Name _____

Date _____

Grade 5 Packet

Directions:

Within this packet, there is additional math, reading, and science work to ensure that students are still actively practicing skills while being absent from school.

If you need assistance with this packet, try to problem solve on your own first, ask a parent/sibling/guardian, and if you still have difficulties, contact your teacher via class dojo.

Ms. Evans
Mr. Turner
Mr. Estevez

Directions:

Use the table of contents page to know what to complete daily.

Try your best!

Achievement First

Middle School Literature and Composition

Scholar Packet: Passages and Questions

Grade 5

Name: _____

Homeroom: _____

Teacher: _____

Table of Contents:

DAY ONE Passage and Questions

Directions

205002P

Read this passage. Then answer at the end of the passage.

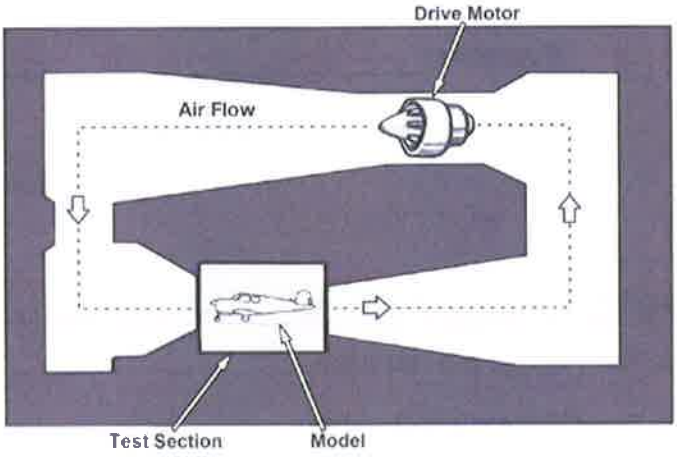
What Are Wind Tunnels?

by David Hitt

1 Wind tunnels are large tubes with air moving inside. The tunnels are used to copy the actions of an object in flight. Researchers use wind tunnels to learn more about how an aircraft will fly. NASA uses wind tunnels to test scale models of aircraft and spacecraft. Some wind tunnels are big enough to hold full-size versions of vehicles. The wind tunnel moves air around an object, making it seem like the object is really flying.

How do Wind Tunnels Work?

2 Most of the time, powerful fans move air through the tube. The object to be tested is fastened in the tunnel so that it will not move. The object can be a small model of a vehicle. It can be just a piece of a vehicle. It can be a full-size aircraft or spacecraft. It can even be a common object like a tennis ball. The air moving around the still object shows what would happen if the object were moving through the air. How the air moves can be studied in different ways. Smoke or dye can be placed in the air and can be seen as it moves. Threads can be attached to the object to show how the air is moving. Special instruments are often used to measure the force of the air on the object.



How Does NASA Use Wind Tunnels for Aircraft?

3 NASA has more wind tunnels than any other group. The agency uses the wind tunnels in a lot of ways. One of the main ways NASA uses wind tunnels is to learn more about airplanes and how things move through the air. One of NASA's jobs is to improve air transportation. Wind tunnels help NASA test ideas for ways to make aircraft better and safer. Engineers can test new materials or shapes for airplane parts. Then, before flying a new airplane, NASA will test it in a wind tunnel to make sure it will fly as it should.

4 NASA also works with others that need to use wind tunnels. That way, companies that are building new airplanes can test how the planes will fly. By letting these companies use the wind tunnels, NASA helps to make air travel safer.

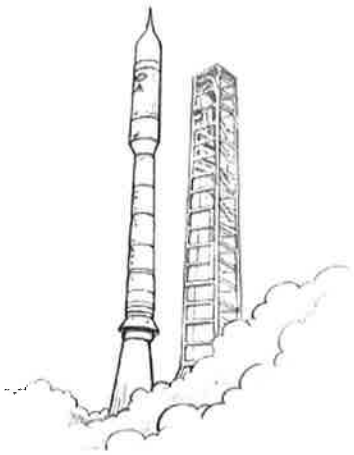
How Can Wind Tunnels Help Spacecraft?

5 NASA also uses wind tunnels to test spacecraft and rockets. These vehicles are made to operate in space. Space has no atmosphere. Spacecraft and rockets have to travel through the atmosphere to get to space. Vehicles that take humans into space also must come back through the atmosphere to Earth.

6 Wind tunnels have been important in making the Ares rockets and Orion spacecraft. Ares and Orion are vehicles that will take astronauts into space. NASA engineers tested ideas for the design of Ares in wind tunnels. They needed to see how well Ares would fly. Engineers tested Orion models. They needed to know what would happen to different designs when the spacecraft came back through the atmosphere.

7 Long after the first design work is finished, NASA can still use wind tunnels. Wind tunnel tests have helped NASA change the space shuttle to make it safer. Wind tunnels will keep helping make all spacecraft and rockets better.

8 Wind tunnels can even help engineers design spacecraft to work on other worlds. Mars has a thin atmosphere. It is important to know what the Martian atmosphere will do to vehicles that are landing there. Spacecraft designs and parachutes are tested in wind tunnels set up to be like the Martian atmosphere.



9 NASA has many different types of wind tunnels. They are located at NASA centers all around the country. The wind tunnels come in a lot of sizes. Some are only a few inches square, and some are large enough to test a full-size airplane. Some wind tunnels test aircraft at very slow speeds. But some wind tunnels are made to test at hypersonic speeds. That is more than 4,000 miles per hour!

Directions: Answer the following questions based on passage you just read.

1.

Which of the following **best** summarizes the main idea of the passage?

A "Researchers use wind tunnels to learn more about how an aircraft will fly." (paragraph 1)

B "Special instruments are often used to measure the force of the air on the object." (paragraph 2)

C "NASA engineers tested ideas for the design of Ares in wind tunnels." (paragraph 6)

D "Long after the first design work is finished, NASA can still use wind tunnels." (paragraph 7)

2.

Which key detail helps the reader understand the importance of using wind tunnels?

A Wind tunnels can move air more than 4,000 miles per hour.

B Wind tunnels are design tools that help make safer aircraft vehicles.

C Wind tunnels can create different atmospheres.

D Wind tunnels are large tubes that show how air moves.

3.

The statement that "NASA also works with others that need to use wind tunnels" **most strongly** suggests that

A many different groups are developing space shuttles

B NASA hopes to buy vehicles made by other agencies

C NASA has the largest wind tunnels in existence

D many companies do not have their own wind tunnels

4.

The most important feature of a wind tunnel used to test vehicles that can land on Mars is the ability to test how

A gravity affects vehicles
B a thin atmosphere affects vehicles
C high-speed winds affect vehicles
D freezing temperatures affect vehicles

5.

Which sentence from the passage **best** explains why NASA uses wind tunnels to test spacecraft models?

A "These vehicles are made to operate in space." (paragraph 5)
B "Spacecraft and rockets have to travel through the atmosphere to get to space." (paragraph 5)
C "They needed to know what would happen to different designs when the spacecraft came back through the atmosphere." (paragraph 6)
D "Some are only a few inches square, and some are large enough to test a full-size airplane." (paragraph 9)

6.

Which sentence from the passage **best** explains how a wind tunnel works?

A "NASA uses wind tunnels to test scale models of aircraft and spacecraft." (paragraph 1)
B "The object to be tested is fastened in the tunnel so that it will not move." (paragraph 2)
C "The air moving around the still object shows what would happen if the object were moving through the air." (paragraph 2)
D "Smoke or dye can be placed in the air and can be seen as it moves." (paragraph 2)

7. What is the central idea of the article? Support your answer with details from the article.

NOTE: You can use this page to plan, but you should write your final answer in your answer sheet packet.

DAY TWO Text and Question

Directions

305009P

Read this passage. Then answer the question that follows.

The Discontented Rock

an Iroquois tale by Frances Jenkins Olcott

1 FROM the beginning of the Earth, Gustahote, the great Rock, had overhung the valley. He watched and guarded the land, but he was not content, and longed to be something mightier and stronger than he was.

2 "If I could be the wide river that flows through the valley," he thought, "then surely I should be mighty and strong! The river winds happy and free through its broad lands; and green grass and flowers follow its course. If I could only be that river!"

3 And instantly Gustahote the Rock became the river. Down the valley he sped, leaping with joy, and the singing brooks from the hills ran into his stream. Through rocky gorges he tossed his foaming waves toward the Sky, and they returned to him in a rainbow spray. He wound around the bases of lofty mountains, and leaped down precipices. Then through the silent forest he glided, and the trees dipped their branches in his cool waters.

4 On and on he hastened, faster and faster, growing wider as he went, until at last he plunged into the billowing ocean. It encircled him with its broad, hungry arms, and drew him down and mingled his waters with the deep, so that he was the river no longer.

5 Then suddenly Gustahote found himself again the Rock, overhanging and guarding the valley. And he rejoiced to have escaped from the hungry deep.

6 But he was not content. He still longed to be something mightier and stronger than he was.

7 "If I could have wings, and live in the Sky," he thought, "then surely I should be mighty and strong! The Sky is open and pathless, and leads to unseen heights. It has no billowing deep to swallow the unfortunate."

8 And even as he thought thus, Gustahote the Rock became a bird, and the air was caressing and delicious as he tried his wings. He plumed them, and fluttered them, and spreading them wide, soared into the Sky. Beneath him were the valleys and the forests and the mountains, growing smaller and smaller as he flew upward.

9 The air became cold, as he rose above the clouds and entered the Land of Mists. A whirling wind rushed past him, breaking his wings. They drooped at his sides, and he fell heavily toward the Earth. But a fiercer blast caught him, and tore his body to fragments, and whirled the pieces over and over through the endless grey Sky.

10 Then suddenly Gustahote found himself again the Rock, overhanging and guarding the valley. And he rejoiced that he had escaped from the pathless Sky.

11 But still he was not content. He longed to be something mightier and stronger than he was.

12 "If I could be a creature, and wander about on the Earth," thought he, "then surely I should be mighty and strong. Fair are the valleys of the Earth, and wide its green forests, and beautiful and fruitful its meadows. It has no fierce rushing wind to rend in pieces the unfortunate."

13 And even as he thought thus, Gustahote the Rock became a creature walking upon the Earth. He wandered up and down the world, so strange to him, and soon grew lonely and desired a companion.

14 First he sought the beasts, but they were too busy getting their food to stop and talk to a strange creature. After that he went to the birds, but they were nesting, and could not stop to talk to a strange creature. Weary, lonely, and despairing, he wandered about.

15 Then suddenly Gustahote found himself again the Rock overhanging and guarding the valley. And he rejoiced that he was a Rock once more. And he heard a voice whisper:—

16 "Be content, O Gustahote the Rock! The waters may overflow you, but they cannot drown you. The Sun may look upon you with its hottest rays, but he cannot burn you. The tempest may strike you, but it cannot rend you. Old age cannot wrinkle you. The rivers may dry up in their beds, the forests may fall into dust, but you will stand stanch and true, and always watching, and forever remain unchanged and changeless."

17 So Gustahote the Rock rejoiced exceedingly; and he still overhangs and guards the valley. The river flows from him, and the Sky smiles or frowns, and the Earth heeds him not. But he is content.

Directions: Answer the following question based on your reading of the text.

1.

129050011

What makes Gustahote lonely while he's an Earth creature? Use **two** details or examples from the passage to support why Gustahote is lonely.

NOTE: You can use this page to plan your response, but please write your final answer in your answer sheet packet.

DAY THREE Text and Question

Directions

305010P

Read this passage. Then, answer the question that follows.

The Unfortunate Fireflies

by Clara Dillingham Pierson

1 SEVERAL very large families of Fireflies lived in the marsh and were much admired by their friends who were awake at night. The older Fireflies told the younger ones that they should get all the sleep they could during the daytime if they were to flutter and frisk all night. Most of them did this, but two young Fireflies, who cared more about seeing the world than they did about minding their elders, used to run away while the rest were dreaming. Each thought herself very important, and was sure that if the others missed her they wouldn't sleep a wink all day.

2 One night they planned to go by daylight to the farthest corner of the marsh. They went to bed when the rest did and pretended to fall asleep. When she was sure that the older Fireflies were dreaming, one of them reached over with her right hind leg and touched the other just below the edge of her left wing-cover. "Are you ready?" she whispered.

3 "Yes," answered the friend, who happened to be the smaller of the two.

4 When well away from their sleeping relatives, they lifted their wing-covers, spread their wings, and flew.

5 "Oh, wouldn't they make a fuss if they knew!" exclaimed the Larger Firefly.

6 "They think we need to be told every single thing," said the Smaller Firefly.

7 Just then a Flycatcher darted toward them and they had to hide. He had come so near that they could look down his throat as he flew along with his beak open. The Fireflies were so scared that their feelers shook.

8 "I wish that bird would mind his own business," grumbled the Larger Firefly.

9 "That's just what he was doing," said a voice beside them, as a Garter Snake drew himself through the grass. Then their feelers shook again, for they knew that snakes do not breakfast on grass and berries.

10 "Did you ever see such luck?" said the Smaller Firefly. "If it isn't birds it is snakes."

11 "Perfectly dreadful!" answered the other. "I never knew the marsh to be so full of horrid people."

12 Then they reached the farther corner of the marsh and crawled around to see what they could find. Their eyes bothered them so that they could not see unless they were

close to things, so it was useless to fly. They peeped into the cool dark corners under the skunk cabbage leaves, and lay down to rest on a bed of soft moss.

13 While they were resting, they noticed a plant growing near. It had a flower of green and dark red which was unlike any other blossom they had ever seen. Each [leaf] was stiff and hollow and grew right out of the ground instead of coming from a stalk.

14 "I'm going to crawl into one of them," said the Larger Firefly. She balanced herself on the top of a fresh green leaf.

15 "I'm going into this one," said the other Firefly, as she alighted on the edge of a brown-tipped leaf. "It looks nice and dark inside." Each dropped quickly into her own leaf.

16 Then there was a queer sputtering, choking voice in the fresh green leaf and exactly the same in the brown-tipped one. After that a weak little voice in the green leaf said, "I fell into water."

17 Another weak voice from the brown-tipped one replied, "So did I."

18 On the inside of each leaf were many stiff hairs, all pointing downward. Now that they wanted to get out, these same hairs stuck into their eyes and pushed against their legs and made them exceedingly uncomfortable.

19 After a while they gave up trying to get out until they should be rested. It was after sunset when they tried the last time, and the light that shone from their bellies brightened the little green rooms where they were. They went at it carefully. Slowly, one foot at a time, they managed to climb out of the doorway at the top. As they came out, they heard the squeaky voice of a young Mouse say, "Oh, where did those bright things come from?"

20 They also heard his mother answer, "Those are only a couple of foolish Fireflies who have been in the leaves of the pitcher-plant all day."

21 They flew toward home. "I'm dreadfully tired," said one, "but I suppose we shall have to dance in the air with the rest or they will make a fuss."

22 "Yes," said the other. "It spoils everything if we are not there."

23 As they came near the middle of the marsh they were surprised to see the mild summer air twinkling with hundreds of tiny lights as their friends and relatives flew to and fro in the dusk. "Well," said the Larger Firefly, "I think they might have waited for us!"

24 "Humph!" said the Smaller Firefly. "If they can't be more polite than that, I won't play."

25 So two very tired and cross young Fireflies sat on a last year's cat-tail and sulked. "We were not even missed!" they cried.

26 They were much wiser after that, for they had learned that two young Fireflies were not so wonderfully important after all. And that if they chose to do things which it was never meant young Fireflies should do, they would be likely to have a very disagreeable time, but that other Fireflies would go on eating and dancing and living their own lives. To be happy, they must keep the Firefly laws.

1. Explain why the young fireflies complain about the older fireflies. Use **two** details from the passage to support your answer.

DAY FOUR Passage and Questions

Directions: Read the passage below and answer the question(s) that follow.

Excerpts from The Summer of the Swans

A novel by Betsy Byars

Due to an illness, ten-year-old Charlie Godfrey cannot speak or write, but he can understand all that his family tells him. His older sister Sara shows Charlie some swans, and he becomes fascinated with them. Later, in the middle of the night, Charlie goes to visit the swans by himself. The first part of this text is told from Charlie's point of view. The second part of the text is told from Sara's point of view.

1 Charlie awoke, but he lay for a moment without opening his eyes. He did not remember where he was, but he had a certain dread of seeing it.

2 There were great parts of his life that were lost to Charlie, blank spaces that he could never fill in. He would find himself in a strange place and not know how he had got there. Like the time Sara had been hit in the nose with a baseball, and the blood and the sight of Sara kneeling on the ground in helpless pain had frightened him so much that he had turned and run without direction, in a frenzy, dashing headlong up the street.

3 By chance Mr. Weicek had seen him, put him in the car, and driven him home, but later he remembered none of this. He had only awakened in bed and looked at the crumpled bit of ice cream cone still clenched in his hand and wondered about it.

4 The first thing he became aware of was the twigs pressing into his face, and he put his hand under his cheek. Still he did not open his eyes. Pictures began to drift into his mind; he saw Aunt Willie's cigar box which was filled with old jewelry and button and knickknacks, and he found that he could remember every item in that box—the string of white beads without a clasp, the old earrings, the tiny book with souvenir fold-out pictures of New York, the plastic decorations from cakes, the turtle made of sea shells. Every item was so real that he opened his eyes and was surprised to see, instead of the glittering contents of the box, the dull and unfamiliar forest.

5 He raised his head and immediately felt the aching of his body. Slowly he sat up and looked down at his hands.

6 Then he sat up straight. He hands dropped to his lap. His head cocked to the side like a bird listening. Slowly he straightened until he was standing. At his side his fingers twitched at the empty air as if to grasp something. He took a step forward, still with his head to the side. He remained absolutely still.

7 Then he began to cry out in a hoarse excited voice, again and again, screaming now, because he had just heard someone far away calling his name.

* * * * * *

8 At the top of the hill Sara got slowly to her feet and stood looking down at the forest. She pushed the hair back from her forehead and moistened her lips. The wind dried them as she waited.

9 Scarcely daring to believe her ears, she stepped closer to the edge of the bank. Now she heard it unmistakably—the sharp repeated cry—and she knew it was Charlie.

10 "Charlie!" she shouted with all her might.

11 She paused and listened, and his cries were louder and she knew he was not far away after all, just down the slope, in the direction of the ravine.

12 "It's Charlie, it's Charlie!"

13 A wild joy overtook her and she jumped up and down on the bare earth and she felt that she could crush the whole hill just by jumping if she wanted.

14 She let out another whoop of pure joy, turned and ran down the hill in great strides, her tennis shoes slapping the ground like rubber paddles, the wind in her face, her hands grabbing one tree trunk after another for support. She felt like a wild creature who had traveled through the forest this way for a lifetime. Nothing could stop her now.

15 At the edge of the ravine she paused and stood gasping for breath. Her heart was beating so fast it pounded in her ears, and her throat was dry.

16 She thought for a minute she was going to faint, a thing she had never done before, not even when she broke her nose. She hadn't even believed people really did faint until this minute when she clung to the tree because her legs were as useless as rubber bands.

17 There was a ringing in her ears and another sound, a wailing siren-like cry that was painfully familiar.

18 "Charlie?"

19 She walked along the edge of the ravine, circling the large boulders. Then she looked down into the ravine where the shadows lay, and she felt as if something had turned over inside her because she saw Charlie.

20 He was standing in his torn pajamas, face turned upwards, hands raised, shouting with all his might. His face was streaked with dirt and tears. His pajama jacket hung in shreds about his scratched chest.

21 He opened his eyes and as he saw Sara a strange expression came over his face, an expression of wonder and joy and disbelief, and Sara knew that if she lived to be a hundred no one would ever look at her quite that way again.

22 She paused, looked down at him, and then, sliding on the seat of her pants, went down the bank and took him in her arms. His arms gripped her like steel.

23 She could feel his fingers digging into her back as he clutched her shirt. "It's all right now, Charlie, I'm here and we're going home." His face was buried in her shirt and she patted his head, said again, "It's all right now. Everything's fine."

1 Which phrase from the text **best** helps the reader determine the meaning of *frenzy* as it is used in paragraph 2?

A. "blank spaces that he could never fill in"

B. "kneeling on the ground in helpless pain"

C. "frightened him so much"

D. "turned and run without direction"

2 Paragraphs 1 through 7 are told from Charlie's point of view. How does Charlie's point of view influence the story?

A. The setting of the story is not revealed until late in the excerpt because Charlie himself does not focus on the setting right away.

B. The small details Charlie remembers become more and more important to him than the situation he is in.

C. The conflict is not revealed until the very end of the excerpt because Charlie remains unaware of the problems he is facing.

D. The challenges Charlie faces in his life appear to be more serious than they really are because Charlie does not understand the details of his situation.

3 Which statement **best** expresses one of the themes in paragraphs 8 through 23?

A. When people start exploring nature, they find both challenges and excitement.

B. When people work together as a team, they can eventually solve problems.

C. When people care deeply about someone, they become determined to help them.

D. When people listen to the advice of others, they reach success more easily in whatever they do.

4 Based on information from the entire text, which statement **best** expresses how Charlie and Sara feel about each other?

A. Charlie is afraid of Sara, and Sara is angry that she must find Charlie.
B. Charlie loves Sara, and Sara loves and wants to take care of Charlie.
C. Charlie wants independence from Sara, and Sara is overprotective of Charlie.
D. Charlie feels abandoned by Sara, and Sara believes she caused Charlie to run away.

5 What is the purpose of the phrase "gripped her like steel" in paragraph 22?

A. To emphasize how calm Charlie feels when he sees Sara
B. To emphasize how strong Charlie's emotions are when Sara rescues him
C. To emphasize how fearful Charlie still is after Sara finds him
D. To emphasize how fast Charlie's emotions change after Sara hugs him

6 Paragraphs 1 through 7 are told from the point of view of Charlie while paragraphs 8 through 23 are told from the point of view of his sister, Sara. Compare and contrast how Sara and Charlie react to the event in the story.Use at least two details from the text to support your response.

Write your answer on the lines below.

NOTE: You can use this page to plan your response, but please write your final answer in your answer sheet packet.

DAY FIVE Passage and Questions

Directions

Read this story. Then answer questions that follow.

In 1888, Sky, a member of the Apache Nation, has jumped off a train in Alabama so he can return home rather than be taken to an area reserved for Native Americans. He becomes very ill and is found by a young African-American girl. Her family takes him in and nurses him back to health, even though hiding him from the authorities is against the law. Now that he is well, the family knows that they should turn Sky over to Mr. Wratten, the lawman who has been searching for him.

Excerpt from *Run Away Home*

by Patricia C. McKissack

1 I hadn't been truthful with Sky. And it was bothering me. We were going to do him harm and turn him into Mr. Wratten as soon as he was well. After another week passed, Sky was fine, but none of us wanted to see him leave.

2 I helped Mama take down the quilts that had made the sickroom, wash them, and put them away until they were needed again. Sky had slept outside all week, where he seemed to be most comfortable. He'd found a piece of hickory and was using Papa's tools to make a bow and arrows.

3 Although Sky never spoke the words thank you, he expressed his gratitude in so many thank-you ways. If a fence needed mending, he mended it. If Big Two needed feeding, he fed him. If a hole needed digging, he dug it. This pleased Papa. But Sky flat out would not do a chore that he considered woman's work. I couldn't get over the way he watched me struggling with a bucket of water and wouldn't offer to help, saying, "Less water would make it easier to carry."

4 "That is his way," Mama told me when I complained. "We can't expect him to change who he is to suit us. That's what's wrong with those schools that try to de-Indian his people."

5 In spite of herself, Mama had grown fond of Sky, too, and Sky was slowly allowing himself to smile more—and even talk more, too.

6 One day, while he was working on his bow and Buster lay between us, his tail thump, thump, thumping against the wooden floor, Sky turned to me and said, "Yes."

7 "Yes? Yes what?"

8 "Girls can have their ears pierced."

9 We both laughed. I couldn't be sure, but I felt that Sky was giving me permission to ask him a few things. And so I did.

10 Since the first night I'd seen the Apaches, I'd been curious about the woman who had risen to defend Geronimo.

11 "Who is Lozen?" I asked.

12 "Lozen," he began, still filing away on the wooden bow, "is sister of Victorio." I had heard Mr. Wratten talk about Victorio, so at least I knew who he was. "She is a war woman," Sky continued, "one who is equal to anyone in battle. She fought with her brother until he was killed, then she rode with Geronimo and she has great powers. I rode with her against the Mexicans and the whites. She was with us when we surrendered."

13 Lozen reminded me of a story Papa had told me about Harriet Tubman, a slave woman who had been a conductor on the Underground Railroad. Papa said she stood no taller than me, but she was strong and brave. She even served as a spy for the Union Army during the war.

14 Suddenly Buster took off down the path, chasing some critter he had no plans to hurt. "Most people don't understand him, because he's so wild," I said.

15 "There is a difference between what is wild and what is free," Sky said softly.

16 I knew he was thinking about his own people. They had been called wild because they fought so hard to stay free. A terrible war had been fought so we black people could be free. That should have included Indians, too. Now that I had gotten to know Sky, it bothered me that we were doing what all the others had done to his people. I didn't like it, but my word is out to Mama.

17 My mind returned to Lozen, and I imagined myself riding with her, the wind at my back, the sun in my face.

18 "What time of year is this?" Sky had to ask me three times to bring me out of my wonderful daydream. "Your mind is in too many places," he said.

19 "There you go, sounding just like Papa," I said. "It is June of 1888," I added. Clearly that meant nothing to him. Looking for a better way to answer, I decided to show him the farm. He had seen it, but not through my eyes.

20 First we went to the kitchen garden where Mama had set out turnips, collards, beans, corn, tomatoes, okra, sweet potatoes, goobers, and peppers. "We'll eat out of this garden all summer, then we'll can or dry a lot of it come fall."

21 "What's a goober?" he asked.

22 "Goobers are peanuts, and just wait 'til you taste them." Sky knew a lot of the foods I named, and even told me how his mother had used peppers and corn to make his favorite dishes.

23 Next we visited the orchards, where I showed him peach, apple, and pecan trees. "My grandpa planted these trees when he got this land. Papa says you don't plant a pecan tree for yourself, but for your grandchildren, because it takes near about fifteen years for it to bear nuts."

#1 How are the narrator and Sky alike? Use **two** details from the story to support your response.

NOTE: You can use this page to plan your response, but please write your final answer in your answer sheet packet.

#2 What does the narrator think of Sky's view of women? Use **two** details from the story to support your response.

NOTE: You can use this page to plan your response, but please write your final answer in your answer sheet packet.

DAY SIX Passage and Questions

Directions
Read this story. Then answer the questions that follow.

Just Like Home

by Mathangi Subramanian

1 When the recess bell rang, Priya sighed and slowly hung up her smock. At her old school, she spent recess climbing the monkey bars and sharing secrets with her friends. Now she sat in the corner of the field and watched the other kids play without her.

2 The only thing Priya liked about her new school was art. They hadn't had art at her old school, but here, art was a whole hour. The studio had the most wonderful things, like aluminum pie tins, plaster of paris and India ink. During art, Priya forgot that she didn't have any friends at her new school. All she thought about was whatever she was working on.

3 As she cleared her table, Priya noticed a box of sidewalk chalk sitting on the counter by the window. She grabbed and stuffed it in her pockets. Then she took her usual place at the end of the recess line.

4 While she and her classmates filed through the halls and out into the yard, Priya thought about how she and her mother used to draw chalk patterns on the long driveway leading up to their old apartment building. The patterns were called *rangoli*, and they looked like stars and roses. Priya's mother said that the drawings were to welcome guests to their home. All the families in India, where Priya's family was from, did rangoli every morning, just like Priya and her mother. Their new apartment had barely any sidewalk in front of it, and there was no room for rangoli. Priya missed the early mornings she and her mother would spend drawing feathery, colorful patterns on the cement.

5 Priya walked over to the basketball court and sat on the hot pavement. She was glad to have something to do besides sit in her corner. She pulled the box out of her pocket and took out a bright red piece of chalk and began drawing the rangoli patterns she loved best. She drew flowers with huge, swirling petals and stars with eight points. She colored them green, yellow and blue, all colors her mother had used. She liked the soft, solid feeling of the chalk in her hand, and the way that the dust left patterns on her fingers.

6 "That's pretty," a voice said.

7 She turned around and saw that Enrique, a boy in her class, was watching her.

8 "It's called rangoli," she said. "They do this in India, where my parents are from."

9 "You know what that reminds me of?" he asked, kneeling down beside her. "The floor of my grandmother's house in Mexico has tiles that have designs like that."

10 "What do you mean?" Priya asked.

11 "Hand me a piece of chalk," Enrique said. "I'll show you." Enrique sat down on the pavement and began to draw. He used the green, orange, and yellow chalk to draw flowers that were more detailed than Priya's, but still had huge, curvy petals. Then he drew circles inside circles, and surrounded them with small diamonds. Priya kept drawing too, in between and around Enrique's designs.

12 "What are you guys doing?" a voice asked.

13 Priya and Enrique had been so absorbed in drawing that they hadn't noticed that their classmate Farah had been watching them.

14 "Hey," Farah said, sitting down beside them, "that looks like the rugs in my uncle's house in Iran. Except on the rugs, the shapes are bigger, and aren't as curly."

15 "Show us," said Enrique, handing her a piece of chalk.

16 Farah took the chalk and began drawing. She drew shapes that were full of straight lines and bold colors. They were bigger than the shapes Priya and Enrique had drawn, and they overlapped each other in diagonals to form new shapes. She colored the drawings purple, dark blue, and white.

17 "Wow!" Ms. Lopez, Priya's teacher, said. "That's beautiful!"

18 Priya, Enrique and Farah stood up and looked at what they had done. The pavement was covered in bright colors and shapes: triangles, circles, squares and diamonds, all mixed together. Their classmates began to drift over to see what was happening.

19 "It looks like a universe, with lots of planets and stars," said Lily.

20 "It looks like a coral reef full of tropical fish," said Jasper.

21 "What do you think it looks like Priya?" asked Enrique.

22 Priya looked at Enrique and Farah. Their knees, elbows, and fingers were covered in red, yellow, green and blue chalk dust. Priya smiled and said, "It looks like home."

1 How are Priya's feelings about recess at her old school and her new school different? Use **two** details from the story to support your response.

NOTE: You can use this page to plan your response, but please write your final answer in your answer sheet packet.

2 What do Lily and Jasper's points of view reveal about the drawing? Use **two** details from the story to support your response.

NOTE: You can use this page to plan your response, but please write your final answer in your answer sheet packet.

3 How do Priya's actions in paragraph 5 help develop the theme of the story? Use **two** details from the story to support your response.

NOTE: You can use this page to plan your response, but please write your final answer in your answer sheet packet.

DAY SEVEN Passage and Questions

Directions

Read this story. Then, answer the questions that follow.

Joe Jones has been assigned to write a Friendly Letter to an author, seeking answers to four questions. When the author's response is not helpful, he has to write to the author again.

Excerpt from
Your Question for Author Here

by Kate DiCamillo and Jon Scieszka

Dear Maureen O'Toople,

What the heck kind of author letter was that? I am supposed to ask the questions. You are supposed to send back the author answers. That's how the assignment goes. That is all you have to do.

There's nothing in the assignment about writing a Perfunctory[1] Letter. But maybe I can get some extra credit because I did that, too.

So here are the questions, right off the board, just how Mrs. Bund wrote them.

1. Why do you write books?

2. Where do you get your ideas?

3. What got you started writing?

4. Your question for author here.

Please send some good author answers or Mrs. Bund will give me another C– and then my mom will freak out again and say I'm not applying myself and my dad will ground me and I will miss my baseball team playoffs and have to do whatever they say for the next week.

I'm not kidding,

Joe Jones

Dear Joe Jones,

No one gets credit for writing Perfunctory Letters. They are an insult to the human spirit. What we humans crave is connection. Perfunctory Letters work counter to that.

But I digress; I digress!

---

[1] **perfunctory:** lacking in interest or enthusiasm

You have posed some questions. And you want some answers, answers that will result in you receiving a grade higher than a C–. I don't know if I can help you, Joe, because I don't feel like answering questions. The older you get, the more questions you get asked, and the more weary you become of answering the questions and the more elusive the answers—any answer, every answer—seem.

What I would like to do is ask a question. I would like to ask you a question. So, let's make a deal, Joe. I'll ask you a question and you answer it. And then, if I feel like it, I'll answer one of your questions. How does that sound?

Here's my first question for you: Are you afraid of thunderstorms?

Yours cordially and only somewhat perfunctorily and more than a little curiously,

Maureen O'Toople

P.S. I'm no fool, Joe. I'm betting good money that you haven't read one single book I've written. Prove me wrong.

Maureen O'Toople,

Aw, come on. It's bad enough I have to do this lame assignment. Now I have to write extra? I thought authors were supposed to like getting letters from their kid fans.

But if I don't get these answers, I am hosed. That's what my dad says. Hosed. I don't know what that really means. Like, what does a hose have to do with anything? But I do know it means no TV, no computer time, no baseball, no comics, no music, no phone, no hanging out with my friend James. Basically it means nothing that is really the good part of living.

Why would they do that to me? Do people just get meaner when they get older?

Okay, here's my answer. I am kind of afraid of thunderstorms. Not the rain part. That sounds great on the roof. It's the part between the flash of lightning and the BAM of thunder. It's waiting for the BAM that weirds me out. You just don't know when it's going to happen.

So please send me some author answers. As soon as you can.

Really,

Joe Jones

P.S. I didn't get a chance to read any of your books yet. I actually picked you mostly to annoy Jennifer, because she is all crazy about your books and always talking about the horses or the princesses or whatever is in them. I usually only read history books that really tell you something. And books that are funny.

Dear Joe,

Thank you for answering my question. I, too, like the sound of the rain on the roof. I also like the lightning. It's like some great cosmic flashlight. It makes me think that someone is searching for me. And I don't mind the BAM of thunder because that makes me think that, perhaps, I have been found. That's the way a good book makes me feel, as if I have been found, understood, seen.

Oh, I'm sneaky, Joe. Right there, in the first paragraph, I have answered your first question. And you know what that means: Now I get to ask you another question. Are you ready?

What's in your sock drawer besides socks?

That's the question. Answer it and I'll answer another question of yours. Quid pro quo.

Amusing myself

and delighted to be a part of your "lame assignment"

I remain,

Maureen

P.S. "Whatever is in them" is a truly alarming phrase to use in reference to my books. But, as an interesting aside, I am happy to inform you that none of my books (not one) features princesses or horses. Toads, tidal waves, arachnid revolutions, yes. Princesses, no. Horses, no. Do your research, Joe.

P.P.S. Yes. People do get meaner as they get older.

1. What is a theme of the "Excerpt from *Your Question for Author Here*"? Support your answer with details from the story.

NOTE: You can use this page to plan your response, but please write your final answer in your answer sheet packet.

DAY EIGHT Passage and Questions

Read the passage below. Then answer the questions that follow.

from *The Wild Robot*

by Peter Brown

THE OCEAN

1 Our story begins on the ocean, with wind and rain and thunder and lightning and waves. A hurricane roared and raged through the night. And in the middle of the chaos, a cargo ship was sinking
down
down
down
to the ocean floor.

2 The ship left hundreds of crates floating on the surface. But as the hurricane thrashed and swirled and knocked them around, the crates also began sinking into the depths. One after another, they were swallowed up by the waves, until only five crates remained.

3 By morning the hurricane was gone. There were no clouds, no ships, no land in sight. There was only calm water and clear skies and those five crates lazily bobbing along an ocean current. Days passed. And then a smudge of green appeared on the horizon. As the crates drifted closer, the soft green shapes slowly sharpened into the hard edges of a wild, rocky island.

4 The first crate rode to shore on a tumbling, rumbling wave and then crashed against the rocks with such force that the whole thing burst apart.

5 Now, reader, what I haven't mentioned is that tightly packed inside each crate was a brand-new robot. The cargo ship had been transporting hundreds of them before it was swept up in the storm. Now only five robots were left. Actually, only four were left, because when that first crate crashed against the rocks, the robot inside shattered to pieces.

6 The same thing happened to the next crate. It crashed against the rocks, and robot parts flew everywhere. Then it happened to the next crate. And the next. Robot limbs and torsos were flung onto ledges. A robot head splashed into a tide pool. A robot foot skittered into the waves.

7 And then came the last crate. It followed the same path as the others, but instead of crashing against the rocks, it sloshed against the remains of the first four crates. Soon, more waves were heaving it up out of the water. It soared through the air, spinning and glistening until it slammed down onto a tall shelf of rock. The crate was cracked and crumpled, but the robot inside was safe.

THE OTTERS

8 The island's northern shore had become something of a robot gravesite. Scattered across the rocks were the broken bodies of four dead robots. They sparkled in the early-morning light. And their sparkles caught the attention of some very curious creatures.

9 A gang of sea otters was romping through the shallows when one of them noticed the sparkling objects. The otters all froze. They raised their noses to the wind. But they smelled only the sea. So they cautiously crept over the rocks to take a closer look.

10 The gang slowly approached a robot torso. The biggest otter stuck out his paw, swatted the heavy thing, and quickly jumped back. But nothing happened. So they wriggled over to a robot hand. Another brave otter stuck out her paw and flipped the hand over. It made a lovely clinking sound on the rocks, and the otters squeaked with delight.

11 They spread out and played with robot arms and legs and feet. More hands were flipped. One of the otters discovered a robot head in a tide pool, and they all dove in and took turns rolling it along the bottom.

12 And then they spotted something else. Overlooking the gravesite was the one surviving crate. Its sides were scraped and dented, and a wide gash ran across its top. The otters scampered up the rocks and climbed onto the big box. Ten furry faces poked through the gash, eager to see what was inside. What they saw was another brand-new robot. But this robot was different from the others. It was still in one piece. And it was surrounded by spongy packing foam.

13 The otters reached through the gash and tore at the foam. It was so soft and squishy! They squeaked as they snatched at the fluffy stuff. Shreds of it floated away on the sea breeze. And in all the excitement, one of their paws accidentally slapped an important little button on the back of the robot's head.

14 *Click*.

15 It took a while for the otters to realize that something was happening inside the crate. But a moment later, they heard it. A low whirring sound. Everyone stopped and stared. And then the robot opened her eyes.

1 Read the sentence from paragraph 3 in the box.

> There were no clouds, no ships, no land in sight.

In the sentence, what does the repetition of the word "no" emphasize?

Ⓐ how peaceful the sea is

Ⓑ how long the storm lasted

Ⓒ the remoteness of the setting

Ⓓ the determination of the characters

2 Read the sentence from paragraph 3 in the box.

> And then a smudge of green appeared on the horizon.

Which event does the sentence suggest will happen next in the passage?

Ⓐ The robot will open its eyes.

Ⓑ The crates will land on shore.

Ⓒ The otters will look at the crates.

Ⓓ The ship will sink into the ocean.

3 In paragraph 4, what is the effect of the author's use of the words "tumbling," "rumbling," and "crashed"?

Ⓐ It helps the reader imagine the power of the waves.

Ⓑ It helps the reader determine the depth of the waves.

Ⓒ It helps the reader understand the size of the rocks on the island.

Ⓓ It helps the reader picture the sharpness of the rocks on the island.

4 In paragraph 5, what is the **most likely** reason the author addresses the reader directly?

Ⓐ to call attention to important information

Ⓑ to explain the strangeness of each robot

Ⓒ to provide details about previous key events

Ⓓ to highlight the number of items that were lost

5 How does the author **mainly** create a lighthearted mood in the section titled **THE OTTERS**?

Ⓐ by explaining what the otters look like

Ⓑ by showing how the scenery affects the otters

Ⓒ by revealing what the otters learn about the robot parts

Ⓓ by describing how the otters interact with the robot parts

6 What is the **main** effect of the single word in paragraph 14?

Ⓐ It creates a feeling of joy.

Ⓑ It creates a feeling of worry.

Ⓒ It creates a feeling of comfort.

Ⓓ It creates a feeling of suspense.

7 Based on the passage, what is the **first** sign to the otters that the robot has been turned on?

Ⓐ "But this robot was different from the others." (paragraph 12)

Ⓑ "And it was surrounded by spongy packing foam." (paragraph 12)

Ⓒ "But a moment later, they heard it. A low whirring sound." (paragraph 15)

Ⓓ "Everyone stopped and stared. And then the robot opened her eyes." (paragraph 15)

8 Determine whether **each** quotation from the passage appeals mainly to the sense of touch, the sense of sound, or to both senses.

#8A "A hurricane roared and raged through the night." (paragraph 1)

Ⓐ sense of touch

Ⓑ sense of sound

Ⓒ both senses

#8B "It was so soft and squishy!" (paragraph 13)

Ⓐ sense of touch

Ⓑ sense of sound

Ⓒ both senses

#8C "They squeaked as they snatched at the fluffy stuff." (paragraph 13)

Ⓐ sense of touch

Ⓑ sense of sound

Ⓒ both senses

DAY NINE Passages and Questions

Read the passage and the poem below. Then answer the questions.

Catalina Solis is a young girl living in Chile. Her father works as a mechanic in an observatory, a place where astronomers use telescopes to study the stars. Read this passage about Catalina's brave act in the observatory.

Lace Round the Sky

by Cecilia Aragon

1 As Papá's snores boomed off the clapboard walls, Catalina slid from her mattress and groped her way to the front door. The latch clicked softly. The girl waited a moment to see if any of her family would wake, but nobody stirred.

2 Catalina stood on the doorstep of their Cerro Tololo observatory staff housing, drinking in deep lungfuls of the clear night air under the blazing Southern Hemisphere starshine. The Milky Way sprawled across the sky, a swath of pure white lace shadowed by dark blotches.

3 Night was her favorite time. During the day the Chilean mountaintop swarmed with tourists, shouting and calling to each other as breezes spun dust into the thin mountain air. While the visitors were there, Papá could not allow her to help polish the brass fittings of the old refractor telescope nor pour smoking liquid nitrogen into the Dewar vessel that

kept the Schmidt telescope camera cool. During the day she was no one special, just a kid underfoot among the many who made the pilgrimage to the mountaintop to visit the miraculous devices that let scientists learn about the stars.

4 But at night, when everything was quiet, Catalina was one of the few who were allowed beyond the roped-off corridors and the "No Admittance" signs. The night staff all knew her, knew she would keep her hands away from the delicate instruments and could always be counted on to fetch a cup of coffee or grab a toolbox.

5 She loved helping to service the grand telescopes, the eyes that peered out into the universe—even if it was annoying how she was always told not to disturb the astronomers who directed the telescopes through the night, searching the sky in elaborate patterns. Catalina wanted more than anything to confess her secret dream to these great and revered scientists, whose love of astronomy had brought them from all over the world to an isolated mountaintop.

6 Instead, Señor Alfonso, the accountant, told her that if she bothered the scientists she would be banned from the telescopes. Señora Carmen, the head administrator, frowned and scolded her. "Little girls have no place interfering with important work."

7 Even her father, when she said, "Papá, I want to be an astronomer someday," laughed and tugged at one of her long black braids. "Maybe if you work hard, you'll be hired to clean the offices when you're big enough, like your mother."

8 But Catalina was curious. The sky did not merely consist of white dots of stars against a black background, like her schoolbooks said. The sky she saw every night was knotted with patterns, from fuzzy balls of fluff to filaments braided and twirling overhead. What were the bright threads that looped in twisting arcs around dark eyelets? And what secret commands did the astronomers type on their computers to persuade the telescopes to rotate and capture the distant, hidden galaxies?

9 One day last summer, she had been curled up on a dingy green vinyl sofa in the small library. Magazine pages flapped on battered wooden side tables as fans swung back and forth. Flipping through the pages of a botany journal, she had stopped at the picture of an intricate white flower.

10 "It's called wild carrot, or Queen Anne's Lace." One of the foreign astronomers, pallid and tall in an expensive suit, stood behind her. His Spanish was heavily accented. She stared up at him, panicked. "Pretty, isn't it? I've always liked that flower, because I think it looks like a galaxy. Nature repeats itself."

11 She looked down at the page. It did look familiar. "A flocculent spiral galaxy," she whispered.

12 Blond eyebrows climbed his reddened forehead. "Indeed. And what is your name, young lady?" he asked, his light blue eyes focusing on her with disconcerting intensity.

13 "I'm Catalina Solis."

14 "Eduardo Solis's daughter? The mechanic?"

15 "Yes." She slanted a look at him. "I want to be an astronomer when I grow up."

16 He laughed genially, no longer meeting her eyes, and patted her on the shoulder. "Yes, of course, my dear. Work hard in school, and it could happen."

17 No one believed she would be a scientist one day. But why? She knew she could be a good scientist. She knew it!

18 She danced along the dirt road, bare feet soundless against the gravel, a practiced eye scanning the half-dozen domes at the mountaintop's summit. Then she stopped suddenly. The one-meter telescope's dome slit was open, but its angle was unusual. Cautiously, she wandered nearer. The telescope was pointed down, almost at the ground, lower than she had ever seen it.

19 She bit her lip, shifting from foot to foot. The red light over the entrance door indicated that it was forbidden to enter and disturb the scientists at work.

20 She looked back along the darkened road. No adults were around. Quickly making up her mind, she ran to the dining hall. Dim yellow light framed blackout curtains behind narrow, wired-glass windows. The cooks must still be cleaning up after dinner.

21 Bursting through the door, she cried, "Señora Silvia, I need your help. I think there's a problem with one of the telescopes."

22 Inside, dishes clattered loudly against the cast-iron sinks. The head cook put one soapy hand on her apron and glared. "Girl, what does someone like you know about telescopes?"

23 Catalina explained, but Silvia only shook her head. "Nonsense. I'm sure they're just doing something different tonight. It's not our place to interrupt. Now shoo!" She flapped her apron at the girl.

24 Back out under the starlight, Catalina stared at the offending dome. A strand of unease twisted in her gut. Something was wrong, she was sure of it. But what could she do?

25 She sucked in her breath as the thought came to her. She could check for herself. It was dark outside. Opening the door wouldn't allow too much light into the dome, and she knew how to move in the dark without banging into any of the equipment.

26 But if she was wrong, the scientists running the telescope would be angry. Staff children did not belong in the off-limits areas.

27 Gritting her teeth, she gave one last glance around the mountaintop, hoping she could make her plea to a sympathetic adult. But there was no one. So, taking a deep breath, she turned the handle and slipped inside.

28 It was dark within the dome, and her eyes took a moment to adjust. The telescope mount was emitting a faint grinding noise. That wasn't normal. She took a cautious step forward and saw an irregular shape hunched on the floor.

29 She inhaled sharply. It was a man. Coming closer, she saw that one leg was bent under him at an awkward angle.

30 "Señor?" she whispered. "Are you all right?"

31 The man groaned. He canted his head, skin pale in the low light, eyes glittering beneath half-closed lids. She recognized him: the scientist she had met in the library. "Fell," he gasped in his accented Spanish, gesturing at the platform above. "I think . . . broke leg. Need to . . . uh . . ." His voice trailed off.

32 Catalina balanced on the balls of her feet. "I'll run and get the night operator," she promised, already backing toward the door.

33 "No!" His voice was sharp. "First, need to . . . fix the telescope." He muttered to himself for a moment in English. "In two minutes, the . . . scope will move past its limit and . . . be damaged. I'll tell you how . . ."

34 Catalina's eyes lifted to the clock drive lit by a blinking yellow light. She had often helped her father reset this device. Quickly, she walked to

the controller and flipped the two switches her father used to stop the telescope.

35 The man behind her was still gasping out directions.

36 "Shh, it's all right," she soothed, coming to his side. "I fixed it. No more problems, OK?"

37 "You what . . . ?" he muttered, confused. "Already?" Then his head lolled to one side. Catalina stared at his unconscious figure a moment and then jumped to her feet.

38 Her braids thumped her back rhythmically as she ran all the way to the night operator's office. She burst into the low brown structure without knocking, for the man could be grumpy sometimes.

39 "Señor Rojas, there's an emergency," she called out as the big man swiveled his beat-up wooden chair to face her. "The astronomer using the one-meter had an accident. He fell and broke his leg. You need to get help!"

* * *

40 Later that night, Catalina crouched behind one of the junction boxes as the astronomer was carried out on a stretcher.

41 "Wait!" he called as he was about to be loaded into the ambulance. "Wait! Catalina!"

42 Catalina straightened and crept into the ring of lights. He remembered her name?

43 The man's leg had been splinted, and his eyes were bright with pain. "How did you know?" he asked.

44 "Know what?" she whispered, puzzled.

45 "That something was wrong." He lifted a hand to gesture vaguely in the direction of the one-meter.

46 She scuffed the dirt with her toe. "Um, I saw the barrel pointing down, and I knew . . . it wasn't normal."

47 His eyes sharpened. "That was observant of you. Then you knew how to shut down the equatorial mount."

48 Shyly, she nodded.

49 His gaze remained on her as they lifted the stretcher and began to slide it into the ambulance. "A good scientist," he continued, "is always observant." Then the door slammed behind him.

* * *

50 "Mail Call!" yelled Arturo, Señor Rojas's son. He tossed a padded envelope plastered with foreign stamps onto Catalina's doorstep. She was helping Mamá make mote con huesillos, one of her favorite desserts. Scooping up the envelope, she tore open the flap.

51 Out fell a pressed and dried white flower in wax paper. Queen Anne's lace, she remembered, tracing the edges with her fingertip. Like a spiral galaxy.

52 "Dear Catalina," the letter began, "I wanted to thank you for not only saving (possibly) my life, or at least my dignity, but also something far more valuable: the one-meter telescope mount. In return, I thought I might offer a budding scientist some advice."

53 She continued reading, heart pummeling her ribs. He listed several addresses he said were of the best schools in Chile for young scientists. "The scholarship applications aren't easy, but if you attempt them, I'd be happy to give you my feedback."

54 She clutched the letter to her chest, an absurd joy exploding like a supernova. It was going to happen. She would become an astronomer. She knew it now.

55 That night, when she ran out under the stars, she called, "I'll discover all your secrets someday!" She spun the delicate, galactic flower in her hand. Patterns in the sky, patterns on the earth; humans laced them together. Circling above her, the intricate sky no longer seemed quite so remote.

Read the poem below.

One Day I'll Be

by James McDonald

Today at school my teacher said,
I wonder what you'll be?
When time has passed and you've grown up,
And the world is yours to see.

Right then and there I stood straight up,
And looked her in the face,
And said with pride and confidence,
I plan to live in space.

Like pirates of so long ago,
My ship will take me far,
Around the moon and back again,
And to a distant star.

So when you talk about the world,
And say it's yours to see,
I believe I'll have the greatest view,
Upon the cosmic sea.

1. In the passage, how are Catalina and the astronomer similar?

Ⓐ They both like working alone.

Ⓑ They both enjoy reading magazines.

Ⓒ They both are fascinated by the stars.

Ⓓ They both think nighttime is the best time.

2. Which detail **best** supports the answer to question #1?

Ⓐ "Catalina wanted more than anything to confess her secret dream to these great and revered scientists, whose love of astronomy had brought them from all over the world to an isolated mountaintop." (paragraph 5)

Ⓑ ". . . she had been curled up on a dingy green vinyl sofa in the small library." (paragraph 9)

Ⓒ ". . . the astronomer was carried out on a stretcher." (paragraph 40)

Ⓓ "'Dear Catalina,' the letter began, 'I wanted to thank you for not only saving (possibly) my life, or at least my dignity, but also something far more valuable: the one-meter telescope mount.'" (paragraph 52)

3. Which sentence **best** states a theme of the passage?

Ⓐ New opportunities take careful planning.

Ⓑ Inspiration can be found in unlikely places.

Ⓒ Success can be ensured by having many different goals.

Ⓓ Hope should not be limited by the expectations of others.

4. Read the sentences in the box. Determine the correct order of the **three** sentences that would **best** create a summary of "Lace Round the Sky."

1. Catalina prevents a telescope from breaking and helps someone in need.
2. Catalina spends times looking at magazines in a small library at the observatory.
3. Catalina enjoys looking at the night sky and dreams of someday becoming an astronomer.
4. Catalina notices something is wrong with one of the telescopes and makes a decision to investigate.

Ⓐ 3, 2, 4

Ⓑ 2, 4, 1

Ⓒ 4, 1, 2

Ⓓ 3, 4, 1

Ⓔ 1, 2, 3

5. What do lines 5–8 of the poem **mainly** show?

Ⓐ the student's rude behavior

Ⓑ the student's bold attitude

Ⓒ the teacher's creativity

Ⓓ the teacher's surprise

6. Based on the poem, what is **most likely** suggested by the phrase "the cosmic sea" in line 16?

Ⓐ an area among the clouds

Ⓑ a place among the stars

Ⓒ an unexplored lake

Ⓓ a faraway ocean

7. Based on paragraphs 52 and 53 of the passage and lines 1–4 of the poem, which sentence **best** shows a similarity between the astronomer and the teacher?

Ⓐ They are both pleased with a young person's talents.

Ⓑ They are both amused by a young person's thoughts.

Ⓒ They are both supportive of a young person's dreams.

Ⓓ They are both sympathetic to a young person's challenges.

8. Which sentence **best** describes how Catalina is different from the student in the poem?

Ⓐ Catalina prefers to stay near her home, while the student is eager to leave.

Ⓑ Catalina wants to repair telescopes, while the student wants to build rockets.

Ⓒ Catalina is happiest by herself, while the student would like to live with friends.

Ⓓ Catalina wants to observe the night sky, while the student wants to travel in space.

DAY 10 Passage and Questions

DIRECTIONS
Read the article and answer the questions that follow.

Play, Play Again

by Ellen Braaf

Play puzzles scientists. Why do animals spend time and energy doing silly things that seem to have no purpose?

1 The struggle for survival in nature is deadly serious. What place is there for play, an activity that doesn't help animals eat, grow, or reproduce?

Leopard cubs play rough to develop the strength and skills they will need as adult hunters.

2 And play is risky. Animals can break bones, pull muscles, or get bitten or scratched. Why is play worth the risk? Many scientists believe it's essential for survival—as important as food or sleep. According to animal play expert Marc Beckoff at the University of Colorado, "play is serious business."

Getting Ready for the Adult World

3 Playing lets young animals try out different ways of doing things again and again in a safe environment, where a mistake won't be fatal. Most scientists believe that when animals play, they are practicing skills they'll need later in life. This is why different kinds of animals play in different ways. Young predators, such as wolves, lions, and bears, play by stalking, pouncing, biting, and shaking their heads from side to side. They're honing their skills for when they will run down, catch, and kill prey. When a wolf pup chases its own tail, bites it, and yanks it back and forth, the pup is rehearsing skills it will need one day as a hunter.

4 Prey animals, such as elk, deer, or antelope, play differently. They dash about like crazy, leaping wildly in the air—twisting, turning, twirling. According to biologist John Byers of the University of Idaho, they act like they have "flies in their brains." But these animals are rehearsing skills they'll need one day to escape predators and avoid becoming dinner.

5 During play, animals constantly monitor their behavior to keep play going. If one animal plays too roughly, the play ends. To keep things fun, they often reverse roles. A stronger or dominant animal will lie on its back, assuming a submissive position, while a weaker animal gets to play "boss."

Animals play in different ways. Wolf cubs play at chasing and attacking, while young mountain goats play at leaping and running away.

Taking Risks

6 Animals at play are also training for the unexpected. In play, animals learn about the world around them and their own physical limits. The need to test those limits, and experience unpredictable situations, could explain why animals sometimes seem to prefer play that is a bit dangerous.

7 A study of Siberian ibexes at Brookfield Zoo in Chicago showed that even though half their enclosure was flat and grassy—a perfect place to frolic in safety—the young goats chose to play most of the time on a steep, rocky area where they were much more likely to get hurt. Why did they place themselves in danger?

8 Beckoff believes that such play helps animals develop flexibility—in their minds as well as their muscles—so that they are better prepared to deal with unexpected or uncontrolled events. In the confusion of fleeing a sudden attack by a predator, an ibex may stumble or crash into another member of the herd. But if it has had lots of practice regaining its footing in play, its misstep is less likely to spell disaster.

Playing for Smarts

9 Research shows that smarter animals spend more time playing. Elephants play more than horses. Wolves play more than rabbits. And parrots play more than ducks or sparrows. Smarter animals also play in more creative and complex ways. Not surprisingly, humans and chimpanzees are among the most playful species.

10 Could play actually help the brain grow? Some scientists think so. They believe that play exercises the brain like lifting a weight exercises a muscle. They even call play "brain food." So play on! Your brain will thank you for it.

1 According to the article, how do animals stay safe when playing?

A. They follow the rules set by adults.

B. They keep the play low to the ground.

C. They avoid changing the games they play.

D. They quit the game when it gets out of control.

2 Based on the article and the photographs, what is the **main** reason predators and prey animals play differently from one another?

A. They live in different areas.

B. They have different running speeds.

C. They practice different types of skills.

D. They have different levels of intelligence.

3 Read the sentence from paragraph 10 in the box below.

> They believe that play exercises the brain like lifting a weight exercises a muscle.

What is the **most likely** reason the author includes the comparison?

A. to show that the brain can be flexed

B. to show that animals must rest after play

C. to show that strong animals are often smart

D. to show that the brain can improve through play

4 What is the **most likely** way the author prepared to write the article?

A. by taking care of animals in the wild

B. by studying some notes taken during a class

C. by gathering information from a variety of sources

D. by imagining what it would be like to be an animal

5 Which of the following words from paragraphs 3–5 are synonyms?

A. "safe" and "fatal"

B. "honing" and "rehearsing"

C. "escape" and "monitor"

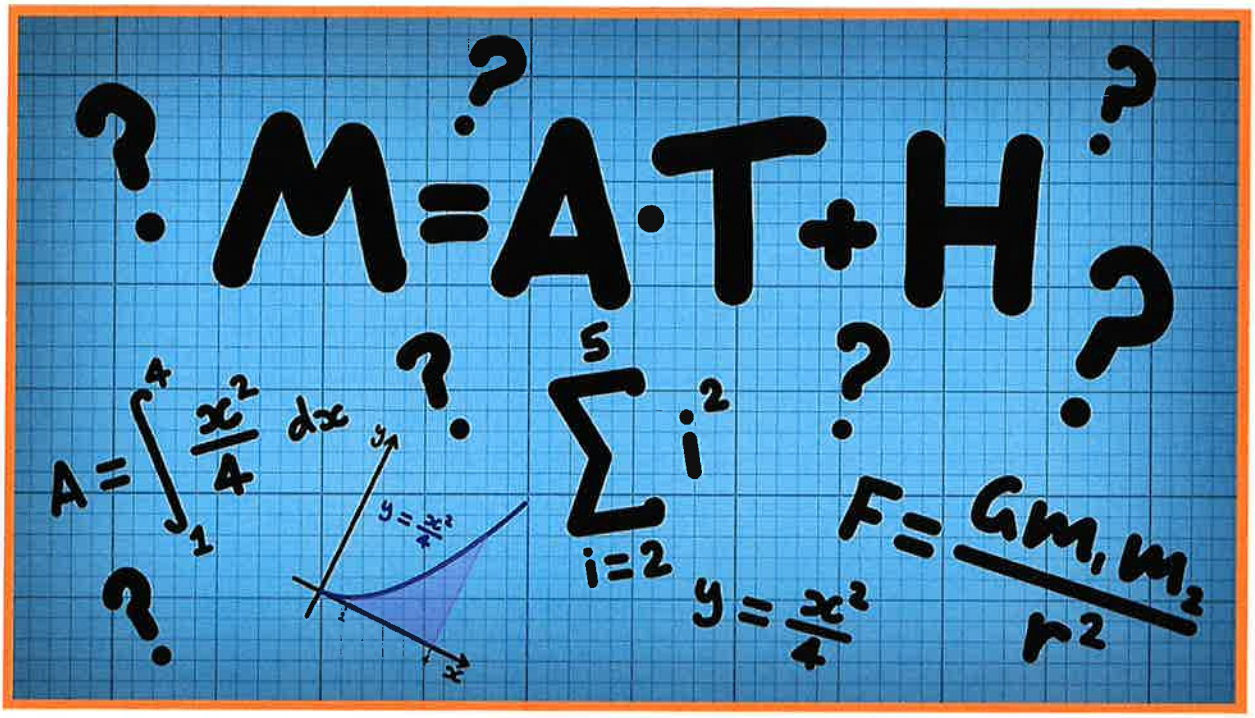
D. "dominant" and "submissive"

Question 6 is an open-response question.

- **Read the question carefully.**
- **Explain your answer.**
- **Add supporting details.**
- **Double-check your work.**

6 Based on the article, explain why Marc Beckoff claims that "play is serious business." Support your answer with important details from the article.

NOTE: You can use this page to plan your response, but please write your final answer in your answer sheet packet.



Directions:

Complete 2-3 lessons per day and be sure to show your work within the packet or on a blank sheet of paper.

Try your best!

i-Ready

Grade 5 Mathematics

Student At-Home Activity Packet

This At-Home Activity Packet includes 27 sets of practice problems that align to important math concepts your student has worked with so far this year.

We recommend that your student completes one page of practice problems each day.

Encourage your student to do the best they can with this content—the most important thing is that they continue developing their mathematical fluency and skills!

See the Grade 5 Math concepts covered in this packet!

Grade 5 Math concepts covered in this packet

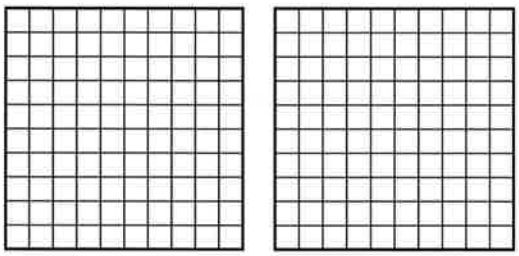
Grade 5 Math concepts covered in this packet (Continued)

Concept	Practice	Fluency and Skills Practice	
Understanding Addition and Subtraction with Fractions	19	Adding Fractions with Unlike Denominators	23
	20	Adding with Mixed Numbers	24
	21	Subtracting Fractions with Unlike Denominators	25
	22	Subtracting with Mixed Numbers	26
	23	Estimating in Word Problems with Fractions	28
Extending Multiplication and Division to Fractions	24	Fractions as Division	29
	25	Understanding of Multiplying by a Fraction	30
	26	Multiplying Unit Fractions to Find Area	31
	27	Tiling a Rectangle to Find Area	32

Understanding of Place Value

Name: _____

1 The decimal grid in each model represents 1 whole. Shade each model to show the decimal number below the model.



0.5 **0.05**

Complete the comparison statements.

0.05 is _____ of 0.5.

0.5 is _____ times the value of 0.05.

Complete the equations.

$0.5 \div$ _____ $= 0.05$

$0.05 \times$ _____ $= 0.5$

2 Draw a number line from 0 to 2. Then draw and label points at 2 and 0.2.

Use the number line to explain why 2 is 10 times the value of 0.2.

Complete the equations to show the relationship between 2 and 0.2.

$0.2 \times$ _____ $= 2$

$2 \div$ _____ $= 0.2$

3 Which type of model do you like best? Explain why.

Understanding Powers of 10

Name: _____

Multiply or divide.

1. $6 \div 10$ _____
2. $0.6 \div 10$ _____
3. $6 \div 10^2$ _____
4. $0.6 \div 10^2$ _____
5. $6 \div 10^3$ _____
6. $60 \div 10^3$ _____
7. 0.3×10 _____
8. 0.3×10^2 _____
9. 0.3×10^3 _____
10. 0.03×10^2 _____
11. 0.003×10^2 _____
12. 0.03×10^3 _____
13. $72 \div 10$ _____
14. 0.72×10^2 _____
15. $7{,}200 \div 10^3$ _____
16. $20 \div 10^2$ _____
17. 0.9×10^3 _____
18. 0.001×10^2 _____
19. $54 \div 10$ _____
20. $150 \div 10^3$ _____
21. 0.46×10^3 _____

22. What strategies did you use to solve the problems? Explain.

Reading a Decimal in Word Form

Name: _____

What is the word form of each decimal?

1. 0.2

_____

2. 0.02

_____

3. 0.002

_____

4. 0.12

_____

5. 0.012

_____

6. 0.102

_____

7. 1.002

_____

8. 9.4

_____

9. 90.04

_____

10. 0.94

_____

11. 500.2

_____

12. 8.008

_____

13. 700.06

_____

14. 6.335

_____

15. 3,000.001

_____

16. What strategies did you use to help you read the decimals? Explain.

Writing a Decimal in Standard Form

Name: _____

What decimal represents each number?

1. one and six tenths

_____

2. eight and eleven hundredths

_____

3. $6 \times 1 + 5 \times \frac{1}{10}$

_____

4. thirteen and thirteen thousandths

_____

5. $2 \times 10 + 7 \times \frac{1}{10} + 3 \times \frac{1}{100}$

_____

6. $4 \times 1 + 1 \times \frac{1}{100} + 9 \times \frac{1}{1{,}000}$

_____

7. five hundred twelve thousandths

_____

8. $8 \times 100 + 2 \times \frac{1}{10} + 8 \times \frac{1}{1{,}000}$

_____

9. $2 \times 1 + 4 \times \frac{1}{100}$

_____

10. forty-two and forty-one hundredths

_____

11. $7 \times 100 + 2 \times 10 + 3 \times 1 + 6 \times \frac{1}{10}$

_____

12. twelve and sixty-eight thousandths

_____

13. $3 \times 1{,}000 + 6 \times 100 + 3 \times 10 + 7 \times \frac{1}{10} + 2 \times \frac{1}{100} + 8 \times \frac{1}{1{,}000}$

_____

14. nine hundred fifty-six and four hundred twenty-seven thousandths

_____

15. How was writing decimals for numbers in word form different from numbers in expanded form?

Comparing Decimals

Name: _____

Write the symbol <, =, or > in each comparison statement.

1. 0.02 _____ 0.002
2. 0.05 _____ 0.5
3. 0.74 _____ 0.84
4. 0.74 _____ 0.084
5. 1.2 _____ 1.25
6. 5.130 _____ 5.13
7. 3.201 _____ 3.099
8. 0.159 _____ 1.590
9. 8.269 _____ 8.268
10. 4.60 _____ 4.060
11. 302.026 _____ 300.226
12. 0.237 _____ 0.223
13. 3.033 _____ 3.303
14. 9.074 _____ 9.47
15. 6.129 _____ 6.19
16. 567.45 _____ 564.75
17. 78.967 _____ 78.957
18. 5.346 _____ 5.4
19. 12.112 _____ 12.121
20. 26.2 _____ 26.200
21. 100.32 _____ 100.232

22. What strategies did you use to solve the problems? Explain.

Rounding Decimals

Name: _____

Round each decimal to the nearest tenth.

1. 0.32 _____
2. 3.87 _____
3. 0.709 _____
4. 12.75 _____
5. 12.745 _____
6. 645.059 _____

Round each decimal to the nearest hundredth.

7. 1.079 _____
8. 0.854 _____
9. 0.709 _____
10. 12.745 _____
11. 645.059 _____
12. 50.501 _____

Round each decimal to the nearest whole number.

13. 1.47 _____
14. 12.5 _____
15. 200.051 _____

16. Write two different decimals that are the same value when rounded to the nearest tenth. Explain why the rounded values are the same.

17. Round 1.299 to the nearest tenth and to the nearest hundredth. Explain why the rounded values are equivalent.

Multiplying Multi-Digit Whole Numbers

Name: _____

Estimate. Circle all the problems with products between 3,000 and 9,000. Then find the exact products of only the problems you circled.

1. 132 × 34

2. 247 × 15

3. 145 × 23

4. 308 × 12

5. 158 × 41

6. 364 × 32

7. 400 × 29

8. 254 × 17

9. 187 × 42

10. 216 × 12

11. 323 × 18

12. 194 × 26

13. 317 × 14

14. 385 × 31

15. 285 × 27

16. What strategies did you use to solve the problems? Explain.

Multiplying with the Standard Algorithm

Name: _____

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

1. 580 × 30

2. 3,104 × 18

3. 1,482 × 38

4. 1,085 × 17

5. 1,236 × 55

6. 1,625 × 18

7. 2,105 × 13

8. 1,788 × 15

9. 2,500 × 19

10. 648 × 32

11. 2,409 × 23

12. 306 × 62

13. 2,417 × 24

14. 650 × 35

15. 962 × 44

Answers

20,736	17,400	27,365	47,500	55,872
18,972	18,445	26,820	67,980	56,316
22,750	29,250	55,407	42,328	58,008

Using Estimation and Area Models to Divide

Name: _____

Check each answer by multiplying the divisor by the quotient. If the answer is incorrect, cross out the answer and write the correct answer.

Division Problems	Student Answers
516 ÷ 12	~~48~~ 43 Check: 12 × 48 = 576
837 ÷ 31	*27*
351 ÷ 13	*57*
918 ÷ 54	*22*
896 ÷ 32	*23*
1,482 ÷ 78	*14*
1,012 ÷ 11	*82*
1,344 ÷ 56	*24*

1 Explain how you could know that the answers to two of the problems are incorrect without multiplying.

Using Area Models and Partial Quotients to Divide

Name: _____

Estimate. Circle all the problems that will have quotients greater than 30. Then find the exact quotients of only the problems you circled.

1. 540 ÷ 12 _____
2. 798 ÷ 38 _____
3. 429 ÷ 11 _____
4. 931 ÷ 19 _____
5. 925 ÷ 25 _____
6. 390 ÷ 15 _____
7. 1,071 ÷ 51 _____
8. 1,326 ÷ 13 _____
9. 1,856 ÷ 32 _____
10. 2,952 ÷ 72 _____
11. 1,869 ÷ 89 _____
12. 1,798 ÷ 29 _____

13. Select a problem you did not circle. Describe two different ways you could use estimation to tell the quotient is not greater than 30.

Adding Decimals

Name: _____

Circle all the problems with sums less than 5.
Then find the exact sums of only the problems you circled.

1. 0.24 + 4.25 _____
2. 4.8 + 0.16 _____
3. 2.31 + 2.075 _____
4. 2.31 + 2.7 _____
5. 0.909 + 4.09 _____
6. 3.99 + 1.109 _____
7. 2.675 + 2.325 _____
8. 3.775 + 0.225 _____
9. 2.06 + 2.933 _____
10. 2.6 + 2.933 _____
11. 1.809 + 3.091 _____
12. 3.01 + 1.991 _____
13. 1.83 + 3.1 + 0.1 _____
14. 0.012 + 3.79 + 1.101 _____
15. 2.6 + 2.04 + 0.099 _____

16. What strategies did you use to solve the problems?

Subtracting Decimals to Hundredths

Name: _____

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

1. 7.5 − 1.2 _____
2. 10.75 − 4.13 _____
3. 20.2 − 14.8 _____
4. 6.12 − 0.7 _____
5. 41.5 − 33.25 _____
6. 15.9 − 8.92 _____
7. 105.53 − 99.28 _____
8. 9.46 − 3.68 _____
9. 74 − 65.9 _____
10. 5.05 − 0.56 _____
11. 31.27 − 23.67 _____
12. 256.4 − 248.38 _____
13. 12 − 4.39 _____
14. 1,280.01 − 1,272.77 _____
15. 500.2 − 494.94 _____

Answers

6.25	5.26	6.62	8.1	7.6
4.49	8.25	7.61	6.98	5.42
7.24	5.4	8.02	5.78	6.3

Using Estimation with Decimals

Name: _____

Solve the problems.

1. Lori needs at least 12 liters of water to fill a water cooler. She has a container with 4.55 liters of water, a container with 3.25 liters of water, and a container with 4.85 liters of water. Does she have enough water? Use estimation only to decide. Explain why you are confident in your estimate.

2. Nia wants the total weight of her luggage to be no more than 50 kilograms. She has three suitcases that weigh 15.8 kilograms, 17.42 kilograms, and 16.28 kilograms. Is the total weight within the limit? Use only estimation to decide. Explain how you know your estimate gives you the correct answer.

3. Omar measures one machine part with length 4.392 centimeters and another part with length 6.82 centimeters. What is the difference in length? Use estimation to check your answer for reasonableness.

Name: _____

4 Kyle wants to buy a hat for $5.75, a T-shirt for $7.65, and a keychain for $3.15. He has $16. Does he have enough money? Use estimation only to decide. Explain why you are confident in your estimate.

5 For his hiking club, Ricardo is making a container of trail mix with 3.5 kilograms of nuts. He has 1.78 kilograms of peanuts and 0.625 kilograms of almonds. The rest of the nuts will be cashews. How many kilograms of cashews does he need? Use estimation to check your answer for reasonableness.

6 Suppose you want to be sure that the total cost of three items does not go over a certain amount. How can you use estimation only to solve the problem?

Multiplying a Decimal by a Whole Number

Name: _____

Multiply.

1. 3×0.2 _____
2. 3×0.03 _____
3. 3×0.23 _____
4. 4×0.08 _____
5. 4×1.1 _____
6. 4×1.18 _____
7. 6×0.07 _____
8. 6×1.1 _____
9. 6×1.17 _____
10. 21×0.05 _____
11. 21×1.05 _____
12. 21×2.05 _____
13. 9×3.25 _____
14. 5×0.87 _____
15. 11×3.68 _____
16. 16×6.4 _____
17. 7×6.89 _____
18. 32×5.12 _____

19. How did you know where to put the decimal point in problem 6?

Multiplying Decimals Less Than 1

Name: _____

Multiply.

1. 0.5×3 _____
2. 0.5×0.3 _____
3. 0.5×0.03 _____
4. 6×0.2 _____
5. 0.6×0.2 _____
6. 0.06×0.2 _____
7. 0.8×0.1 _____
8. 0.8×0.2 _____
9. 0.8×0.3 _____
10. 0.4×0.02 _____
11. 0.4×0.04 _____
12. 0.4×0.12 _____
13. 0.3×0.4 _____
14. 0.6×0.4 _____
15. 0.6×0.8 _____
16. 0.01×0.5 _____
17. 0.05×0.5 _____
18. 0.25×0.5 _____

19. Describe a pattern you noticed when you were completing the problem set.

Multiplying with Decimals Greater Than 1

Name: _____

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

1. 0.3×1.2 _____
2. 1.2×0.4 _____
3. 1.2×1.1 _____
4. 0.3×12.1 _____
5. 4.4×1.1 _____
6. 0.02×1.8 _____
7. 7.1×5.1 _____
8. 6.6×0.02 _____
9. 2.4×4.8 _____
10. 9.2×5.24 _____
11. 1.2×1.24 _____
12. 8.4×6.2 _____
13. 4.2×3.21 _____
14. 4.25×8.5 _____
15. 1.9×2.78 _____

Answers

0.132	1.32	13.482	1.488	48.208
4.84	0.48	52.08	11.52	5.282
36.125	0.036	0.36	3.63	36.21

Dividing a Decimal by a Whole Number

Name: _____

Multiply to check if the student's answer is reasonable. If not, cross out the answer and write the correct quotient.

Division Problems	Student Answers
0.88 ÷ 11	~~0.8~~ 0.08 Product: 11 × 0.8 = 8.8
5.6 ÷ 8	*0.07*
7.2 ÷ 9	*0.8*
25.35 ÷ 5	*5.7*
21.7 ÷ 7	*3.1*
14.4 ÷ 12	*0.12*
96.16 ÷ 8	*12.2*
60.18 ÷ 2	*30.9*

1 Can an answer be incorrect even if it looks reasonable? Explain.

Dividing by Hundredths

Name: _____

Divide.

1. 1 ÷ 0.25 _____
2. 4 ÷ 0.25 _____
3. 3.75 ÷ 0.25 _____
4. 6.5 ÷ 0.25 _____
5. 1.8 ÷ 9 _____
6. 1.8 ÷ 0.9 _____
7. 1.8 ÷ 0.09 _____
8. 225 ÷ 75 _____
9. 22.5 ÷ 7.5 _____
10. 2.25 ÷ 0.75 _____
11. 0.36 ÷ 0.06 _____
12. 6.36 ÷ 0.06 _____
13. 36.36 ÷ 0.06 _____
14. 9 ÷ 2.25 _____
15. 13.5 ÷ 2.25 _____

16. Describe a pattern you noticed when you were completing the problem set.

Adding Fractions with Unlike Denominators

Name: _____

Add.

1. $\frac{1}{2} + \frac{1}{4}$ _____

2. $\frac{1}{2} + \frac{3}{8}$ _____

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

4. $\frac{1}{3} + \frac{1}{4}$ _____

5. $\frac{5}{6} + \frac{1}{12}$ _____

6. $\frac{1}{3} + \frac{2}{5}$ _____

7. $\frac{5}{6} + \frac{2}{3}$ _____

8. $\frac{3}{4} + \frac{5}{6}$ _____

9. $\frac{7}{9} + \frac{1}{6}$ _____

10. $\frac{7}{8} + \frac{2}{3}$ _____

11. $\frac{3}{2} + \frac{3}{5}$ _____

12. $\frac{9}{8} + \frac{5}{6}$ _____

13. What is a different common denominator you could use in problem 2? Describe how you would add the fractions using this different common denominator. Is the result equivalent to the sum found in problem 2?

Adding with Mixed Numbers

Name: _____

Add.

1 $4\frac{7}{8} + \frac{1}{8}$

_____

2 $4\frac{7}{8} + \frac{1}{4}$

_____

3 $4\frac{7}{8} + \frac{1}{2}$

_____

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

_____

5 $2\frac{3}{4} + \frac{2}{3}$

_____

6 $2\frac{3}{4} + \frac{5}{6}$

_____

7 $1\frac{2}{5} + 1\frac{1}{2}$

_____

8 $2\frac{4}{5} + 3\frac{1}{2}$

_____

9 $3\frac{2}{3} + 3\frac{2}{5}$

_____

10 $4\frac{5}{8} + 2\frac{2}{3}$

_____

11 $5\frac{3}{4} + 2\frac{3}{5}$

_____

12 $3\frac{5}{6} + 2\frac{7}{8}$

_____

13 What strategy did you use to solve problem 3? Describe each step.

Subtracting Fractions with Unlike Denominators

Name: _____

Subtract.

1. $\frac{1}{2} - \frac{1}{4}$ _____

2. $\frac{1}{2} - \frac{3}{8}$ _____

3. $\frac{1}{2} - \frac{1}{3}$ _____

4. $\frac{1}{3} - \frac{1}{4}$ _____

5. $\frac{5}{6} - \frac{5}{12}$ _____

6. $\frac{3}{4} - \frac{1}{6}$ _____

7. $\frac{7}{8} - \frac{3}{4}$ _____

8. $\frac{1}{2} - \frac{2}{5}$ _____

9. $\frac{3}{4} - \frac{3}{5}$ _____

10. $\frac{2}{3} - \frac{3}{5}$ _____

11. $\frac{5}{6} - \frac{3}{8}$ _____

12. $\frac{7}{8} - \frac{2}{3}$ _____

13. How could you check your work in problem 4? Describe each step.

Subtracting with Mixed Numbers

Name: _____

Subtract.

1. $2\frac{1}{8} - \frac{1}{4}$

_____

2. $2\frac{1}{8} - \frac{1}{2}$

_____

3. $2\frac{1}{8} - \frac{3}{4}$

_____

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

_____

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

_____

6. $3\frac{1}{6} - 1\frac{3}{4}$

_____

7. $7\frac{2}{5} - 3\frac{1}{2}$

_____

8. $5\frac{3}{8} - 4\frac{1}{6}$

_____

9. $8\frac{2}{3} - 3\frac{4}{5}$

_____

10. $6\frac{2}{5} - 3\frac{3}{4}$

_____

11. $9\frac{3}{8} - 3\frac{2}{3}$

_____

12. $14\frac{1}{8} - 9\frac{5}{6}$

_____

13. What pattern did you notice in problems 1 through 3? Explain how this helped you subtract.

Estimating in Word Problems with Fractions

Name: _____

Solve the problems. Estimate to tell if your solution is reasonable. Show your work.

1 Jim mails one package that weighs $\frac{3}{8}$ pound and another that weighs $\frac{2}{3}$ pound. What is the total weight of both packages?

2 Rosa needs $5\frac{1}{4}$ yards of ribbon for a crafts project. She already has $2\frac{7}{8}$ yards of ribbon. How many more yards of ribbon does she need to buy?

3 To make fruit punch, Tyrone needs $3\frac{3}{8}$ quarts of orange juice and $3\frac{3}{4}$ quarts of cranberry juice. How many quarts of juice does he need in all?

Estimating in Word Problems with Fractions *continued*

Name: _____

4 Lin spent $\frac{5}{6}$ hour on math homework and $1\frac{3}{4}$ hours on science homework. How many hours in all did she spend on homework for both subjects?

5 Sandra rode her bike $9\frac{1}{3}$ miles on Monday and $6\frac{4}{5}$ miles on Tuesday. How many more miles did she ride on Monday than on Tuesday?

6 How can you make a high estimate for the sum of two fractions in a word problem?

Fractions as Division

Name: _____

Solve each problem.

1. Roger has 4 gallons of orange juice. He puts the same amount of juice into each of 5 pitchers. How many gallons of orange juice are in 1 pitcher?

2. Marta has 8 cubic feet of potting soil and 3 flower pots. She wants to put the same amount of soil in each pot. How many cubic feet of soil will she put in each flower pot?

3. Greg made 27 ounces of potato salad to serve to 10 guests at a picnic. If each serving is the same size, how much potato salad will each guest receive?

4. Chandra spends 15 minutes doing 4 math problems. She spends the same amount of time on each problem. How many minutes does she spend on each problem?

5. Taylor has 5 yards of gold ribbon to decorate 8 costumes for the school play. She plans to use the same amount of ribbon for each costume. How many yards of ribbon will she use for each costume?

6. DeShawn is using 7 yards of wire fencing to make a play area for his puppy. He wants to cut the fencing into 6 pieces of equal length. How long will each piece of fencing be?

7. What is a division word problem that can be represented by $\frac{4}{3}$?

Understanding of Multiplying by a Fraction

Name: _____

1 Draw a number line model to represent each multiplication problem. Then solve the problem.

$\frac{2}{3} \times \frac{1}{2}$

$\frac{2}{3} \times \frac{1}{2} =$

$\frac{5}{6} \times \frac{3}{4}$

$\frac{5}{6} \times \frac{3}{4} =$

2 Draw an area model to represent each multiplication problem. Then solve the problem.

$\frac{4}{5} \times \frac{2}{3}$

$\frac{4}{5} \times \frac{2}{3} =$

$\frac{3}{4} \times \frac{1}{6}$

$\frac{3}{4} \times \frac{1}{6} =$

3 What type of model do you like best? Explain why.

Multiplying Unit Fractions to Find Area

Name: _____

Each multiplication problem is used to find the area of a rectangle. Write the missing digits in the boxes to make each multiplication problem true.

1 length: $\frac{1}{2}$ unit

width: $\frac{1}{8}$ unit

$\frac{1}{2} \times \frac{1}{8} = \frac{\square}{\square}$ square unit

2 length: $\frac{1}{3}$ unit

width: $\frac{1}{4}$ unit

$\frac{1}{3} \times \frac{1}{4} = \frac{\square}{\square}$ square unit

3 length: $\frac{1}{2}$ unit

width: $\frac{1}{3}$ unit

$\frac{1}{2} \times \frac{1}{3} = \frac{\square}{\square}$ square unit

4 length: $\frac{1}{2}$ unit

width: $\frac{1}{5}$ unit

$\frac{1}{2} \times \frac{1}{5} = \frac{\square}{\square}$ square unit

5 length: $\frac{1}{4}$ unit

width: $\frac{1}{4}$ unit

$\frac{1}{4} \times \frac{1}{4} = \frac{\square}{\square}$

6 length: $\frac{1}{3}$ unit

width: $\frac{1}{8}$ unit

$\frac{1}{3} \times \frac{1}{8} = \frac{\square}{\square}$

7 length: $\frac{1}{2}$ unit

width: $\frac{1}{7}$ unit

$\frac{1}{2} \times \frac{1}{7} = \frac{\square}{\square}$

8 length: $\frac{1}{3}$ unit

width: $\frac{1}{10}$ unit

$\frac{1}{3} \times \frac{1}{10} = \frac{\square}{\square}$ square unit

9 length: $\frac{1}{5}$ unit

width: $\frac{1}{6}$ unit

$\frac{1}{6} \times \frac{1}{5} = \frac{\square}{\square}$ square unit

10 Write missing digits in the boxes to make two different multiplication problems that are both true.

$\frac{1}{\square} \times \frac{1}{4} = \frac{1}{\square}$

$\frac{1}{\square} \times \frac{1}{4} = \frac{1}{\square}$

Tiling a Rectangle to Find Area

Name: _____

Each multiplication problem is used to find the area of a rectangle. Write each product.

1 length: $\frac{1}{2}$ unit
width: $\frac{1}{3}$ unit
$\frac{1}{2} \times \frac{1}{3}$
_____ square unit

2 length: $\frac{2}{3}$ unit
width: $\frac{1}{2}$ unit
$\frac{2}{3} \times \frac{1}{2}$
_____ square unit

3 length: $\frac{3}{2}$ unit
width: $\frac{2}{3}$ unit
$\frac{3}{2} \times \frac{2}{3}$
_____ square unit

4 length: $\frac{1}{3}$ unit
width: $\frac{1}{4}$ unit
$\frac{1}{3} \times \frac{1}{4}$
_____ square unit

5 length: $\frac{3}{4}$ unit
width: $\frac{1}{3}$ unit
$\frac{3}{4} \times \frac{1}{3}$
_____ square unit

6 length: $\frac{5}{3}$ unit
width: $\frac{3}{4}$ unit
$\frac{5}{3} \times \frac{3}{4}$
_____ square unit

7 length: $\frac{3}{5}$ unit
width: $\frac{1}{2}$ unit
$\frac{3}{5} \times \frac{1}{2}$
_____ square unit

8 length: $\frac{3}{2}$ unit
width: $\frac{3}{5}$ unit
$\frac{3}{2} \times \frac{3}{5}$
_____ square unit

9 length: $\frac{3}{2}$ unit
width: $\frac{6}{5}$ unit
$\frac{3}{2} \times \frac{6}{5}$
_____ square unit

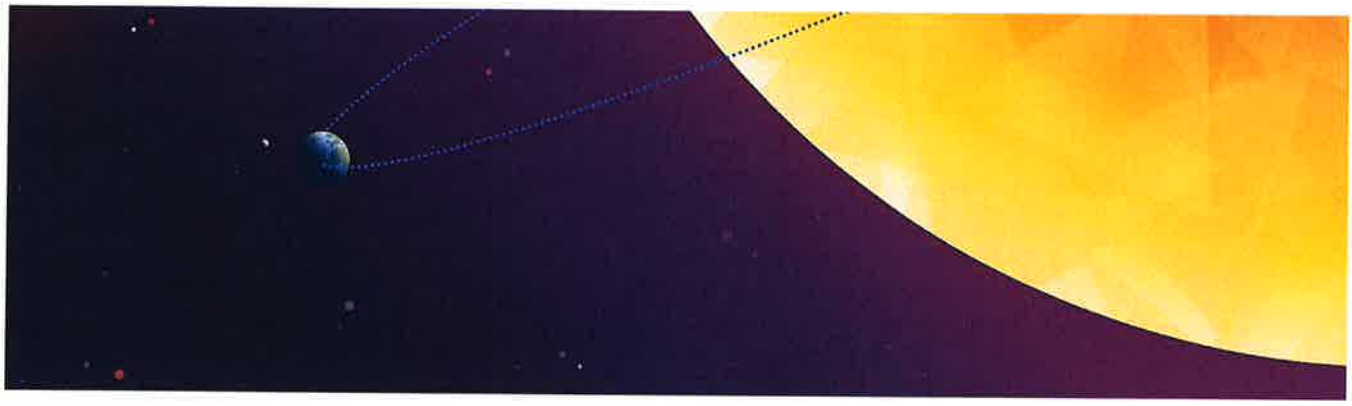
10 Describe how you could modify one tiling diagram to solve problems 1 through 3.

Directions:

Complete 1 lesson per day and be sure to use evidence to explain all of your answers.

Try your best!

AmplifyScience



Patterns of Earth and Sky:

Analyzing Stars on Ancient Artifacts

Copymaster Compilation

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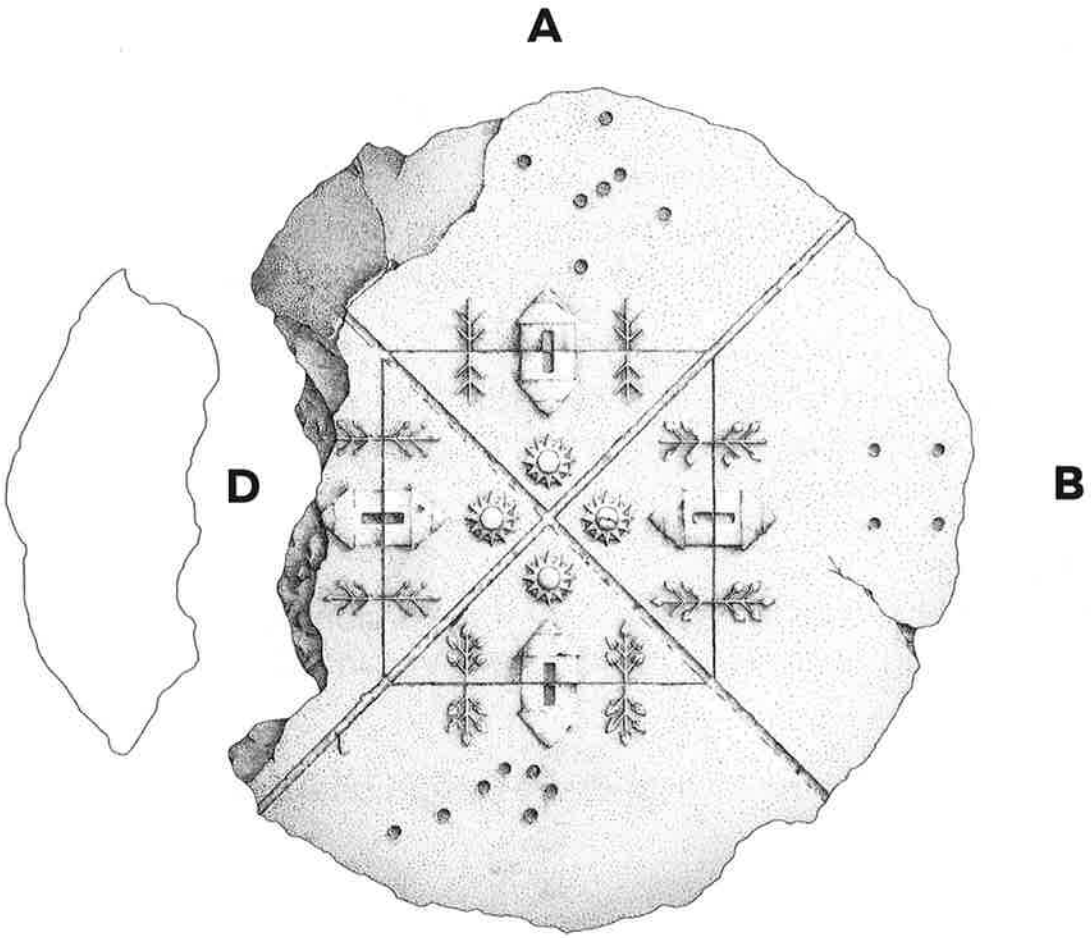
AMP.NA18

Table of Contents

Name: _____ Date: _____

Pre-Unit Writing: Explaining the Discovered Artifact

Scientists discovered this while digging for ancient artifacts, but the artifact is missing part of section D.



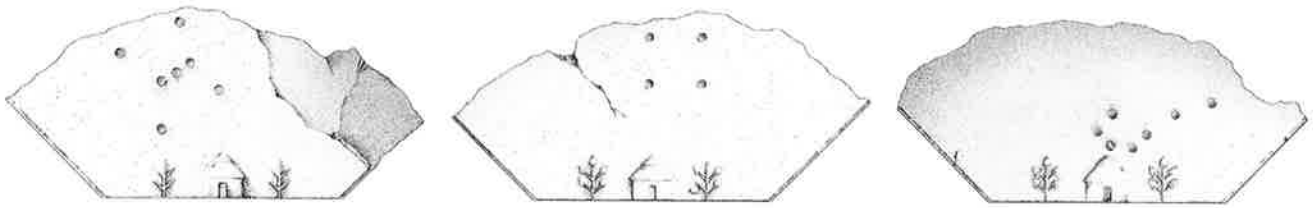
On the following pages, answer the questions as completely as you can.

Name: _____ Date: _____

Pre-Unit Writing: Explaining the Discovered Artifact (continued)

Part 1

Each section of the artifact shows different stars in the sky.



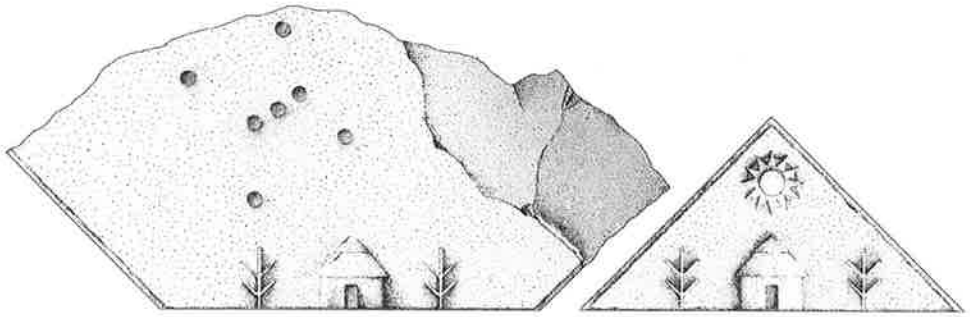
A B C

Question: Why do you think there are different stars in each nighttime section of the artifact?

Name: _____ Date: _____

Pre-Unit Writing: Explaining the Discovered Artifact (continued)

Part 2



A (nighttime) **A (daytime)**

1. Why does the nighttime section of the artifact show other stars, but not the sun?

_____

_____

_____

2. Why does the daytime section of the artifact show only the sun, but not other stars?

_____

_____

_____

_____

3. On Earth, why does the pattern of daytime and nighttime repeat every day?

_____

_____

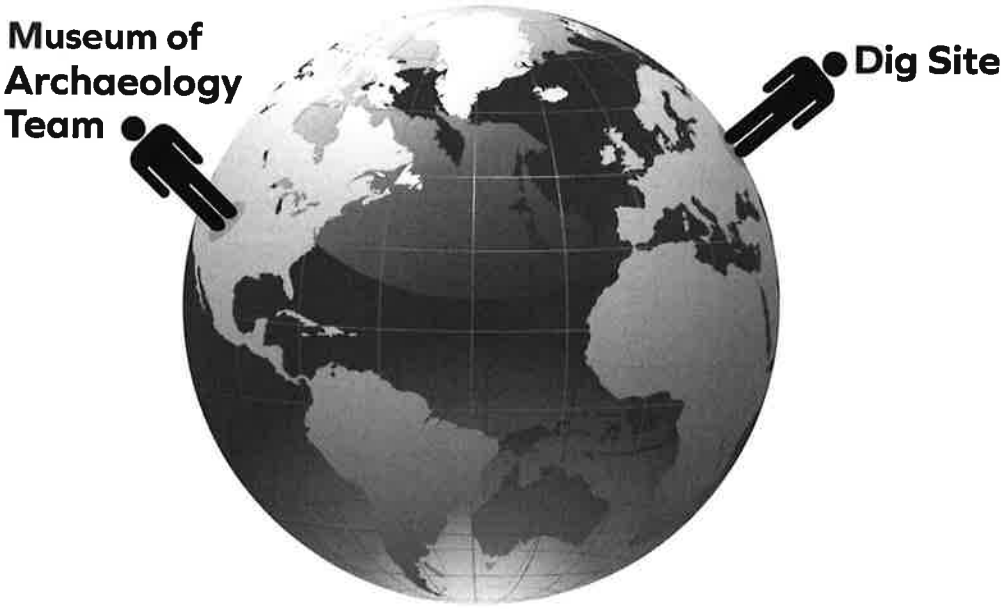
_____

Name: _____ Date: _____

Pre-Unit Writing: Explaining the Discovered Artifact (continued)

Part 3

This image shows a person standing near the Museum of Archaeology and another person standing near the dig site where the artifact was found.



1. Draw an arrow next to each person so it shows which direction is *up* for that person.

2. Why doesn't the person at the dig site fall off Earth?

_____

_____

_____

Name: _____ Date: _____

Chapter 1 Home Investigation: Observing the Stars

A. Interview someone at home about their experiences observing the stars or other objects in space. Record the person's name.

B. List three of your own interview questions on the lines below. **Ideas:** Which stars or other objects in space has the person has seen? Do they have a special memory connected with seeing the stars? Does the person have a favorite star?

C. Interview the person and record their responses.

Name of person interviewed: _____

1. _____

_____

Response: _____

_____

2. _____

_____

Response: _____

_____

3. _____

_____

Response: _____

_____

4. What do you still wonder about the stars?

Response: _____

_____

Name: _____ Date: _____

Scientific Explanation: Stars in the Daytime

1. Write a scientific explanation that answers the question, Why don't we see a lot of stars in the daytime?
2. Make a drawing if it helps you explain your ideas.

We don't see a lot of stars during the daytime because _____

_____

This is because _____

_____

_____

This means that _____

_____

_____

Name: _____ Date: _____

Investigating How Shadows Change

1. Predict how your shadow will change throughout the day in Part 1.
2. Go outside to measure the length and direction of your shadow at different times using a meter stick and record your data in Part 2.
   - Create a rough sketch in the Part 2 box to show where you will stand to measure your shadow.
   - Record your measurements and direction descriptions in the Part 2 table.
3. Discuss the reflection questions in Part 3 with a partner, then record your ideas.

Part 1. Predict

Describe how you think your shadow changes over the course of a day. Why do you think this happens?

_____

_____

_____.

Part 2. Measure and Record

- Choose a location outside where you will stand each time you measure your shadow. Draw a rough sketch of your location in the box on the next page, including a few landmarks in different directions (for example, a school building, a play structure, a tree). Mark the location so that you can return to it each time you measure your shadow.
- Each time you go outside to measure your shadow, record the date and time. The times should be about the same each day. Have a partner help you measure the length of the shadow and record this in the table. Write a few notes about the shadow's direction (for example, toward the tree, away from the tree).

Name: _____ Date: _____

Investigating How Shadows Change (continued)

Date	Time	Shadow length	Shadow direction

Name: _____ Date: _____

Investigating How Shadows Change (continued)

Part 3. Reflect

1. How does the length of your shadow change over the course of a day?

_____

_____

_____.

2. How does the direction of your shadow change over the course of a day?

_____

_____

_____.

3. Why do shadows change length and direction over the course of a day? Use evidence you collected to support your explanation.

_____

_____

_____

_____

_____.

Name: _____ Date: _____

Chapter 2 Home Investigation: Earth and Stars Quiz

A. Using what you have learned so far about Earth and the stars, create a quiz by recording five statements. Some statements should be **true**, and some statements should be **false**. The first statement is done for you.

B. Give the quiz to someone at home. Have that person read each statement and indicate whether they think it is true or false.

C. Talk about the answers with the person who took the quiz. You might teach them something!

1. The sun is the closest star to Earth.	❒ true	❒ false
2.	❒ true	❒ false
3.	❒ true	❒ false
4.	❒ true	❒ false
5.	❒ true	❒ false

Name: _____ Date: _____

Scientific Explanation: Why the Sun Is Up Sometimes, but Not Other Times

1. Write a scientific explanation that answers the question, Why is the sun up sometimes, but not other times?
2. Make a drawing if it helps you explain your ideas.

We observe the sun up sometimes, but not other times because _____

_____

When the sun is up, we are _____

_____

When that happens, we see _____

_____

When the sun is **not** up, we are _____

_____

When that happens, we see _____

_____

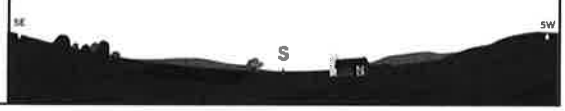
Name: _____ Date: _____

Investigating the Sun Throughout the Year

1. In the Sim, choose the observation year and record it on the line below.
2. Choose a starting date and record it in the first row of the data table.
3. Choose the dates of the remaining observations and record them in the table.
4. In the Sim, change the date to the starting date and set the time to NOON.
5. In the data table, draw the sun's position from the Sim in the Sky View box.
6. Repeat Steps 4 and 5 for all remaining dates in the table.
7. For all but your first observation, decide if the sun is in the same position as the previous month. If not, explain how it has changed.
8. Answer the reflection question after the table.

Year:

_____

_____ (starting date) time: **noon**	Sky View + 〈 〉 

Name: ______________________ Date: ______________

Investigating the Sun Throughout the Year (continued)

____

(date)

time: **noon**

Is the sun in the same position as it was in the previous month?

☐ yes ☐ no

If not, how has it changed?

Sky View +

‹ ›

____

(date)

time: **noon**

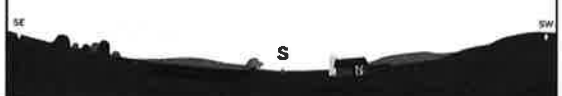
Is the sun in the same position as it was in the previous month?

☐ yes ☐ no

If not, how has it changed?

Sky View +

‹ ›



____

(date)

time: **noon**

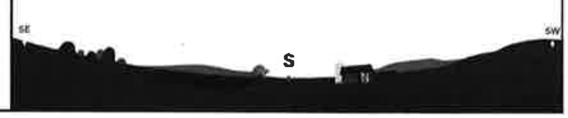
Is the sun in the same position as it was in the previous month?

☐ yes ☐ no

If not, how has it changed?

Sky View +

‹ ›



Name: ______________________________ Date: ______________

Investigating the Sun Throughout the Year (continued)

____
(date)

time: **noon**

Is the sun in the same position as it was in the previous month?

☐ yes ☐ no

If not, how has it changed?

Sky View +

____
(date)

time: **noon**

Is the sun in the same position as it was in the previous month?

☐ yes ☐ no

If not, how has it changed?

Sky View +

____
(date)

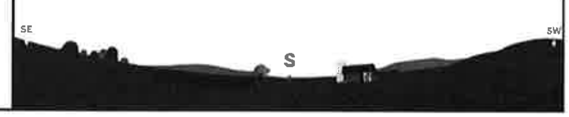
time: **noon**

Is the sun in the same position as it was in the previous month?

☐ yes ☐ no

If not, how has it changed?

Sky View +



Name: ____________________ Date: __________

Investigating the Sun Throughout the Year (continued)

____

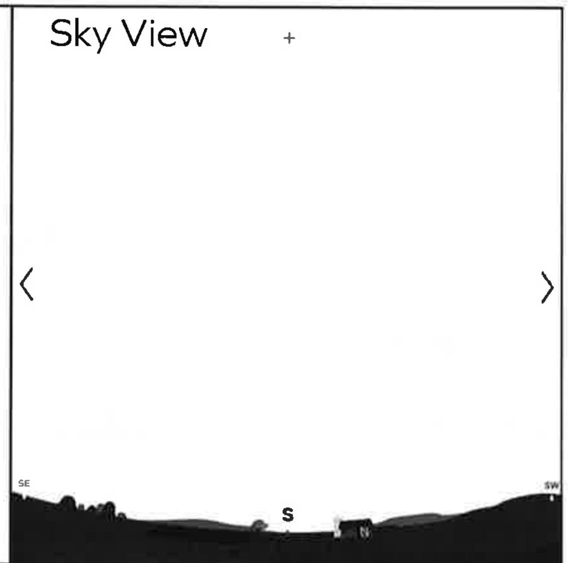
(date)

time: **noon**

Is the sun in the same position as it was in the previous month?

☐ yes ☐ no

If not, how has it changed?



____

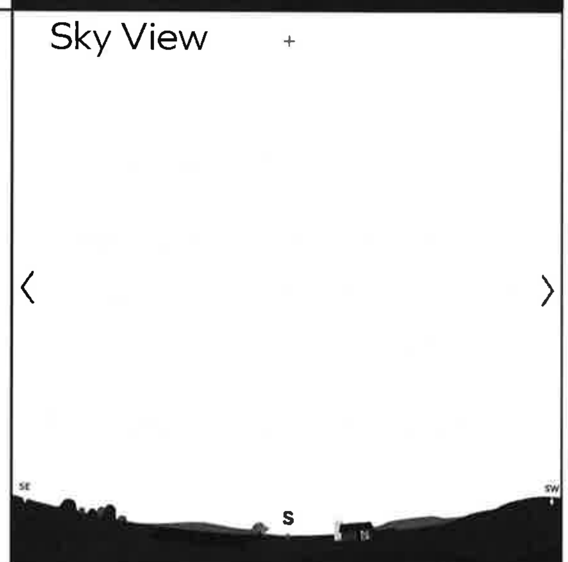
(date)

time: **noon**

Is the sun in the same position as it was in the previous month?

☐ yes ☐ no

If not, how has it changed?



____

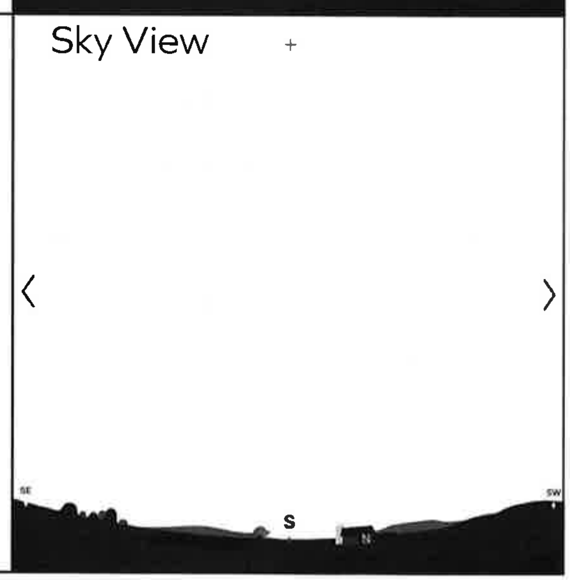
(date)

time: **noon**

Is the sun in the same position as it was in the previous month?

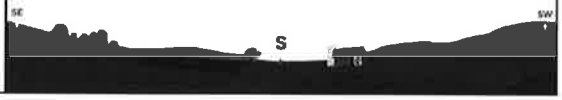
☐ yes ☐ no

If not, how has it changed?



Name: _____ Date: _____

Investigating the Sun Throughout the Year (continued)

_____ (date) time: **noon** Is the sun in the same position as it was in the previous month? ☐ yes ☐ no If not, how has it changed?	Sky View 
_____ (date) time: **noon** Is the sun in the same position as it was in the previous month? ☐ yes ☐ no If not, how has it changed?	Sky View 

Does the sun's position change throughout the year? If so, how?

_____

_____

_____.

Name: _____ Date: _____

Chapter 3 Home Investigation: Planning and Conducting a Systematic Investigation

1. With an adult, make a plan to systematically observe which stars are visible in an area of the sky over a period of two weeks.
2. Fill in the dates and times when you will observe the sky (first column).
3. Go outside and choose an area of the sky that you would like to investigate. Choose an area that is near a reference point (a telephone pole, a building, or a tree), so you can be sure you are looking at the same area every time. Draw the stars you see and the reference point for this and every observation that follows (second column).
4. Follow your plan. You may wish to look at a star map or a digital device so you can learn more about the stars you are investigating.

Date and Time	Observation: Stars and Reference Point
_____ date	
_____ time	
_____ date	
_____ time	

Name: _____ Date: _____

Chapter 3 Home Investigation: Planning and Conducting a Systematic Investigation (continued)

Date and Time	Observation: Stars and Reference Point
_____ date	
_____ time	
_____ date	
_____ time	
_____ date	
_____ time	
_____ date	
_____ time	

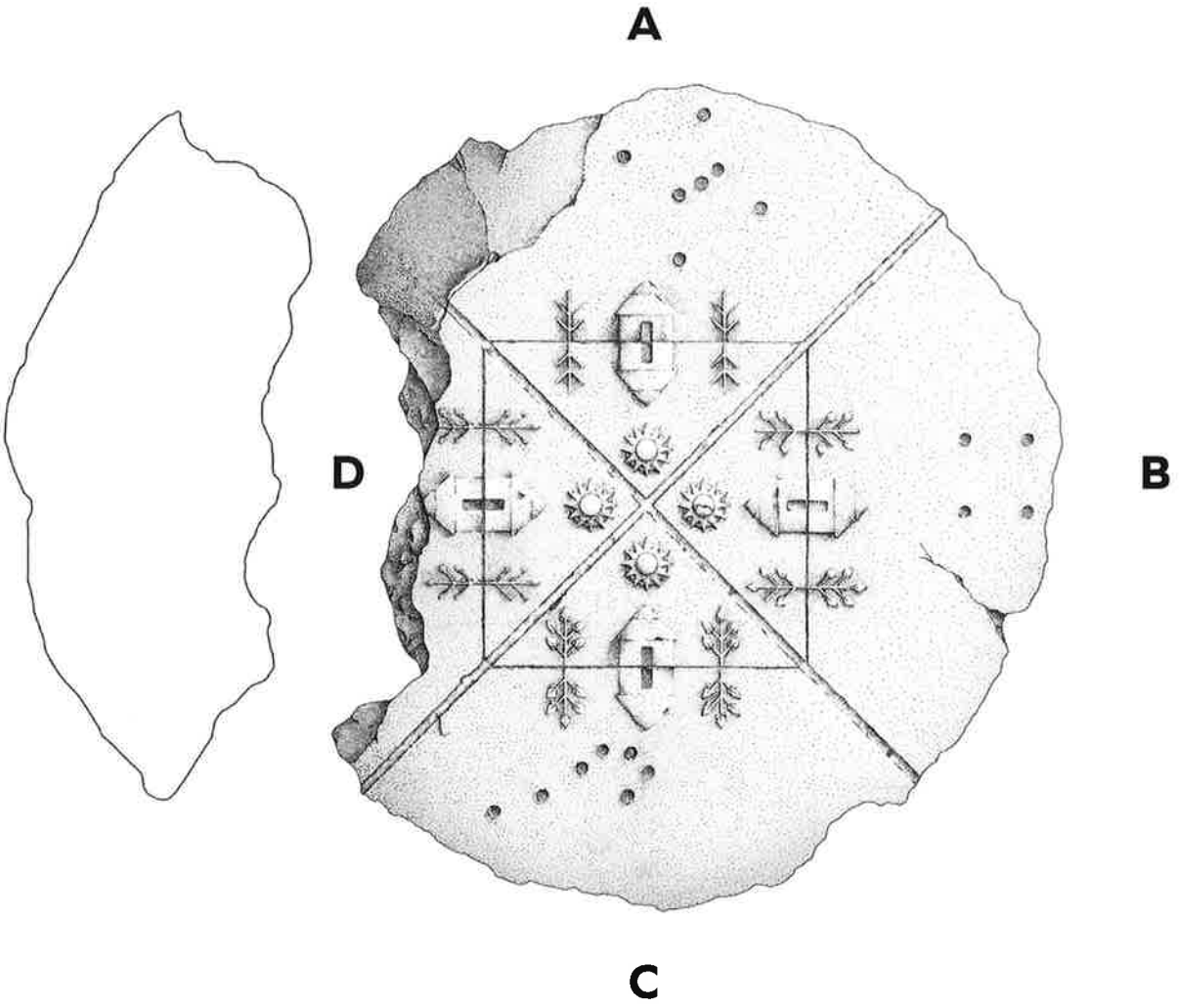
Name: _____ Date: _____

End-of-Unit Writing: Explaining the Artifact

Scientists discovered this while digging for ancient artifacts, but the artifact is missing part of section D.

Part 1. The Artifact

Draw what you think the missing piece looks like on the artifact below.

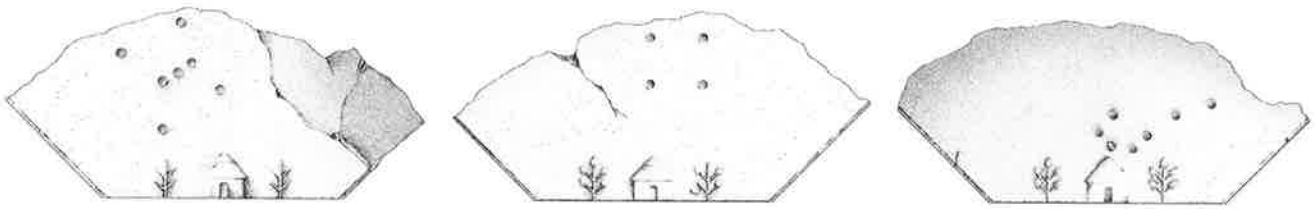


Name: _____ Date: _____

End-of-Unit Writing: Explaining the Artifact (continued)

Part 2: Scientific Explanation of the Nighttime Sky

Each section of the artifact shows a different constellation in the sky.



A B C

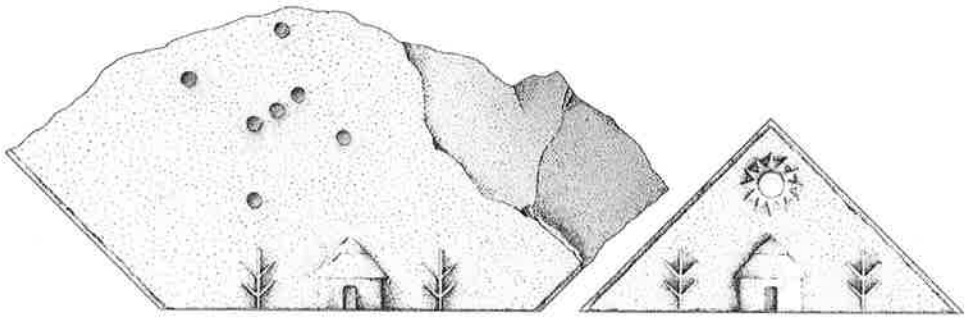
Question: Why does the sky look different in each nighttime section of the artifact?

Name: _____ Date: _____

End-of-Unit Writing: Explaining the Artifact (continued)

Part 3: The Sun and Other Stars in the Artifact

People have been asking many questions about the artifact. Share your answers to these frequently asked questions:



A (nighttime) **A (daytime)**

1. Why does the nighttime section of the artifact show other stars in the sky, but not the sun?

_____

_____

_____

2. Why does the daytime section of the artifact show only the sun in the sky, but not other stars?

_____

_____

_____

_____

3. On Earth, why does the pattern of daytime and nighttime repeat every day?

_____

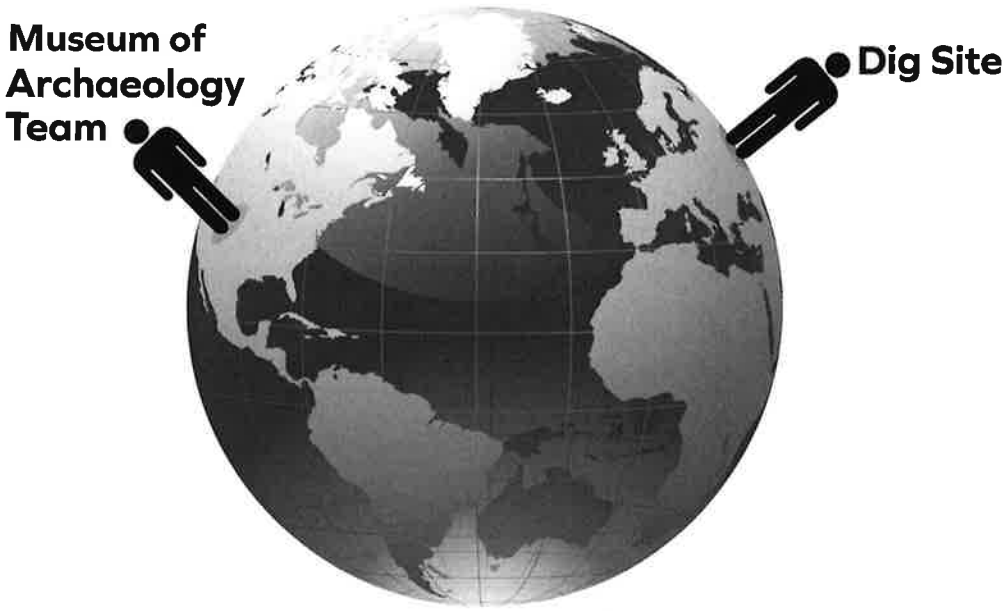
_____

Name: _____ Date: _____

End-of-Unit Writing: Explaining the Artifact (continued)

Part 4: Providing More Information About the Dig Site

This diagram shows a person standing near the Museum of Archaeology and another person standing near the dig site where the artifact was found.



1. Draw an arrow next to each person so it shows which direction is *up* for that person.

2. Why doesn't the person at the dig site fall off Earth?

_____

_____

_____

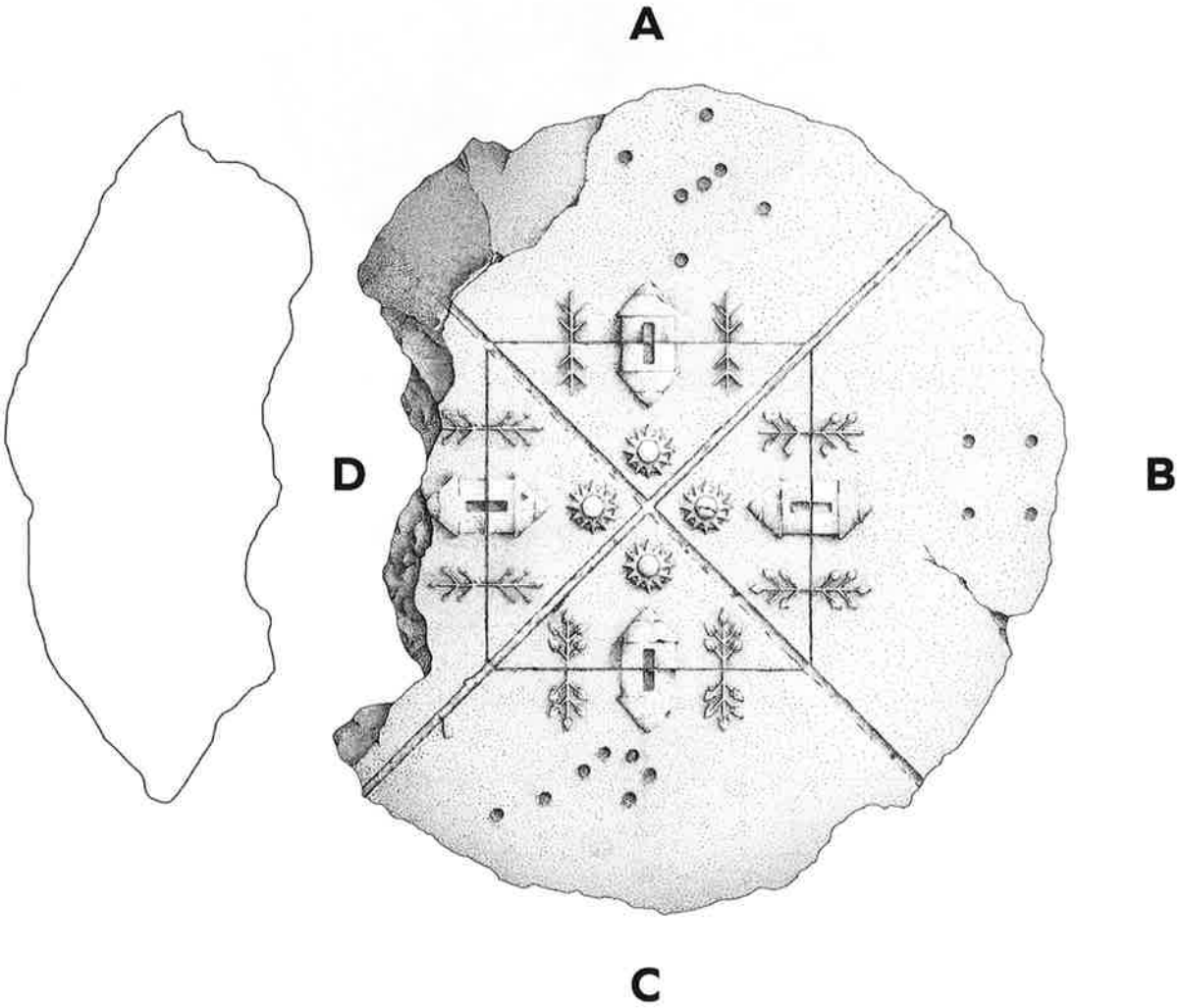
Name: _____ Date: _____

End-of-Unit Writing: Explaining the Artifact

Scientists discovered this while digging for ancient artifacts, but the artifact is missing part of section D.

Part 1: The Missing Piece

Draw what you think the missing piece would have looked like.

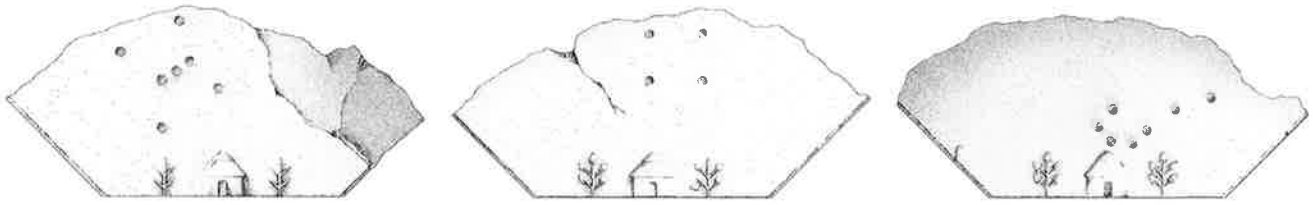


Name: _____ Date: _____

End-of-Unit Writing: Explaining the Artifact (continued)

Part 2: Scientific Explanation of the Nighttime Sky

Each section of the artifact shows a different constellation in the sky.



A **B** **C**

Question: Why does the sky look different in each nighttime section of the artifact?

The sky looks different in each nighttime section of the artifact because

_____

_____

Different constellations are visible on different nights throughout the year because _____

_____

This means that _____

_____

_____

_____

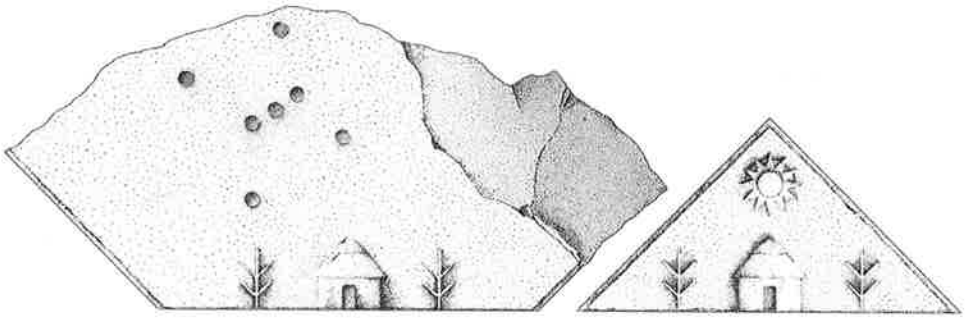
_____

Name: _____ Date: _____

End-of-Unit Writing: Explaining the Artifact (continued)

Part 3: The Sun and Other Stars in the Artifact

People have been asking many questions about the artifact. Share your answers to these frequently asked questions:



A (nighttime) **A (daytime)**

1. Why does the nighttime section of the artifact show other stars in the sky, but not the sun?

_____

_____

_____

2. Why does the daytime section of the artifact show only the sun in the sky, but not other stars?

_____

_____

_____

_____

3. On Earth, why does the pattern of daytime and nighttime repeat every day?

_____

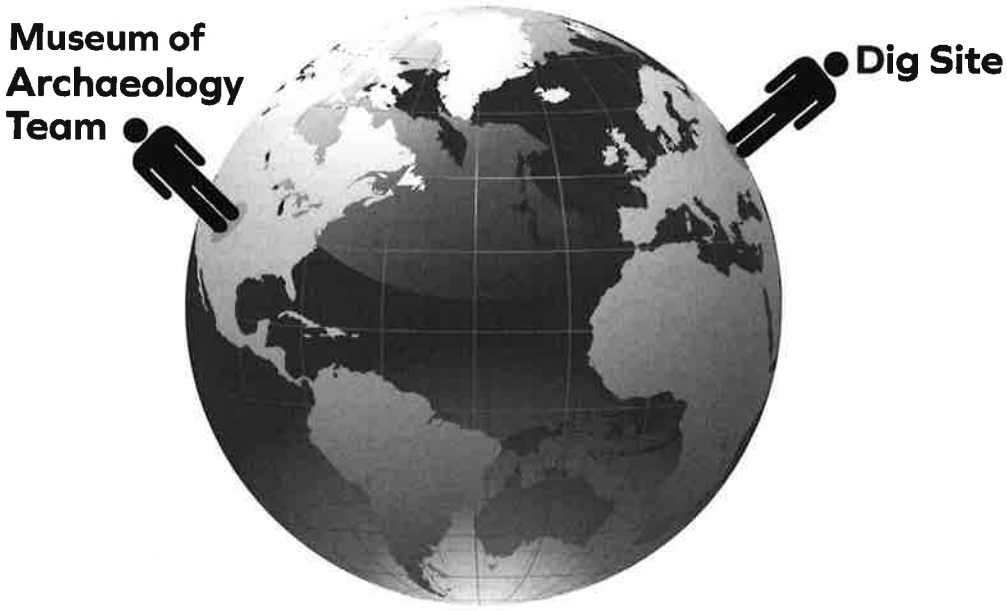
_____

Name: _____ Date: _____

End-of-Unit Writing: Explaining the Artifact (continued)

Part 4: Providing More Information About the Dig Site

This diagram shows a person standing near the Museum of Archaeology and another person standing near the dig site where the artifact was found.



1. Draw an arrow next to each person so it shows which direction is *up* for that person.

2. Why doesn't the person at the dig site fall off Earth?

_____

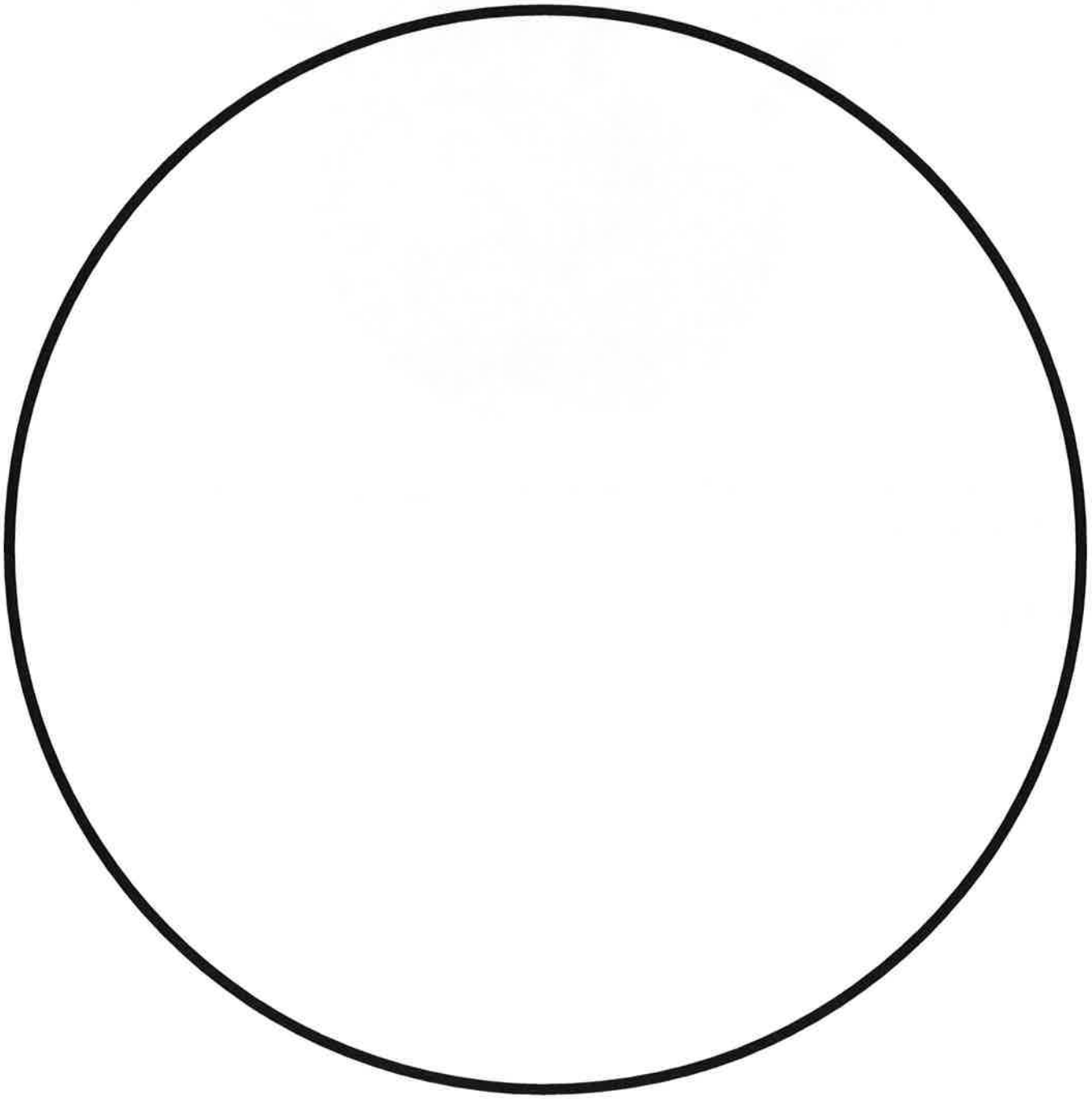
_____

_____

Name: _____ Date: _____

Chapter 4 Home Investigation: Design an Artifact

1. With an adult, design an artifact that shows your ideas about the stars we can see from Earth. Work together to come up with an artifact that is unique.
2. Choose the stars or constellations you would like to include by referring to reference books or reliable sites on the Internet.
3. Draw your ideas.



The days are getting longer — but very, very slowly

By Ian Sample, The Guardian, adapted by Newsela staff on 06.08.18
Word Count **615**
Level **MAX**

This image shows the far side of the moon, illuminated by the sun, as it crosses between the DSCOVR spacecraft's Earth Polychromatic Imaging Camera (EPIC) camera and telescope, and the Earth — a million miles away. Photo: NASA

Sometimes the day does not feel long enough. However, that is changing. New calculations have been made. The results tell us that the days are getting longer. The recent calculations indicate a day on Earth was a full five hours and 15 minutes shorter more than a billion or so years ago. This was a very long ago; it was a time before complex life spread around the planet.

Scientists used a combination of tools to find out about Earth's longer days. They used an astronomical theory. It involves using physics and chemistry to describe objects in space.

They also used geochemical signatures buried in ancient rocks. The ancient rocks showed that 1.4 billion years ago a day on Earth was 18 hours and 41 minutes long. A day on Earth is measured when the Earth turns a full revolution on its axis. In other words, it is how long the Earth takes to complete one rotation or full spin.

In modern times, a day is 23 hours, 56 minutes and 4 seconds. That means the length of days has, on average, grown over time. It has increased by about one 74-thousandths of a second per year in

the last 1.4 billion years. That trend is expected to continue. Scientists think it will continue for millions, if not billions, of years more.

As the Earth's rotation gradually winds down, the moon moves further away. Stephen Meyers is a geoscientist at the University of Wisconsin-Madison. He worked with Alberto Malinverno, a geophysicist at Columbia University in New York. Together they published their findings in a science journal called Proceedings of the National Academy of Sciences. They calculated how far away the moon is from Earth now. Over the past 1.4 billion years the moon has drifted about 44,000 kilometers from Earth. The moon is now a distance of 384,400 kilometers away from Earth.

Meyers and Malinvern set themselves the task of reconstructing changes in the distance between the Earth and the moon. They studied the Earth's Milankovitch cycles. They are the variations in Earth's orbit, along with its wobbles and tilts toward the sun. They went further back in time than ever before. Until now, it has been hard to work out reliable figures for more than 50 million years ago.

Milankovitch cycles affect how much sun reaches the planet's poles. That means they are prime drivers of climate change over long periods of times, ranging from tens of thousands of years to millions of years.

To pin down the frequency of the cycles in Earth's deep history, the scientists studied ancient rocks. They examined copper and aluminum ratios linked to climate change in the rocks. They looked at a 1.4-billion-year-old Xiamaling marine sediment in northern China. They compared it to a 55-million-year-old Walvis ridge in the south Atlantic.

"We were interested in reconstructing the Milankovitch cycles because they provide a powerful tool for evaluating the history of our planet, and the solar system. They are like signposts on a trail, allowing us to navigate geological history," said Meyers.

Studying the ancient rocks helped the scientists learn more about the Earth. Not only did they learn that the days on Earth are getting longer, they also learned more about Earth's ice ages. "The identification of Milankovitch cycles in sediments spanning the past million years has revolutionized our understanding of the nature of ice ages, the instability of ice sheets and how Earth's climate system works."

As for the moon, it will not retreat from Earth forever. At some point in the far future, it will reach a stable distance when it will be visible only from one half of Earth, and never seen from the other.

Quiz

1 Read the conclusion below.

The moon will one day stop drifting away from Earth.

Which detail from the article provides the BEST support for the statement above?

(A) That trend is expected to continue. Scientists think it will continue for millions, if not billions, of years more.

(B) As the Earth's rotation gradually winds down, the moon moves further away. Stephen Meyers is a geoscientist at the University of Wisconsin-Madison.

(C) They calculated how far away the moon is from Earth now. Over the past 1.4 billion years the moon has drifted about 44,000 kilometers from Earth.

(D) At some point in the far future, it will reach a stable distance when it will be visible only from one half of Earth, and never seen from the other.

2 Which piece of evidence BEST explains the cause of major changes on Earth?

(A) Meyers and Malinverno set themselves the task of reconstructing changes in the distance between the Earth and the moon.

(B) Milankovitch cycles affect how much sun reaches the planet's poles. That means they are prime drivers of climate change over long periods of times, ranging from tens of thousands of years to millions of years.

(C) To pin down the frequency of the cycles in Earth's deep history, the scientists studied ancient rocks. They examined copper and aluminum ratios linked to climate change in the rocks.

(D) Studying the ancient rocks helped the scientists learn more about the Earth. Not only did they learn that the days on Earth are getting longer, they also learned more about Earth's ice ages.

3 What is MOST likely the reason the author included the information about geochemical signatures?

(A) to explain a method that succeeded when astronomical theory failed to describe Earth's changes

(B) to alarm readers about the possibility of no longer being able to see the moon in the near future

(C) to explain one of the ways scientists determined how long an Earth day was a billion years ago

(D) to persuade readers that climate change is negatively affecting Earth's geology

4 Read the following passage introducing a discovery that was made about the length of Earth's day a billion years ago.

Sometimes the day does not feel long enough. However, that is changing. New calculations have been made. The results tell us that the days are getting longer. The recent calculations indicate a day on Earth was a full five hours and 15 minutes shorter more than a billion or so years ago. This was a very long ago; it was a time before complex life spread around the planet.

What does the author MOST LIKELY want the reader to think about Earth's day based on this introductory passage?

(A) The author wants the reader to think that a day on Earth has gotten shorter over a billion-year period.

(B) The author wants the reader to think that a day on Earth has grown slowly over a billion-year period.

(C) The author wants the reader to think that a day on Earth has stayed about the same over a billion-year period.

(D) The author wants the reader to think that a day on Earth has more than doubled over a billion-year period.

Nine-year-old applies to be NASA's planetary protection officer

By Amy B. Wang, Washington Post on 08.22.17
Word Count **559**
Level **MAX**

U.S. space agency NASA is hiring a planetary protection officer. This job is about protecting Earth from space germs. Photo: NASA

When NASA announced last week that it was looking for a new planetary protection officer, the space agency received some incredulous responses.

Some were agog at the six-figure salary: between $124,000 and $187,000 per year. Others laughed at the fantastical job title, one that conjured up science-fiction fantasies and battles with aliens. (In reality, NASA says, the position is focused on preventing astronauts from bringing biological contaminants from space back to Earth — and vice versa.)

But one 9-year-old boy in New Jersey took the vacancy seriously. So he took a sheet of paper and an obviously well-sharpened pencil, and carefully hand-wrote his application.

"Dear NASA, My name is Jack Davis and I would like to apply for the planetary protection officer job," Jack wrote. "I may be nine but I think I would be fit for the job."

What Could Possibly Be On A 9-Year-Old's Resume?

Among his qualifications? For one, he wrote, his sister says he's an alien. Jack also said he had watched the TV show "Marvel Agents of S.H.I.E.L.D." and "almost all the space and alien movies I can" — though not yet "Men in Black." (In Jack's defense, the 1997 hit movie with Will Smith and Tommy Lee Jones came out more than a decade before he was even born.)

Toward the end of his letter, Jack casually mentions that he is great at video games. But his final assertion is perhaps the most persuasive.

"I am young, so I can learn to think like an alien," Jack wrote.

He signed off with his name and appended it with "Guardian of the Galaxy" and "Fourth Grade."

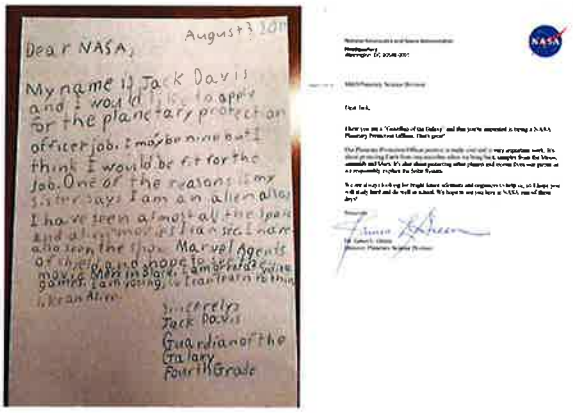
Unexpected Response

Jack soon got that simple yet elusive thing every job seeker wants: confirmation that his application had been received. James L. Green, director of NASA's planetary science division, wrote back to him right away.

"I hear you are a 'Guardian of the Galaxy' and that you're interested in being a NASA Planetary Protection Officer," Green wrote. "That's great!"

He also took the time to dispel any myths about what the job entailed.

"It's about protecting Earth from tiny microbes when we bring back samples from the moon, asteroids and Mars. It's also about protecting other planets and moons from our germs as we responsibly explore the solar system."


Dear NASA,
August 3 201
My name is Jack Davis and I would like to apply for the planetary protection officer job. I may be nine but I think I would be fit for the job. One of the reasons is my sister says I am an alien also I have seen almost all the space and alien movies I can see. I have also seen the show Marvel Agents of the S.H.I.E.L.D. and hope to see the movie Men in Black. I am great at video games. I am young, so I can learn to think like an Alien.
Sincerely,
Jack Davis
Guardian of the Galaxy
Fourth Grade

In short, it's light on the alien encounters. But Green signed off on an encouraging note, telling Jack to "study hard and do well in school" so that they could see him at NASA eventually. As a bonus, Jack also received a phone call from NASA's headquarters in Washington to congratulate him on his interest.

Defying Gravity

"At NASA, we love to teach kids about space and inspire them to be the next generation of explorers," Green said in a statement. "Think of it as a gravity assist — a boost that may positively and forever change a person's course in life, and our footprint in the universe."

Jack told ABC News that it would be "really cool" to work for NASA.

"I feel like — I am the only one who really wants a job at NASA this young," he told the news station.

Quiz

1 Which detail would be MOST important to include in a summary of the article?

(A) "He signed off with his name and appended it with 'Guardian of the Galaxy' and 'Fourth Grade.'"

(B) "As a bonus, Jack also received a phone call from NASA's headquarters in Washington to congratulate him on his interest."

(C) "Think of it as a gravity assist — a boost that may positively and forever change a person's course in life, and our footprint in the universe."

(D) "When NASA announced last week that it was looking for a new planetary protection officer, the space agency received some incredulous responses."

2 Which of the following are TWO main ideas from the article?

1. *NASA is offering a six-figure salary to an applicant that can help promote responsible exploration in space.*
2. *NASA is hiring a fourth grader named Jack Davis to be their next "Guardian of the Galaxy."*
3. *NASA wants to have a positive influence on young children who want to learn about space travel.*
4. *NASA has had some interesting responses to the recent job posting for a 'planetary protection officer.'"*

(A) 2 and 3

(B) 1 and 4

(C) 1 and 3

(D) 3 and 4

3 Which detail from the article MOST shows why Jack Davis decided to apply for the job at NASA?

(A) "I feel like — I am the only one who really wants a job at NASA this young," he told the news station.

(B) It's about protecting Earth from tiny microbes when we bring back samples from the moon, asteroids and Mars.

(C) "Dear NASA, My name is Jack Davis and I would like to apply for the planetary protection officer job," Jack wrote.

(D) Some were agog at the six-figure salary: between $124,000 and $187,000 per year.

4 Which answer choice accurately characterizes the reaction of the director of NASA's planetary science division to Jack's application?

(A) The director was shocked that a 9-year-old would want to apply for the NASA job.

(B) The director was insulted that a 9-year-old sent in an application to a serious job.

(C) The director was excited to get the attention of younger applicants and wanted to encourage Jack.

(D) The director didn't respond to Jack's application because he thought it was a joke.

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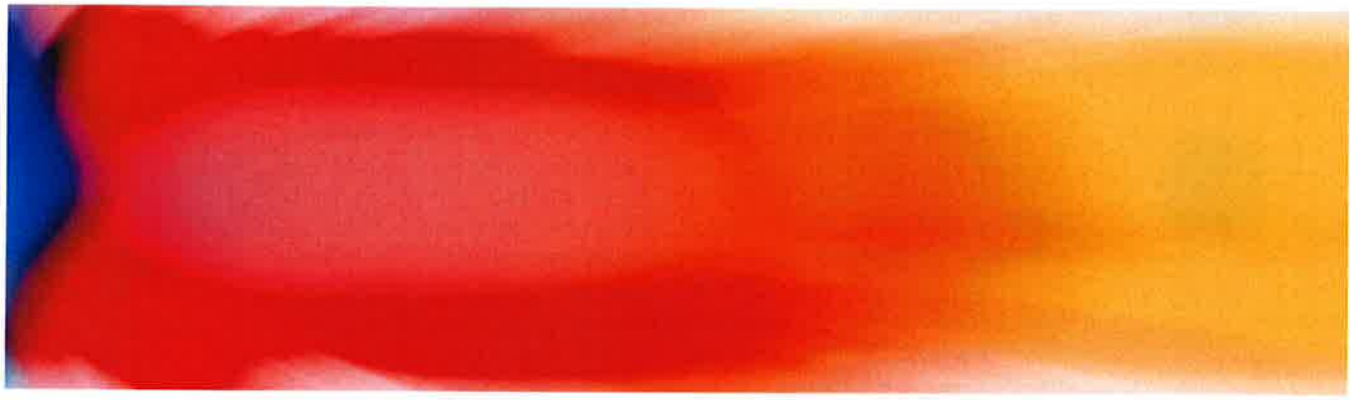

Modeling Matter:

The Chemistry of Food

Copymaster Compilation

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Table of Contents

Name: _____ Date: _____

Pre-Unit Writing: Explaining Mixtures

Scenario

A food scientist is testing new ingredients in her lab. She takes a spoonful of Substance A, a white powder, and adds it to Substance C, a clear liquid. She stirs them for 30 seconds. Substance A settles to the bottom of the container.

Substance A **Substance C**

Next, she takes a spoonful of Substance B, a different white powder, and adds it to a new container of Substance C. She stirs them for 30 seconds. Substance B can no longer be seen in the container.

Substance B **Substance C**

Question

Why did something different happen with Substance A than with Substance B when mixed with Substance C? Be sure to explain what happened to both substances.

Write a scientific explanation.

On the following pages, answer the question as completely as you can. You can draw a diagram in the box on the last page if it helps you explain your thinking.

Name: _____ Date: _____

Pre-Unit Writing: Explaining Mixtures (continued)

Why did something different happen with Substance A than with Substance B when mixed with Substance C? Be sure to explain what happened to both substances.

Name: _____ Date: _____

Pre-Unit Writing: Explaining Mixtures (continued)

Make a drawing if it helps you explain your thinking. Label your drawing.

Name: _____ Date: _____

Chapter 1 Home Investigation: Food Mixtures

1. Interview two people at home about mixtures they've made in the kitchen.
2. Record each person's name and then ask the questions below.
3. Record each person's responses on the lines below each question.

Person 1: _____

Describe a mixture you've made out of different ingredients.

_____

_____

_____

What were some of the properties of the ingredients before you mixed them? Did the mixture have the same or different properties?

_____

_____

_____

Person 2: _____

Describe a mixture you've made out of different ingredients.

_____

_____

_____

What were some of the properties of the ingredients before you mixed them? Did the mixture have the same or different properties?

_____

_____

_____

Name: _____ Date: _____

Scientific Explanation of Chromatography

1. Write a scientific explanation that answers the question below.
2. Your explanation should include:
   - a **topic sentence** that answers the question.
   - supporting sentences that tell **what happens** and **why**.
3. Your audience is the president of Good Food Production, Inc.

Question: Why did the food coloring separate into different dyes?

The food coloring separated into different dyes because _____

_____

_____

_____

_____. We observed that _____

_____

_____

_____

_____. This means that

_____

_____

_____

_____

_____

_____

Name: _____ Date: _____

Scientific Explanation of Dissolving

1. Write a scientific explanation that answers the question below.
2. Your explanation should include:
   - a **topic sentence** that answers the question.
   - supporting sentences that tell **what happens** and **why**.
3. Your audience is the president of Good Food Production, Inc.

Question: Which flavor ingredients will not leave sediments in the salad dressing? Why?

Sugar and citric acid will not leave sediments in the salad dressing because

_____

_____

_____.

We observed that _____

_____

_____

_____

_____.

This happened because _____

_____

_____

_____

_____.

Name: _____ Date: _____

Chapter 2 Home Investigation: Investigating More Mixtures

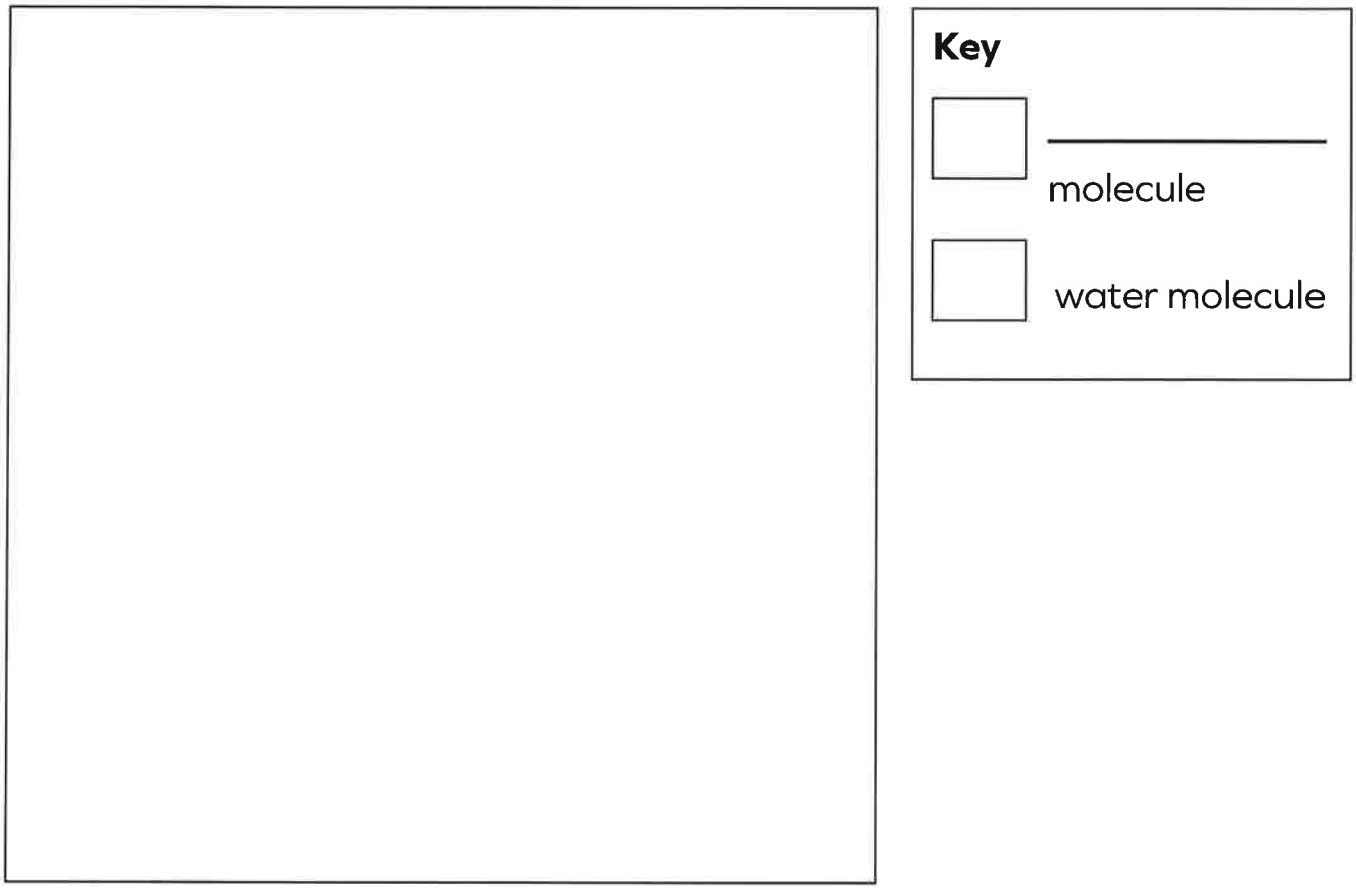
1. With someone at home, choose two flavor ingredients to see whether or not they will dissolve in water. Choose ingredients that you did not investigate in class.
2. On the next page, record the name of your first flavor ingredient on the line provided.
3. Add a small amount of your first flavor ingredient into a half cup of water and stir with a spoon until it has dissolved or until you are sure that it will not dissolve.
4. In the Key on the next page, record the name of flavor ingredient 1. Then draw a shape to represent a molecule of flavor ingredient 1 and a shape to represent a water molecule.
5. Draw a model of your first mixture.
6. Repeat Steps 2–5, this time using your second flavor ingredient. Draw your model on page 3.
7. Use your models to explain to the person who's investigating with you what is happening with the molecules of the substances as they mix or don't mix.

Name: _____ Date: _____

Chapter 2 Home Investigation: Investigating More Mixtures (continued)

Flavor ingredient 1: _____

Model of the Mixture

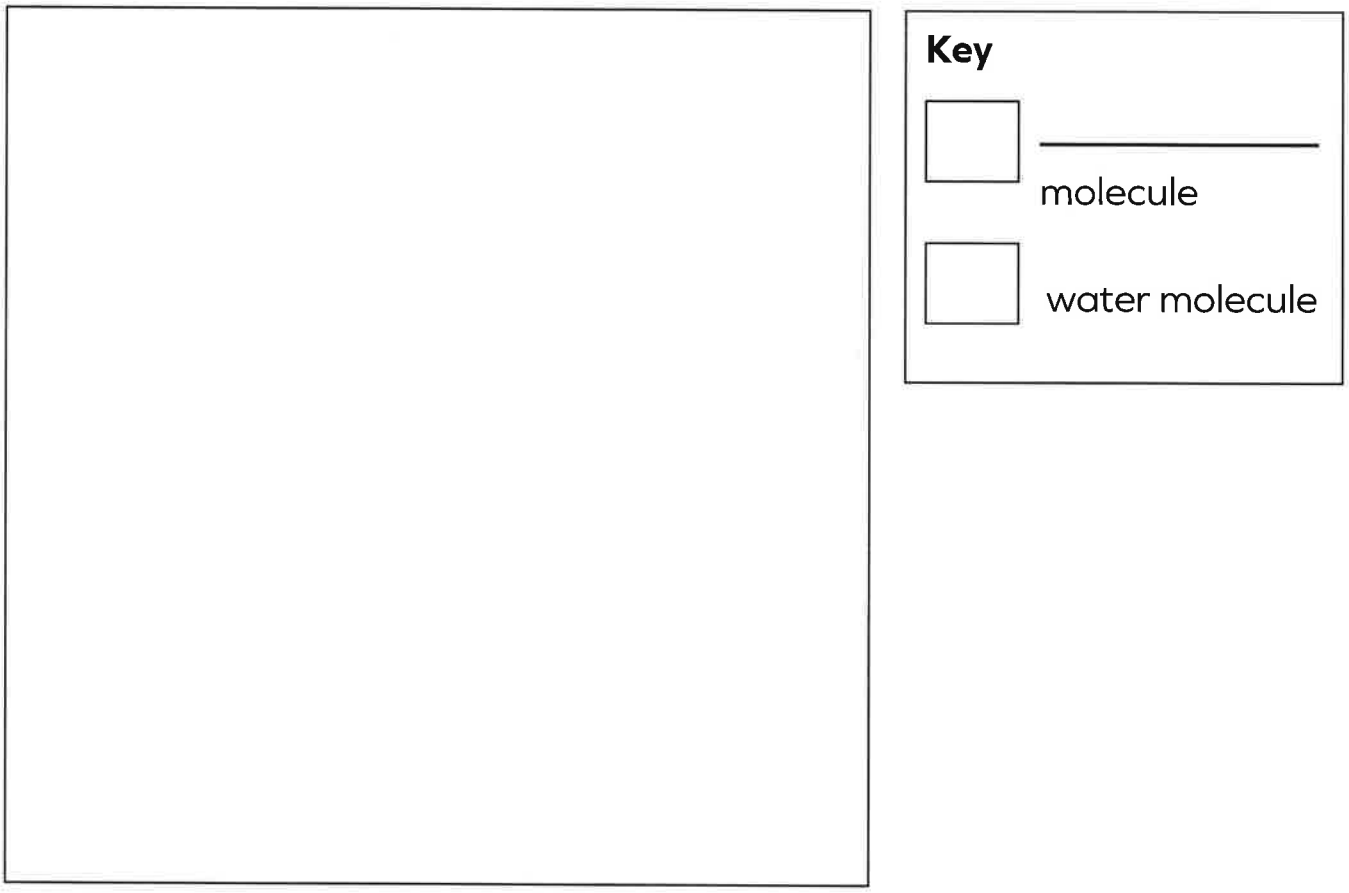


Name: _____ Date: _____

Chapter 2 Home Investigation: Investigating More Mixtures (continued)

Flavor ingredient 2: _____

Model of the Mixture



Name: _____ Date: _____

Making Sense of Mixing in the Simulation

You are a food scientist who is trying to create a new sauce. You are mixing together different combinations of liquids to see how well they mix together. Using the Simulation, try mixing the ingredients for Sauce A and Sauce B.

Sauce A

1. To make a sample of Sauce A, add together Molecules 2 and Molecules 6.

2. Stir the molecules to spread them around and then watch what they do.
3. Describe what you see the molecules doing.

_____

_____

_____

_____

_____

4. For each statement, circle the option that best describes what you observed.

   Molecules 2 **do** / **do not** connect to other Molecules 2.

   Molecules 6 **do** / **do not** connect to other Molecules 6.

   Molecules 2 **do** / **do not** connect to Molecules 6.

Name: _____ Date: _____

Making Sense of Mixing in the Simulation (continued)

Sauce B

1. To make a sample of Sauce B, add together Molecules 3 and Molecules 6.

2. Stir the molecules to spread them around and then watch what they do.
3. Describe what you see the molecules doing.

_____

_____

_____

_____

_____

4. For each statement, circle the option that best describes what you observed.

   Molecules 3 **do** / **do not** connect to other Molecules 3.

   Molecules 6 **do** / **do not** connect to other Molecules 6.

   Molecules 3 **do** / **do not** connect to Molecules 6.

Name: _____ Date: _____

Making Sense of Mixing in the Simulation (continued)

At the observable scale, you noticed that Sauce A formed a mixture, while Sauce B separated into layers. Based on what you saw happening with the molecules, why do you think Sauce A's ingredients mixed evenly, but Sauce B's ingredients did not?

_____

_____

_____

_____

You are thinking about making a third sauce, Sauce C, by adding together Molecules 1 and Molecules 3. Try combining them in the Simulation. Based on what you see, would you predict that the sauce will make an even mixture or separate into layers? Why do you think that?

_____

_____

_____

_____

Name: _____ Date: _____

End-of-Unit Writing: Explaining Emulsifiers in Salad Dressing

1. Write a scientific explanation that answers the question below.
2. Your explanation should include:
   - a **topic sentence** that answers the question.
   - supporting sentences that tell **what happens** and **why**.
3. Your audience is the president of Good Food Production, Inc.

Question: Why do the oil and vinegar separate into layers when they are stirred together, but completely mix when lecithin is stirred in?

Name: _____ Date: _____

End-of-Unit Writing: Explaining Emulsifiers in Salad Dressing (continued)

Name: _____ Date: _____

End-of-Unit Writing: Explaining Emulsifiers in Salad Dressing (continued)

Make a diagram if it helps you explain your thinking. Label your diagram.

Name: _____ Date: _____

End-of-Unit Writing: Scientific Explanation of Emulsifiers in Salad Dressing

1. Write a scientific explanation that answers the question below.
2. Your explanation should include:
   - a **topic sentence** that answers the question.
   - supporting sentences that tell **what happens** and **why**.
3. Your audience is the president of Good Food Production, Inc.

Question: Why do the oil and vinegar separate into layers when they are stirred together, but completely mix when lecithin is stirred in?

Oil and vinegar separate into layers when they are stirred together, but completely mix when lecithin is stirred in because _____

_____

_____

_____

_____.

When we stirred just the oil and vinegar together, we observed that _____

_____

_____

_____

_____.

This happened because _____

_____

_____

_____

_____.

Name: _____ Date: _____

End-of-Unit Writing: Scientific Explanation of Emulsifiers in Salad Dressing (continued)

When we stirred in the lecithin, we observed that _____

_____

_____

_____

_____.

This happened because _____

_____

_____

_____

_____

_____

_____.

Name: _____ Date: _____

End-of-Unit Writing: Scientific Explanation of Emulsifiers in Salad Dressing (continued)

Make a diagram if it helps you explain your thinking. Label your diagram.

Name: _____ Date: _____

Chapter 3 Home Investigation: Molecules in Salad Dressing Quiz

1. Create a quiz about the molecules you've used in class to make salad dressing.
2. Write five statements about what happens to the molecules in dissolving, mixing, or separating substances. Some statements should be true, and some statements should be false.
3. Give the quiz to someone in your family group. Have that person read each statement and circle whether they think each one is true or false.
4. Talk about the answers with the person who took the quiz. You might teach them something!

1.	true	false
2.	true	false
3.	true	false
4.	true	false
5.	true	false

Teenagers get a crash course in food-justice issues at community classes

By Seattle Times, adapted by Newsela staff on 03.05.20
Word Count **808**
Level **1150L**

Image 1. Dream Bernard, age 14, prepares the vermicelli bowls to feed the class and others working or playing at High Point Community Center on January 1, 2020. The Seattle Parks and Recreation department started a monthlong cooking class for youth ages 13 to 19 to learn about food-justice issues and basic cooking skills every Friday and Saturday night. Photo by: Amanda Snyder/The Seattle Times/TNS

The night of January 1, seven teenagers were at the mostly empty High Point Community Center in Seattle, Washington. Their cooking instructor, Asia Faircloth, had a question for them: "You guys want to go play with knives?"

Split into two groups, the students worked in the kitchen, where Faircloth taught them how to cook vermicelli bowls with tofu and chicken. They also worked with Jacob Alhadeff to practice new chopping skills with professional chef's knives.

Both instructors peppered the quiet class with seemingly surface-level questions: What's your favorite fast food? Who likes to eat packaged ramen? Have you seen the prices of salads at chain restaurants? Alhadeff, who works with the city's Parks and Recreation department, explained the larger lesson behind the questions and cooking class.

Public-Policy, Health And Civil-Rights Issue

The four-week course, which will run through June at the High Point and South Park community centers, is framed around cooking and food justice. Food justice is the idea that access to nutritious food should be thought of as a public-policy, health and civil-rights issue.

At the local level, food justice can mean increased shopping options for fresh and healthy produce in low-income neighborhoods.

"Low-income people of color are more likely to feel the adverse effects of food injustice," Alhadeff said. "So providing cooking instruction, an introduction to food justice and putting money back in the pockets of our community members seemed like a no-brainer."

Reaching Youth Most Affected By Food Injustice

By the end of February, 24 kids will have completed the course. The city recruits 13- to 19-year-olds primarily through social media, with the goal of reaching youth most impacted by food injustice. Funds from the Parks and Recreation department and Associated Recreation Council pay for the program.

"We hope we reach a demographic of more economically and institutionally vulnerable teens," Alhadeff said. "Any teenagers can join."

Alhadeff and Faircloth not only teach young people how to cook more than just microwaveable food at home, but they also try to connect the dots between individual choices and larger social issues. For example, they try to get the students to think about how a person's decision to eat out or what they buy at the grocery store ties into issues like obesity, climate change and global food supplies.

A class on February 7 briefly touched on those sweeping topics, but by the end of the four weeks, students seemed to grasp a bit more about food justice.

"I had never heard of that term before," said Dominic Tatro, a junior at Seattle Lutheran High School who attended the January course.

Food Droughts And Civil Unrest

"We started with more personal things, then looked at the bigger, global view ... like, how climate change is related to food," he said. "It can be really bad when droughts turn places into actual deserts (and) food droughts can cause a lot of (civil) unrest."

Tahir Adams and Najah Goodrich joined the South Park classes. They mentioned how farmers can struggle to put food on their own kitchen tables while growing fresh produce for the rest of the country. They shared their thoughts on the water crisis in Flint, Michigan, but also bragged about the new skills and recipes they learned.

In class, Alhadeff stressed the one thing he wanted every student to learn was the claw grip: keeping your fingers pointed toward the inside of your hand to chop food evenly and prevent accidents.

"Always, always use the claw," Tahir said.

One 13-year-old who organizes a weekly cooking club with his friends quickly got a handle on the technique, while Dream Bernard, 14 years old, had more difficulty with her knife and carrot.

"The way I cut it at home is probably more dangerous, but I think it works better," she said. "Definitely cut myself a few times at home though."

Like many of the teenagers at February 7's class, Dream said she often makes boxed macaroni and cheese at home or packaged ramen. She asked Faircloth if a later session could include how to make her favorite fast-food meal: orange chicken.

Dream and her brother are home-schooled, so their mother, Dee Bernard, said community events like the cooking classes offer a chance for them to build social skills.

"Doesn't hurt if she learns how to cook a few new recipes too," Bernard said, "even though I'll always be the best cook in our family."

Quiz

1 Read the following sentences from the article.

1. *"So providing cooking instruction, an introduction to food justice and putting money back in the pockets of our community members seemed like a no-brainer."*
2. *"I had never heard of that term before," said Dominic Tatro, a junior at Seattle Lutheran High School who attended the January course.*
3. *"It can be really bad when droughts turn places into actual deserts (and) food droughts can cause a lot of (civil) unrest."*
4. *She asked Faircloth if a later session could include how to make her favorite fast-food meal: orange chicken.*

Which two sentences taken together provide the BEST evidence to support the idea that Seattle's new cooking class are changing the way teens see the world?

(A) 1 and 2

(B) 2 and 3

(C) 3 and 4

(D) 1 and 4

2 With which statement would Jacob Aldaheff MOST LIKELY agree?

Option 1: Seattle's new cooking classes for teens teaches them how to have a positive impact on their community.

Option 2: It's important for Seattle teenagers to rely less on fast and unhealthy food.

Which sentence from the article supports your response?

(A) Option 1; They also worked with Jacob Alhadeff to practice new chopping skills with professional chef's knives.

(B) Option 2; "We started with more personal things, then looked at the bigger, global view ... like, how climate change is related to food," he said.

(C) Option 1; "So providing cooking instruction, an introduction to food justice and putting money back in the pockets of our community members seemed like a no-brainer."

(D) Option 2; They shared their thoughts on the water crisis in Flint, Michigan, but also bragged about the new skills and recipes they learned.

3 Which answer choice BEST explains why the author wrote this article?

(A) to persuade teenagers to join the new cooking classes in Seattle

(B) to describe one way that Seattle is trying to fight food injustice

(C) to explain why food injustice is the most pressing issue in the United States today

(D) to encourage more people to learn about food injustice

4 Why does the author include the opinions of Tahir and Dream?

(A) to show the variety of things students are learning in the cooking classes

(B) to demonstrate how students feel empowered to fight food injustice

(C) to show how not every student is enjoying the cooking classes

(D) to help persuade teenagers that they will enjoy cooking classes

Stopping the spread of germs

By National Geographic Society, adapted by Newsela staff on 01.28.20
Word Count **915**
Level **1120L**

Image 1. Washing your hands is an easy way to stop germs from spreading. It helps prevent other people from getting sick. Photo: Nano Creative/Science Source

A contagion is a way in which a disease can be transmitted from person to person. It can start out with something as simple as a cough. If a person passes too close and inhales infected droplets, the disease can spread to the population at large, in no time. It can create an outbreak, a sudden increase in the number of sick people in a place. Fortunately, there are ways to prevent and manage such catastrophes.

The simplest measures are known as nonpharmaceutical interventions or NPIs. These are methods that prevent illnesses from spreading without using medicines or vaccines.

You are probably already familiar with this type of intervention, especially if you have had a cold or flu. These methods are effective against pathogens, or disease-causing germs, that can be spread through person-to-person contact. These include things that include staying home when you are sick so that you don't come into contact with other people. Others are washing your hands

so they're clean when you touch common things such as doorknobs. Sneezing or coughing into a tissue or your elbow prevents saliva from spreading through the air.

Preventing Further Infections

NPIs can be used with other prevention measures, like vaccines, to strengthen an individual's chances of avoiding infection. NPIs are simple and inexpensive, and might sometimes be the only prevention tool that individuals can use.

Prevention methods do not always work. If someone is infected with an illness or disease, they should seek treatment as soon as possible so that they can be healed quickly and not pass it on to others.

Once health practitioners identify cases of disease, they can take steps to prevent further infections. These steps vary and depend on the pathogen. A common method is through quarantine, which involves separating an individual who might have come into contact with the infectious disease, from other people. An infectious disease is one that is passed on easily from person to person.

Quarantine And Isolation

The United States has quarantine stations at ports and border crossings across the country that are staffed by the Centers for Disease Control and Prevention (CDC). The CDC might quarantine any traveler suspected of carrying an infectious disease or they may opt to send them to a hospital.

Isolation is another method to prevent the spread of disease. During isolation, a sick individual is separated from those who are not sick. This is in contrast to a quarantine, which separates an individual who might have been exposed to an illness, but is not showing symptoms of being sick. Similar to quarantines, the CDC has the authority to isolate an individual suspected of carrying a contagious disease that would harm the public.

The exact procedures of both isolation and quarantine depend on how severe the disease is. Chickenpox, for example, is highly contagious and can be passed through skin contact or through the air. When infected, children are instructed to not attend school so they do not infect their classmates. However, because the disease is relatively mild, those who are infected can be isolated at home. On the other hand, more serious and deadly diseases, such as Ebola or measles, might require help from the government. In such cases, it is illegal to break an isolation or quarantine order. Additionally, severely ill individuals are likely to be isolated in a hospital setting.

Authorities might also choose to close public spaces to prevent the spread of disease. For example, schools can shut down if there is an increase in influenza, or flu, cases. While the CDC provides instruction for more severe global outbreaks, it does not officially determine if schools should close for the flu. Instead, it is up to the school. However, recent evidence suggests that school closures can help to limit exposure to the contagion and prevent the spread of disease.

Foodborne Illnesses Can Involve Recalls

A different approach is needed if the contagion is foodborne, or spread through food. It can be recalled if it is labeled wrong or if there is a physical substance such as plastic that makes it impure. Or it can be recalled to prevent the spread of pathogens carried by food, such as the bacteria salmonella. During a recall, food has to be pulled off shelves in grocery stores to prevent more people from getting sick from tainted food. People who have already purchased recalled food should not eat it and throw it away.

The U.S. Food and Drug Administration (FDA) is responsible for regulating most food products. Exceptions include meat, poultry and some egg products, which are regulated by the U.S. Department of Agriculture's Food Safety Inspection Service (FSIS). When there is a foodborne illness, the CDC launches an investigation, and if the threat could seriously endanger the public, the FDA begins to warn the public through the media.

Although meat that is not cooked well often gets a bad reputation for being a source of bacteria, leafy greens such as lettuce and spinach are more often responsible for foodborne illnesses. The 2011 Food Safety Modernization Act improved sanitation standards. Modern advances in technology make it easier for experts to track outbreaks and identify the source.

From the large-scale policies and procedures of government agencies to individuals washing their hands, we all have a role to play in preventing disease outbreaks.

Quiz

1 Read the following paragraph from the section "Quarantine And Isolation."

The exact procedures of both isolation and quarantine depend on how severe the disease is. Chickenpox, for example, is highly contagious and can be passed through skin contact or through the air. When infected, children are instructed to not attend school so they do not infect their classmates. However, because the disease is relatively mild, those who are infected can be isolated at home. On the other hand, more serious and deadly diseases, such as Ebola or measles, might require help from the government. In such cases, it is illegal to break an isolation or quarantine order. Additionally, severely ill individuals are likely to be isolated in a hospital setting.

Which answer choice BEST supports the idea that legislation has been created to protect the public health of citizens?

(A) The exact procedures of both isolation and quarantine depend on how severe the disease is.

(B) When infected, children are instructed to not attend school so they do not infect their classmates.

(C) In such cases, it is illegal to break an isolation or quarantine order.

(D) Additionally, severely ill individuals are likely to be isolated in a hospital setting.

2 Read the following sentences from the article.

1. *If a person passes too close and inhales infected droplets, the disease can spread to the population at large, in no time.*
2. *You are probably already familiar with this type of intervention, especially if you have had a cold or flu.*
3. *These methods are effective against pathogens, or disease-causing germs, that can be spread through person-to-person contact.*
4. *These include things that include staying home when you are sick so that you don't come into contact with other people.*

Which two sentences taken together provide the BEST evidence to support the idea that NPIs help to prevent the spread of illnesses?

(A) 1 and 2

(B) 1 and 3

(C) 2 and 4

(D) 3 and 4

3 How is isolation to prevent the spread of disease different from quarantine?

(A) People are isolated to prevent the outbreak of infectious diseases; people are quarantined to contain diseases within a certain area.

(B) People are isolated to contain highly infectious diseases; people are quarantined to contain diseases that are not dangerous.

(C) People are isolated when they are already sick; people who are quarantined might have been exposed to an illness, but are not sick.

(D) People are isolated within a region or state; people are quarantined when they need to be prevented from entering a country.

4 Which answer choice would BEST describe the FDA's reaction to a foodborne contagion?

(A) The agency inspects all food products that come from the country's farms.

(B) The agency ensures people are notified of any serious threats to the food supply.

(C) The agency investigates the source of foodborne illnesses and prosecutes unsafe practices.

(D) They agency regulates sanitation standards in the nation's food production centers.

AmplifyScience

The Earth System:

Investigating Water Shortages

Copymaster Compilation

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Table of Contents

Name: _____ Date: _____

Pre-Unit Writing: Explaining Rain on Ferris Island

Part 1

Explain your ideas about rain by answering these questions.

1. How do raindrops form?

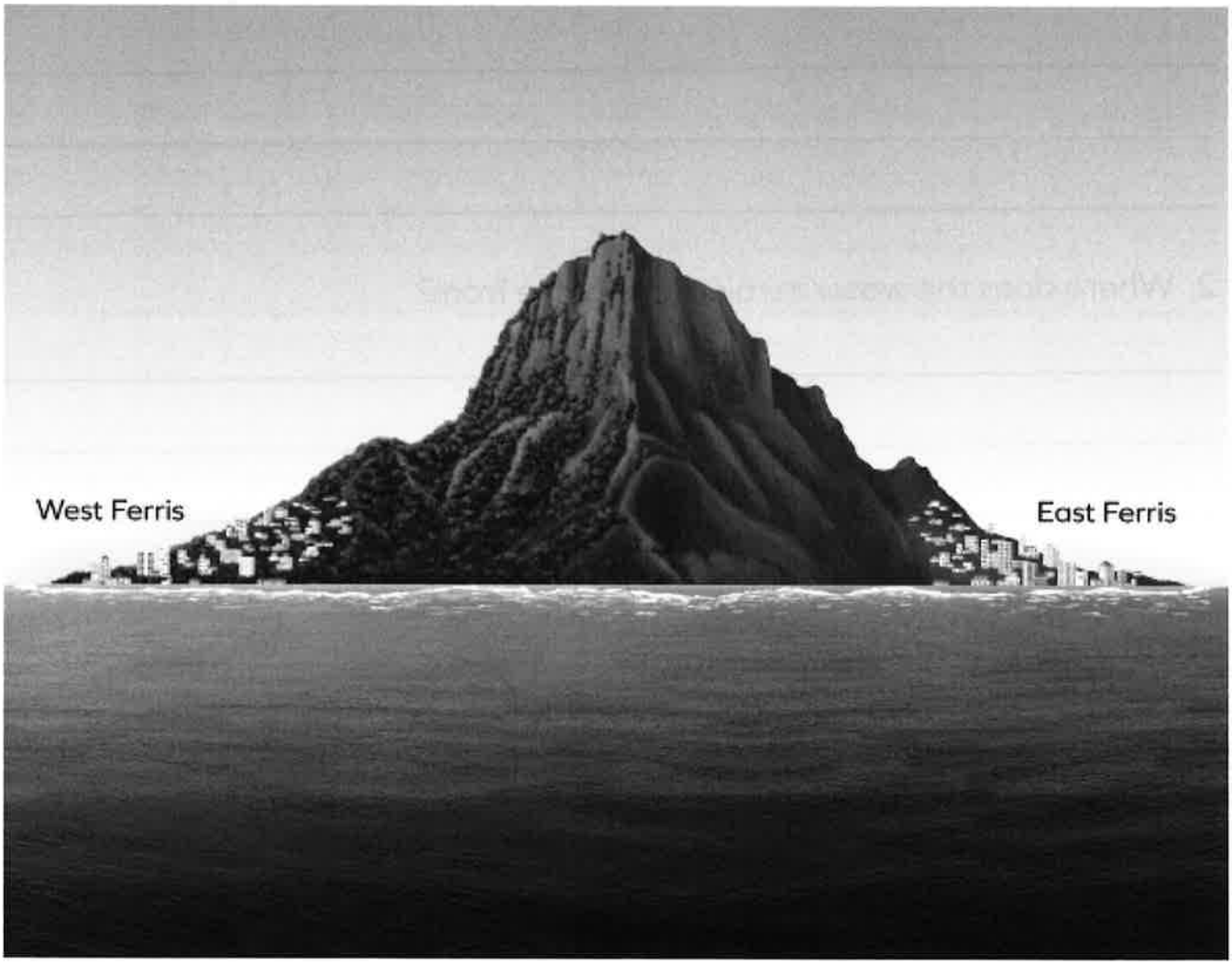
2. Where does the water in raindrops come from?

Name: _____ Date: _____

Pre-Unit Writing: Explaining Rain on Ferris Island (continued)

Part 2

This map shows Ferris Island. West Ferris gets a lot of rain, but East Ferris gets very little rain.



Name: _____ Date: _____

Pre-Unit Writing: Explaining Rain on Ferris Island (continued)

Why does it rain more in West Ferris than in East Ferris? Explain your answer.

Name: _____ Date: _____

Chapter 1 Home Investigation: Saving Water

1. Interview two people at home about whether they think it is important to save water and what ideas they have about how to save water.
2. Write each person's name and then ask the questions shown below.
3. Record each person's responses on the lines below each question.

Name of Person 1: _____

Do you think it is important to save water? Why or why not?

_____

_____

What can we do to save water?

_____

_____

Name of Person 2: _____

Do you think it is important to save water? Why or why not?

_____

_____

What can we do to save water?

_____

_____

Name: _____ Date: _____

Scientific Explanation of the Water Shortage

1. In the box below, write scientific words that you will use in your explanation.
2. Your audience is the people of East Ferris.
3. Write an explanation that answers Question 1 on the next page.
4. Your explanation should also include:
   - **a topic sentence** that answers the question.
   - supporting sentences that tell **what happens** and **why**.
5. Refer to your Ferris Island Diagram (on page 7 on the Investigation Notebook) to help you write your explanation.
6. After you have written your explanation for Question 1, answer Question 2 on page 3 following the same steps.

Scientific language

Name: _____ Date: _____

Scientific Explanation of the Water Shortage (continued)

Question 1: Why is East Ferris running out of water?

East Ferris is running out of water because _____

_____

_____

_____.

When people in East Ferris use water, _____

_____

_____

_____.

The amount of water flowing in has stayed the same, but _____

_____

_____

_____.

This means that _____

_____

_____.

Name: _____ Date: _____

Scientific Explanation of the Water Shortage (continued)

Question 2: Why is West Ferris *not* running out of water?

West Ferris is *not* running out of water because _____

_____

_____

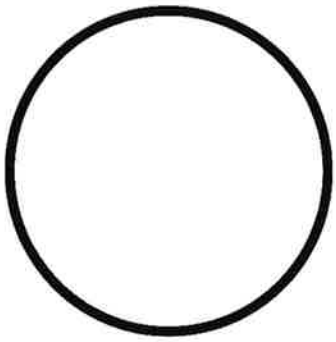
_____

_____.

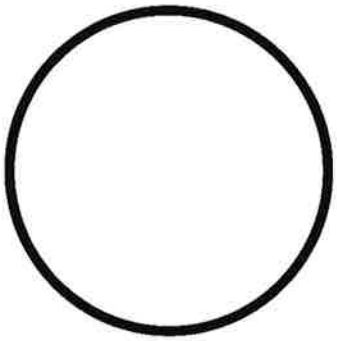
Name: _____ Date: _____

Freshwater and Saltwater Drops Investigation

1. Practice releasing drops of water into the cup until you can make drops that are always the same size.
2. Carefully release three drops of freshwater into the Freshwater circle.
3. Empty the dropper into the cup, then use the empty dropper to spread out drops in the circle.
4. Repeat Steps 2 and 3 with the salt water.



Freshwater



Salt water

Name: _____ Date: _____

Chapter 2 Home Investigation: Evaporation and Condensation

1. With the help of someone at home, look for examples of evaporation and condensation happening in or around your home.
2. Record each example in the table below.

Examples of evaporation	Examples of condensation

Name: _____ Date: _____

Scientific Explanation of How Raindrops Form

1. In the box below, write scientific words that you will use in your explanation.
2. Your audience is the people of East Ferris.
3. Write an explanation that answers Question 1 on the next page.
4. Your explanation should also include:
   - **a topic sentence** that answers the question.
   - supporting sentences that tell **what happens** and **why**.
5. After you have written your explanation for Question 1, answer Question 2 on page 3 following the same steps.

Scientific language

Name: _____ Date: _____

Scientific Explanation of How Raindrops Form (continued)

Question 1: Why does a lot of rain form over West Ferris?

A lot of rain forms over West Ferris because _____

_____

_____.

During condensation, _____

_____

_____.

This means that _____

_____

_____.

This is why _____

_____

_____.

Name: _____ Date: _____

Scientific Explanation of How Raindrops Form (continued)

Question 2: Why doesn't much rain form over East Ferris?

_____

_____.

Make a diagram if it helps you explain your thinking. Label your diagram.

Name: _____ Date: _____

Scientific Explanation of Why It Rains in West Ferris

1. In the box below, write scientific words that you will use in your explanation.
2. Your audience is the people of East Ferris.
3. Write an explanation that answers Question 1 on the next page.
4. Make sure you include what is happening at the nanoscale as part of your explanation.
5. Your explanation should also include:
   - **a topic sentence** that answers the question.
   - supporting sentences that tell **what happens** and **why**.
6. After you have written your explanation for Question 1, answer Question 2 on page 3 following the same steps.

Scientific language

Name: _____ Date: _____

Scientific Explanation of Why It Rains in West Ferris (continued)

Question 1: Why does a lot of rain form over West Ferris?

A lot of rain forms over West Ferris because _____

_____

_____

_____.

When it is cold, _____

_____

_____

_____.

This means that _____

_____

_____

_____.

Name: _____ Date: _____

Scientific Explanation of Why It Rains in West Ferris (continued)

Question: Why doesn't much rain form over East Ferris?

_____

_____

_____

_____

_____.

Make a diagram if it helps you explain your thinking. Label your diagram.

Name: _____ Date: _____

Chapter 3 Home Investigation: Rain Quiz

1. Write four statements about rain and how raindrops form. Some statements should be true and some should be false.
2. Give the quiz to someone at home. Have that person read each statement. They should circle "Agree" by the statements they agree with and "Disagree" by the statements they disagree with.
3. Talk about the answers with the person who took the quiz. You might teach them something!

Statement 1: Agree / Disagree

_____

_____

Statement 2: Agree / Disagree

_____

_____

Statement 3: Agree / Disagree

_____

_____

Statement 4: Agree / Disagree

_____

_____

Name: _____ Date: _____

End-of-Unit Writing Part 1: Explaining the Rain Shadow on Ferris Island

1. Write an explanation that answers the question below.
2. Your audience is the people of East Ferris.
3. Make sure you include what is happening at the nanoscale as part of your explanation.

Question: Why does more rain form over West Ferris than East Ferris?

Name: _____ Date: _____

End-of-Unit Writing Part 1: Explaining the Rain Shadow on Ferris Island (continued)

Make a diagram if it helps you explain your thinking. Label your diagram.

Name: _____ Date: _____

End-of-Unit Writing Part 1: Explaining the Rain Shadow on Ferris Island

1. Write an explanation that answers the question below.
2. Your audience is the people of East Ferris.
3. Make sure you include what is happening at the nanoscale as part of your explanation.
4. Your explanation should also include:
   - **a topic sentence** that answers the question.
   - supporting sentences that tell **what happens** and **why**.

Question: Why does more rain form over West Ferris than East Ferris?

More rain forms over West Ferris than East Ferris because _____

_____

_____.

When the wind blows, _____

_____

_____

_____

_____

_____

_____.

This is why _____

_____

_____.

Name: _____ Date: _____

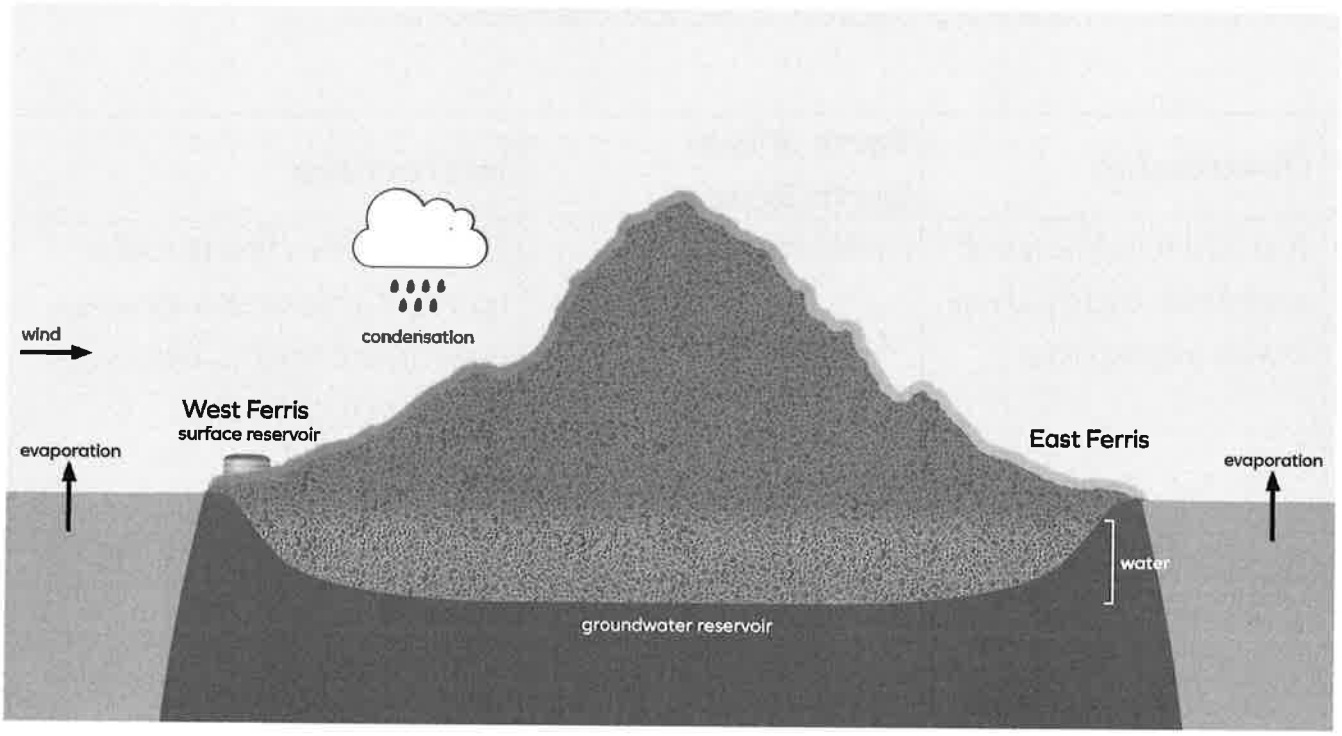
End-of-Unit Writing Part 1: Explaining the Rain Shadow on Ferris Island (continued)

Make a diagram if it helps you explain your thinking. Label your diagram.

Name: _____ Date: _____

Labeling Earth System Interactions

1. On the diagram of Ferris Island below, label interactions between parts of the Earth system.
2. You can add more drawings if it helps you explain the interactions between the parts of the Earth system.
3. Write a caption that explains one of the interactions you labeled.



Caption:

_____

_____

_____

Name: _____ Date: _____

Chapter 4 Home Investigation: Earth System Interactions

1. Describe the different parts of the Earth system (hydrosphere, biosphere, atmosphere, and geosphere) to someone at home.
2. With their help, try to identify examples of parts of the Earth system interacting in and around your home.
3. In the table below, record what you observed in the first column. In the second column, write which parts of the Earth system you think are involved. In the third column, describe the interactions.

Observation	**Parts of the Earth System**	**Interactions**
A puddle in the yard is smaller today than it was yesterday.	hydrosphere atmosphere	The water in the puddle (part of the hydrosphere) is evaporating to become water vapor in the atmosphere.

Name: _____ Date: _____

Chapter 5 Home Investigation: Chemical Reactions at Home

1. Find two different chemical reactions that you can observe in or around your home. Answer the questions below for each chemical reaction.
2. Explain to someone at home how you know these are chemical reactions.
3. Ask the person at home if he or she has any questions about how to know if a chemical reactions has happened. Record these questions, then see if you can answer them.

Chemical Reaction 1: _____

What evidence can you observe that shows this is a chemical reaction?

_____

_____

Chemical Reaction 2: _____

What evidence can you observe that shows this is a chemical reaction?

_____

_____

What questions did the person you talked to have about chemical reactions? Were you able to answer them?

_____

_____

_____

_____

_____

_____

Name: _____ Date: _____

End-of-Unit Writing Part 2: Explaining Wastewater Treatment

1. In the box below, write scientific words that you will use in your explanation.
2. Your audience is the people of East Ferris.
3. Write an explanation that answers the question on the next page.
4. Make sure you include what is happening at the nanoscale as part of your explanation.

Scientific language

Name: _____ Date: _____

End-of-Unit Writing Part 2: Explaining Wastewater Treatment (continued)

Question: How does adding substances to wastewater allow engineers to get rid of harmful substances?

Make a diagram if it helps you explain your thinking. Label your diagram.

Name: _____ Date: _____

End-of-Unit Writing Part 2: Explaining Wastewater Treatment

1. In the box below, write scientific words that you will use in your explanation.
2. Your audience is the people of East Ferris.
3. Write an explanation that answers the question on the next page.
4. Make sure you include what is happening at the nanoscale as part of your explanation.
5. Your explanation should include:
   - **a topic sentence** that answers the question.
   - supporting sentences that tell **what happens** and **why**.

Scientific language

Name: _____ Date: _____

End-of-Unit Writing Part 2: Explaining Wastewater Treatment (continued)

Question: How does adding substances to wastewater allow engineers to get rid of harmful substances?

Adding substances to wastewater allows engineers to get rid of harmful substances because _____

_____.

New substances form when _____

_____

_____

_____.

This means that _____

_____

_____.

Make a diagram if it helps you explain your thinking. Label your diagram.

Town Hall Meeting Script

Ryan, middle school science teacher: I am still confused about how we could possibly have a water shortage. I know that the water on Earth does not really leave Earth, but instead gets recycled over and over again. Why should we be worried?

Xiao, head forest ranger: I travel all over the island, so I know that it rains a lot over in West Ferris. I'm still confused about why West Ferris has a lot of rain but East Ferris doesn't. Could a water resource engineer explain it to me?

Rio, dog walker: Sometimes it's very cold when I'm walking the neighborhood dogs, and I know that rain sometimes happens when it's cold. So why hasn't there been any rain on these days?

Latisha, construction worker: I want to build something that can help solve the water shortage in East Ferris. What could I build, and how could I build it?

Fatima, head of an advertising agency: My company is excited about creating posters to let people know what they can do to help our water shortage problem, but I'm not sure what ideas to include. What are some things we can do to help solve the problem?