, and no parade too loud. She owned the city, and she was in command. The city was a part of her.

Or so she thought. When Emine traveled to Cairo for a two-week vacation, she wasn't prepared for what happened the moment she stepped off the plane. The heat hit her like a slap on the face. The dust found her eyes and nose immediately, and clogged them. Taxi drivers at the airport clamored for her attention, shouting and barking at her and each other in Arabic, trying to convince her to come with them. "Best price," they insisted in thick accents, looking at her eagerly. "For you-best price."

But Emine was determined to adapt to the city's frenetic energy. On her first evening in Cairo, she took a stroll from her hotel to the banks of the Nile, and watched the boats bobbing lazily on the water. Away from the traffic, people strolled and laughed quietly; the palm trees whispered in the wind, and Emine felt calmer. She watched the sun set, a deep red orb that sank into the clouds and then disappeared behind distant minarets, casting the evening in meditative hues of pink and purple. Emine relished the sight; it was nearly impossible to witness such a sight in New York City.

After a week of sightseeing in and around Cairo, Emine felt like she had a handle on the city. She knew all the second-hand bookshops and the metro. She had sugary crepes for breakfast. She listened to the calls to prayer from the many mosques. She could count up to

ten in Arabic, which made bargaining and ordering food a little easier. And she could recognize the stray cats that lazed outside her hotel. It was time for something new, Emine thought. A tour operator down the street had approached her a few times, advertising all kinds of trips on the Nile, to the Pyramids, and into the Black and White Deserts. The last adventure had caught her eye ever since she saw the pictures in the brochure, and Emine decided she would do it before her trip was up.

The following week, Emine joined two South Korean tourists and a friendly Bedouin guide, and together they drove 250 kilometers into the deserts. The Black Desert contained black volcanic rocks, whereas the White Desert contained white chalk rocks. The setting sun set the sky on fire, which she was used to, but what came next startled her completely: stars! Stars everywhere, and not at all like the few stars she could see in the New York City sky! These stars twinkled and nearly danced above her. Every few minutes, a shooting star whizzed by.

Her guide explained they were deep enough in the desert that no manmade light could interfere with the natural light in the sky. Compared to New York City's skyline, there was absolutely no electricity around her for miles. As a result, it looked like millions of people were taking pictures from the sky-each star a camera flash. Some stars shone more steadily than others, and the guide told her those were planets. He took out a high-powered telescope, through which Emine could see Saturn and its rings. She was amazed at how rapidly it moved from the field of view in the eyepiece of the telescope, because it was orbiting the sun so quickly. Emine fell asleep counting not sheep, not stars, but *shooting* stars. She had easily seen ten that night-more than she had ever seen before in her life.

In the morning, Emine was up early to watch the sun rise. The red ball was bigger than she had ever imagined, and Emine understood that, compared to the stars she had seen the night before, it was so much closer to planet Earth. Even as the sun rose higher in the sky, she could make out other stars twinkling faintly in the fresh morning sky and knew she would remember that sunrise forever.

Name: _____ **Date:** _____

Use the article "Stargazing" to answer questions 1 to 2.

1. Of all the stars in the sky, the one that looks the biggest from Earth is the sun. Why does the sun appear to be bigger than other stars?

_____

_____

_____

2. Explain how the distance between a star and Earth affects how big the star looks from Earth. Support your answer with information from the article.

_____

_____

_____

Use the article "The Brightest Sky" to answer questions 3 to 7.

3. Emine travels to Cairo on vacation. While there, where does she drive with two South Korean tourists and a Bedouin guide?

_____

_____

_____

4. Read these sentences from "The Brightest Sky" about Emine waking up in the desert.

"In the morning, Emine was up early to watch the sun rise. The red ball was bigger than she had ever imagined, and Emine understood that, compared to the stars she had seen the night before, it was so much closer to planet Earth."

Why is Emine up early?

5. What is the size of the "red ball"?

6. What is the "red ball" compared to?

7. What is much closer to Earth than the stars Emine saw the night before?

Use the articles "The Brightest Sky" and "Stargazing" to answer question 8

8. Think back to what you learned from "Stargazing" about the size of the sun and its distance from Earth. Then reread the sentences above from "The Brightest Sky." Pay special attention to how the sentences describe the "red ball" that Emine sees. What might the "red ball" be? Support your answer with evidence from both "Stargazing" and "The Brightest Sky."

Place in Space

The capsule began to vibrate. Eva tried to distract herself. She studied the panel in front of her-with its red-lit numbers and many gauges. She looked out the window, taking her last peek at Earth. On her left sat her mother, who, like her, was wearing a pillowy-looking space suit. On her right was her brother, and to his right, their father. The newspapers had called them "pioneers," but Eva felt more like a guinea pig.

The noise was almost unbearable as the ship lifted off. In just minutes, Earth was far below them as they sped toward deep space. She had expected it to be dark, like night. But space was brightly lit. It reminded her of a birthday cake, with stars flickering like candles.

She remembered their house. It was like all the other houses in the neighborhood. She remembered the day that the dome was placed over her sector of town. The grownups had said that the dome would protect them. That was just four years ago. Now she and her family were headed to a space station, thousands of miles away from the world she knew. The grownups said that *this* would be safe, but she didn't really believe them anymore.

Her mother and her brother had both been excited when the family was chosen to migrate. She was more like her father; she liked things to stay the way they had always been. She didn't want to be part of this great experiment. As she took her last look down at Earth, she understood for the first time that her planet really was a small place. Space was huge. She was determined to find her place in it.

migrate

mi · grate

Advanced Definition

intransitive verb

1. to move from one region into another.

   Their ancestors had migrated from the east, finally settling in this small western mining town.

2. to change habitat or location periodically as in response to changes in climate or employment opportunities.

   Geese migrate to the south when the weather gets cold.

   The pickers migrate north to work in the orchards during the harvest season.

Spanish cognate

migrar/emigrar: The Spanish word *migrar/emigrar* means migrate.

These are some examples of how the word or forms of the word are used:

1. Animals that **migrate** to islands often develop unusual traits, or characteristics.
2. Some birds **migrate**. Some birds, like seagulls, leave cold places and travel to warm places.
3. Some animals **migrate** when winter comes. Animals that migrate go from colder places to warmer places.
4. Those birds **migrated** between Canada and Texas. The Canadian and United States governments have protected these birds to help save them.
5. Her mother and her brother had both been excited when the family was chosen to **migrate**. She was more like her father; she liked things to stay the way they had always been.
6. When temperatures finally stabilized and conditions improved, Fagan says, "[Homo sapiens] possessed all the awesome mental abilities of modern humanity." Outfitted with those abilities, humans eventually **migrated** out of Africa into Europe. There they discovered they were not alone.
7. Most anthropologists who study pre-Columbian cultures believe that the ancestors of modern Native American peoples **migrated** from Asia, across the Bering Strait, and south through what is present day Alaska, Yukon, and British Columbia. This was possible because sea levels had dropped around 300 feet during the Ice Age, between 12,000 and 60,000 years ago.

unbearable

un · bear · a · ble

Advanced Definition

adjective

1. impossible to bear or endure; intolerable.

These are some examples of how the word or forms of the word are used:

1. The wicked heat, the ear-pounding noise, the stinging air - the assault on Ken Sims's senses was almost **unbearable**.
2. He felt imprisoned at a desk for eight hours a day, fighting the **unbearable** urge to burst into action and buzz around the room.
3. The noise was almost **unbearable** as the ship lifted off. In just minutes, Earth was far below them as they sped toward deep space.

Name: _____ **Date:** _____

1. Why is it going to matter in the story that space is brightly lit?

A. An explosion might force the ship out of orbit.

B. Eva will be able to see what's happening.

C. They are getting too close to the heat of the sun.

D. It might all of a sudden become pitch-black.

2. It is implied that where they're going might

A. be safer than anywhere they've ever lived.

B. have its own problems.

C. be over-crowded like earth.

D. be another space vehicle.

3. Eva's character is shown by the fact that she

A. is impatient to get to a new place.

B. is glad to have been chosen for the experiment.

C. is courageous in the face of uncertainty.

D. grimly accepts her fate.

4. If life at the new space station turns out to be similar to life on Earth, the family member(s) who might be most happy about that is/are

A. Eva's mother and brother.

B. Eva's father and brother.

C. Eva's mother only.

D. Eva and her father.

5. What do you think could have happened to Earth to force some of the population to migrate off the planet?

The Wonders of Flight

by ReadWorks

Maria gripped the handles of the airplane seat and squeezed her eyes shut. Engines fired up one by one, and the inside of the cabin soon filled with their powerful roar. Maria had put in earplugs to block out the noise, but some of it crept in anyway. She could sense the plane preparing for takeoff. Her mother, who sat next to her, reached out to stroke her hand, but she shook off this comforting touch. Maria did not want anyone, not even her own mother, to know just how terrified she was. Across the aisle, her older brother Luis sat with his arms loose and relaxed in his lap. He chatted with their father about the hot springs and majestic mountains they were going to see in Montana, where they were headed on vacation. Luis showed no signs of fear. Maria felt a sharp pang of jealousy at her brother's courage.

Wheels turned with greater and greater speed. Wind rushed over the frame of the plane and added to the deafening noise. Suddenly, with a jolt that made her stomach lurch, they were in the air. Beads of cold sweat trickled down Maria's neck. All she wanted was to be back on solid ground. She hated the idea of being trapped in a flimsy aluminum and plastic tube, hurtling at 500 miles an hour through the skies. Every time she had flown on an airplane in the past, she had remained frozen in her seat for the entire flight, trembling and praying for a safe landing. This time, on her fourth trip, she had promised herself she would overcome this crippling fear. Instead of pulling down the window shade next to her, as she always did, she kept it open. Now she peered out the window cautiously, and couldn't help but marvel at the receding landscape of New York City below her: the neat rows of apartment buildings, trees and skyscrapers that now seemed small enough to pluck with her fingers. Puffy white clouds drew closer and soon moved right through the airplane wing. Then Maria noticed the wing flapping like a fragile leaf in a strong gust of wind. She closed her eyes again.

"We have now reached cruising altitude," said the pilot. "You may remove your seatbelts." Maria stayed put but ventured another glance out the window. It had been raining all night but seemed as though the sun would shine today. The sky now appeared as a beguiling mix of dark rainclouds and bright yellow light and little pockets of sky blue. Maria gazed in wonder at this close-up view of the skies. After a few moments, she saw what seemed to be a rainbow poking out of a cloud. As the plane moved along she could see it more clearly. It was the most beautiful rainbow she had ever seen. Its colors were vibrant and sharp, and it was in the shape of a full circle instead of the usual semicircle. For a minute she thought she was imagining this magnificent rainbow, but it did not go away when she blinked her eyes a few times. Forgetting her fears altogether, she exclaimed, "Look, Luis! Mom! Dad! A rainbow!" Luis and her parents got out of their seats and huddled around her window to take a look.

"I have never seen anything like it in my forty-two years on this planet!" said her father. "A circular rainbow!"

"Well spotted, Maria!" said her mother.

Luis looked at her with a bit of envy for having made such an interesting discovery. But eventually, he too complimented Maria for finding the rainbow. "Very cool," he said, appreciating the sight.

Everyone else on the plane started to wonder what the buzz was about, and soon other passengers and even flight attendants wandered over to Maria's side of the plane to gaze at the unusual rainbow. Maria's fears of flying seemed to have vanished. She snapped off her seatbelt and stood up. "Does anybody know why it is a full circle?" she asked. "And why does a rainbow even appear? I've never quite understood it."

A slim young woman wearing wire-rimmed glasses happened to be sitting behind Maria. "That's a very good question, young lady," she said. "I'm Laura," she said, holding out her hand. "I'm a physicist, and I study the way light travels from stars like the sun. Would you like me to explain to you a bit more about rainbows?"

"Yes," said Maria, nodding excitedly. She had just finished snapping pictures of the rainbow with her smartphone. "I know it has something to do with the way sunlight hits water particles in the air, right?"

"Yes," said Laura, "That's exactly right. You only get a rainbow when sunlight hits fine particles of water-mist or fog, or even falling raindrops. Normally we only see sunlight as bright white or yellow in color, but when a ray of sunlight hits a water droplet suspended in the air, the sunray bends its path, bouncing off the water droplet in a completely different direction. As it bounces off, the sunray gets split up into all the different wavelengths of light that it is composed of: red, orange, yellow, green, blue, indigo, and violet. That's when we see a rainbow."

"Interesting," said Maria. "But why doesn't sunlight form rainbows when it hits other particles, like human bodies for instance?"

"Because sunlight, like all light, normally travels in straight lines, even when it comes into contact with other substances like human flesh, or a tree, or a piece of wood. Only when it hits water or some other transparent material, like glass, does the sunray bend. And only when it hits water does it bend in such a way that it gets broken up into all of its wavelengths of color, forming a rainbow."

Maria stared at Laura in awe. It was amazing that she knew how to explain the science behind that

beautiful sight out the window. A group of people now huddled around Laura as she explained things.

"What I really want to know is," said Luis. "Why this rainbow is a circle? Can we get to that part now?"

"Yes, of course," said Laura, with a twinkle in her eye. "That's easy to explain. Normally we view rainbows from the ground, and the surface of the earth breaks up the rainbow and stops us from seeing it as a whole. From high up in the air we can see the full effect because there is no land mass blocking off the other half of it. Maria was very, very lucky to have spotted a rainbow from an airplane window. It's rare to see a full circle rainbow, and we might not have another chance for the rest of our lives. She's made this a flight to remember for all of us."

Everyone on the plane erupted into applause. "Well done, young lady!" said an old man, patting her on the back before pulling out his camera to take photos.

After a few more minutes the rainbow drifted out of view, but the joy of discovering it stayed with Maria for the rest of her flight. Now she would have a great story to tell her friends when she got home. Even when the plane hit a patch of turbulence and jolted around a bit in the air, Maria did not feel as afraid as she had before. She now appreciated that the airplane was a marvelous invention that had allowed her to see something rare and beautiful, something that she would never have seen on solid ground. When the plane touched down in Montana, she knew that thanks to the special rainbow she had been so lucky to see, she had solved her fears of flying.

Name: _____ **Date:** _____

1. Where does this story take place?

A. Montana

B. New York City

C. on an airplane

D. in a helicopter

2. What main problem does Maria face?

A. She does not want to go on vacation.

B. She is afraid of flying.

C. She does not like her brother.

D. She has never seen a rainbow.

3. Maria is trying to get over her fear of flying. Which details from the text support this statement?

A. Maria keeps her window shade open instead of closing it like she usually does.

B. Maria stays in her seat with her seatbelt fastened.

C. Maria wears earplugs to block out the noise.

D. Maria spots a rainbow.

4. How does Maria feel about discovering the rare circular rainbow?

A. bored and uninterested

B. jealous and annoyed

C. scared and doubtful

D. happy and excited

5. What is this passage mostly about?

A. Maria's family vacation to Montana

B. the beautiful mountains and hot springs of Montana

C. how a rainbow helps Maria overcome her fear of flying

D. the scientific study of light waves

6. Read the following sentences: "It had been raining all night but seemed as though the sun would shine today. The sky now appeared as a **beguiling** mix of dark rainclouds and bright yellow light and little pockets of sky blue. Maria gazed in wonder at this close-up view of the skies."

What does "**beguiling**" mean?

A. fascinating or attractive

B. ugly or uninteresting

C. bright or colorful

D. strange or mysterious

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

Rainbows are usually shaped like a semicircle, _____ the rainbow Maria saw in the sky was a full circle.

A. thus

B. also

C. finally

D. but

8. How are rainbows formed?

_____

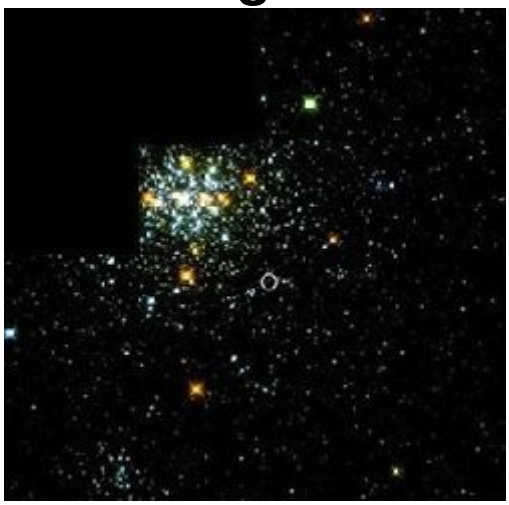
_____

_____

9. Why does Laura the physicist say that Maria "made this a flight to remember"?

10. How did Maria's attitude towards flying and airplanes change throughout the course of the story? What caused this change?

Seeing Stars



NASA

Scientists have determined that the number of visible stars in the universe is 70 sextillion.

Have you ever gazed at the night sky and guessed that it held thousands of stars? Well, think again! Scientists have determined that the number of visible stars in the universe is 70 sextillion. (That's 7 followed by 21 zeros!) According to scientists, there are ten times more stars in the universe than grains of sand on all the deserts and beaches in the world.

Luckily for the scientists, they did not have to count each star. They used powerful telescopes to count the stars located in one section of sky. A telescope is a device used to observe distant objects. The scientists then estimated the number of sections of sky in the entire universe and multiplied that number by the number of stars in the counted section.

The study found seven times more stars than had been calculated previously. "Even for an astronomer used to dealing in monster numbers, this is mind-boggling," said one scientist.

Name: _____ **Date:** _____

1. What did scientists recently determine?

A. Scientists recently determined that the number of visible stars in the universe is 70 sextillion.

B. Scientists recently determined the number of grains of sand on all the deserts and beaches in the world.

C. Scientists recently determined the number of visible moons in the universe.

D. Scientists recently determined that they had overestimated the number of visible stars in the universe.

2. The text describes the process by which scientists counted the visible stars in the universe. What was the first step in that process?

A. Scientists estimated the number of sections of sky in the entire universe.

B. Scientists multiplied the number of sections of sky in the universe by the number of stars in one of those sections.

C. Scientists counted each star one by one.

D. Scientists used telescopes to count the stars in one section of the sky.

3. Read these sentences from the text.

"According to scientists, there are ten times more stars in the universe than grains of sand on all the deserts and beaches in the world.

Luckily for the scientists, they did not have to count each star. They used powerful telescopes to count the stars located in one section of sky. A telescope is a device used to observe distant objects. The scientists then estimated the number of sections of sky in the entire universe and multiplied that number by the number of stars in the counted section."

Based on this information, why might scientists not have counted each star?

A. Scientists prefer doing things slowly to doing things quickly.

B. Scientists like doing multiplication more than addition.

C. Counting each star would have taken a long time.

D. Counting grains of sand is more enjoyable than counting stars.

4. Read this sentence from the text.

"Scientists recently determined that the number of visible stars in the universe is 70 sextillion."

Based on this information, what can you infer about the total number of stars in the universe?

A. The total number of stars in the universe might be greater than 70 sextillion if invisible stars were to be counted too.

B. There may be fewer than 70 sextillion stars in the universe because scientists were not counting stars one by one.

C. Scientists were surprised that the total number of stars in the universe was not higher than 70 sextillion.

D. Scientists were surprised that the total number of stars in the universe was not lower than 70 sextillion.

5. What is the main idea of this text?

A. There are more stars in the universe than grains of sand on all the deserts and beaches in the world.

B. Scientists recently calculated the number of visible stars in the universe.

C. The number 70 sextillion is 7 followed by 21 zeros.

D. A telescope is a device used to observe distant objects, such as stars.

6. Read these sentences from the text.

"Scientists recently determined that the number of visible stars in the universe is 70 sextillion. (That's 7 followed by 21 zeros!) According to scientists, there are ten times more stars in the universe than grains of sand on all the deserts and beaches in the world."

Why might the author have included the information about grains of sand?

A. to help readers comprehend how many stars there are in the universe

B. to make clear the importance of protecting the world's deserts and beaches

C. to suggest that most people care more about grains of sand than stars

D. to prove that counting stars is easier than counting grains of sand

7. Read these sentences from the text:

"Luckily for the scientists, they did not have to count each star. They used powerful telescopes to count the stars located in one section of sky."

How could the second sentence be rewritten to show the relationship between both sentences?

A. For example, they used powerful telescopes to count the stars located in one section of the sky.

B. In conclusion, they used powerful telescopes to count the stars located in one section of the sky.

C. Instead, they used powerful telescopes to count the stars located in one section of the sky.

D. Additionally, they used powerful telescopes to count the stars located in one section of the sky.

8. What is a telescope?

9. What did scientists do after using telescopes to count the stars located in one section of the sky?

Include two pieces of information from the text in your answer.

10. Explain whether scientists would have been able to determine the number of visible stars in the universe without using telescopes.

Support your answer with evidence from the text.

Astral Bodies

by Kirsten Weir

The personal risks that astronauts face in space

Astronauts are heroes, brave men and women who take giant leaps for humankind. No matter how great the leap, though, their bodies remain stubbornly terrestrial, adapted for life on solid ground.

Mary Roach takes a look at the personal challenges of space travel in her book, *Packing for Mars: The Curious Science of Life in the Void.* What does it take to stay healthy and happy in the depths of space? The answers, Roach says, are surprising, inspiring, and often pretty gross.

Space Sanitation

Consider, for instance, basic hygiene. On Earth we take bathing for granted. In a cramped space capsule-not so much.

The first spacecraft had no bathtubs or showers. And as astronauts ventured farther into space, the trips got longer and stinkier. NASA's Gemini VII mission in 1965 involved "two men, two weeks, no bathing, same underwear," writes Roach. By day four, the astronauts described the stench wafting from their spacesuits as "absolutely horrible."

The first spacecraft had no toilets, either. Astronauts pooped in plastic bags. When bacteria break down human waste, they release gas as a by-product. To prevent gas from building up and bursting the bags, the astronauts had to massage a *germicide* (a solution that kills bacteria) into the waste. They found the whole process "distasteful," Roach writes. Fortunately for today's astronauts on the International Space Station, a toilet is on board.

NASA

NASA/Roger Ressmeyer/Corbis- An astronaut cleans a toilet on the space shuttle Endeavour.

One of the biggest challenges in space is coping with weaker gravity. This is called microgravity. Gravity is a force of attraction between two objects that have mass. On Earth, the planet's massive gravity pulls you toward it. In space, tools float away and water droplets drift off, making it almost impossible to perform everyday tasks. Roach explains, "Everything you build for space has to be rethought."

Roach got a taste of microgravity aboard a NASA plane nicknamed the "Vomit Comet." It's designed to fly in *parabolas* (U-shaped curves). On the downward path of each curve, gravity weakens, and riders free fall. At this point, riders experience weightlessness.

The sensation of weightlessness was surprising, Roach says. Your arms don't pull down on your shoulders. Your hair doesn't sit on your scalp. Your organs float up beneath your rib cage instead of hanging heavily in your gut. "It's like you're unburdened from something you didn't know was weighing you down," Roach told *Current Science.* "It's so comfortable, you just feel giddy. Plus just to fly across the room like Superman-it's a dream!"

Falling Apart

Life with weaker gravity isn't all fun and games. On Earth, working muscles counteract gravity and enable you to walk and lift objects. With weaker gravity, astronauts' muscles get no workout. They *atrophy* (waste away).

AP Images

AP Images- Astronauts exercise to keep their bones and muscles fit.

Space travel also weakens the skeleton. On Earth, every time you run or pick up a heavy object, your bones experience tiny amounts of damage. Cells called *osteocytes* sense that

damage and send in cells to patch it like road crews fixing potholes. "The repaving strengthens the bones," Roach writes. In space, astronauts don't experience that minute damage. Their bones aren't "repaved," so they weaken and become brittle.

Muscles recover a few weeks after astronauts return to Earth, Roach writes. It can take months, however, for bones to build up again. Some studies suggest that an astronaut's weakened bones never completely recover. That's a concern for NASA, which plans to send astronauts to Mars. The round-trip journey will take two or three years. No human has ever been weightless for so long.

NASA

NASA- Astronauts exercise to keep their bones and muscles fit.

High Costs

A Mars expedition raises other health concerns too. Earth's atmosphere protects us from high-intensity radiation. Too much radiation can cause *mutations* (random changes) in DNA that trigger abnormal cell growth. Cancer results. The longer you're in space, the greater the risk of DNA mutations.

For that reason, NASA will probably send older astronauts to Mars. It takes 10 to 20 years for radiation damage to result in cancer. So astronauts in their 60s would be nearing the end of their natural life spans by the time cancer showed up. "There are a lot of astronauts who would sign up to go to Mars, even knowing full well the dangers," says Roach.

To succeed, a Mars mission would have to be totally sustainable. Practically everything would have to be recycled. Roach tested one of NASA's sustainability solutions: recycled urine. The

foul chemicals in it had been filtered by *osmosis,* a process in which water molecules pass through a membrane, leaving dissolved particles behind. The resulting liquid was safe to drink -and surprisingly sweet and tasty, she writes.

A mission to Mars would cost about $500 billion. To Roach, it would be worth every penny, in part because the lessons learned from it might solve problems related to waste, energy production, and water shortages on Earth.

"I think we can do it," she says. "I think you'll be seeing someone go to Mars."

Name: _____ **Date:** _____

1. How can the weaker gravity in space negatively affect the health of astronauts?

A. Astronauts' organs may float around in their bodies and become damaged.

B. Astronauts' muscles get no workout and can waste away.

C. Astronauts' bones are repaved in space and they become brittle.

D. Astronauts are not exposed to radiation that can prevent abnormal cell growth.

2. How do the three sections-"Space Sanitation," "Falling Apart," and "High Costs"-contribute to the overall structure of the passage?

A. Each section considers the negative and positive effects of space travel.

B. Each section describes a different problem faced by space astronauts.

C. The three sections describe the space shuttle improvements in chronological order.

D. The first two sections describe problems; the third section describes the solution.

3. Read the following sentences from the passage:

"For that reason, NASA will probably send older astronauts to Mars. It takes 10 to 20 years for radiation damage to result in cancer. So astronauts in their 60s would be nearing the end of their natural life spans by the time cancer showed up. 'There are a lot of astronauts who would sign up to go to Mars, even knowing full well the dangers,' says Roach."

What can we conclude from the sentences above?

A. NASA is not committed to saving the lives of any of its aging astronauts.

B. NASA is committed to saving the lives of its aging astronauts, especially those who are willing to go to Mars.

C. Astronauts of all different age groups are less willing to go to Mars because of the threat of cancer.

D. Many NASA astronauts would risk radiation, which may lead to cancer, for the chance to travel to Mars.

4. Read the sentence:

"No matter how great the leap, though, their bodies remain stubbornly terrestrial, adapted for life on solid ground."

What does **adapted** mean as used in this sentence?

A. unaccustomed

B. addicted

C. suited

D. changed

5. Which statement best describes the main idea of the passage?

A. There are several major challenges associated with humans traveling in space.

B. The mission to Mars will solve the major challenges of space travel.

C. There is nothing more worthwhile than space travel, so many astronauts are willing to risk their lives to participate.

D. It is important for astronauts to stay healthy, so they should limit their space travel.

6. What are two challenges that astronauts going to Mars will face that previous astronauts have not faced?

_____

_____

_____

7. The author begins the ninth paragraph by stating, "Life with weaker gravity isn't all fun and games." Why do you think the author wrote this sentence?

8. Choose the answer that best completes the sentence.

A trip to Mars _____ may be "worth every penny" because it might solve problems related to waste, energy production, and water shortages on Earth.

A. never
B. ultimately
C. initially
D. above all

A New World!

Scientists discover an earthlike planet.

Credit ESO

An artist's drawing of the earth-like planet Gliese 581c.

Would you like to have a birthday party every 13 days? Then Gliese 581c is the place for you!

Astronomers recently found the planet Gliese 581c. It orbits the star Gliese 581 once every 13 days. Earth orbits its star, the sun, every 365 days.

Gliese 581c is an exoplanet-a planet that exists beyond our solar system. It is the most earthlike exoplanet discovered so far.

Astronomers say there could be liquid water on Gliese 581c. And where there's water, there could be life. "Liquid water is critical to life as we know it," says Xavier Delfosse, one of the scientists who discovered the planet. "This planet will most probably be a very important target of the future of space missions... On the treasure map of the universe, one would be tempted to mark this planet with an X," says Delfosse.

Planet Files

Earth

· is 8,000 miles across.
· is made of rock, ice, and liquid water.
· is one of eight planets in its solar system.

Gliese 581c

· is estimated to be 12,000 miles across.
· is probably made of rock and might have ice and liquid water.
· is one of three planets in its solar system.

Name: _____ **Date:** _____

1. What is Gliese 581?

A. the star that Gliese 581c orbits

B. a moon that orbits Gliese 581c

C. another planet in Gliese 581c's solar system

D. an asteroid that will hit Gliese 581c

2. What is the purpose of the lists at the end of the passage?

A. to compare and contrast features of Earth with Gliese 581c

B. to explain why scientists are so excited about the discovery of Gliese 581c

C. to introduce the reader to Gliese 581c

D. to suggest that Gliese 581c is more important than Jupiter and Saturn

3. Which conclusion about Gliese 581c could be supported by the passage?

A. Scientists will want to confirm whether water exists on Gliese 581c.

B. Aliens will want to make contact with Earth from Gliese 581c.

C. Astronauts will never go to Gliese 581c on future space missions.

D. People will want to search for treasure on Gliese 581c.

4. Read the following sentences and answer the question:

"It orbits the star Gliese 581 once every 13 days. Earth orbits its star, the sun, every 365 days."

In these sentences, what does the word **orbit** mean?

A. runs

B. exits

C. circles

D. walks

5. The primary purpose of this passage is to describe

A. a new planet with similarities to Earth

B. a new alien species that will visit Earth

C. a new comet that may collide with Earth

D. a new star that Earth will orbit

6. Why would you have a birthday every 13 days on Gliese 581c?

7. Why is the planet Gliese 581c such an exciting discovery?

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

Astronomers are excited about Gliese 581c _____ there could be liquid water there, which means there could be life.

A. so

B. because

C. although

D. but

NASA's Stardust Review

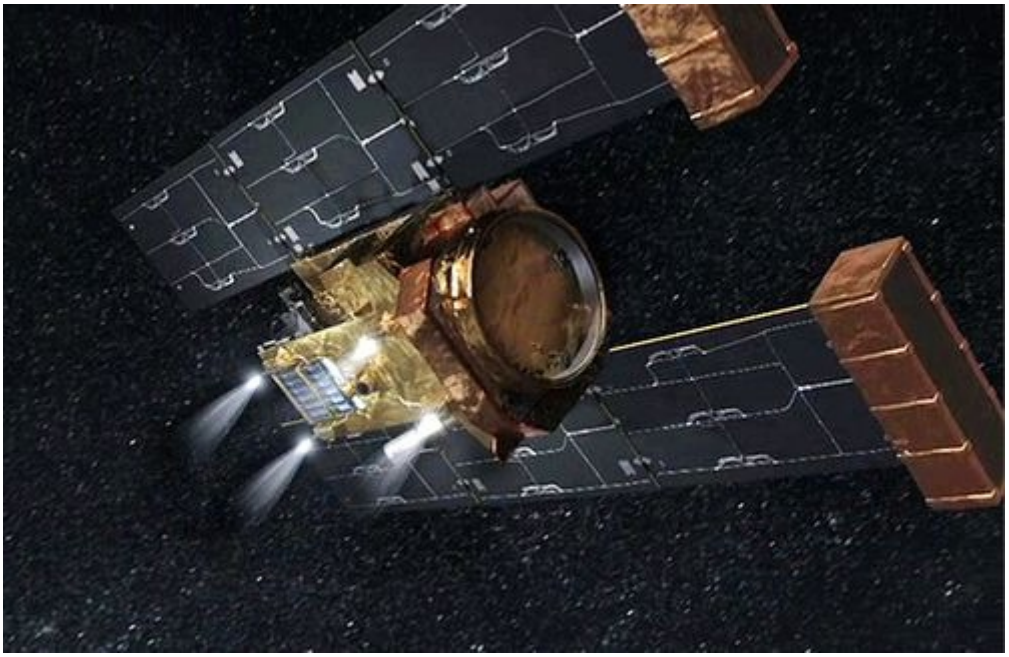


illustration of the Stardust probe

In the wee hours of January 15, 2006, stargazers caught a glimpse of an intergalactic treasure chest blazing through Earth's atmosphere. The space capsule plunged to the ground at a speed of about 28,800 miles per hour. Its fiery dive lit up the sky in the western United States. When the container landed safely in the Utah desert, excited scientists from NASA burst into applause.

Stardust, which captured comet dust and space particles, recently completed a 2.9-billion-mile journey. The probe spent seven years exploring space and collecting particles that may hold clues to the solar system's origins.

"We visited a comet, grabbed a piece of it, and [the capsule] landed here," Donald Brownlee, an astronomy professor and the mission's head investigator, told reporters. "It's an incredible thrill."

Stardust's cargo contains more than a million particles. Most of the particles are less than 1/10 the width of a human hair. Scientists could spend decades studying the tiny fragments.

Astronomers had been counting down the days until the container's arrival. *Stardust* was launched on Feb. 7, 1999. Five years later, the probe streaked through a **comet**, collecting dust along the way. A comet is a heavenly body made up of ice and dust that often develops a long, cloudy tail of dust when it is near the sun.

Many scientists believe that comets are leftovers from the formation of the sun and planets about 4.6 billion years ago. Researchers hope that the dust will provide clues to how the solar system was created. It may also help scientists understand how certain materials combined to form life.

"Stardust could provide a new window into the distant past," astronomer Simon Green told reporters.

Name: _____ **Date:** _____

1. How many years did *Stardust* spend exploring space?

A. five
B. seven
C. eight
D. two

2. All of the following were effects of the space capsule's return to Earth EXCEPT

A. the space capsule lit up the sky and landed safely
B. the capsule landed safely in the Utah desert
C. the cargo onboard the capsule caught on fire
D. excited scientists from NASA burst into applause

3. Why does the author refer to the space capsule as an "intergalactic treasure chest"?

A. It holds treasures from each planet in our solar system.
B. It was designed to be in the shape of a treasure chest.
C. It is filled with coins and bills from around the world.
D. It contains valuable information about space.

4. Read this sentence from the passage:

"Scientists could spend decades studying the tiny fragments."

In this sentence, the word **fragments** means

A. parts that are broken off
B. long, cloudy tails of dust
C. fruits that are overripe
D. collections of information

5. Which statement best describes the main idea of this passage?

A. *Stardust* plunged to the ground at a speed of about 28,800 miles per hour.

B. A comet is a heavenly body made up of ice and dust that often forms a tail.

C. Scientists may spend the next few decades studying tiny particles of dust.

D. A space probe's cargo may hold clues to the solar system's origins.

6. When was *Stardust* launched into space?

7. What did astronomer Simon Green mean when he said, "*Stardust* could provide a new window into the distant past"?

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

Scientists hope the space dust holds clues _____ how the solar system formed.

A. or

B. to

C. but

D. and

"Seven Minutes of Terror," Eight Years of Ingenuity

by ReadWorks

"Sometimes when we look at it, it looks crazy," remarked Adam Steltzner, an engineer who works for the National Aeronautics and Space Administration-known more commonly to the world as NASA. "It is the result of reasoned engineering thought. But it still looks crazy."

In a video story entitled "Seven Minutes of Terror," Steltzner was joined on camera by an eloquent cast of entry-descent-landing engineers (or "EDL Engineers"). Working from the Jet Propulsion Laboratory (JPL) in California, their team introduced the world to one of the most daring, inventive feats of engineering the world had ever witnessed: the pinpoint landing of NASA's Curiosity rover on Mars.

The seven minutes explored in that story-and experienced by the world in early August 2012-took place after seven years of engineering, one year of space flight, and countless hours of collaboration on the perfect landing. Dubbed the Mars Science Laboratory ("MSL"), this mission brought together more than 7,000 people, working in organizations from all over the world, to accomplish its goals. MSL is one of the greatest technological accomplishments of human history.

The most impressive thing about MSL is that no mission this ambitious had ever been attempted in the past. The landing presented problems that could not be compared directly to anything done before. But thanks to the rigorous work of hundreds of engineers, NASA ended up making a new mark on Mars.

The Launch

The MSL launch took place on November 26, 2011. Blasting from the Earth at a speed of 12,582 miles per hour, the rockets that broke free of Earth's orbit and sent the Mars-bound spacecraft with

the rover on its way were the most routine part of the mission. For decades NASA has specialized in space launches, drawing on some of the brightest minds on the planet to determine what it takes to bring a spacecraft to the stars.

Planning the rover's trip to the red planet (Mars's nickname, due to its color)-a voyage lasting about 36 weeks at maximum cruise velocity-was also not exactly a new challenge for engineers working on the MSL mission. NASA had already landed two rovers, named "Spirit" and "Opportunity," on the surface of the red planet. Based on the principles of astronomy, the launch engineers at JPL had very precise requirements for making the journey from Earth to Mars.

The key to these requirements was an understanding of orbits. Although Mars is significantly farther from the sun than Earth, both planets orbit the same star. Their distance from each other changes during each cycle, but Earth comes into alignment with Mars once every 26 months-"lapping" it in a perpetual race around the sun. Observing this pattern, astronomers can work with engineers to pinpoint the optimal month, day, and time for a spacecraft to leave Earth on a speedy one-way trip.

Drawing on centuries of knowledge of the laws of physics, scientists designed rockets and a spacecraft to accommodate Curiosity. Years of calculation, construction, careful planning and computer modeling resulted in a vessel that cruised purposefully through space, reaching the orbit of Mars at just the right time to attempt a landing.

Through it all, the margin for error was nearly non-existent. The movement of interplanetary bodies in space is much more demanding than the movement of cars on a highway, or even airplanes in the stratosphere. Miscalculating a vector or failing to account for any aspect of the orbits could lead to a $2 billion failure.

Fortunately, NASA had taken on this challenge before. Its engineers had both the experience and the tenacity to succeed again. What came after the launch was a different story.

The Landing

Spirit and Opportunity, the two NASA rovers that landed on Mars in 2004, used a combination of parachutes, rockets, and hi-tech airbags to protect themselves. Much like launch and spaceflight, each step of the landing sequence was planned and simulated to the very last detail. Learning from a prior Mars mission, EDL engineers were able to recreate some of the same maneuvers used in that sequence.

Unfortunately, the specific requirements of MSL made it difficult to depend on past experience. While NASA had constructed the biggest supersonic parachute ever made, parachuting was far from enough. Since the atmosphere of Mars is 100 times thinner than the atmosphere of Earth, the parachute alone could not reduce the speed of descent past 200 miles per hour-a breakneck speed that would surely damage Curiosity upon landing.

Curiosity outweighed any earlier rover and contained over 150 pounds of sensitive scientific devices, so an airbag solution was ruled out. Instead, EDL engineers designed a maneuver that would allow the entry capsule to turn sharply and activate powerful rockets to finish the job. Once this maneuver was complete, the capsule could attempt a vertical landing.

Successfully executing the switch from a parachute entry to a controlled, rocket-fueled descent was a

feat that could have gone wrong at any moment. Still, even this was not enough to succeed. Once the parachute was cut, and a full radar system was online to guide Curiosity to the surface, the force from the rockets could kick up so much dust that the dust itself would damage the rover.

Eternally thinking one step ahead, EDL engineers designed a device called a "sky crane" to complete the final step of the landing sequence. When the sky crane was 20 feet above Martian soil, it lowered Curiosity onto the surface with a set of cables.

Moving from 13,000 miles per hour to zero miles per hour in just seven minutes, Curiosity finally touched down. The capsule, with all rockets still firing, blasted back into the sky and crash-landed elsewhere on the planet. The landing was a success.

The Ongoing Mission

NASA states that the MSL mission "is part of NASA's Mars Exploration Program, a long-term effort of robotic exploration of the red planet." The most popular inquiry is whether Mars may have supported life at any point in its long history. The search for these signs, however, is one piece of a much greater picture.

The mission has eight scientific objectives, each one broken into specific goals and all coming together to form a more detailed understanding of all things Mars. Curiosity, a rover the size of a station wagon, contains advanced instruments that help it probe, sample, record, and analyze its way through Martian terrain. NASA is preparing for the next space flight to Mars by collecting evidence on the biological, geological, chemical, and radiological profile of the red planet. Another rover mission, building on the work of Curiosity, is planned to launch in 2020.

Ultimately, scientists hope to learn enough about Mars to bring human beings to the surface for a manned research mission. Some, working with entrepreneur Elon Musk, are even devising a plan to colonize the planet by 2030. Skeptics debate whether or not such a seemingly outrageous idea could ever be made into reality.

Looking back at NASA's solutions to the great technical challenge of the Curiosity landing, it's hard to feel too skeptical about humankind's ability to reach for the stars.

From the Earth to Outer Space

by ReadWorks

Many years ago, people here on Earth decided that they wanted to go into outer space.

This is something people had imagined for a very long time, in books and movies and stories grandparents told to their grandchildren. However, in the 1950s, people decided they really wanted to do it. There was just one problem: how would they get there?

One of the earliest movies about flying to the moon was made by Georges Méliès and released in 1902. It was called *A Trip to the Moon*. In this movie, the moon was made up of a man's face, covered in cream, and a whole tribe of angry natives lived there. That part was not very realistic. However, the spaceship didn't seem too far-fetched: it was a small capsule, shaped like a bullet, that the astronauts loaded into a giant cannon and aimed at the moon.

This movie was based on a book that came out many years earlier by an author named Jules Verne. One of the fans of the book was a Russian man, Konstantin Tsiolkovsky. The book made him think. Could you really shoot people out of a cannon and have them get safely to the moon? He decided you couldn't, but it got him thinking of other ways you could get people to the moon. He spent his life considering this problem and came up with many solutions.

Some of Tsiolkovsky's solutions gave scientists in America and Russia (where Tsiolkovsky lived) ideas when they began to think about space travel. They also thought about airplanes they and other people had made, and even big bombs that could fly themselves very long distances. How could they take all these ideas and make them into one thing that would safely get astronauts into space?

Many scientists spent years working together to solve the problem. They drew and discussed different designs until they agreed on the ones that were the best. Then, they built small models of those designs, and tested and tested them until they felt ready to build even bigger models. They made full-scale rockets, which they launched without any people inside, to test for safety. Often the rockets weren't safe, and they exploded right there on the launch pad, or shot off in crazy directions like a balloon that you blow up and release without tying it first. After many, many tests, they started to send small animals into space. Only after a long time did they ever put a person inside a rocket and shoot him into space.

Even after they began sending people into space, during the Gemini program in the 1960s, scientists were still trying to improve the shape of the rockets. The design changed many times, and eventually ended up looking like a half-rocket and half-airplane. This rocket, called the space shuttle, was used for many years. Now, the government lets private companies try their own designs for spaceships, and they have come up with many different, crazy-looking machines.

There is no single solution for sending a person into space. Thanks to the imaginations of people like Jules Verne and Konstantin Tsiolkovsky, and the hard work of the scientists who built and tested rockets over the years, humanity has developed reliable technology for space travel. Still, the work continues. Every day, the people who work on this problem share new designs, build test models, and try to imagine better ways to explore the vast deep mystery that is outer space.

Name: _____ **Date:** _____

Use the article "From the Earth to Outer Space" to answer questions 1 to 3.

1. According to the article, where did people on Earth decide they wanted to go many years ago?

_____

_____

_____

2. What problem does this article discuss?

_____

_____

_____

3. Summarize the series of events that led to people going into outer space.

_____

_____

_____

Use the article ""Seven Minutes of Terror," Eight Years of Ingenuity" to answer questions 4 to 6.

4. To which planet did the rover Curiosity travel?

5. What is one of the problems this article discusses?

6. Summarize the series of events that led to Curiosity landing on Mars.

Use the articles ""Seven Minutes of Terror," Eight Years of Ingenuity" and "From the Earth to Outer Space" to answer questions 7 to 9.

7. Compare the series of events that led to people going into outer space with the series of events that led to Curiosity landing on Mars.

8. Contrast the series of events that led to people going into outer space with the series of events that led to Curiosity landing on Mars.

9. Which mission was more difficult: sending people into outer space or sending Curiosity to Mars? Support your answer with evidence from both articles.

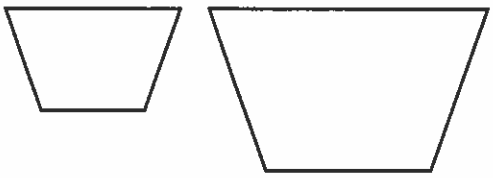
This test will tell you how well you understand the Arizona Mathematics Academic Standards **before** using this book.

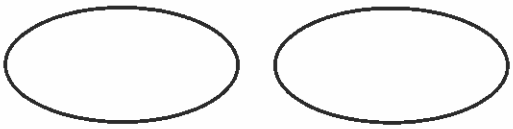
Tryout Test

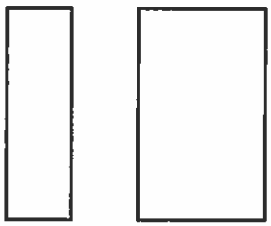
Estimated time: 75 minutes

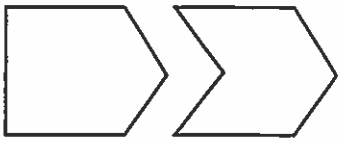
Directions: Read each question and choose the best answer.

1 Which pair of figures is similar but NOT congruent?

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

2 Cora had 18 stuffed animals. She gave 6 to her sister. Which equation shows the number of stuffed animals, s, Cora has now?

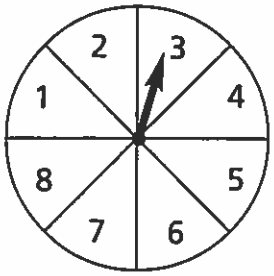
Ⓐ $18 + 6 = s$
Ⓑ $18 \div 6 = s$
Ⓒ $6 - 18 = s$
Ⓓ $18 - 6 = s$

3 What is the missing number in this pattern?

14, 28, 56, 112, ❑, 448

Ⓐ 168
Ⓑ 200
Ⓒ 224
Ⓓ 336

4 If Jill spins this spinner, which statement is true?



Ⓐ Jill will most likely spin a number greater than 2.
Ⓑ Jill is equally likely to spin a number greater than 7 as to spin a number less than 7.
Ⓒ It is impossible for Jill to spin a 6.
Ⓓ Jill is unlikely to spin a number greater than 4.

5 Which shows the fractions in order from least to greatest?

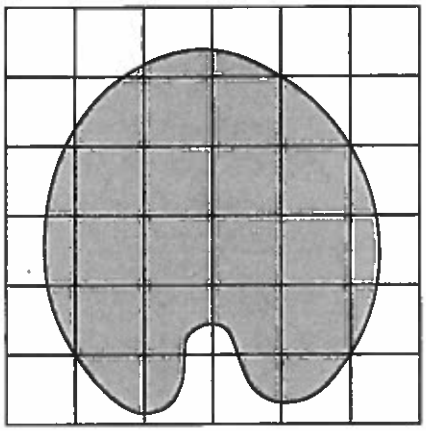
Ⓐ $\frac{1}{3}, \frac{1}{4}, \frac{1}{6}$
Ⓑ $\frac{1}{6}, \frac{1}{4}, \frac{1}{3}$
Ⓒ $\frac{1}{3}, \frac{1}{6}, \frac{1}{4}$
Ⓓ $\frac{1}{6}, \frac{1}{3}, \frac{1}{4}$

GO ON

6 It took George $14\frac{1}{4}$ hours to plant a vegetable garden. Dirk planted his garden in $9\frac{3}{4}$ hours. How much longer did it take George to plant his garden than Dirk?

Ⓐ $3\frac{1}{4}$ hours
Ⓑ $3\frac{1}{2}$ hours
Ⓒ $4\frac{1}{4}$ hours
Ⓓ $4\frac{1}{2}$ hours

7 Jack outlined a horse's hoofprint on a grid as shown below.



What is the approximate area of the hoofprint?

Ⓐ 12 units^2
Ⓑ 20 units^2
Ⓒ 25 units^2
Ⓓ 28 units^2

8 Gus asked each student in his class how many pets he or she has. The data he collected is shown below.

2, 3, 5, 4, 1, 0, 1, 2, 2, 3,
3, 2, 3, 5, 4, 1, 2, 2, 3, 1

Which data item has the greatest frequency?

Ⓐ 0
Ⓑ 1
Ⓒ 2
Ⓓ 3

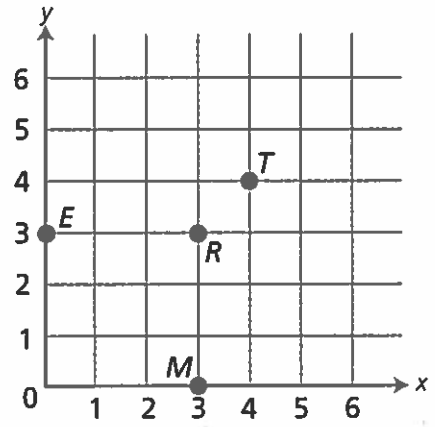
9 Which is the **best** unit to use to describe the weight of a man?

Ⓐ kilograms
Ⓑ milligrams
Ⓒ grams
Ⓓ ounces

10 Lauren earns $5 per hour raking leaves. On Saturday, she raked leaves for 3 hours. On Sunday, she raked leaves for 4 hours. How can you determine how much money Lauren made in all on Saturday and Sunday?

Ⓐ Multiply 5 times 3, then add 4.
Ⓑ Add 3 and 4, then multiply by 5.
Ⓒ Multiply 3 times 4, then add 5.
Ⓓ Add 3 and 4, then divide by 5.

11 Which point is located at (3, 0)?



Ⓐ point T
Ⓑ point E
Ⓒ point R
Ⓓ point M

12 Solve for m in this equation.

$$12 = \frac{m}{3}$$

Ⓐ $\frac{1}{4}$
Ⓑ 4
Ⓒ $\frac{1}{16}$
Ⓓ 36

13 Which of these numbers is NOT prime?

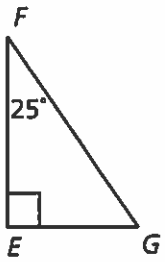
Ⓐ 12
Ⓑ 7
Ⓒ 11
Ⓓ 5

14 Multiply.

$$\begin{array}{r} 5.07 \\ \times\ 3.6 \\ \hline \end{array}$$

Ⓐ 18.252
Ⓑ 182.52
Ⓒ 1825.2
Ⓓ 18,252

15 What is the measure of $\angle G$?



Ⓐ 45°
Ⓑ 65°
Ⓒ 155°
Ⓓ 245°

16 Tam has red, blue, green, and black collars for her dog. She has leashes in the same colors. How many different collar and leash combinations are possible?

Ⓐ 8
Ⓑ 12
Ⓒ 16
Ⓓ 64

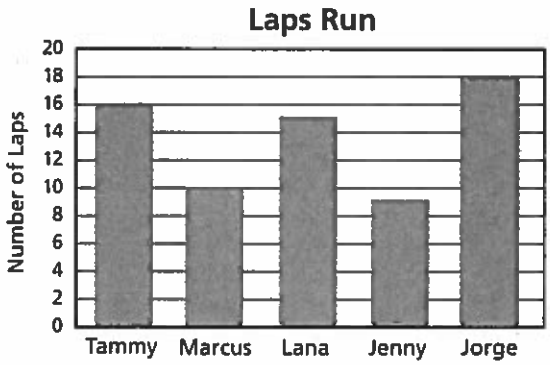
17 What are all the factors of 42?

Ⓐ 1, 42
Ⓑ 1, 6, 7, 42
Ⓒ 1, 2, 3, 6, 7, 14, 21, 42
Ⓓ 1, 2, 3, 4, 6, 7, 14, 21, 24, 42

18 Arlene and her friends made 52 tote bags with animal pictures on them. They sold the bags for $15 each. How much money did they make?

Ⓐ $260
Ⓑ $312
Ⓒ $680
Ⓓ $780

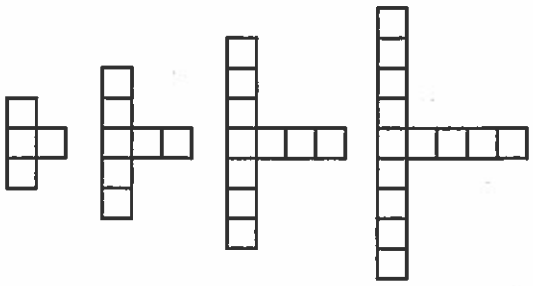
19 The graph shows the number of laps that five students ran during physical education.



Which student ran seven more laps than Jenny ran?

Ⓐ Tammy
Ⓑ Marcus
Ⓒ Lana
Ⓓ Jorge

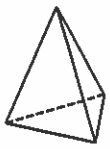
20 How many squares will it take to make the next figure in this pattern?

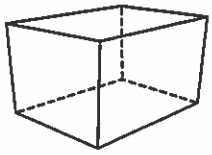


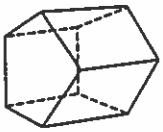
Ⓐ 14
Ⓑ 15
Ⓒ 16
Ⓓ 23

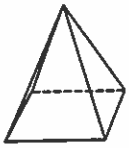
GO ON

21 Which is an example of a rectangular prism?

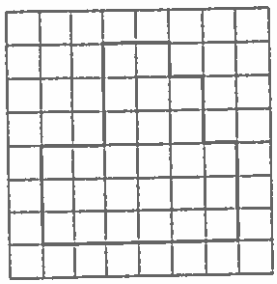
Ⓐ 

Ⓒ 

Ⓑ 

Ⓓ 

22 What is the area of this figure?



Ⓐ 36 square units
Ⓑ 26 square units
Ⓒ 25 square units
Ⓓ 24 square units

23 A total of 56,295 tickets were sold to a soccer game. If the price of each ticket was $22.50, which is the best estimate of the amount earned by ticket sales?

Ⓐ $1,200,000
Ⓒ $120,000
Ⓑ $1,000,000
Ⓓ $100,000

24 Which comparison is true?

Ⓐ $\frac{3}{4} < 0.4$
Ⓒ $\frac{2}{5} < 0.5$
Ⓑ $\frac{9}{10} < 0.9$
Ⓓ $\frac{1}{10} < 0.01$

25 Simplify this expression.

$$16 \div (8 - 4) + 5 \times 3$$

Ⓐ 9
Ⓒ 27
Ⓑ 19
Ⓓ 54

26 Which shape comes next in this pattern?

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

27 Austin invited some people to a party. He divided them into 4 groups to play a game. Which expression matches this situation?

Ⓐ $p - 4$
Ⓒ $4 \div p$
Ⓑ $p \div 4$
Ⓓ $4 - p$

28 How many gallons are there in 25 quarts?

Ⓐ 100 gal
Ⓒ 12.50 gal
Ⓑ 75 gal
Ⓓ 6.25 gal

29 Ariel recorded the temperature at 8:00 A.M. for five days. She made this table of the temperatures.

Temperature at 8 A.M.

Day	Temperature
Monday	30°F
Tuesday	32°F
Wednesday	34°F
Thursday	36°F
Friday	38°F

Which **best** tells how the temperature changed from Monday to Friday?

Ⓐ The temperature increased 2° each day.
Ⓑ The temperature decreased 2° each day.
Ⓒ The temperature stayed the same throughout the week.
Ⓓ The temperature increased more each day than it did the day before.

30 What is 354 ÷ 6?

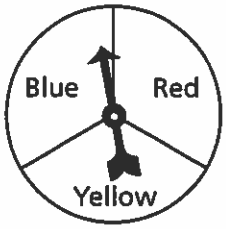
Ⓐ 6 R9 Ⓒ 59
Ⓑ 7 R3 Ⓓ 69

31 What is the mean of the workout times shown in this table?

Workouts (minutes)				
50	45	70	65	50

Ⓐ 50 min Ⓒ 56 min
Ⓑ 55 min Ⓓ 68 min

32 A spinner has 3 equal parts colored red, blue, and yellow. Fred spins the spinner and rolls a 1–6 number cube.

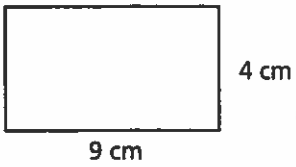


How many different outcomes are possible for this event?

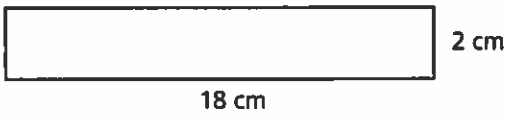
Ⓐ 3 Ⓒ 9
Ⓑ 6 Ⓓ 18

33 Elijah drew a rectangle with an area of 36 cm^2 and a perimeter of 30 cm. Which rectangle did he draw?

Ⓐ



Ⓑ



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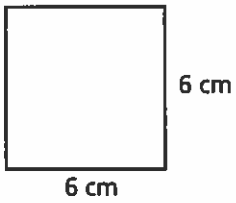

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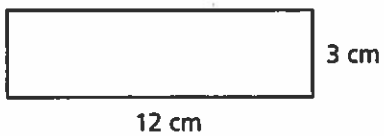


GO ON

34 Michael had 15 toy cars. Caleb had 11 toy cars. Michael traded 1 of his cars for 2 of Caleb's cars. Then Michael bought 4 more cars. Which piece of information do you **not** need to determine how many toy cars Michael has now?

Ⓐ Michael had 15 toy cars.
Ⓑ Caleb had 11 toy cars.
Ⓒ Michael traded 1 of his cars for 2 of Caleb's cars.
Ⓓ Michael bought 4 more cars.

35 Which shape has 6 vertices?

Ⓐ hexagon
Ⓑ octagon
Ⓒ pentagon
Ⓓ triangle

36 Which rule describes the pattern in the table?

A	*B*
2	12
5	21
1	9
8	30

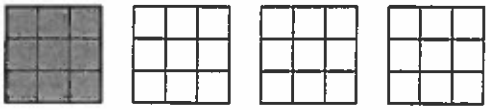
Ⓐ Add 2, multiply by 3.
Ⓑ Add 3, multiply by 2.
Ⓒ Multiply by 2, add 3.
Ⓓ Multiply by 3, add 2.

37 A recipe calls for $1\frac{5}{8}$ cups of rye flour and $2\frac{5}{8}$ cups of wheat flour. How many cups of flour is that in all?

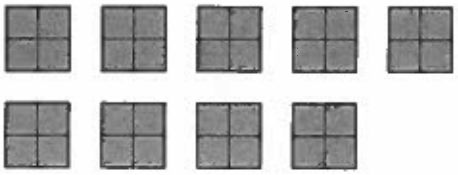
Ⓐ $3\frac{1}{4}$
Ⓑ $3\frac{7}{8}$
Ⓒ $4\frac{1}{4}$
Ⓓ $4\frac{1}{2}$

38 Which model can be used to represent the improper fraction $\frac{9}{4}$?

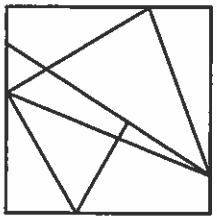
Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

39 Ellis wants to color this picture so that no two edges share a common color.



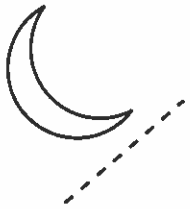
What is the fewest number of colors that Ellis can use?

Ⓐ 2
Ⓑ 3
Ⓒ 4
Ⓓ 5

40 Maribel walked 4 miles for a charity fundraiser. How many feet did she walk?

Ⓐ 1,760
Ⓑ 5,280
Ⓒ 7,040
Ⓓ 21,120

41 Which shows the figure below after it is reflected over the dotted line?



Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

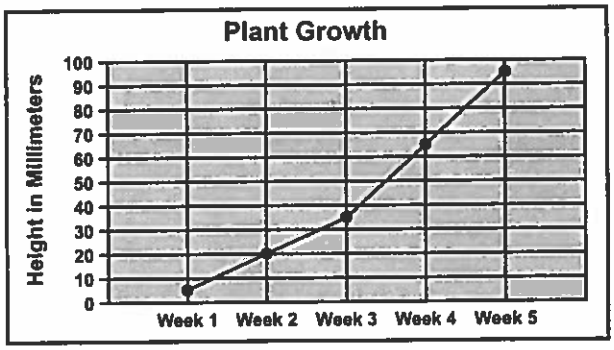
42 Sid has 6 red pens, 4 black pens, 2 green pens, and 5 blue pens. If he picks one pen without looking, which color pen is Sid most likely to pick?

Ⓐ red
Ⓑ black
Ⓒ green
Ⓓ blue

43 What is the value of the expression $n + 20$ when $n = 9.4$?

Ⓐ 9.24
Ⓑ 10.6
Ⓒ 11.6
Ⓓ 29.4

44 This graph shows the growth of Amy's plant over the past five weeks.



Which is the **best** prediction of next week's growth?

Ⓐ The plant will grow less than 5 millimeters.
Ⓑ The plant will grow more than 20 millimeters.
Ⓒ The plant will stop growing.
Ⓓ The plant will die.

45 Of the people on a bus, 35% are students. What fraction of the passengers are students?

Ⓐ $\frac{1}{3}$
Ⓑ $\frac{3}{10}$
Ⓒ $\frac{2}{5}$
Ⓓ $\frac{7}{20}$

46 Which rule was used to make this pattern?

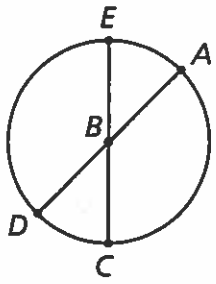
24, 29, 34, 39, 44, 49, . . .

Ⓐ Add 5.
Ⓑ Add 5, subtract 1.
Ⓒ Multiply by 3.
Ⓓ Add 2, add 3.

GO ON

47 In the diagram, which is NOT a radius?

Ⓐ $\overline{AB}$
Ⓑ $\overline{BE}$
Ⓒ $\overline{DB}$
Ⓓ $\overline{EC}$



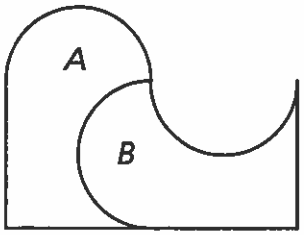
48 Karina had $36.45. She spent $17.18 on a CD. How much money does Karina have left?

Ⓐ $13.27
Ⓑ $19.27
Ⓒ $21.27
Ⓓ $21.33

49 Which measure is approximately equal to 5 gallons?

Ⓐ 1 liter
Ⓑ 4 liters
Ⓒ 10 liters
Ⓓ 20 liters

50 How was Figure *A* below transformed to get Figure *B*?



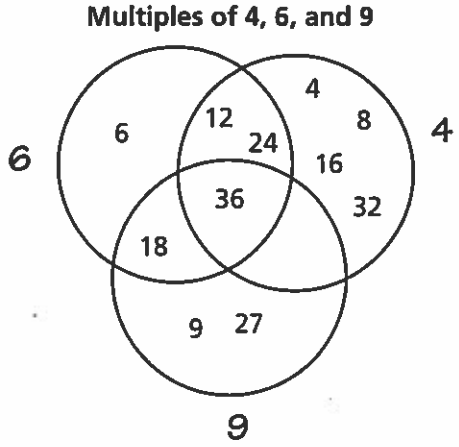
Ⓐ reflection
Ⓑ translation
Ⓒ rotation, 90° counterclockwise
Ⓓ rotation, 90° clockwise

51 What is the next number in this pattern?

3, 13, 10, 20, 17, 27, ❑

Ⓐ 23
Ⓑ 24
Ⓒ 30
Ⓓ 37

52 Which numbers shown on this Venn diagram are common multiples of 4 and 6?

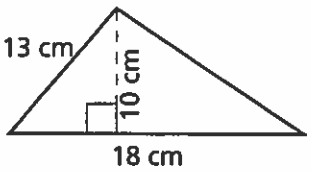


Ⓐ 12, 24, 36
Ⓑ 18, 36
Ⓒ 4, 6, 8, 16, 32
Ⓓ 9, 27

53 Which answer shows the numbers in order from greatest to least?

Ⓐ $1\frac{1}{8}$, 1.25, 1.6, $1\frac{3}{8}$
Ⓑ 1.6, $1\frac{3}{8}$, 1.25, $1\frac{1}{8}$
Ⓒ $1\frac{1}{8}$, $1\frac{3}{8}$, 1.25, 1.6
Ⓓ $1\frac{1}{8}$, 1.25, $1\frac{3}{8}$, 1.6

54 What is the area of the triangle shown below?



Ⓐ 42 cm^2
Ⓑ 71.5 cm^2
Ⓒ 90 cm^2
Ⓓ 117 cm^2

55 What number should go in the box to make the following equation true?

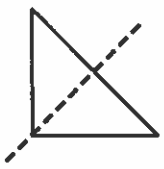
$$\square \times 6 = 96$$

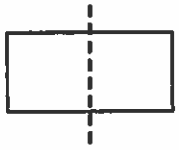
Ⓐ 16
Ⓑ 36
Ⓒ 90
Ⓓ 576

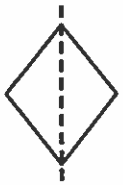
56 Cindy is deciding which outfit to wear. She will choose between a red top, a black top, and a white top and either a pair of shorts, a pair of pants, or a skirt. How many possible outfits of one top and one bottom can Cindy make?

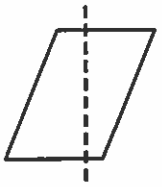
Ⓐ 3
Ⓑ 6
Ⓒ 9
Ⓓ 27

57 Which shape does NOT have a line of symmetry?

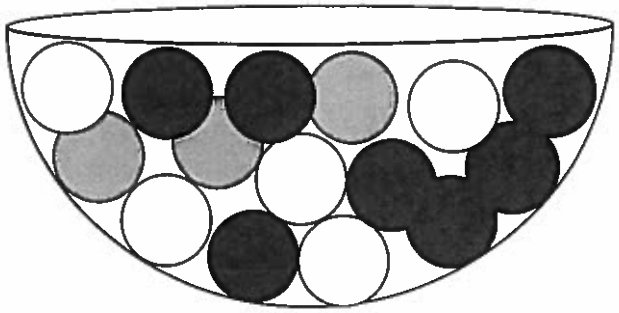
Ⓐ 

Ⓒ 

Ⓑ 

Ⓓ 

58 Which **best** describes the probability of drawing a gray marble from this bowl?



Ⓐ impossible
Ⓑ unlikely
Ⓒ likely
Ⓓ certain

59 The Sharks swim team practices only on Tuesdays. The Fins swim team practices only on Wednesdays. Jason has swim practice on Mondays. Based on this information, which of the following statements must be true?

Ⓐ If Jason has swim practice on Mondays, then he is on the Sharks team.
Ⓑ If Jason has swim practice on Mondays, then he is on the Fins team.
Ⓒ If Jason has swim practice on Mondays, then he is not on either the Sharks or Fins team.
Ⓓ If Jason has swim practice on Mondays, then he is not on a swim team.

60 $4.025 \div 5 =$

Ⓐ 805
Ⓑ 0.85
Ⓒ 0.805
Ⓓ 0.8005

Points Earned/Total = _____/60

Homework

Student: Teacher: Mrs. Fioravante Date:

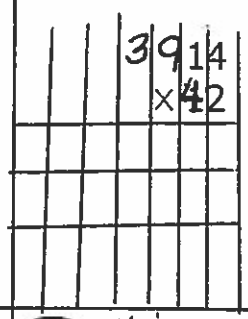
1 $4{,}817 \times 3 =$ _____

2 $75 \div 15 =$ _____

3 Write the fraction in lowest terms

$\frac{15}{40} =$ _____

4



5 Evaluate this expression.

$[(25-14) \times 2 - 12] \div 2$

6 Write an expression

4 times greater than the sum of 6 and 8

_____

7 In 4,444 how many times greater is the 4 in thousands place than the 4 in the tens place?

8 Write >, <, =

48.063 ☐ 48.603

_____

9

$$\begin{array}{r} 444 \\ -\ 206 \\ \hline \end{array}$$

10 Write the fraction in lowest terms

$\frac{12}{18} =$ _____

11 $8\overline{)60}$

12

$$\begin{array}{r} 624 \\ \times 72 \\ \hline \end{array}$$

13 In 8,888, how many times smaller is the 8 in the tens place than the 8 in the thousands place

14 Add:

$3.14 + 4 + 0.218$

15 $13\overline{)143}$

16 $4.3 - 2.754 =$

17

$$\begin{array}{r} 429 \\ \times 63 \\ \hline \end{array}$$

18 Subtract:

$8.2 - 3.754$

19 $\frac{2}{21} + \frac{3}{21} =$ _____

20 Evaluate

$2^3 \div 4 \times 3$

Student: Teacher: Date:

21 $4\overline{)332}$

22 Convert to fraction

$0.19 =$ _____

23 $5\overline{)71}$

24
$$\begin{array}{r} 203 \\ \times\ 0.24 \\ \hline \end{array}$$

25
$$\begin{array}{r} 4.6 \\ 0.2 \\ \hline \end{array}$$

26
$$\begin{array}{r} 6\ \frac{2}{3} \\ -3\ \frac{3}{4} \\ \hline \end{array}$$

27
$$\begin{array}{r} 2\ \frac{4}{5} \\ +3\ \frac{1}{2} \\ \hline \end{array}$$

28 $\square \div 100 = 0.074$

29 Simplify your answer

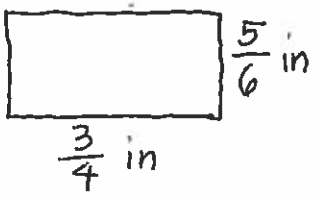
$\frac{15}{25} - \frac{5}{25} =$

30 $2\frac{1}{4} \times \frac{1}{5} =$

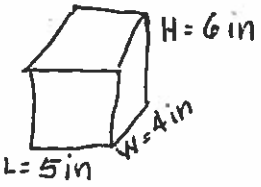
31 $6\overline{)261}$

32
$$\begin{array}{r} 55 \\ \times\ 4.0 \\ \hline \end{array}$$

33 Find the area.



34 Find the Volume.



35 Convert to fraction

$0.09 =$ _____

36 $4\overline{)2.0}$

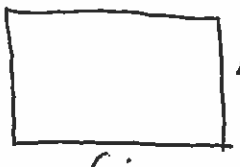
37 Convert to decimal

$\frac{24}{100} =$ _____

38 $\frac{3}{4} \times \frac{2}{9} =$ _____

39 $25\overline{)160}$

40 Find the perimeter



Name : _____ Score : _____

Teacher : _____ Date : _____

Adding Fractions

1) $\frac{2}{3} + \frac{1}{4} =$

2) $\frac{1}{3} + \frac{1}{2} =$

3) $\frac{3}{5} + \frac{8}{10} =$

4) $\frac{1}{4} + \frac{1}{2} =$

5) $\frac{1}{3} + \frac{4}{5} =$

6) $\frac{3}{5} + \frac{1}{2} =$

7) $\frac{1}{2} + \frac{2}{3} =$

8) $\frac{1}{2} + \frac{1}{10} =$

9) $\frac{1}{2} + \frac{4}{5} =$

10) $\frac{1}{5} + \frac{2}{3} =$

11) $\frac{2}{3} + \frac{3}{4} =$

12) $\frac{3}{10} + \frac{1}{2} =$

13) $\frac{2}{10} + \frac{1}{2} =$

14) $\frac{1}{5} + \frac{2}{3} =$

15) $\frac{1}{10} + \frac{1}{3} =$

Reduce each fraction as much as possible.

Ex) $\frac{10}{12} = \frac{5}{6}$

1) $\frac{10}{16} = \_\_$

2) $\frac{9}{24} = \_\_$

3) $\frac{24}{32} = \_\_$

4) $\frac{14}{16} = \_\_$

5) $\frac{45}{54} = \_\_$

6) $\frac{8}{16} = \_\_$

7) $\frac{5}{15} = \_\_$

8) $\frac{3}{9} = \_\_$

9) $\frac{6}{16} = \_\_$

10) $\frac{9}{54} = \_\_$

11) $\frac{63}{72} = \_\_$

12) $\frac{7}{14} = \_\_$

13) $\frac{56}{64} = \_\_$

14) $\frac{2}{4} = \_\_$

15) $\frac{2}{6} = \_\_$

16) $\frac{21}{28} = \_\_$

17) $\frac{10}{80} = \_\_$

18) $\frac{5}{30} = \_\_$

19) $\frac{50}{60} = \_\_$

20) $\frac{16}{24} = \_\_$

Answers

Ex. $\frac{5}{6}$

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0

This test will tell you how well you understand the Common Core State Standards for Mathematics **before** using this book.

Tryout Test

Estimated time: 60 minutes

Directions: Read each question and choose the best answer.

1 Evaluate this expression.

$$[(25 - 14) \times 2 - 12] \div 2$$

Ⓐ 3
Ⓑ 5
Ⓒ 11
Ⓓ 16

2 Which expression shows a number 4 times greater than 796 + 812?

Ⓐ $4 \times (796 + 812)$
Ⓑ $(796 + 812) \div 4$
Ⓒ $(4 \times 796) + 812$
Ⓓ $(796 + 812) + 4$

3 Marcie subtracted 17 from 58 and then multiplied by the sum of 6 and 8. Write the expression she used.

Answer: _____

4 Which expression can Will evaluate to find the distance to the grocery store and back if he walks 8 blocks east and 3 blocks south to get to the grocery store?

Ⓐ $2 + 8 + 3$
Ⓑ $2 \times 8 + 3$
Ⓒ $(8 + 3) \times 2$
Ⓓ $(8 \times 2) \times (3 \times 2)$

5 What is the value of the expression?

$$3 + \{6 + [10 - 3 \times (2 + 1)] + 1\}$$

Ⓐ 11
Ⓑ 13
Ⓒ 31
Ⓓ 49

6 Start at zero and write a sequence for each of these rules:

Add 4

Add 8

Describe the relationship between the corresponding terms in the two sequences.

Answer: _____

_____

7 In the number 22,222, how many times greater is the 2 in thousands place than the 2 in hundreds place?

Ⓐ 1 time
Ⓑ 9 times
Ⓒ 10 times
Ⓓ 100 times

8 Which describes how to move the decimal point to multiply by 0.01?

Ⓐ Move the decimal point 1 place to the right.
Ⓑ Move the decimal point 1 place to the left.
Ⓒ Move the decimal point 2 places to the right.
Ⓓ Move the decimal point 2 places to the left.

9 How much will 1,000 pens cost if 1 pen costs $1.19?

Answer: _____

GO ON

10 Ben bought 100 tulip bulbs for $53.60. What was the cost of each bulb?

Answer: _____

11 Write 10,000 in exponential notation.

Answer: _____

12 Write 10^1 in standard form.

Answer: _____

13 What is the standard form for 600,000 + 40,000 + 200 + 70 + 0.9 + 0.05?

Ⓐ 640,270.95 Ⓒ 64,270.95
Ⓑ 604,207.095 Ⓓ 642,270,095

14 What is the place value of 4 in the number 5,236.147?

Ⓐ hundreds Ⓒ hundredths
Ⓑ tenths Ⓓ thousandths

15 Write 56.437 in word form.

Answer: _____

16 Which answer choice shows *two hundred twenty-seven and four hundredths*?

Ⓐ 0.02274 Ⓒ 227.04
Ⓑ 227.004 Ⓓ 227.4

17 Write >, =, or < to compare these decimals.

29.052 ☐ 29.502

Answer: _____

18 Adam bought 3.158 pounds of salmon. To the nearest tenth of a pound, how much salmon did he buy?

Ⓐ 3.16 lb Ⓒ 3.1 lb
Ⓑ 3.2 lb Ⓓ 3 lb

19 $623 \times 71 =$

Ⓐ 4,984 Ⓒ 44,233
Ⓑ 5,084 Ⓓ 44,242

20 What number goes in the box in the number sentence below?

$8 \times \square = 56$

Ⓐ 6 Ⓒ 8
Ⓑ 7 Ⓓ 9

21 There are 868 seats in a theater arranged in 28 equal rows. How many seats are in each row?

Ⓐ 31 Ⓒ 43
Ⓑ 41 Ⓓ 46

22 Annamaria paid $13.14 for 6 notebooks. What was the cost of each notebook?

Ⓐ $2.19 Ⓒ $21.90
Ⓑ $2.79 Ⓓ $78.84

23 Oranges cost $1.29 a pound. How much will 3.6 pounds of oranges cost? Round up to the nearest cent.

Answer: _____

24 The table shows prices of items at a clothing store.

Item	Price
T-shirt	$9.95
Shorts	$15.25
Pants	$18.75
Sunglasses	$1.95
Flip-flops	$9.59
Baseball hat	$8.50

Jamie bought 2 pairs of flip-flops. She gave the clerk a $20 bill. How much change should she receive?

Ⓐ $.18 Ⓒ $1.82
Ⓑ $.82 Ⓓ $1.92

25 George shipped two boxes weighing 0.9 pounds and 5.25 pounds. What was the total weight of the two boxes?

Ⓐ 5.15 pounds Ⓒ 5.34 pounds
Ⓑ 5.24 pounds Ⓓ 6.15 pounds

26 Miguel needs 1.2 liters of milk for a recipe. He has 0.5 liters. How much more does he need?

Ⓐ 6.2 L
Ⓑ 1.9 L
Ⓒ 1.7 L
Ⓓ 0.7 L

27 A deli sandwich has $\frac{1}{8}$ pound of sliced turkey and $\frac{1}{4}$ pound of sliced American cheese. What is the total weight of the turkey and cheese?

Ⓐ $\frac{1}{8}$ pound Ⓒ $\frac{3}{8}$ pound
Ⓑ $\frac{1}{4}$ pound Ⓓ $\frac{1}{2}$ pound

28 Alicia measured her bean plant and announced it was $\frac{1}{3}$ foot tall. Her friend Marcia said her bean plant was $\frac{1}{4}$ foot tall. How much taller was Alicia's plant?

Ⓐ $\frac{1}{12}$ ft Ⓒ $\frac{1}{7}$ ft
Ⓑ $\frac{7}{12}$ ft Ⓓ $\frac{2}{7}$ ft

29 It took George $14\frac{1}{4}$ hours to plant a vegetable garden. Dirk planted his garden in $9\frac{3}{4}$ hours. How much longer did it take George to plant his garden than Dirk?

Ⓐ $3\frac{1}{4}$ hours Ⓒ $4\frac{1}{4}$ hours
Ⓑ $3\frac{1}{2}$ hours Ⓓ $4\frac{1}{2}$ hours

30 If 6 people divide 5 pounds of nuts evenly, how many pounds of nuts will each person get?

Ⓐ $\frac{5}{6}$ lb
Ⓑ $1\frac{1}{5}$lb
Ⓒ 11 lb
Ⓓ 30 lb

31 If Amy pours a 32-ounce bottle of juice into 5 glasses, about how many ounces of juice will be in each glass?

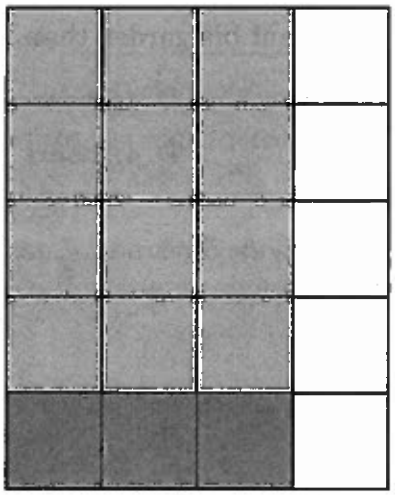
Ⓐ between 4 ounces and 5 ounces
Ⓑ between 5 ounces and 6 ounces
Ⓒ between 6 ounces and 7 ounces
Ⓓ between 7 ounces and 8 ounces

GO ON

32 Andrew needs to find $\frac{1}{5}$ of 65. Which expression can he use?

Ⓐ $\frac{1}{65} \times 5$
Ⓑ $65 \div 5$
Ⓒ 65×5
Ⓓ $\frac{1}{65} \div 5$

33 Use this area model to help you find the product $\frac{1}{5} \times \frac{3}{4}$.



Answer: _____

34 Which statement describes the product of $4\frac{2}{3} \times \frac{3}{5}$?

Ⓐ The product is less than $4\frac{2}{3}$.
Ⓑ The product is greater than $4\frac{2}{3}$.
Ⓒ The product is less than $\frac{3}{5}$.
Ⓓ The product is 1.

35 Greg rode his bicycle at $8\frac{1}{2}$ miles per hour for $1\frac{1}{2}$ hours. How far did he ride?

Ⓐ 7 miles
Ⓑ 10 miles
Ⓒ $10\frac{3}{4}$ miles
Ⓓ $12\frac{3}{4}$ miles

36 Ron had $\frac{1}{2}$ of a sheet of wrapping paper. He divided it into 5 equal pieces. What fraction of the sheet of wrapping paper was each piece?

Answer: _____

37 How many $\frac{1}{4}$ pound bags of raisins can Dara make from 4 pounds of raisins?

Answer: _____

38 How many inches are in 24 feet?

Ⓐ 3 inches
Ⓑ 8 inches
Ⓒ 72 inches
Ⓓ 288 inches

39 Which measure is equal to 850 grams?

Ⓐ 0.85 kg
Ⓑ 8.5 kg
Ⓒ 85 kg
Ⓓ 8,500 kg

40 How can you change feet into yards?

Ⓐ Divide by 3.
Ⓑ Multiply by 3.
Ⓒ Multiply by 12.
Ⓓ Divide by 12.

41 Jake needs 180 inches of a wallpaper border to put around a window. He has $3\frac{1}{2}$ yards. How many more inches of the border does he need?

Answer: _____

42 Jenny measured the widths of some pictures she cut out of magazines and made this line plot of the data.

Picture Widths

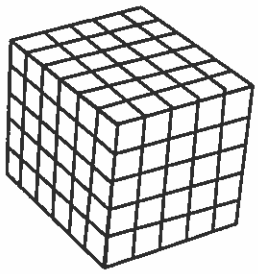
$2\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{3}{8}$	$2\frac{1}{2}$
X	X	X	X
X	X	X	X
X	X	X	X
		X	X
			X

Width (in inches)

If she arranges all of the pictures that are more than $2\frac{1}{4}$ inches wide side-by-side in a row, how long will the row of pictures be?

Answer: _____

43 What is the volume of this rectangular prism?



Ⓐ 70 cubic units
Ⓑ 85 cubic units
Ⓒ 120 cubic units
Ⓓ 150 cubic units

44 How many cubic yards of dirt must be removed to make a hole that is 10 yards deep, 12 yards long, and 5 yards wide?

Ⓐ 27 yd^3
Ⓑ 270 yd^3
Ⓒ 600 yd^3
Ⓓ 6,000 yd^3

45 Russ rents two storage lockers. One is 12 feet long, 10 feet wide, and 8 feet tall. The other is 10 feet long, 6 feet wide, and 8 feet tall. What is the total volume of the two lockers?

Show all of your work. Explain in words the steps you followed. Write your answer on the answer line.

Answer: _____

Explanation: _____

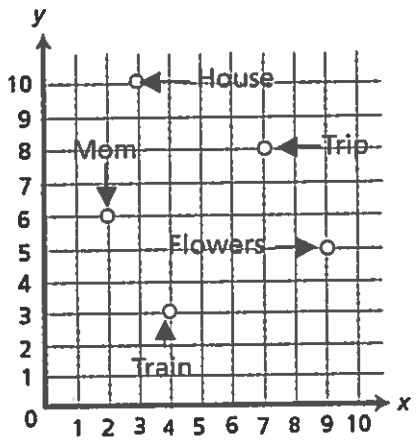
_____

_____

_____

GO ON

Marcus made this drawing to show where he is putting the nails to hold pictures on his wall. Use this coordinate grid for questions 46 and 47.



46 What picture is he putting at point (7, 8)?

Ⓐ Flowers
Ⓑ House
Ⓒ Mom
Ⓓ Trip

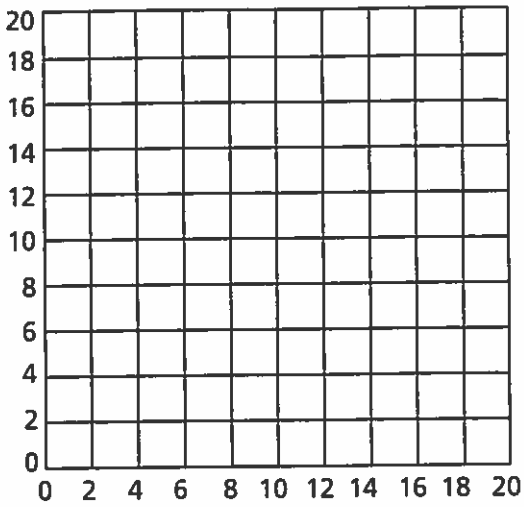
47 What ordered pair shows the location of the train picture?

Ⓐ (3, 4)
Ⓑ (4, 3)
Ⓒ (4, 4)
Ⓓ (3, 3)

48 Start at 20. Write sequences for the rules *Subtract 4* and *Subtract 2*. Use corresponding terms from the patterns to make ordered pairs. Graph the ordered pairs on the coordinate grid at the top of the next column.

Subtract 4: 20, _____

Subtract 2: 20, _____



Describe the pattern shown by the points.

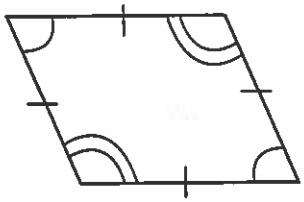
Answer: _____

_____

49 Which statement is true?

Ⓐ All squares are rectangles.
Ⓑ All trapezoids are parallelograms.
Ⓒ All trapezoids are triangles.
Ⓓ A rectangle has acute angles.

50 Classify this quadrilateral.



Ⓐ trapezoid, parallelogram, rectangle
Ⓑ trapezoid, parallelogram, rhombus
Ⓒ parallelogram, rectangle, rhombus
Ⓓ parallelogram, rhombus, square

STOP

Points Earned/Total = _____/50

Shape Your Future

HEALTHY FAMILY CHECKLIST

Print this sheet and hang it on the fridge to keep your family on track. It provides healthy reminders to drink water, eat fruits and vegetables each day. It's important to make healthy habits for the whole family.

Check the box for each day you hit your goal. Remember, no one's perfect, so start small and track your progress. Get healthy habits rolling.

	S	M	T	W	T	F	S
Packed a bottle of water and drank it throughout the day							
Ate a fruit or vegetable at each meal							
Replaced a sugary drink with water							
Did 30 minutes of exercise (adults) or 60 minutes (kids)							
Went on a family walk or were active together							
Got a good night's sleep							
Watched less than 1 hour of TV							
Encouraged a friend or family to try something on this list							

Find more recipes and physical activity ideas at

ShapeYourFutureOK.com

TSET

SPELL YOUR NAME

& DO THE WORKOUT!

- 15 PUSHUPS
- 50 JUMPING JACKS
- 20 CRUNCHES
- 10 BURPEES
- 60-SECOND WALL SIT
- 20 ARM CIRCLES
- 20 SQUATS
- 30 JUMPING JACKS
- 60-SECOND PLANK
- 20 MOUNTAIN CLIMBERS
- 40 CRUNCHES
- 12 BURPEES
- 15 SQUAT JUMPS
- 10 PUSHUPS
- 20 LUNGES
- 10 TRICEP DIPS
- 20 JUMPING JACKS
- 60 SECOND PLANK
- 30 BICYCLE CRUNCHES
- 60-SECOND WALL SIT
- 40 HIGH KNEES
- 30 SQUATS
- 15 TRICEP DIPS
- 10 MOUNTAIN CLIMBERS
- 12 JUMPING LUNGES
- 30 CRUNCHES

Physical Activity Log

Date	Workout	Duration	Notes

Homework

Student: Teacher: Mrs. Fioravante Date: Week of 12-16

1 $816 \times 5 =$

_____

2 $48 \div 12 =$

_____

3 Write the fraction in lowest terms

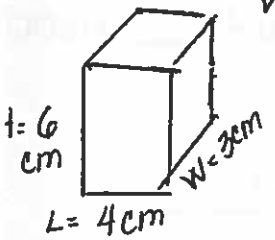
$\frac{12}{18} =$

_____

4

$$\begin{array}{r} 100 \\ \times 438 \\ \hline \end{array}$$

5 Find the volume: $V = L \times W \times H$



6 Write the fraction in lowest terms

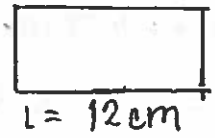
$\frac{3}{27} =$

_____

7

$$\begin{array}{r} 173 \\ \times 82 \\ \hline \end{array}$$

8 Find the area



9

$$\begin{array}{r} 361 \\ -\ 156 \\ \hline \end{array}$$

10 Write the fraction in lowest terms

$\frac{12}{16} =$

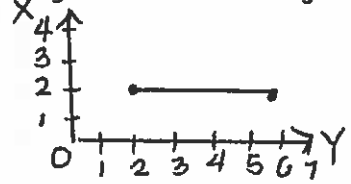
_____

11 $5\overline{)64}$

12

$$\begin{array}{r} 132 \\ \times 32 \\ \hline \end{array}$$

13 What is the length of the segment?



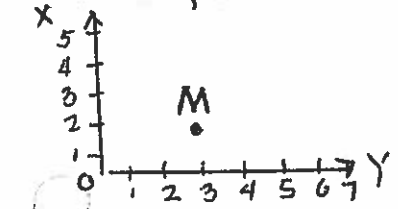
Answer: _____

14 Subtract: $8.4 - 3.623$

15 $20\overline{)140}$

16 Evaluate: $3 + (6 - 2) \times 4$

17 What is the coordinate points of M?



Answer: _____

18 Add

$3\frac{3}{7}$ _____

$+ 2\frac{1}{3}$ _____

_____

19 $\frac{4}{38} + \frac{9}{38} =$

_____

20 Evaluate $[6 - (3 \times 2)] + 4$

Student: Teacher: Date:

21 $5\overline{)375}$

22 Convert to fraction

$0.09 =$ _____

23 $6\overline{)93}$

24
$$\begin{array}{r} 6.4 \\ \times\ 0.2 \\ \hline \end{array}$$

25 What makes the equation true?

$150 \times$ ____ $= 15{,}000$

Answer: _____

26 What makes the equation true?

$30 \times$ ____ $= 60{,}000$

Answer: _____

27 $\frac{36}{37} - \frac{5}{37} =$ _____

28 What makes the equation true?

$180{,}000 \div$ ____ $= 600$

Answer: _____

29 Round to the nearest tens

658.37

Answer: _____

30 $\frac{8}{9} \times \frac{2}{7} =$ _____

31 $4\overline{)238}$

32 Find the value of y

$8y = 24$

$y =$ _____

33 Convert to decimal

$\frac{14}{100} =$ _____

34 $\frac{5}{9} \times \frac{4}{9} =$ _____

35 Convert to fraction

$0.91 =$ _____

36 $2\overline{)4.0}$

37 Subtract:

$3\frac{3}{4}$ ____

$-1\frac{1}{6}$ ____

38 Add:

$6\frac{5}{8}$ ____

$+2\frac{3}{4}$ ____

39 Multiply:

$8.6 \times 10^3 =$

Answer _____

Divide:

$3.4 \div 10^2 =$

Answer: _____

Homework

Student: Teacher: Mrs. Fioravante Date: Week of 12-16

1 $816 \times 5 =$

2 $48 \div 12 =$

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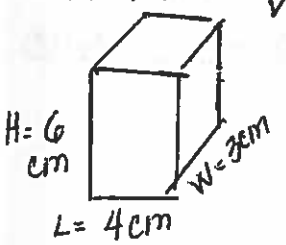

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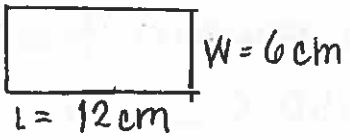

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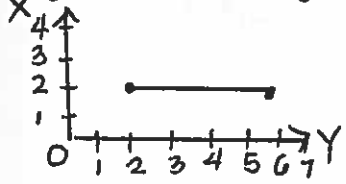

Answer: _____

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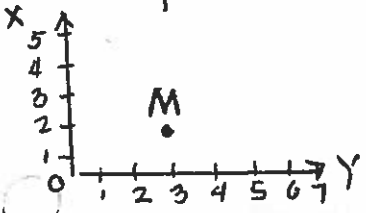

Answer: _____

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$3\frac{3}{7}$ _____

$+\ 2\frac{1}{3}$ _____

_____

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Student: Teacher: Date:

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$\frac{36}{37} - \frac{5}{37} =$ _____

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$180{,}000 \div$ ____ $= 600$

Answer: _____

29 Round to the nearest tens

658.37

Answer: _____

30

$\frac{8}{9} \times \frac{2}{7} =$ _____

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$8y = 24$

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33 Convert to decimal

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$0.91 =$ _____

36 $2\overline{)4.0}$

37 Subtract:

$3\frac{3}{4}$ ____

$-\ 1\frac{1}{6}$ ____

38 Add:

$6\frac{5}{8}$ ____

$+\ 2\frac{3}{4}$ ____

39 Multiply:

$8.6 \times 10^3 =$

Answer _____

Divide:

$3.4 \div 10^2 =$

Answer: _____

Bell Work

Student: Teacher: Date: 12-2-19

1 $47 \times 7 =$	**2** $91 \div 13 =$	**3** Write the fraction in lowest terms $\frac{2}{14} =$	**4** 519×10
5 $305 + 208$	**6** Write the fraction in lowest terms $\frac{11}{88} =$	**7** 613×4	**8** $0.42 + 3.5$
9 $325 - 243$	**10** Write the fraction in lowest terms $\frac{8}{16} =$	**11** $6\overline{)69}$	**12** 233×22
13 121×42	**14** $8.2 - 3.476$	**15** $14\overline{)126}$	**16** $3.75 + 0.248$
17 212×28	**18** $10 - 2.345$	**19** $\frac{6}{14} + \frac{3}{14} =$	**20** 267×2

Student: Teacher: Mrs. Fioravante Date: 12-2-19

21 $7\overline{)217}$	**22** Convert to fraction $0.77 =$ _____	**23** $2\overline{)57}$	**24** 12×0.1
25 313×3	**26** $\frac{3}{8} + \frac{4}{6} =$ _____	**27** $\frac{3}{4} - \frac{1}{3} =$ _____	**28** $2\frac{2}{5}$ _____ $+ 3\frac{1}{3}$ _____ _____
29 $\frac{37}{42} - \frac{18}{42} =$ _____	**30** $\frac{1}{2} \times \frac{1}{5} =$ _____	**31** $5\overline{)431}$	**32** 15×1.5
33 Convert to decimal $\frac{8}{10} =$ _____	**34** $\frac{2}{9} \times \frac{2}{9} =$ _____	**35** Convert to fraction $0.87 =$ _____	**36** $3\overline{)4.2}$
37 Convert to decimal $\frac{43}{100} =$ _____	**38** $4\frac{1}{2}$ _____ $- 1\frac{2}{3}$ _____ _____	**39** $15\overline{)351}$	**40** 0.46×10^4

Homework

Student: Teacher: Mrs. Fioravante Date: Week of 12-2

1 Tuesday 1-10

$7214 \times 9 =$

2

$85 \div 17 =$

3 Write the fraction in lowest terms

$\frac{12}{20} =$

4

814×100

5

$409 + 502$

6 Write the fraction in lowest terms

$\frac{3}{12} =$

7

156×24

8 Add: $0.628 + 3.49 =$

9

$125 - 116$

10 Write the fraction in lowest terms

$\frac{14}{21} =$

11 Wednesday 11-20

$4\overline{)668}$

12

455×14

13 Multiply:

$0.78 \times 10^3 =$

14 Subtract:

$8.2 - 3.763 =$

15

$13\overline{)104}$

16 Divide:

$6.4 \div 10^3 =$

17 $2\frac{3}{5} + 4\frac{3}{4}$ = ____

18 $7\frac{4}{5} - 2\frac{2}{3}$ = ____

19 Multiply:

4.38×0.3

20

424×36

Student: Teacher: Mrs. Fioravante Date: Week of 12-2

21 Thursday 21 - 30 $7\overline{)161}$	22 Convert to fraction 0.61 =	23 $5\overline{)67}$	24 113×0.26
25 2048×23	26 Round to the nearest whole number. 765.84	27 Round to the nearest tenths. 24.63	28 Estimate the sum $2\frac{3}{4} + 1\frac{1}{5} =$ $\_\_ + \_\_ =$
29 $\frac{3}{4} \div \frac{1}{2} =$	30 $\frac{7}{9} \times \frac{1}{3} =$	31 Friday 31-40 $8\overline{)394}$	32 42×2.5
33 Convert to decimal $\frac{18}{100} =$	34 $\frac{2}{7} \times \frac{5}{7} =$	35 Convert to fraction 0.49 =	36 $4\overline{)4.4}$
37 Convert to decimal $\frac{63}{100} =$	38 Multiply: $40 \times 10^2 =$	39 $25\overline{)365}$	40 $0.3\overline{)4.38}$

Bell Work

Student: Teacher: Mrs. Fioravante Date: Week of 12-9

1 $2,614 \times 7 =$

2 $90 \div 15 =$

3 Write the fraction in lowest terms

$\frac{21}{28} =$

4

$$\begin{array}{r} 485 \\ \times\ 100 \\ \hline \end{array}$$

5 Write four and eight hundredths in standard form

6 Write the fraction in lowest terms

$\frac{4}{18} =$

7

$$\begin{array}{r} 192 \\ \times\ 83 \\ \hline \end{array}$$

8 Add: $0.24 + 4.635 =$

9 Subtract: $10 - 3.478$

10 Write the fraction in lowest terms

$\frac{8}{24} =$

11 $5\overline{)79}$

12

$$\begin{array}{r} 220 \\ \times\ 43 \\ \hline \end{array}$$

13

$$\begin{array}{r} 303 \\ \times\ 56 \\ \hline \end{array}$$

14 Subtract: $6.2 - 2.347$

15 $11\overline{)110}$

16 Multiply: 0.46×10^3

17 Divide: $9.6 \div 10^2$

18 Round to the nearest tenths

8.473

19 $\frac{11}{44} + \frac{8}{44} =$

20 Add:

$$\begin{array}{r} 2\ \frac{3}{4} \\ +\ 3\ \frac{4}{5} \\ \hline \end{array}$$

Student: Teacher: Date:

21 $9\overline{)459}$

22 Convert to fraction

$0.21 =$ _____

23 $5\overline{)83}$

24
$$\begin{array}{r} 40 \\ \times\ 0.1 \\ \hline \end{array}$$

25
$$\begin{array}{r} 3.4 \\ \times\ 0.6 \\ \hline \end{array}$$

26 Subtract:

$5\frac{4}{5}$ _____

$-2\frac{2}{3}$ _____

_____

27 Subtract. Simplify

$\frac{12}{15} - \frac{3}{15} =$

_____

28 Subtract:

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

$-3\frac{3}{4}$ _____

_____

29 $\frac{27}{45} - \frac{8}{45} =$

_____

30 $\frac{3}{4} \times \frac{1}{8} =$

_____

31 $8\overline{)346}$

32
$$\begin{array}{r} 32 \\ \times\ 4.5 \\ \hline \end{array}$$

33 Convert to decimal

$\frac{25}{100} =$

_____

34 $\frac{2}{9} \times \frac{4}{9} =$

_____

35 Round to the nearest whole number.

347.25

_____

36 $2\overline{)5.4}$

37 Multiply:

$60 \times 10^2 =$

_____

38 Estimate the sum

$3\frac{1}{4} + 4\frac{4}{5}$

____ + ____ = ____

_____

39 $40\overline{)124}$

Estimate the difference.

$5\frac{3}{4} - 2\frac{1}{3} =$

____ - ____ = ____

Science!

Hello scientists!

Please remember science is an inquiry!

As you are home, look around you and ask questions. Make hypothesis.

All science in this packet is beneficial to helping you with your critical thinking skills and understanding 5th grade science standards.

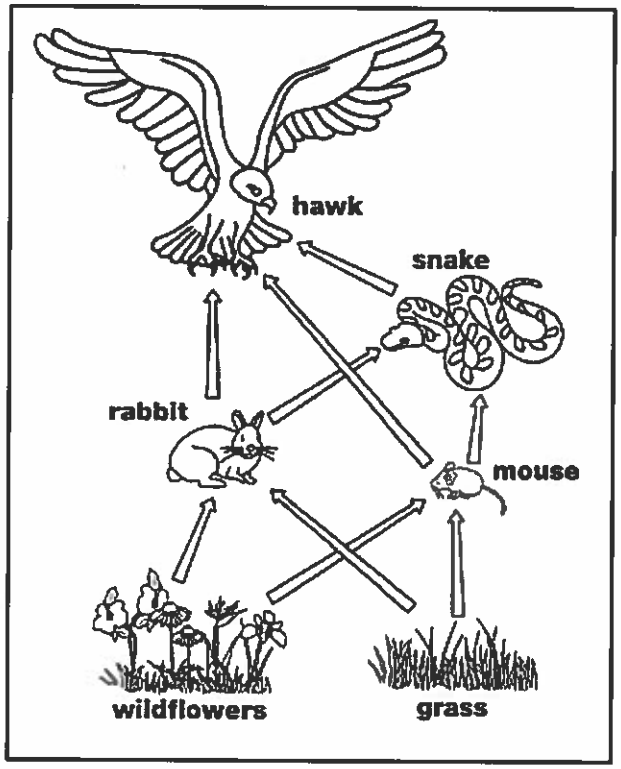
Work hard - always do your best. You are stronger than you know!

Miss you! Love, Mrs. Perez ☺

Name: _____

Monday
3/16

Food Web



A food web shows how energy is passed on from one living thing to the next. It shows the feeding habits of different animals that live together in an ecosystem.

In the food web pictured on the left, energy is passed from the grass to the mouse to the snake to the hawk.

Producers are living things that make their own food with sun and air. The producers are pictured at the bottom of the food web.

Consumers are living things that eat other living things.

Use the food web in the picture above to answer the questions.

1. Name the living things in the food web that are producers. _____

_____

2. Name the living things in the food web that are consumers. _____

_____

3. Which living things does the snake eat? _____

4. Which living things does the hawk eat? _____

5. What is eaten by the rabbit? _____

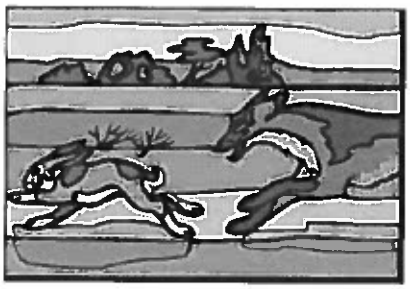
Name: _____

Monday

Predator and Prey

A **predator** is an animal that hunts other animals for food.

Prey is an animal that is hunted and eaten for food.



Identify the predator and prey for each scenario below.

1. **A snapping turtle in a pond eats a small perch.**

   predator - _____ prey - _____

2. **A shrew is eaten by a barn owl.**

   predator - _____ prey - _____

3. **A seagull lands near an alligator and the alligator eats it.**

   predator - _____ prey - _____

4. **A gray wolf hunts and eats a rabbit.**

   predator - _____ prey - _____

5. **A blue whale swallows krill.**

   predator - _____ prey - _____

6. **A penguin is captured and eaten by a leopard seal.**

   predator - _____ prey - _____

7. **A robin pulls an earthworm from the lawn and eats it.**

   predator - _____ prey - _____

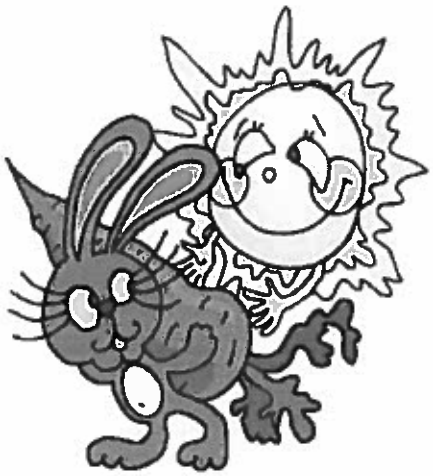
Name: _____ Monday

Producers and Consumers

A **producer** is a living thing that makes its own food from sunlight, air, and soil. Green plants are producers who make food in their leaves.

A **consumer** is a living thing that cannot make its own food. Consumers get their energy by eating food. All animals are consumers.

A **decomposer** is a living thing that gets energy by breaking down dead plants and animals. Fungi and bacteria are the most common decomposers.



Tell whether each living thing below is a *producer*, *consumer*, or *decomposer*.

a. apple tree - _____

b. hawk - _____

c. mushroom - _____

d. carrot - _____

e. dragonfly - _____

f. bamboo - _____

g. cougar - _____

h. bacteria - _____

i. daffodil - _____

j. pigeon - _____

k. snake - _____

l. catfish - _____

Tuesday
3/17

Name: _____

A Mighty Flier

by Kelly Hashway

What is two inches tall, can hover in mid-air, and flies in every direction including backwards? It's not an insect. The answer is the bee hummingbird.

Most hummingbirds are about three to five inches long. But the bee hummingbird is only five centimeters, or approximately two inches, making it the smallest species of bird alive today. Really it isn't bigger than a large insect. But don't let its tiny body fool you. This bird is a fierce flier. It can beat its wings up to 80 times per second. If you ever see one in flight, you'll notice its wings are just a blur to the human eye. Hummingbirds are also the only vertebrates that can hover in one place. Add to that being able to fly backwards and upside down, and these creatures are amazing flying machines.

And being a master flier isn't the only one of the bee hummingbird's talents. The bee hummingbird does a great job performing its part in plant reproduction. During the course of a single day, the bee hummingbird can visit up to 1,500 flowers. And just like a bee, when the bee hummingbird drinks nectar from the flowers, pollen is transferred from the flower to the bird's body. This pollen is carried to the next flower. Transferring pollen from one flower to another helps plants make seeds.

Besides drinking nectar, bee hummingbirds eat insects. In fact, they eat about half their body mass each day. But what's more impressive is that they drink eight times their body mass every day. This is why they live in areas where there are gardens and shrubbery. These tiny birds are found primarily in Cuba, but some have been spotted in Jamaica and Haiti as well.

Despite its size, there's no arguing that the bee hummingbird is a mighty flier.

Tues

Name: _____

A Mighty Flier

by Kelly Hashway

1. How do hummingbirds help flowering plants?
   - **a.** They give the flowering plants energy.
   - **b.** They help flowering plants make seeds and reproduce.
   - **c.** They build their nests in flowering plants.
   - **d.** They drink pollen in the flowers.

2. The bee hummingbird is about as large as....
   - **a.** a flea
   - **b.** a bee
   - **c.** a dragonfly
   - **d.** a sparrow

3. If you ever see a hummingbird in flight, you may have a difficult time seeing the wings. They would look blurry. Why?

   _____

   _____

4. What do hummingbirds drink?
   - **a.** pollen
   - **b.** insects
   - **c.** flowers
   - **d.** nectar

5. In which countries do bee hummingbirds live?

   _____

6. If a bee hummingbird weighed 2 grams, about how many grams of liquid would it drink in a day? Use your math skills to figure out the answer. Show your work in the space below.

   answer: _____

TUES

Name: _____

A Mighty Flier

by Kelly Hashway

The scrambled words below are vocabulary words from the article. Unscramble each word and write it on the line. Please be sure each word is spelled correctly.

1. _____ l i r m o y e a x a t p p

   hint: about; roughly; estimated number

2. _____ b a t v e e e t r s r

   hint: animals with backbones

3. _____ t e a r n c

   hint: sweet liquid inside of flowers

4. _____ e l p n o l

   hint: powdery dust in flowers that is used to help them reproduce

5. _____ f a n d t s e e r r r

   hint: moved

6. _____ a s m s

   hint: amount of matter something is made of; can be measured in pounds, ounces, grams, or kilograms

TUES

Name: _____

A Mighty Flier

by Kelly Hashway

In the article, "A Mighty Flier," you learned about the world's smallest bird, the bee hummingbird.

Write a short essay in which you compare and contrast the hummingbird to any other type of bird. In your writing, list five ways the hummingbird is similar to other bird you chose. Then, list five ways a hummingbird is different from the other bird.

Wednesday
3/18

Name: _____

Talking About Penguins

by Guy Belleranti

Penguins are one of the world's most interesting birds. They waddle when they walk, and have flippers instead of wings. The bones in a penguin's flippers are heavier and more solid than those in the wings of a flying bird. This helps the penguin "fly" through the water.

Emperor Penguin with Chick

The penguin's black back and white front has an important function, too -- camouflage in the water. Penguins blend in with the sea from above and with the sky from below. This makes it harder for predatory birds, leopard seals, sea lions, orcas and sharks to see them.

Many people think all penguins live in the cold and ice of Antarctica. However, only 6 of the 17 species or types of penguins live in Antarctica. The others live in parts of New Zealand, Australia, South Africa and South America and on the Falkland and Galapagos Islands.

Let's talk about two of the penguin species – the Emperor penguin of Antarctica and the Galapagos penguin of the Galapagos Islands.

The Emperor penguin is the world's largest penguin. Its oily outer feathers help keep it dry. Its dense inner down feathers and thick fat layer helps keep it warm. Emperor penguins also often huddle in groups to conserve heat.

A mother Emperor penguin lays only one egg at a time. After the mother Emperor penguin lays the egg she travels to open sea to feed on fish, squid and krill (shrimp-like ocean crustaceans). The father stays behind with the egg. He keeps it warm and protected by balancing it on his feet and covering it with feathered skin called a brood pouch. The mother returns two months later, regurgitates food for the newly hatched chick, then stays with it while the father goes out to sea to feed.

Wed

The Galapagos penguin lives in an area much warmer than Antarctica. The Galapagos Islands are on the Equator, 600 miles west of the South American country of Ecuador. This is as far north as any penguin lives in the wild. The Galapagos penguin is one of the smallest and also one of the most endangered of all penguins. It shares the Galapagos Islands with many other unusual animals including the giant Galapagos tortoise and the blue-footed booby. Instead of having to stay warm the Galapagos penguin must find ways to stay cool. The best way is to spend the heat of day in cool water currents hunting small fish and krill. When a Galapagos penguin does get out of the water it often spreads its flippers to cool off. It might also pant like a dog. And it shades its feet by standing with its body hunched forward.

Galapagos Penguin

This has just been a peek at penguins. To find out more visit your school and public libraries.

About the Author

Guy Belleranti works as a docent at the Reid Park Zoo in Tucson, Arizona. The information in this article comes from his experiences teaching children about the wild animals at the zoo.

Wed

Name: _____

Talking About Penguins

by Guy Belleranti

1. Most wild penguins live...

   a. in South Africa
   b. near the North Pole
   c. in the Southern Hemisphere
   d. near the Equator

2. The father Emperor penguin keeps the egg warm and hatches the chick. Where is the mother penguin during this time?

   _____

   _____

3. How are a penguin's flipper bones different from the bones in other birds' wings?

   _____

   _____

4. A sea lion might have a hard time seeing a penguin swimming in the water. Why?

   a. Sea lions cannot see the color black very well because it blends in with the snow and ice.
   b. When the sea lion looks up, the penguin's white belly blends in with the bright colors of the sky.
   c. Penguins swim very fast and they look like a streak zooming through the water.
   d. A penguin becomes invisible when it swims in cold water.

5. According to the information in the article, what three things does a Galapagos penguin do to cool off when it is too warm?

   _____

   _____

Wed

Name: _____

Talking About Penguins

by Guy Belleranti

Fill in the missing letters to create a vocabulary word from the article. Then write the full word on the line. Be sure you spell each word correctly.

1. ___ ___ u a t ___ ___ _____
   hint: imaginary line around the center of the Earth

2. ___ n d a ___ ___ e ___ ___ d _____
   hint: nearly extinct

3. ___ r c ___ s _____
   hint: killer whales

4. c ___ ___ ___ ___ r v e _____
   hint: protect; keep in

5. ___ a ___ ___ n c i n ___ _____
   hint: keeping something steady so it does not fall

6. ___ a n ___ _____
   hint: take heavy breaths to cool off

7. ___ e g ___ r ___ i t a t ___ s _____
   hint: spits up food that has been partly digested

Wed

Name: _____

Talking About Penguins

by Guy Belleranti

In the article, "Talking About Penguins", you learned many interesting facts about Emperor penguins and Galapagos penguins.

Even though they don't fly, penguins are actually birds. Write a short paragraph in which you describe why penguins are birds. Be sure to mention several traits that are unique to birds.

Thursday
3/19

Name: _____

The Big-Eared, Bushy-Tailed Fennec Fox

by Guy Belleranti

In the deserts of North Africa and Saudi Arabia lives the smallest of all foxes with the largest of ears. This animal is the fennec fox.

Fennec foxes have ears that are 5 to 6 inches long. That's big for an animal that weighs less than four pounds. Their ears help shed body heat. And, as you may have guessed, they also provide great hearing.

It's interesting to compare the big ears of fennec foxes to the small ears of arctic foxes. Arctic foxes live in cold climates, so they don't need to shed heat. Instead, they need to save heat. Big ears would not save heat and would probably even cause an arctic fox to get frostbitten!

It's also interesting to think about the hair of fennec foxes. Why would a fox that lives in the desert need a thick, fur coat? Actually, the desert isn't always warm. During the nighttime, a desert can be downright cold! A fennec fox's fur keeps them warm during those chilly desert nights. They also have long bushy tails that they use as a blanket. And the hair on their feet protects them from the hot sand in the daytime.

Fennec foxes live in small communities of burrows or dens. They spend most of the day sleeping in their dens, out of the hot sun. Then, when night comes, out they come in search of food. In addition to their great hearing, fennecs also use their great sense of smell and big eyes to track down dinner. Animals that are active at night are called nocturnal.

Like other foxes, fennecs are omnivores. This means they eat both meat and plants. Some of their favorite foods include rodents, birds, eggs, insects, lizards, snails, fruit and leaves.

Fennec fox mothers give birth to a litter of one to five babies (called kits). The average life span of a Fennec fox is 10 to 12 years.

The cream coloration of fennec foxes help them blend into their desert habitat. Still, they have to watch out for predators. These include caracals (a type of wild cat), jackals, eagle owls, hyenas and humans. Humans catch them for their fur and to sell as exotic pets.

About the Author

Guy Belleranti works as a docent at Reid Park Zoo in Tucson, Arizona. The information in this article comes from his experiences working with animals and teaching others.

Thurs

Name: _____

The Big-Eared, Bushy-Tailed Fennec Fox

by Guy Belleranti

1. List two ways the fennec fox's ears help it to survive.

_____

_____

2. Why does a fennec fox have thick hair?

   a. to help it survive in cold, arctic climates
   b. to help it survive in the cold, desert night
   c. to help it hear enemies approaching
   d. to help it shed heat

3. Where might you find a fennec fox in the wild?

   a. Brazil
   b. France
   c. Russia
   d. Egypt

4. Name some of the predators of the fennec fox.

_____

_____

5. Name some animals that are prey to the fennec fox.

_____

_____

6. A fennec fox just had a litter of kits. Which number of kits would the fox be most likely to have?

   a. two
   b. seven
   c. ten
   d. twelve

Challenge: With a parent or teacher's help, use the Internet to print out facts about fennec foxes and arctic foxes. Then, make a Venn diagram to compare and contrast the two species.

Thurs

Name: _____

The Big-Eared, Bushy-Tailed Fennec Fox

by Guy Belleranti

Some of the sentences below are true. Others are false.

Read each sentence. If the sentence is true, write the word *true* on the line. If the sentence is false, cross out the underlined word(s) and write a new word on the line to make the sentence true.

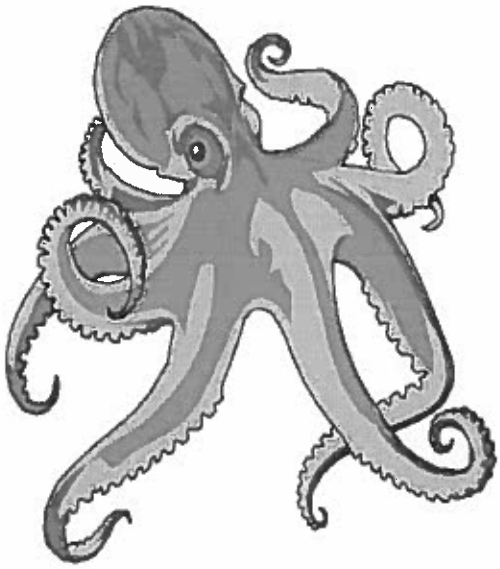
1. A baby fennec fox is called a cub. _____
2. Fennec foxes are nocturnal. _____
3. Fennec foxes are carnivores. _____
4. The hair on a fennec fox's ears protects it from the hot desert sand. _____
5. Fennec foxes have ears that are about 6 inches long. _____
6. A caracal is a type of wild cat. _____
7. Fennec foxes search for food in the afternoon. _____
8. Fennec foxes live about 20 years. _____
9. Fennec foxes spend a lot of time sleeping during the daylight hours. _____
10. Fennec foxes live in communities of burrows or dens. _____

Name: _____

Friday
3/20

MAGICIAN OF THE SEA

by Kelly Hashway



What do three hearts, eight arms, and one huge brain add up to? An octopus, a creature that can do amazing things.

Octopuses are extremely intelligent. They can learn new things just like humans. They've even learned a few tricks to get them out of sticky situations. If an octopus is threatened by a predator, such as a shark or bird, it can use some pretty incredible skills to get away. Octopuses don't have teeth or sharp claws to defend themselves. Instead, they use more clever ways to fool their attackers. Octopuses like to hide themselves in the sand on the bottom of the ocean floor. How you ask? Well, the octopus is like a chameleon because it can change the color of its skin to match the sand. And this color change, or camouflage, happens in less than a minute.

Some octopuses like to stay in more shallow water where there are rocks and coral. Because octopuses are invertebrates, meaning they don't have backbones, they can squeeze themselves into small spaces between the rocks to get out of reach of their predators. Another way an octopus can hide is by shooting ink. An octopus uses a part of its body called a siphon to shoot ink into the water. The ink forms a cloud that hides the octopus. By the time the ink clears and the predator can see again, the octopus has swum away or hidden. It's very much like a magician doing a vanishing act.

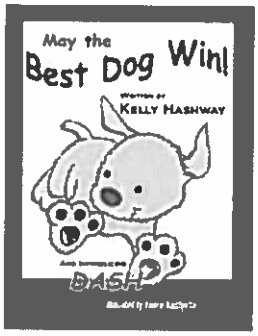
Fri

If you think that's a neat trick, then you'll love what else these creatures have up their sleeves. If an octopus is being attacked, it can actually make itself look like a venomous sea snake. It will bury itself in the sand, keeping two arms visible. It will change the color of those arms to match a sea snake. But what if there's no time to hide? If an octopus is in trouble, it can break off one of its arms. The arm will then change colors and squirm around in the water to distract the predator while the octopus swims away to safety. Don't worry though. The octopus's arm will grow back.

There is one kind of octopus that has venom to use in defense. The blue-ringed octopus is tiny; it could fit in the palm of your hand. Predators might think this size makes the octopus a great snack, but they know to stay away. The blue-ringed octopus is very poisonous and can kill predators much larger than itself, including humans.

So the next time you see an octopus in the aquarium or while you're snorkeling, remember that inside that oversized head is a very large brain, making them a clever addition to the sea.

About the Author



Kelly Hashway's latest book, *May the Best Dog Win,* is now available!

Dash has the perfect life until the Super Sweeper 5000 shows up. Sweeper runs all over the house sucking up the leftover food scraps, and he even gets his own room! But Dash won't give up his place as the favorite dog without a fight.

Hashway, Kelly. *May the Best Dog Win.* ISBN: 9780984589081

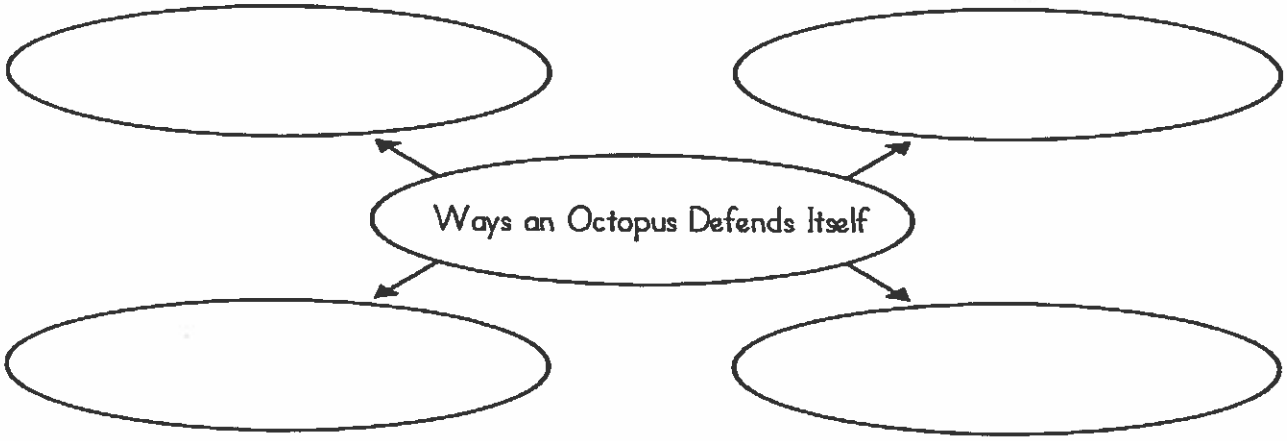
Fri

Name: _____

Magician of the Sea

by Kelly Hashway

1. Complete the graphic organizer.



2. How are an octopus and a chameleon alike?

   a. They both like to hide on the ocean floor.
   b. They can both change the color of their skin.
   c. They are both invertebrates.
   d. They both use their arms to kill predators.

3. Explain how shooting ink helps an octopus to escape from predators.

_____

_____

4. What happens to an octopus if it loses one of its eight arms?

   a. It will grow a new one.
   b. It will die.
   c. It is no longer poisonous.
   d. It can swim faster.

5. What is the author's purpose for writing this article?

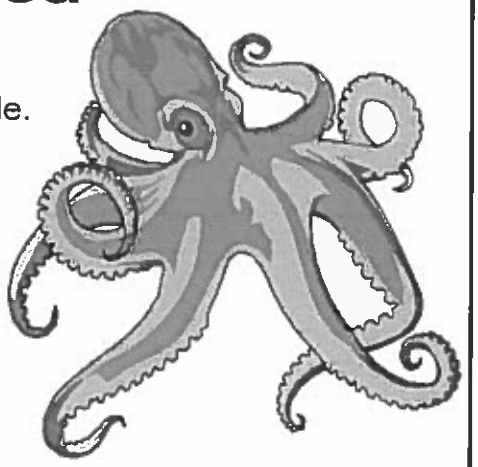
   a. to explain how octopuses eat, live, and play
   b. to show how dangerous octopuses are
   c. to describe the physical characteristics of octopuses
   d. to explain how octopuses protect themselves

Fri

Name: _____

Magician of the Sea

Vocabulary Activity



The scrambled words below are vocabulary words from the article. Unscramble each word and write it on the line. Please be sure each word is spelled correctly.

1. _____ t i i e e g t l l n n
   hint: smart; brainy

2. _____ m u a f c l o e g a
   hint: ability to blend in

3. _____ r i b n e v e t a e r t
   hint: animal without a backbone

4. _____ b e i s v i l
   hint: in sight; able to be seen

5. _____ t e s o r d p a r
   hint: animals that hunt other animals

6. _____ r o k s e n g n i l
   hint: diving under water with a breathing tube

7. _____ n i m a c g i a
   hint: person who performs tricks

Name: _____

Monday
3/23

Quills and Thrills

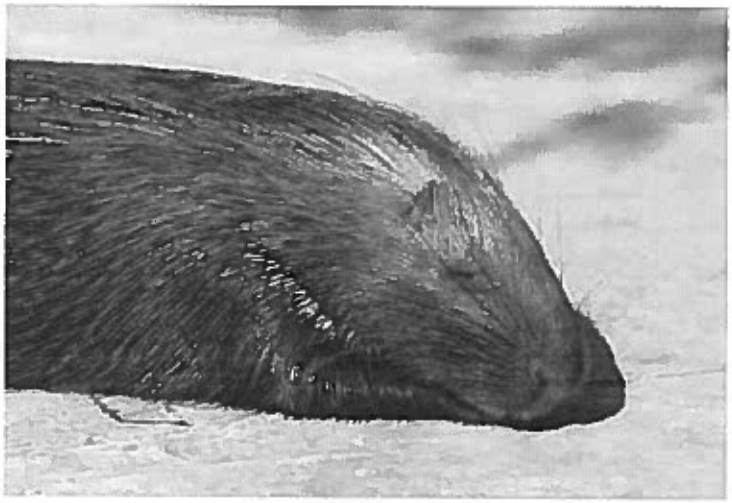
by Kelly Hashway

Forests are homes to many animals. But there's one forest creature that gives off an odor and makes a rattling sound when it feels threatened. No, it's not a cross between a skunk and a rattlesnake. It's a porcupine.

Porcupines are covered with quills—about 30,000 on average. The quills cover most of the porcupine's body with the exception of the face, stomach, and the inside of the animal's legs. You probably know that rattlesnakes shake their tails to scare off predators. It's like a warning signal. Well, porcupines do something similar. When a porcupine is approached by a predator or is feeling threatened, it rustles its quills. This creates a rattling sound as a warning sign, telling other animals or even humans to back off. But the sound isn't the only warning. When a porcupine raises its quills like this, it produces an odor. So the animal uses both sound and smell to ward off enemies.

If a porcupine is attacked, its quills act as protection. You may have heard rumors that porcupines can shoot their quills at attackers. This isn't true. What actually happens is when a porcupine tenses the muscles around their quills and makes them stand up, the quills become loose. If an animal gets too close to the porcupine and brushes up against it, the quills will detach and stick into the attacker.

Mon



The quills aren't poisonous, but they have multiple layers of barbs like barbed wire, which makes them painful and sometimes difficult to remove because they embed themselves into the attacker's skin. But the interesting thing about quills is that they are coated with antibiotic fatty acids that help speed up the healing process. Why? To protect the porcupine in case it accidentally pierces its own skin. A porcupine's quills will grow back after losing them, but it does take several months.

So if you ever find yourself in a forest, and you hear a rattling sound followed by a strange odor, beware. Finding yourself on the other end of a porcupine's quills may be more thrills than you're looking for.

About the Author

Kelly Hashway's latest book, *May the Best Dog Win,* is now available!

Dash has the perfect life until the Super Sweeper 5000 shows up. Sweeper runs all over the house sucking up the leftover food scraps, and he even his own room! But Dash won't give up his place as the favorite dog without a fight.

Hashway, Kelly. *May the Best Dog Win.* ISBN: 9780984589081

MON

Name: _____

Quills and Thrills

by Kelly Hashway

1. Which parts of a porcupine's body are not covered with quills?

_____

_____

2. When a porcupine is feeling threatened by a predator, what does it do?
   - **a.** shoots quills at the predator
   - **b.** makes a rattling sounds with its quills
   - **c.** curls up in a ball
   - **d.** thumps its tail on the ground

3. A porcupine's quills are barbed. What does this mean?
   - **a.** They are poisonous to people and animals.
   - **b.** They are coated with antibiotic fatty acids.
   - **c.** They grow back when the porcupine loses them.
   - **d.** They get stuck in an enemy's skin.

4. What is the author's purpose for writing this article.
   - **a.** to explain how porcupines eat, live, and play
   - **b.** to teach readers how porcupines defend themselves
   - **c.** to describe the life cycle of a porcupine
   - **d.** to entertain readers with a story about porcupines

5. According to the information in the article, Which fact about porcupines in not true?
   - **a.** When a porcupine's quills stand up, they become loose.
   - **b.** When a porcupine raises its quills, it produces an odor.
   - **c.** Porcupines have about thirty thousand quills.
   - **d.** It takes several years for a porcupine to regrow lost quills.

MON

Name: _____

Quills and Thrills

by Vocabulary Activity

The scrambled words below are vocabulary words from the article. Unscramble each word and write it on the line. Please be sure each word is spelled correctly.

1. _____ r o d o
   hint: smell

2. _____ k e s t e t r a n a l
   hint: reptile that makes a rattling sound by shaking its tail

3. _____ s o r r u m
   hint: facts that haven't been proven true; bits of gossip

4. _____ s t e e n s
   hint: tightens muscles because of nervousness

5. _____ c i t a i n o t i b
   hint: type of medicine that kills germs

6. _____ p u n a l i f
   hint: causing discomfort

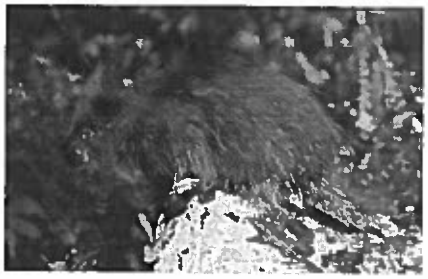
7. _____ e n i d a y c t a c l l
   hint: not on purpose

MON

Name: _____

Quills and Thrills

by Kelly hashway



In the article, "Quills and Thrills," you learned how a porcupine protects itself from enemies in the wild.

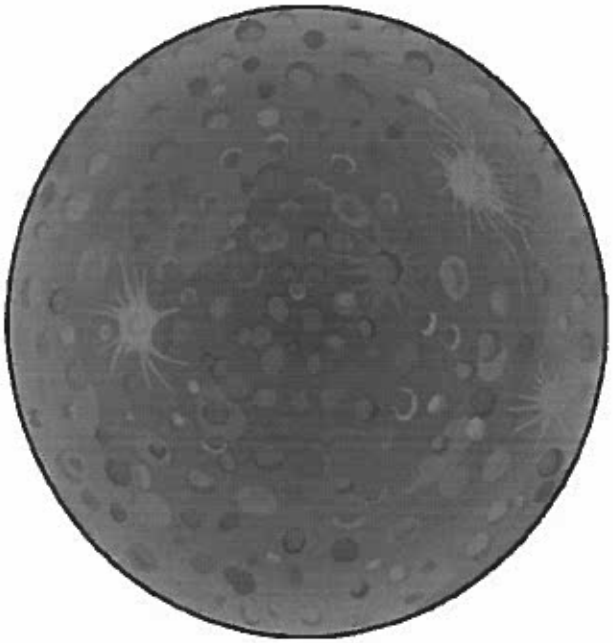
Think of another animal that has a special way of protecting itself from predators. Describe the animal and explain how it protects itself.

Name: _____

TUESday
3/24

Mercury

by Cynthia Sherwood



Mercury is the planet nearest the sun. It's so close that if you were standing on Mercury, the sun would appear two and a half times bigger than what it looks like from here on Earth.

Even the best sunscreen wouldn't be enough on Mercury. The sun's rays are about seven times stronger than on Earth. Mercury is dry, very hot, and practically airless. Mercury is also the smallest planet in our solar system. Because it's often blocked by the glare of the sun, Mercury can be hard to see without a telescope.

Mercury is named after a Roman god who was a messenger known for his speed. As a planet, Mercury moves around the sun faster than any other. It revolves around the sun about once every 88 Earth days.

Did you know....

Even though Mercury is the closest planet to the sun, it is ***not*** the hottest planet!

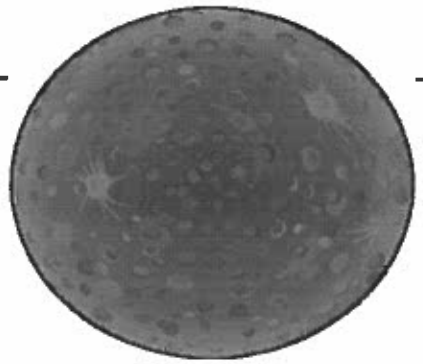
Venus, the second planet from the sun, has hotter temperatures than Mercury. This is because Venus has a thick layer of clouds that trap in heat like a blanket.

Mercury is made up of rock with iron at its core. Its surface looks a lot like our moon, with many craters. Radar images from Earth show that craters at Mercury's north and south poles may contain frozen water, or ice. Scientists couldn't believe it at first. Parts of Mercury reach 800 degrees Fahrenheit (427 degrees Celsius), so they definitely didn't expect to find ice! But it turns out the poles of Mercury are always in the shade of the sun, so they remain extremely cold.

By the way, you'd never be able to enjoy a blue sky on Mercury. Because there's no atmosphere, the sky always appears black. You might even see stars—during the daytime!

TUES

Name: _____



Mercury

by **Cynthia Sherwood**

1. Why is Mercury usually hard to see without a telescope?

_____

2. Mercury is the closest planet to the sun, but Venus is the hottest. Why?

_____

_____

3. Mercury was named after the Roman god of speed. Why is this an appropriate name for the planet?

_____

_____

4. How is it possible for Mercury to have frozen ice?

   a. Mercury is a cold planet.
   b. Mercury has a different type of ice that can form in warm temperatures.
   c. Parts of Mercury are cold because they always face away from the sun.
   d. Mercury has ice because it moves so quickly around the sun.

5. What does the underlined word mean in the sentence below?

   Because there's no <u>atmosphere</u>, the sky always appears black.

   a. layer of air or gas
   b. living things
   c. soil or craters
   d. volcano activity

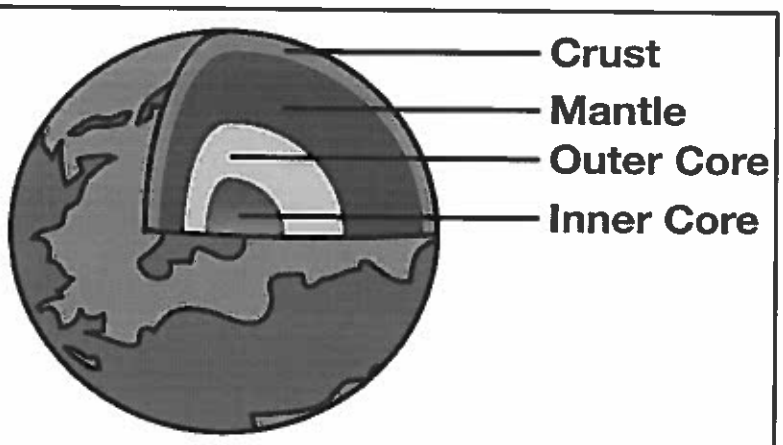
Name: _____

Wednesday
3/25

Beneath our Feet: The Four Layers of Earth

by Kelly Hashway

We all call the Earth home, but did you ever think about what our home is actually made of? The planet is approximately 4,000 miles from surface to center, but what makes up those miles of Earth?



The inside of the Earth has four different layers.

First, let's start with the part of the Earth that we live on, the outermost layer called the crust. It is made up of loose material, like rocks, soil, and seabed. The crust is about five miles deep beneath the oceans and about twenty-five miles thick below the continents.

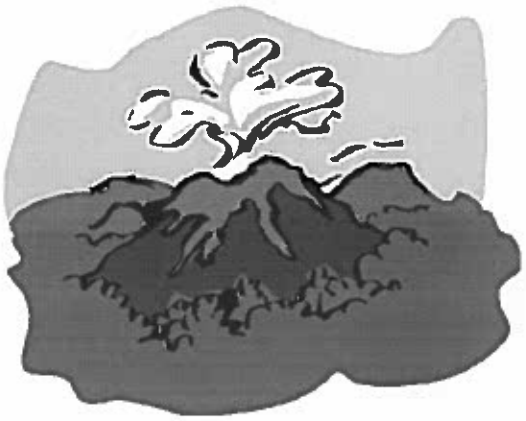
Beyond the crust is the mantle. The mantle extends approximately 1,800 miles deep into the Earth. It makes up about 85% of the total weight of the Earth's mass. The mantle also has layers. The first 50 miles are hard rock. The next 150 miles are super-heated molten rock that is so hot it can flow under pressure, like tar. Underneath this heated layer is several hundred miles of solid rock. Think of the mantle like a peanut butter sandwich. You have the two pieces of bread and the peanut butter between them. In the mantle, we have two layers of solid rock with heated flowing rock between them.

Next is the outer core. This is about 3,000 miles beneath the Earth's surface. The outer core consists of super-heated liquid molten lava. The lava is mostly made up of iron and nickel, which is why some geologists call it molten metal instead of molten rock. The outer core creates the Earth's magnetic field.

Wed

The final layer is the inner core, which is 900 miles deep. Scientists believe the inner core is a solid ball of iron and other minerals. The temperature is extremely hot, somewhere between 9,000 and 13,000 degrees Fahrenheit. But because of the high pressure, the iron and other minerals cannot melt. The heat of the inner core is sometimes compared to the heat of the sun.

Are you wondering why the Earth is made up of four different layers? Many scientists believe that the Earth wasn't always like this. They believe that when the Earth was formed, it was a hot ball made up of a mixture of rock and metals. They think that as the Earth cooled, the heavier parts sank to the inside and the lighter materials rose to the top. This would explain why the inner core is made up of iron and the crust consists of lighter rock and loose material.



Have you ever seen pictures of lava pouring down the sides of a volcano?

The molten rock inside the Earth's mantle is called magma. When it erupts through a volcano, it's called lava.

When it cools, the lava will harden and form new soil and rock, which will become part of the Earth's crust.

As you walk around and enjoy the beauty on the Earth's surface, think about the many layers beneath your feet. It takes all these layers to make up the planet we call home.

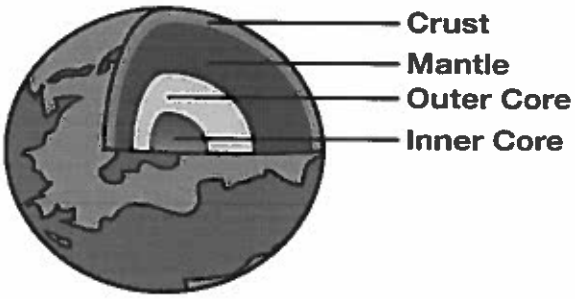
Name: _____ Wed

Beneath our Feet: The Four Layers of Earth

by Kelly Hashway

1. Where is the Earth's crust the thickest?

   a. below the continents
   b. beneath the oceans
   c. below the equator
   d. below the North Pole



2. How is the Earth's mantle like a peanut butter sandwich?

   a. The mantle has three layers, like a peanut butter sandwich.
   b. The mantle is sticky, like peanut butter.
   c. The top and bottom layers of the mantle are the thickest parts.
   d. Peanut butter sandwiches feel like the hard rocks found in the mantle.

3. Which layers of the Earth are made mostly of metals?

   _____

4. Write the word *true* or *false* for each sentence.

   _____ The inner core of the Earth is about the nine hundred degrees Fahrenheit.

   _____ The inner core of the Earth is made of liquid iron and nickel.

   _____ The Earth's mantle lies directly below the inner core.

5. Explain how scientists believe the Earth's four layers were formed.

   _____

   _____

   _____

Thurs
3/26

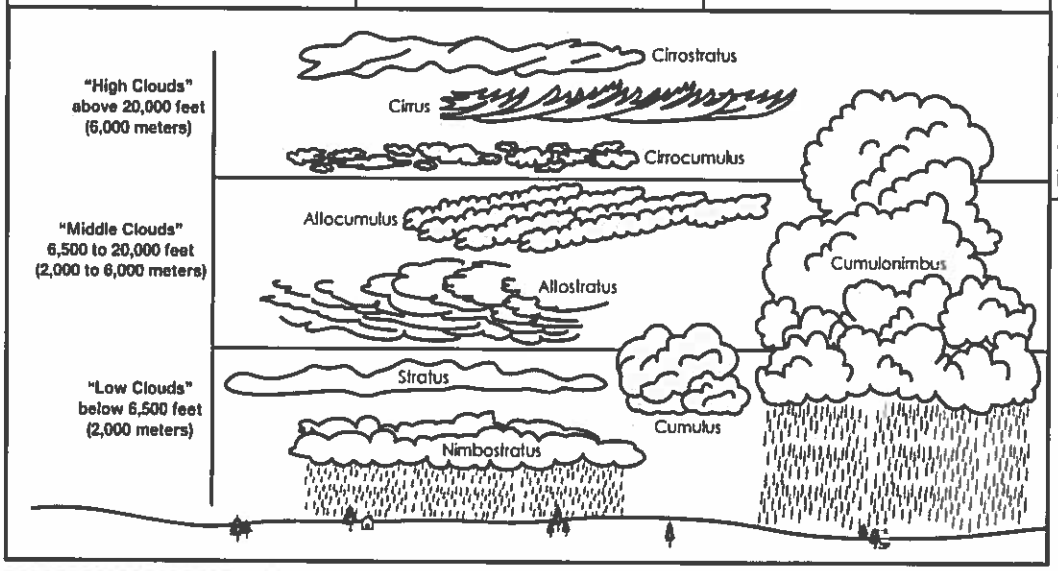
Name: _____

Types of Clouds

by Erin Ryan

When you look up in the sky, you realize that no two clouds look exactly alike. Clouds are formed from water vapor that condenses then clusters together in droplets. There are many different types of clouds that can be seen. The types of clouds are determined based on what they look like and how high they are in the atmosphere.

High-Level Clouds	Mid-Level Clouds	Low-Level Clouds	Vertical Clouds
High-level clouds are formed in altitudes above 20,000 feet. Because the temperatures are so cold at this elevation, these clouds are formed from ice crystals. Cirrus clouds are thin and wispy clouds that are blown by high winds. They usually mean the day will have fair or pleasant weather, and follow the direction that the air moves at the altitude they are found at. Cirrostratus clouds are like very thin sheets of clouds that cover large parts of the sky. Cirrocumulus clouds look like small round puffs in the sky. Sometimes they are called mackerel clouds because they look similar to fish scales.	Mid-level clouds are found in altitudes between 6,500 to 20,000 feet. They are formed mainly of water droplets, but can also be made up of ice crystals when the temperature is cold enough. Altocumulus clouds are composed of water droplets and are gray and puffy. These clouds are usually seen on warm and humid summer mornings and are usually a sign that thunderstorms will follow later in the day. Altostratus clouds are made up of ice crystals and water droplets. They can cover the entire sky and form before rain storms.	Low-level clouds are found below 6,500 feet and although they are mostly made up of water droplets. They can also be composed of ice particles and snow in very cold temperatures. Stratus clouds are among the low-lying clouds. They are gray clouds that cover the entire sky and can be the result of very thick fog lifting in the morning. Nimbostratus clouds are dark gray clouds that produce falling rain or snow.	Cumulus and cumulonimbus clouds are both known as vertical clouds. Cumulus clouds are also called fair weather clouds and look like floating cotton. They have very flat bases and are not very tall clouds. When cumulus clouds are first formed from droplets, they have very distinct edges, but as they move through the sky, air causes the edges to appear more ragged and broken apart. Cumulonimbus clouds can take up several miles across the sky and can reach elevations of 39,000 feet or higher because of very strong updrafts in the atmosphere. Low level cumulonimbus clouds are made up of water droplets, but at higher elevations, they consist of ice crystals. Cumulonimbus clouds are the type of clouds that bring lightning, thunder, violent tornadoes and other intense weather situations.



Thurs

Name: _____

Types of Clouds

by Erin Ryan

1. Name the two types of low-level clouds.

_____

2. What type of clouds are called "fair weather clouds" and look like floating cotton?

_____

3. Name two types of clouds that are between 20,000 and 6,500 feet in the air.

_____

4. Which type of clouds brings lightning, thunder, and tornadoes?

_____

5. Are stratus clouds or cirrus clouds found closer to the ground?

_____

6. What are cirrus, cirrostratus, and cirrocumulus clouds made of?

_____

7. What type of cloud is often formed by fog lifting in the morning?

_____

8. Why are cirrocumulus clouds sometimes called mackerel clouds?

_____

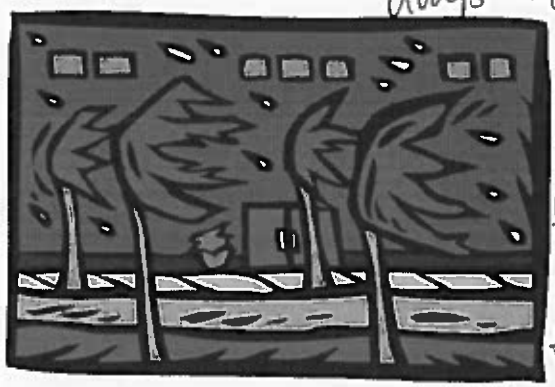
Name: _____

Friday 3/27

Hurricanes: Nature's Wildest Storms

This section is long. It could take more days especially if it takes longer for school to reopen.

by Erin Ryan



You may already know that hurricanes are major tropical storms that can cause devastating waves, wind, and rain. They happen during "Hurricane Season," which is from June 1st until November 30th in the Atlantic Ocean and from May 15th until November 30th in the Pacific Ocean. A hurricane that forms in the Atlantic Ocean begins as tropical disturbance. This is a large area of windy thunderstorms that forms over the warm ocean, near the equator. When the storms grow larger, rains and wind pick up, and the "disturbance" can develop into a full-fledged hurricane.

Stages of a Hurricane: Simple Storms Grow Into Giants

A storm progresses through four different stages before it is actually considered a hurricane. First is a tropical disturbance, which has thunderstorms and rotating winds, or what scientists call cyclonic circulation. Next is a tropical depression, which is similar to a tropical disturbance, but has winds between 23 and 39 miles per hour. A tropical storm is the next level, which has stronger wind speeds between 40 and 73 miles per hour. Once winds reach 74 miles per hour, the storm is officially classified as a hurricane. The winds pick up energy from the warm surface ocean water.

Hurricanes rotate counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere. Hurricanes can vary in size and can grow to have a diameter of up to 600 miles, which is longer than the entire state of Florida!

As a hurricane crosses over land, it begins to dissipate, or break apart and reduce in strength. This is because it is no longer over the warm ocean water that it needs for energy. At this point, a hurricane can still cause a lot of damage because of high winds, rain, and flooding, but unless it makes its way back over the open ocean, it is downgraded from a hurricane back to a tropical storm.

Hurricane Dangers

When a hurricane makes landfall, it can be very dangerous along coastlines because of a storm surge, where ocean waters rush onto land. When this is combined with heavy rainfall, there can be devastating floods.

The center of a hurricane is called the eye. While most of a hurricane contains dangerously strong winds, the eye is actually a calm area in the storm. When the eye of a hurricane passes over land, people might think that it's over, but before long the wind and rain increase again as the second part of the hurricane moves through.

Name: _____ Part 2

Furious Hurricanes

by Erin Ryan

Predicting Hurricanes and Protecting People!

What's the difference between a hurricane watch and a hurricane warning? During a hurricane watch, there is the possibility that a hurricane will make landfall within 36 hours, and people are advised to prepare for a possible storm ahead. When a hurricane warning is issued, a hurricane is definitely on the way, and will make landfall within 24 hours.

The National Hurricane Center, located in Miami, Florida issues watches and warnings before hurricanes approach the coastline. They use computers with satellite images to figure out where and when a hurricane will come on shore. Sometimes, if a hurricane is strong enough, officials may require citizens to evacuate, or leave their homes, and travel to a safer place.

Can you imagine flying a plane through a hurricane? If you're a hurricane hunter, it's your job! Hurricane Hunters, who work for the Air Force Reserve, fly airplanes called WC-130's on weather missions to help the National Hurricane Center make predictions about hurricanes, and gives them the information needed to issue accurate warnings. Pilots determine how fast the winds are blowing, how big the hurricane is, and which direction it's moving. This helps people to be better prepared for hurricanes as they approach shore.

Categories of Hurricanes

There are five categories of hurricanes, which are based on wind speeds. The categories help to make people aware of how much damage a hurricane may cause because the greater the wind speed, the more dangerous the storm.

Category 1 – Winds 74 – 95 mph
Winds snap branches, uproot trees, and overturn mobile homes that aren't secured to the ground.

Category 2 – Winds 96 -110 mph
Winds are strong enough to destroy weak doors and windows, and create 8-foot ocean waves.

Category 3 – Winds 111 - 130 mph
Intense winds cause major flooding near the coast, which can destroy homes and businesses.

Category 4 – Winds 131 - 155 mph
Winds are strong enough to destroy some buildings. Causes heavy damages to building roofs.

Category 5 – Winds greater than 155 mph
Buildings along the shorelines are washed away. Buildings can be completely destroyed.

Name: _____ Part 3

Wild, Wicked Hurricanes

by Erin Ryan

What's Your Name, Hurricane?

Hurricanes and tropical storms are given names to help people identify them. Scientists refer to hurricanes and storms by name as they track them across the ocean.

Before 1953, hurricanes were not given official names. From 1953 through 1978, hurricanes were only given female names, like Isabel, Camille, Claudette, and Wilma. Beginning in 1979, hurricanes were given the names of both women and men. Today, the names alternate by gender, and they are named alphabetically.

For example, in 2010, storms were named as follows:

Alex (male)
Bonnie (female)
Colin (male)
Danielle (female)
Earl (male)
and so on...

There are six different lists of names that change, so the same names are used every six years. The only way that a new name is added is when a hurricane has been particularly deadly or costly and the name is retired, then replaced with a new one.

Hurricane Katrina: One of the Deadliest Storms in History

Hurricanes can leave behind lots of destruction. In 2005, Hurricane Katrina ripped through Louisiana, Alabama, Mississippi and Texas. This was the sixth windiest hurricane on record, and it was one of the deadliest hurricanes in history.

Many people are surprised to learn that Katrina's wind didn't cause most of the damage. The wind had caused levees in New Orleans to break, (Levees are embankments that hold water away from cities.) When the levees broke, water from the Gulf of Mexico rushed into the low-lying land. Over 80% of the city of New Orleans was buried in flood water.

Hurricane Katrina hurricane took 1,833 lives and caused over 76 billion dollars in damages.

Tornado versus Hurricane: Which is stronger?

Hurricanes can cover an area hundreds of miles wide, while tornadoes are almost always less than a mile wide. While they are smaller than hurricanes, tornado winds can be stronger and more powerful. Some tornadoes have winds of over 300 miles per hour, while hurricanes rarely exceed 200 miles per hour.

Name: _____ Part 4

Wild, Wicked Hurricanes

by Erin Ryan

Hurricane Safety Tips

There is no way to stop a hurricane or make it change direction, so if you ever find yourself in the path of a hurricane, be sure to be follow any emergency procedures that your community has in place. Here are some other hurricane safety tips.

- Be sure you have a battery-powered radio, batteries, fresh drinking water, and a supply of food. Also, if anyone in your family needs special medication, be sure you have a full supply.
- Tell neighbors, friends, and family members your emergency plans. Tell them where you'll go if you need to leave your home.
- If you live near the ocean, in low-lying area, or in a mobile home, leave your home and travel inland to a safe place. You could stay with a friend or family member, in an inland hotel/motel, or in an emergency shelter area.
- Keep listening to the radio if a hurricane is approaching. If local authorities instruct you to evacuate, do it immediately.
- Before a hurricane arrives, be sure your family's car is filled with fuel. If the electricity goes out, the fuel pumps at gas stations will not work.
- Stay inside during the storm. You could be seriously injured if you go outside.

But what about my pets?

We should always take good care of our pets and keep them indoors during a storm. If you have to evacuate your home, remember that pets are not allowed in most emergency shelters and hotel rooms. If you leave a pet behind, be sure you set out plenty of food and water for them. Also, be sure they're wearing a collar with your family's name and phone number on it.

The Five Worst Hurricanes in U.S. History

	Hurricane	Year	State(s) Hit	Category	Death Toll
5.	Sea Islands	1893	South Carolina, Georgia	3	1,000
4.	Cheniere Caminanda	1893	Louisiana	4	1100
3.	Hurricane Katrina	2005	Louisiana, Mississippi, Texas, Alabama	5	1,833
2.	Lake Okeechobee Hurricane	1928	Florida	4	2,500
1.	Great Galveston Hurricane	1900	Texas	4	8,000

Name: _____ Questions - Set A

Hurricanes

1. Complete the chart by listing the correct category for each hurricane.

Hurricane Name	Top Wind Speed	Category
Hanna	102 mph	
Arthur	160 mph	
Fey	80 mph	
Cristobal	129 mph	

2. Explain the difference between a hurricane watch and a hurricane warning.

_____

_____

_____

3. Billy tells his teacher that his grandfather lived in the state of Florida in 1969 and survived Hurricane Michael. His teacher does not believe him. Why not? Use information from the hurricane packet to support your answer.

_____

_____

Name: _____ Questions - Set B

Hurricanes

1. Which of these hurricanes had the strongest winds?
   a. Sea Islands Hurricane, in 1893
   b. Hurricane Katrina, in 2005
   c. Lake Okeechobee Hurricane, in 1928

2. What does a hurricane hunter do?
   a. use computers with satellite images to predict the paths of hurricanes
   b. issue official watches and warnings to notify people of danger
   c. fly airplanes through hurricanes

3. Which sequence of storm stages is in the correct order?
   a. tropical depression, tropical disturbance, tropical storm, hurricane
   b. tropical disturbance, tropical depression, tropical storm, hurricane
   c. tropical storm, tropical depression, tropical disturbance, hurricane

4. What would you observe if you were in the eye of a hurricane?
   a. strong, spinning winds
   b. calm or very little wind
   c. heavy rain, thunder, and lightning

5. What caused the most destruction during Hurricane Katrina in 2005?
   a. floods due to breaking levees
   b. houses being blown away
   c. people going outdoors during the storm

6. In 2011, the first tropical storm will be named Arlene, then Brett, then Cindy, then Don. Which storm name might come next?
   a. Eric
   b. Emily
   c. Olivia

7. What happens when a hurricane crosses over land?
   a. it breaks apart and forms tornadoes
   b. it moves more quickly
   c. it loses strength

Name: _____ Questions - Set C

Hurricanes

Tell whether each statement is <u>true</u> or <u>false</u>.

_____ **1.** When a hurricane warning is issued, a hurricane will definitely hit landfall within 24 hours.

_____ **2.** From 1953 through 1978, all tropical storms were given male names.

_____ **3.** The Great Galveston Hurricane hit Florida in 1903.

_____ **4.** Hurricanes form over warm, ocean water.

_____ **5.** Hurricanes begin to lose strength when they hit land.

_____ **6.** More people were killed by Hurricane Katrina than by the Great Galveston Hurricane.

_____ **7.** Hurricanes in the Northern Hemisphere rotate counterclockwise.

_____ **8.** The center of a hurricane is called the eye.

_____ **9.** Hurricanes are given names and tropical storms are not.

_____ **10.** Category 4 hurricane has winds over 155 miles per hour.

_____ **11.** Mobile homes are a safe place to stay during a hurricane.

_____ **12.** Hurricanes were not given official names before 1953.

_____ **13.** Hurricane Katrina flooded the city of New Orleans in 2005.

_____ **14.** Scientists can make hurricanes change direction.

_____ **15.** A levee keeps ocean water away from cities.

Name: _____ Questions - Set D

Hurricanes

Complete each statement with a word from the box at the bottom of the page. Not all words from the box will be used.

1. In the Atlantic Ocean, hurricane season runs from _____ 1st through November 30th.

2. A tropical _____ has winds between 29 and 39 miles per hour.

3. A tropical _____ has winds between 40 and 73 miles per hour.

4. In the Southern Hemisphere, hurricanes rotate _____.

5. Hurricane names are reused every _____ years.

6. Hurricane Katrina flooded the city of _____.

7. During a hurricane _____, there is a possibility that a hurricane will reach landfall.

8. During a hurricane _____, a hurricane will definitely reach landfall.

9. The National Hurricane Center is located in the city of _____

10. If a hurricane is strong enough, citizens might be required to _____, or leave their homes.

Word Box

four	June	Louisiana	Miami	clockwise	disturbance
ten	May	New York	Florida	counterclockwise	depression
six	April	New Orleans	storm	evacuate	tornado
watch	warning	satellite	weather	category	eye

Name: _____ Questions - Set E

Hurricanes

Match each vocabulary word on the left, to its definition on the right.

1. _____ levee
2. _____ hurricane hunter
3. _____ equator
4. _____ tropical depression
5. _____ tropical storm
6. _____ hurricane
7. _____ dissipate
8. _____ coastline
9. _____ evacuate
10. _____ tornado

a. area where the ocean meets the shore

b. to be forced to leave a home because of danger

c. a wall or embankment that holds ocean water away from a city

d. a pilot who flies airplanes through hurricanes to measure the wind speed

e. an area of swirling thunderstorms over the ocean with wind speeds between 23 and 39 miles per hour

f. an area of thunderstorms over the ocean with wind speeds between 40 and 73 miles per hour

g. a giant wind and rain storm that forms over warm water with winds between 74 and 155 miles per hour

h. an imaginary line around the center of the Earth

i. a spinning storm that is less than one mile wide, with swirling winds that can reach over 300 miles per hour

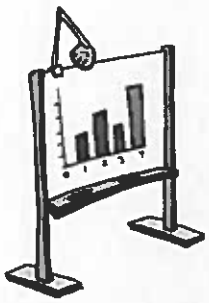
j. to break apart and reduce in strength

Name: _____ Questions - Set E

Hurricane Projects

1. Make a tri-fold hurricane safety brochure. Your brochure should include information about how to stay safe during a hurricane. Illustrate your brochure with colorful pictures.

2. Use graph paper to make a bar graph that shows the wind strengths of historical hurricanes. Be sure your graph has a title, a scale, and axis labels. Be sure the bars on your graph are drawn neatly and spaced evenly.



3. Interview someone who has survived a hurricane. Ask them 10 or more questions about their experiences. Write down their answers.

4. Make a PowerPoint presentation on hurricane safety. Include at least 5 slides with information about how to stay safe during a hurricane.

5. Write a realistic fiction story about a hurricane. Be sure your story has a happy ending and no people or animals are hurt. Your story should be about 3 pages long. Include an illustration.