Amplify Core Knowledge Language Arts®

Unit 7

Activity Book | Grade 3

Astronomy: Our Solar System and Beyond

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Amplify Core Knowledge Language Arts

ISBN 978-1-68161-036-8

Printed in China
06 SHN 2020

Unit 7
Astronomy : Our Solar System and Beyond
Activity Book

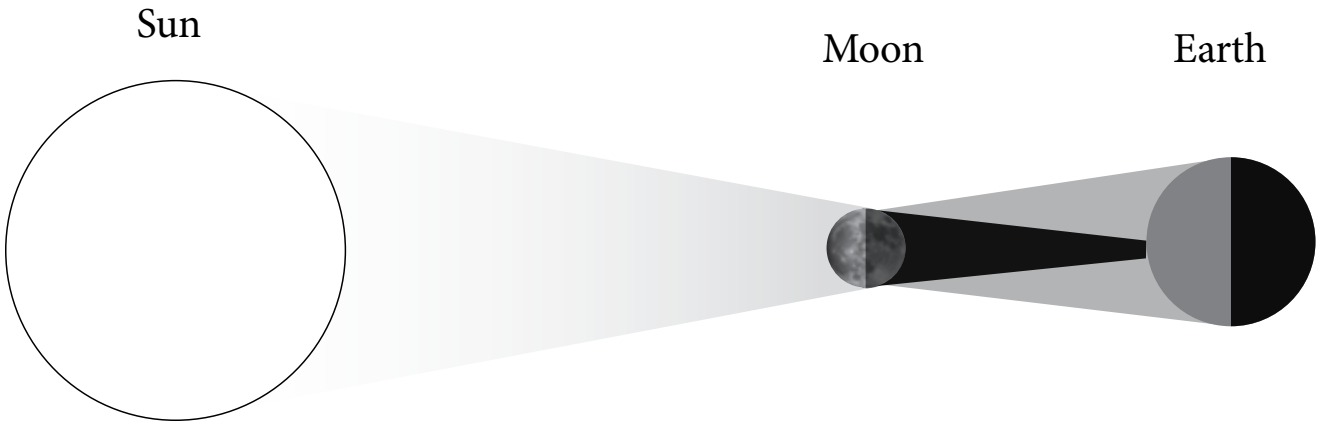
This Activity Book contains activity pages that accompany the lessons from the Unit 7 Teacher Guide. The activity pages are organized and numbered according to the lesson number and the order in which they are used within the lesson. For example, if there are two activity pages for Lesson 4, the first will be numbered 4.1 and the second 4.2. The Activity Book is a student component, which means each student should have an Activity Book.

NAME: _____

DATE: _____

A Solar Eclipse

Directions: Read the statements and look at the diagram. Sequence the events of a solar eclipse in the correct order.



___ The moon's shadow falls somewhere on the surface of Earth.

___ In its orbit around Earth, the moon passes between the sun and Earth.

___ A shadow forms behind the moon.

___ The sun's light shines on half of Planet Earth.

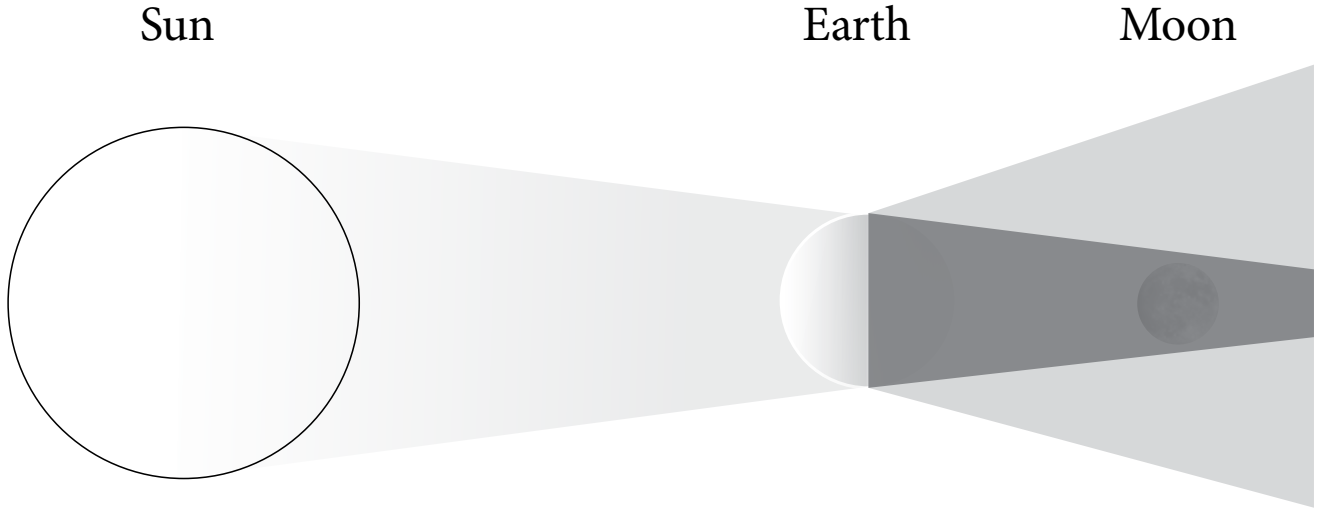
___ The moon blocks some of the sunlight that is shining on Earth.

NAME: _____

DATE: _____

A Lunar Eclipse

Directions: Read the statements and look at the diagram. Sequence the events of a lunar eclipse in the correct order.



___ Earth's shadow crosses the face of the moon, and the moon appears darkened as we view it from Earth.

___ The moon reflects the sunlight so that we see a bright moon from Earth.

___ Earth passes between the sun and the moon.

___ The sun's light shines on the moon.

___ Earth blocks some or all of the sunlight that is shining on the moon.

NAME: _____

DATE: _____

The Sun, Earth, and Our Solar System

1. What two types of energy does the sun provide?
   A. The sun provides electrical and wind energy.
   B. The sun provides heat and light energy.
   C. The sun provides light and electrical energy.
   D. The sun provides water and heat energy.

   page _____

2. How many days does it take for the Earth to orbit the sun?
   A. It takes about 78 days for the Earth to orbit the sun.
   B. It takes about 439 days for the Earth to orbit the sun.
   C. It takes about 365 days for the Earth to orbit the sun.
   D. It takes about 149 days for the Earth to orbit the sun.

   page _____

3. How long does it take for the Earth to make a full rotation on its axis?
   A. It takes 24 hours for the Earth to make a full rotation on its axis.
   B. It takes 3 days for the Earth to make a full rotation on its axis.
   C. It takes 365 days for the Earth to make a full rotation on its axis.
   D. It takes 24 days for the Earth to make a full rotation on its axis.

   page _____

4. What creates the energy that the sun gives off?

   A. The sun's gases create the energy that the sun gives off.

   B. Light and heat from other stars create the energy that the sun gives off.

   C. Absorbing energy from the eight planets creates the energy that the sun gives off.

   D. Running into objects in space creates the energy that the sun gives off.

   page _____

5. What is the solar system?

   _____

   _____

   _____

   page _____

NAME: _____

DATE: _____

Dear Family Members,

Please help your child succeed in spelling by taking a few minutes each evening to review the words together. Helpful activities for your child to do include: spelling the words orally, writing sentences using the words, or simply copying the words.

Spelling Words

This week, we are reviewing all five spelling patterns for /j/ that we have already learned. Your child will be tested on these words.

Students have been assigned three Challenge Words, *answer*, *great*, and *grate*. Challenge Words are words used very often. The Challenge Words do not follow the spelling patterns for this week and need to be memorized.

The Content Word for this week is *Jupiter*. This word is directly related to the material that we are reading in *What's in Our Universe?* The Content Word is an optional spelling word for your child. If your child would like to try it but gets it incorrect, it will not count against him or her on the test for trying. We encourage everyone to stretch themselves a bit and try to spell this world.

The spelling words, including the Challenge Words and the Content Word, are listed below:

1. jellyfish	8. eject	15. average
2. germy	9. budget	16. fudge
3. digest	10. lodging	17. giraffe
4. fringe	11. gymnasium	**Challenge Word**: *answer*
5. nudging	12. jewel	**Challenge Word**: *great/grate*
6. ridge	13. bridging	**Content Word**: *Jupiter*
7. exchange	14. dodge	

Student Reader

The chapters your child will read this week in *What's in Our Universe?* include information about our solar system: the sun, Earth, our moon, the eight planets, asteroids, comets, and meteors. Be sure to ask your child each evening about what he or she is learning.

Students will take home text copies of the chapters in the reader throughout the unit. Encouraging students to read a text directly related to this domain-based unit will provide content and vocabulary reinforcement. Your child will also bring home a copy of the glossary for use in reading the text copies to family members. The bolded words on the text copies are the words found in the glossary.

NAME: _____

DATE: _____

The Sun, Earth, and Our Solar System

Look up in the sky at noon. What do you see? If it is not cloudy, you will see the sun shining brightly in the sky.

The sun provides energy—both light and heat energy. The sun's light and heat give life to plants and animals. Without the sun, Earth would be freezing cold. Have you ever wondered what the sun is made of or why it gives off so much light and heat?

You may be surprised to know that the sun is a star. It is in fact the closest star to Earth. It is made up of different, hot gases. How hot? A hot summer day on Earth is 100 degrees. On the sun, it is 10,000 degrees! The sun stays that hot all the time! The sun's gases create the light and heat energy it gives off.

Long ago, people believed that the sun moved around Earth. This seemed to make sense. Each morning at the start of the day, the sun rose in the east. At the end of the day, the sun set in the west—exactly opposite from where it had came up. To explain this change, people said the sun moved around Earth. But now we know that this is not what really happens. The sun does not move around Earth. It is Earth that moves around the sun!

The sun is in the center of a group of eight **planets**. All of these **planets**, including Earth, circle, or **orbit**, around the sun. The sun, **planets**, and other objects in space that **orbit** the sun are called the **solar system**. The word *solar* has the Latin root word *sol*, which means "the sun." Everything in the **solar system** relates to the sun.

Our **planet**, Earth, moves in two ways. We have just learned that Earth circles around the sun. It takes about 365 days, which is one year, for Earth to **orbit** the sun.

Earth also moves by spinning, or **rotating**, on its **axis**. It is this spinning that makes day and night on Earth and the motion of the sun across the sky from sunrise to sunset. It takes one day for Earth to make one complete **rotation** on its axis. As Earth **rotates** and spins, different parts of it face the sun. When the part facing the sun gets sunlight, it is daytime on that side of Earth. The part that faces away from the sun gets no sunlight. So, on that side of Earth, it is nighttime. Did you know that when it is daytime where we live, it is nighttime on the other side of Earth?

When Earth **rotates** on its **axis**, it is **tilted**. At certain times of the year, one part of Earth is **tilted** toward the sun. The sunlight is more direct and it feels hotter. For people living on this part of Earth, it is summer. For people living on the part of Earth **tilted** away from the sun, there is less sunlight and it is winter. So, when it is summertime for us, there are people living on other parts of Earth where it is winter! So, the fact that Earth is **tilted** on its **axis** is what creates the seasons of the year.

NAME: _____

DATE: _____

Dear Family Members,

Over the next several days, your child will be learning about astronomy, the solar system, and galaxies. S/he will review the organization of the solar system, with the sun at the center and Earth and the other planets orbiting it. S/he will learn that gravity is an important force in the universe and will also learn about galaxies, specifically the Milky Way and Andromeda galaxies.

Below are some suggestions for activities that you may do at home to reinforce what your child is learning about astronomy.

1. Solar System Model

During this domain your child will be seeing images of the planets and their positions in the solar system. You may wish to reinforce this by working with him/her to make your own model of the solar system out of play dough, clay, or papier-mâché. You may wish to reference the diagram of our solar system at the end of this letter. In your model, be sure to include the sun, the eight planets, and the asteroid belt found between Mars and Jupiter. You may also wish to include Earth's moon, the moons of other planets, and/or the dwarf planets Pluto and Ceres. (Pluto is no longer grouped with the eight planets.) You may wish to try to recreate the colors of the planets as shown in photographs taken by the Hubble telescope. (As you create your models, you may wish to depict the orbits of the planets as well.)

2. Gravity, Forces, and Mass

Your child will be learning about a force called *gravity.* In this lesson, your child will be introduced to many new words, that you may want to review at home. Two of the words used are *force,* which is a pull or push on an object or system, and *mass,* which is the amount of material something is made of.

3. Out-of-This-World Images

Your child has learned that a great deal of what we know about space has been discovered through scientific observation. S/he has heard that scientists use

telescopes to observe outer space and that the most famous of these is the Hubble telescope. Your child has also learned about galaxies, what they are made of, and how they are shaped. Visit the Hubble gallery (http://hubblesite.org/gallery/) with your child to view photographs of the planets in our solar system, objects in the universe, and various galaxies. You may also wish to search for related television programs on Discovery, National Geographic, and PBS channels.

4. Words to Use

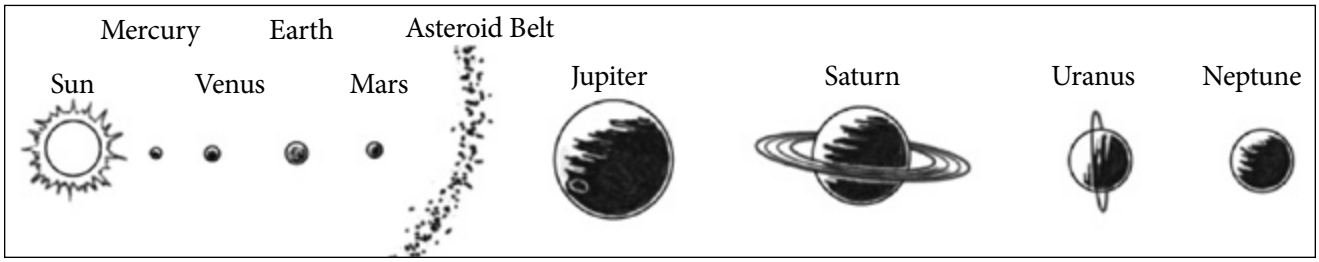
Below are several of the words that your child will be learning about and using. Try to use these words as they come up in everyday speech with your child.

- *satellite*—The moon is Earth's only natural satellite; Jupiter, however, has more than sixty natural satellites.
- *rotates*—We experience daylight and the darkness of night because planet Earth rotates around its axis once each day and causes different parts of Earth to face the sun.
- *cluster*—Our Milky Way Galaxy is a cluster of billions of stars.
- *gravity*—Gravity is a force of attraction between two objects that pulls the object with less mass toward the object with greater mass.

5. Read Aloud Each Day

It is very important that you read with your child every day. Set aside time to read to your child and to listen to your child read to you. I have attached a list of recommended trade books related to astronomy that may be found at the library, as well as a list of informational websites.

Be sure to praise your child whenever s/he shares what has been learned at school.



NAME: _____

DATE: _____

The Moon

1. Describe what happens during a solar eclipse.

_____

_____

_____

page _____

2. Describe what happens during an eclipse of the moon.

_____

_____

_____

page _____

3. Why does the moon look different on different nights of the month?

_____

_____

_____

page _____

4. Compare and contrast Earth's orbit around the sun and the moon's orbit around Earth.

_____

_____

_____

pages _____

If a statement is true, write "true" on the line. If a statement is false, write "false" on the line.

5. The moon gives off light of its own just like the sun.

_____

page _____

6. The moon orbits around Earth.

_____

page _____

7. It takes 24 hours for the moon to orbit around Earth.

_____

page _____

8. Solar eclipses happen much more often than eclipses of the moon.

_____

page _____

NAME: _____

DATE: _____

Compare and Contrast—Our Solar System

Video	Read-Aloud

Write a summary about how the video and the Read-Aloud were most similar:

NAME: _____

DATE: _____

Conjunction *so*

Match the sentences by writing the number of the cause *in the blank that identifies the appropriate* effect. *Rewrite the sentences below, inserting the conjunction* so. *Remember to add correct capitalization and punctuation.*

Causes	**Effects**
1. The book was very exciting.	_____ We played inside.
2. The puppy was very tired.	_____ We helped her look for them.
3. The weather was rainy.	_____ It took a long nap.
4. Mother lost her glasses.	_____ Randy read it three times.

1. _____

_____

2. _____

_____

3. _____

_____

4. _____

_____

A. *Read the two simple sentences.*

B. *Decide which happened first and write the word* Cause *over top of it.*

C. *Decide which happened second and write the word* Effect *over top of it.*

D. *Add the conjunction* so *before the simple sentence that happens second and is the effect, join the two sentences.*

E. *Then, write them as a compound sentence including the conjunction* so.

Example: I forgot to clean up my room. I wasn't allowed to go out to play.

Cause	**Effect**
I forgot to clean up my room, so I wasn't allowed to go out to play.	

1. Chocolate is my favorite flavor of ice cream. I asked for it for dessert.

_____

_____

2. Tom enjoys Uncle Steve's company very much. He invited Uncle Steve to go out to a movie.

_____

_____

3. The little girl said hello. Her neighbor said hello back.

_____

_____

NAME: _____

DATE: _____

The Moon

Look up in the sky at night. What do you see? If it is not cloudy, you may be able to see the moon.

When you see the moon at night, it might look white. It might look gray or silver. Sometimes, it seems to shine and glow. But the moon does not give off light the way the sun does. The moon is a ball of rock that gives off no light of its own. It simply reflects light from the sun. That means light from the sun hits the moon and bounces off.

You already know that Earth **orbits** around the sun. But did you know that the moon **orbits** around Earth? It takes just about one month for the moon to completely circle Earth. If you look up at the night sky each night of the month, you may think that the size and shape of the moon is changing. However, the size and shape are not really changing. The moon is still a round ball. It looks different at different times of the month because of the way the light from the sun is reflected and how much of the moon we can see from Earth.

The way that Earth, the moon, and the sun move can also make other interesting things to look at in the sky. When Earth, the moon, and the sun all move together in a direct line, something called an **eclipse** can take place.

We can see two kinds of **eclipses** from Earth. One kind happens when the moon gets in between the sun and Earth. When that happens, we can't see the sun for a while. At least, we can't see part of it. We call this a solar **eclipse** or an **eclipse** of the sun.

The other kind of **eclipse**, called a lunar eclipse, also involves the sun, the moon, and Earth. It takes place when the moon passes behind Earth and into its shadow. It is Earth's shadow that you see. Earth has blocked out the sun and left part of the moon in darkness.

Eclipses do not happen often because the sun, Earth, and the moon all have to line up just right. Solar **eclipses** can only be seen from a narrow strip of Earth at a time. While they happen once or twice a year, it is very, very rare to see one. **Eclipses** of the moon happen more often, several times each year. They can be seen from half of Earth at a time, so are more often visible.

Whether or not you can see an **eclipse** depends on where you are on Earth. You must never look directly at a solar **eclipse**. The sun is very bright and could burn your eyes. But, it is safe to look at an **eclipse** of the moon. If an **eclipse** is predicted, it is usually big news, so you will likely hear about it.

NAME: _____

DATE: _____

Practice Conjunction *so*

Match the sentences by writing the number of the cause *in the blank that identifies the appropriate* effect. *Rewrite the sentences below, inserting the conjunction* so. *Remember to add correct capitalization and punctuation.*

Causes	**Effects**	
1. The day was very hot.	_____	We adopted her immediately.
2. The day was very cold.	_____	We bundled up in several layers of clothing.
3. The puppy was shivering and afraid.	_____	We asked Mom if we could go swimming at the park.
4. The kitten was cute.	_____	He hid behind the couch to escape the thunder.

1. _____

_____

2. _____

_____

3. _____

_____

4. _____

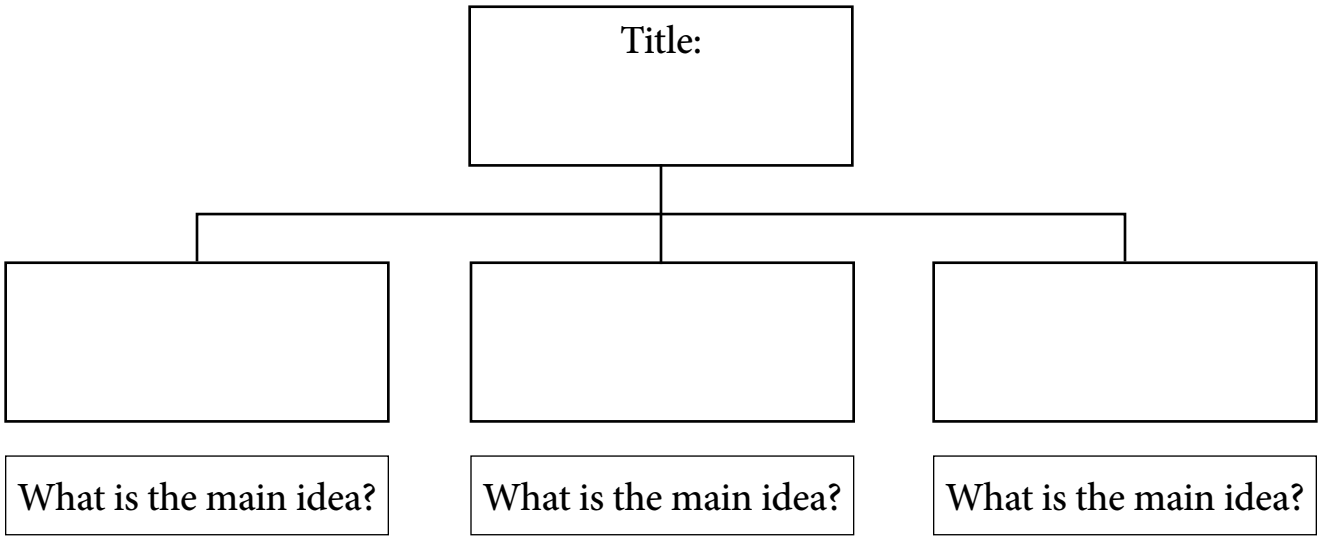
_____

NAME: _____

DATE: _____

Main Idea in Paragraphs

Directions: After reading the selection, reread to find the main idea of three of the paragraphs. Then, write a summary of the selection from the three main ideas.



Summary

NAME: _____

DATE: _____

Blank Busters

jellyfish	germy	digest	fringe
nudging	ridge	exchange	eject
budget	lodging	gymnasium	jewel
bridging	dodge	average	fudge
giraffe			
Challenge Word: *answer* **Challenge Word**: *great/grate* **Content Word**: *Jupiter*			

Fill in the blanks in the sentences below with one of the spelling words in the chart. Only if needed, add a suffix to the end of a word in order for the sentence to make sense: –s, –ed, –ing, –er, *or* –ly.

1. The stained sink was dirty and _____.

2. The normal or _____ size of _____ in the ocean is about five inches.

3. The long-necked _____ at the zoo looks like a giant to a short child.

4. My stomach is _____ the yummy _____ that my grandmother made.

5. In the school's _____ students made a huge replica of the planets in our solar system, and our class made _____.

6. The _____ around the collar of your jacket looks just _____.

7. My little brother kept _____ me with his elbow so I would look at all of the sparkly _____ in the glass case.

8. Our group was _____ from the game because the referee said we were cheating.

9. Asking questions and _____ them are opposites.

Write three sentences using spelling words of your choice that were not used in the first ten sentences. Make sure to use correct capitalization and punctuation. You may use the Challenge Words or Content Word in your sentences.

1. _____

_____

2. _____

_____

3. _____

_____

The Planets Closest to the Sun: Mercury, Venus, Earth, and Mars

Our planet Earth is one of eight planets in our solar system that orbit around the sun. The other planets are Mercury, Venus, Mars, Jupiter, Saturn, Uranus, and Neptune. People have been looking at the planets for thousands of years. People from Mesopotamia, the Greeks, Mayans, Incas, and Aztecs were all interested in the planets. They used just their **naked eye** to study the planets. Now, we have telescopes and other tools that help us get a better look at the planets.

The four planets closest to the sun—Mercury, Venus, Earth, and Mars—are small planets. These planets have a rocky, or solid, surface.

Mercury and Venus are closer to the sun than Earth. The other planets are farther away.

Earth needs 365 days to make one orbit around the sun. That is the length of one year on Earth.

The closer a planet is to the sun, the less time it needs to make an orbit around the sun. Mercury is the closest planet to the sun. It needs just 88 days to make one orbit. Venus is the next closest to the sun. It needs just 225 days to make an orbit. The planets that are farther away take much longer. It takes Neptune 165 years to orbit the sun!

Besides being closest to the sun, Mercury is the smallest of all the planets. The English name for the planet comes from the Romans. They named the planet after the Roman god Mercury. The Greek name for this same god is Hermes.

Venus is the second planet from the sun and is closest to Earth. This planet was named after the Roman goddess of love. For a long time, scientists thought that Venus might be a lot like Earth. After all, it is close to Earth. It is about the same size as Earth and it is covered with clouds, like Earth. But this idea turned out to be wrong, too. We know now that Venus and Earth are different in lots of ways.

Scientists had to change their ideas to fit the new facts. They have now concluded that Venus is much hotter than Earth. It would not be a good place for us to live or even visit.

Mars is the fourth planet from the sun. It is named after the Roman god of war. When you look at Mars in the night sky, it looks quite red. This is because the rocks on Mars contain rust.

Many space **probes** and robots have landed on Mars. They have taken photographs and also dug up rocks.

One **probe** that went to Mars not long ago found some ice. That was big news. Ice is frozen water. If there is water on Mars, there might be life. Some experts argue that nothing could live on Mars. They say it is too cold and too dry. Others think there might be life on Mars. They think there might be something alive down under the rocks. Still others think there might have been life on Mars at one time but there isn't any now.

The Planets Closest to the Sun

If a statement is true, write "true" on the line. If a statement is false, write "false" on the line.

1. Venus is a good place for us to live and visit.

   _____

2. The planet Mars looks red because its rocks have rust in them.

   _____

3. It takes Mercury less time to orbit the sun than the Earth does because Mercury is much closer to the sun.

   _____

4. The four planets closest to the sun have a rocky and solid surface.

   _____

5. Write an interesting fact about Mercury, Venus, and Mars. (Do not use a fact from the earlier questions on this worksheet.)

Mercury: _____

_____

_____

Venus: _____

_____

_____

Mars: _____

_____

_____

6. Compare and contrast an inner planet and our moon.

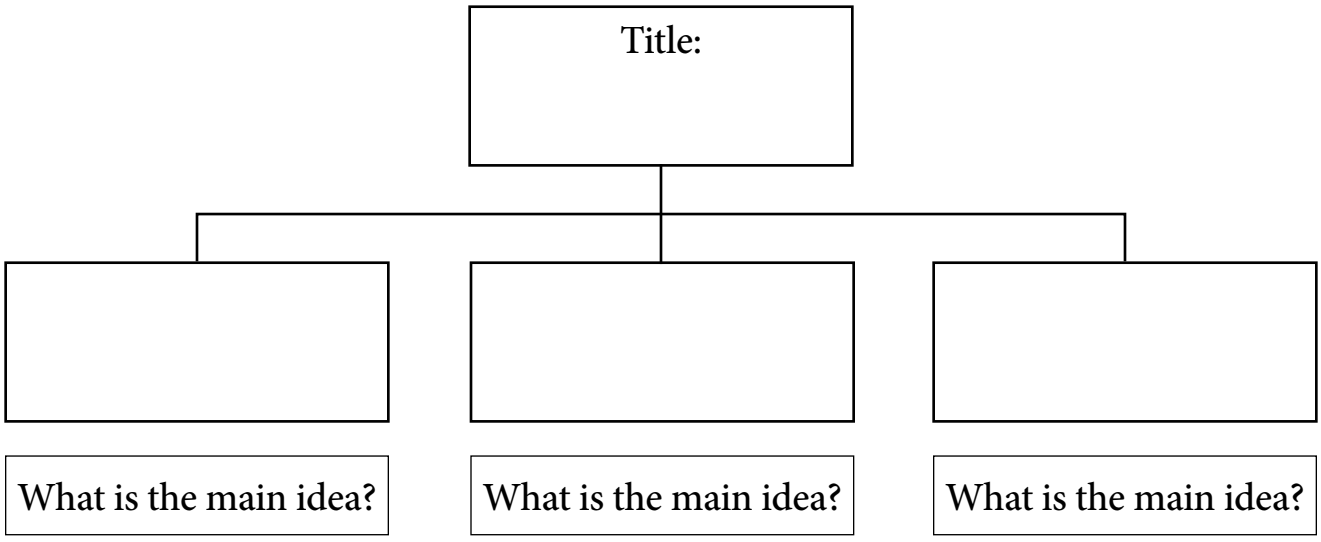
Inner Planet		Moon
	size?	
	surface?	
	appearance?	
	interesting fact?	

NAME: _____

DATE: _____

Main Idea in Paragraphs

Directions: After reading the selection, reread to find the main idea of three of the paragraphs. Then, write a summary of the selection from the three main ideas.



Summary

NAME: _____

DATE: _____

–ful: Suffix Meaning "full of"

Directions: The left-hand side of the table contains words that use the prefix you have been studying. Use the blanks on the right side to record additional words that use the same prefix. Make sure to include the definition for the new words you brainstorm.

careful—(adjective) full of effort to do something correctly or safely	
fearful—(adjective) full of the feeling that something bad will happen	
hopeful—(adjective) full of the feeling of wanting something to happen and thinking it will	
painful—(adjective) full of suffering caused by injury, illness, or sadness	

Write the correct word to complete each sentence.

hopeful	careful	fearful	painful	powerful

1. I had a _____ blister on my foot from walking a long distance in my new shoes.

2. Grandma told us to be _____ when we walked on the icy sidewalk so we wouldn't fall.

3. The _____ kitten hid under the couch when the thunderstorm came through with lots of noises and flashes.

4. The _____ motor in the boat allowed the boat to move quickly even with so many people in it.

5. Write your own sentence using the one word left in the box.

NAME: _____

DATE: _____

–less: Suffix Meaning "lacking"

careless—(adjective) lacking the effort to do something correctly or safely	
powerless—(adjective) lacking the strength or authority to do something	
fearless—(adjective) lacking the feeling that something bad will happen	
hopeless—(adjective) lacking the feeling of wanting something to happen and thinking it will	

Write the correct word to complete each sentence.

powerless	careless	painless	hopeless	fearless

1. He smiled and had a _____ look in his eye as he climbed the ladder up to the high dive platform for the first time.

2. Steven made a _____ mistake on his math test because he didn't check over his answers before turning in the test.

3. Katie had the _____ thought that she would never finish writing her paper in time for the due date.

4. The _____ lawn mower needed more gas to start up again.

5. Write your own sentence using the one word left in the box.

NAME: _____

DATE: _____

Suffixes *–ful* and *–less*

Write the correct suffix in the blank to complete the sentence. Explain why the suffix you added makes the correct word for the sentence.

1. She had a hope _____ (–ful, –less) expression on her face as she checked the weather and saw that the rain would stop before the outdoor concert that night.

   Why did you choose your answer? _____

   _____

2. With a fear _____ (–ful, –less) look in his eyes, Jack touched the snake that the zookeeper brought around to the group even though he was terrified of snakes.

   Why did you choose your answer? _____

   _____

3. Her last visit to the doctor was pain _____ (–ful, –less) because she felt great and did not need any shots or medicine.

   Why did you choose your answer? _____

   _____

4. He used a care _____ and steady hand to paint the details on
(–ful, –less)
the outside of the wooden box so the design would look perfect.

   Why did you choose your answer? _____

   _____

5. The power _____ camera needed to have a charged battery to
(–ful, –less)
start back up again.

   Why did you choose your answer? _____

   _____

6. The hope _____ search for Grandpa's missing glasses took all
(–ful, –less)
morning and finally stopped when he said he would just go to the eye doctor to get a new pair.

   Why did you choose your answer? _____

   _____

7. She had the fear _____ thought that during her next swim
(–ful, –less)
practice, she would try to swim the entire length of the pool without stopping.

   Why did you choose your answer? _____

   _____

NAME: _____

DATE: _____

The Outer Planets: Jupiter, Saturn, Uranus, and Neptune

Do you remember the names of the four planets closest to the sun? If you said, "Mercury, Venus, Earth, and Mars," you are right! There are four more planets called the outer planets. So there are eight planets in all.

Jupiter is the very next planet after Mars. After Jupiter come Saturn, Uranus, and Neptune in that order. Neptune is the planet that is farthest from the sun. Uranus is difficult to see with the naked eye and Neptune is impossible to see without help. Neptune is only visible using a telescope.

The outer planets are very large and are mostly made of gas. Scientists often call these planets **gas giants**. Of all the planets, Jupiter is the largest: 1,300 Earths could fit inside Jupiter! It is made mostly of **hydrogen** gas, the most common gas in the universe.

The gases on Jupiter seem to be blowing around. When you see images of Jupiter, you can see a giant red spot. It looks like an eye! Experts think it is a big wind storm, like a huge hurricane.

Jupiter also has 63 known moons that orbit it. Some of these moons are very large, even larger than Earth's moon.

Saturn is known for its many large rings that orbit the planet. These rings are made of ice and dust. The ice reflects light and makes the rings glow. Saturn also has many moons that orbit it.

The last two planets are Uranus and Neptune. These planets are the farthest from the sun so they are very cold. Uranus and Neptune also have rings, but they aren't easily seen like Saturn's. Both planets also have moons.

So now you know the names of all eight planets. Try asking the adults in your family how many planets there are. They may tell you that there are nine planets. When the adults in your family were in school, people said that there was a ninth planet called Pluto. But in 2006, scientists decided that Pluto did not have all of the characteristics needed to be classified as a planet. They removed Pluto's name from the list of planets, so now there are only eight planets.

NAME: _____

DATE: _____

The Outer Planets

1. The planets below are in the wrong order. Use the numbers 1–8 to put them in the right order from closest to the sun to farthest away from the sun.

   A. _____ Mars
   B. _____ Neptune
   C. _____ Venus
   D. _____ Mercury
   E. _____ Uranus
   F. _____ Saturn
   G. _____ Earth
   H. _____ Jupiter

2. Which planet is the only one that cannot be seen from Earth with the naked eye?

   A. Neptune is the only one that cannot be seen with the naked eye.
   B. Uranus is the only one that cannot be seen with the naked eye.
   C. Jupiter is the only one that cannot be seen with the naked eye.
   D. Saturn is the only one that cannot be seen with the naked eye.

3. What feature is the planet Saturn most known for?

   _____

   _____

4. Out of all eight planets, which one is the largest?
   A. Mercury is the largest of all eight planets.
   B. Jupiter is the largest of all eight planets.
   C. Saturn is the largest of all eight planets.
   D. Neptune is the largest of all eight planets.

5. Jupiter is made up mostly of a gas that is the most common gas in the universe. What type of gas is it?

_____

_____

6. Choose an inner planet (Mercury, Venus, Earth, Mars) and compare and contrast it with an outer planet (Jupiter, Saturn, Uranus, Neptune).

Inner Planet		Outer Planet
	size?	
	rings?	
	surface?	
	distance from Earth?	
	interesting fact?	

NAME: _____

DATE: _____

5.1 ACTIVITY PAGE

Spelling Assessment

As your teacher calls out the words, write them under the correct header.

'j' > /j/	**'dge' > /j/**	**'g' > /j/**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

'dg' > /j/	**'ge' > /j/**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Challenge Word: _____ **Challenge Word**: _____

Challenge Word: _____ **Content Word**: _____

Dictated Sentences

1. _____

_____

_____

_____

2. _____

_____

_____

_____

NAME: _____

DATE: _____

Exit Ticket: Meteors, Meteoroids and Meteorites

Directions: Write a paragraph explaining the differences between meteors, meteoroids, and meteorites. Be sure to use correct spelling, capitalization, and punctuation. You may draw a triple Venn diagram on the back of this page to help you before you begin writing.

NAME: _____

DATE: _____

Building Sentences with the Conjunction *so*

Add adjectives and adverbs to the first set of rows. Add simple sentences to the second set of rows to answer the question what happened because. *Choose from your list to create two new, more interesting sentences using the conjunction* so *to connect the two simple sentences.*

Starter Sentence: **The girl sang.**			
Adjectives to describe **the girl**	Adverbs to describe **how**	Adverbs to describe **when**	Adverbs to describe **where**
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.
4.	4.	4.	4.
Simple sentences that answer the question, **"What happened because the girl sang?"**			
1.			
2.			
3.			
4.			

New sentences:

1. _____

_____

2. _____

_____

Starter Sentence: **My brother jumped.**			
Adjectives to describe **my brother**	Adverbs to describe **how**	Adverbs to describe **when**	Adverbs to describe **where**
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.
4.	4.	4.	4.
Simple sentences that answer the question, **"What happened because my brother jumped?"**			
1.			
2.			
3.			
4.			

New sentences:

1. _____

_____

2. _____

_____

NAME: _____

DATE: _____

Galaxies and Stars

	Key ideas from the text
Pages 34–35	
Pages 36–37	
Pages 38–39	
Pages 40–41	

NAME: _____

DATE: _____

Galaxies and Stars

If a statement is true, write "true" on the line. If a statement is false, write "false" on the line.

1. The stars do not look like the sun because they are all a lot smaller than the sun. _____

   page _____

2. Stars are similar in size, color, and brightness. _____

   page _____

3. Other stars are balls of hot gas, just like the sun. _____

   page _____

4. The Greek root *astron* means sky. _____

   page _____

5. Our solar system is in the Andromeda Galaxy. _____

   page _____

Answer the following question in complete sentences on the lines below.

6. What are some ways that stars can be different?

page(s) _____

7. Compare and contrast a solar system and a galaxy.

Our Solar System		Our Galaxy
	size?	
	location?	
	characteristics?	

NAME: _____

DATE: _____

Reading/Writing Choice Board

Directions: Select activities in three of the boxes below after you complete your reading. Write your responses on a separate sheet of paper, making sure to include the numbers of the activities you chose. When completing the activities, write in complete sentences using correct spelling, capitalization, and punctuation.

1. Create a graphic organizer and compare and contrast two ideas in the text.	2. What is the main idea of the text? List three details from the text that support the main idea.	3. Write a sentence describing the author's purpose (persuade, inform, or entertain).
4. Write three questions you still have after reading the text.	5. Write a list of three new words you learned in the text, their definitions, and use them in a sentence.	6. Describe how one of the images in the chapter helps you to understand the text.
7. Find three sentences that show comparing or contrasting. Write the sentences and underline the comparing and contrasting word or words.	8. Write three new things that you learned from the text.	

NAME: _____

DATE: _____

Conjunctions *and* and *or*

*Read both sentences in each iteam carefully, looking at the words in the sentence. Choose and write one conjunction (*and, or*) in the blank so that the sentence makes sense.*

1. Saturuday is going to be a busy day full of fun things to do. First, Mother plans to take all of us to the library, _____ then we will go to get ice cream at my favorite ice cream shop. Yum!

2. My little sister had forgotten to make her bed. Father said to her, "Sandy, you must make your bed, _____ you will not be able to watch TV tonight."

Read both sentences in each item carefully, looking closely at the conjunction and *or* or *and other clue words in each sentence. Circle the choice that uses the conjunction correctly so that the sentence makes sense.*

3. A. My sister wants to go shopping, and my brother wants to go too.
   B. My sister wants to go shopping, or my brother wants to go too.

4. A. Sally could wake up early in the morning, or she could sleep late today.
   B. Sally could wake up early in the morning, and she could sleep late today.

5. A. Pete's favorite color is orange, or his favorite color is blue.
   B. Pete's favorite color is orange, and his favorite color is blue.

6. A. Aunt Dolly should go to the gas station, or she will run out of gas.
   B. Aunt Dolly should go to the gas station, and she will run out of gas.

Choose the correct answer, looking closely at the conjunctions and *or* or.

7. A. Tim is going to play board games, or he is going to play basketball this weekend. He can't decide which one.
   B. Tim is going to play board games, and he is going to play basketball this weekend. He can't decide which one.

8. A. She will feel better, or she will still be sick in the morning.
   B. She will feel better, and she will still be sick in the morning.

Write compound sentences using the conjunctions and *or* or.

9. (and)

_____

_____

_____

10. (or)

_____

_____

_____

NAME: _____

DATE: _____

Dear Family Members,

Please help your child succeed in spelling by taking a few minutes each evening to review the words together. Helpful activities for your child to do include: spelling the words orally, writing sentences using the words, or simply copying the words.

Spelling Words

This week, we are reviewing all four spelling patterns for /n/ that we have already learned. Your child will be assessed on these words.

Students have been assigned three Challenge Words, *very*, *vary*, and *enough*. Challenge Words are words used very often. The Challenge Words do not follow the spelling patterns for this week and need to be memorized.

The Content Word for this week is *astronomer*. This word is directly related to the material that we are reading in *What's in Our Universe?* The Content Word is an optional spelling word for your child. If your child would like to try it but gets it incorrect, it will not count against him or her on the test for trying. We encourage everyone to stretch themselves a bit and try to spell this world.

The spelling words, including the Challenge Words and the Content Word, are listed below:

1. gnat	8. design	15. knuckle
2. skinny	9. knobby	16. campaign
3. knotted	10. manned	17. giraffe
4. flannel	11. knowledge	**Challenge Word**: *very/vary*
5. knighted	12. channel	**Challenge Word**: *enough*
6. nearby	13. annoy	**Content Word**: *astronomer*
7. understand	14. gnarly	

Student Reader

The chapters your child will read this week in *What's in Our Universe?* include information about our solar system: galaxies, stars, and constellations. Students will also read chapters about exploring space, walking on the moon, and what it's like in space. Be sure to ask your child each evening about what he or she is learning.

Students will take home text copies of the chapters in the reader throughout the unit. Encouraging students to read a text directly related to this domain-based unit will provide content and vocabulary reinforcement. Please remind your child that the glossary can be used for finding the meaning of the bolded words.

NAME: _____

DATE: _____

Galaxies and Stars

Look up in the sky at night. What do you see besides the moon? If it is not cloudy, you may be able to see lots of stars glittering in the sky.

Remember that the sun is also a star. The stars in the night sky do not look like the sun. They do not look as big or as bright. But they are, in fact, very much alike. The stars in the night sky are big balls of hot gas, just like the sun.

So why don't they look the same? The night stars are much, much farther away from Earth than the sun. That is why they look like tiny specks of light. If we could get close to the stars, they would look bigger, brighter, and more like the sun. But the stars we see at night are so far away that no one from Earth has ever been able to get close to them.

Scientists who study the stars and outer space are called **astronomers**. The Greek root word *astron* means star. The prefix *astro* is used in many other English words.

All stars are big balls of hot gas, but **astronomers** have discovered that stars differ in many ways. Stars can be different sizes and colors. Some stars are closer to Earth than others and some stars are hotter than others. Stars that are the hottest and closest to Earth appear brighter than other stars.

Astronomers also discovered that stars cluster together in large groups. A large group of stars that cluster together in one area is called a **galaxy**. There are **billions** and **billions** of stars in one **galaxy**. That's a lot of stars!

The **galaxy** to which our sun and solar system belong is called the **Milky Way Galaxy**. It has a spiral shape when viewed from space. From Earth, it looks like a "milky" band of white light.

The nearest spiral galaxy to the **Milky Way Galaxy** is called the **Andromeda Galaxy**. It is **billions** and **billions** of miles from the **Milky Way Galaxy**. There's that number **billions** again. You have probably heard of a million before. A million is a huge number. So what's a **billion**? It's one thousand million! It is safe to say that the **Andromeda Galaxy** is a long, long, long way away! Even so, it is sometimes possible to see the **Andromeda Galaxy** at night.

Scientists think there are **billions** of **galaxies** in the universe. There's that number **billions** again. There are **billions** of stars in each **galaxy** and **billions** of **galaxies** in the universe—that is almost more than you can think about!

NAME: _____

DATE: _____

"Galaxies"

Isn't space amazing? The thing that may amaze you most is how much distance there is between the planets in our solar system. No wonder they call it space! Now that we have reached the edge of our solar system, do you want to see more closely what lies in the center? Before you can understand what lies beyond our solar system, you need to know a little more about what stars are. And the best place to start is with the star that lies at the center of our solar system that you see every day: our very own sun.

The sun is so much brighter and bigger than all the rest of the stars because we are so much closer to our star than we are to any other star. We only see our star, the sun, in the daytime because that's when we're facing it. And when the sun lights up our skies, it is so bright that we can't usually see any other stars in the daytime.

You can tell just by looking that there is no way a spaceship could land on the sun—it's a big mass of incredibly hot gas! There's no solid surface to land on. The sun, like all stars, is made mostly of a gas called hydrogen. Hydrogen atoms in the center of the sun crash into each other under intense heat and pressure. The hydrogen **atoms fuse**, or join together, to form another gas called helium, and this fusion creates energy you can see and feel in the form of light and heat. So, hydrogen turning into helium produces vast amounts of energy, and is what causes the sun to shine.

The amount of heat and light being produced by a star determines its color. The surface of our sun is about ten thousand degrees Fahrenheit, not

nearly as hot as the inside of the star! Even though ten thousand degrees is really hot compared to boiling water, our sun is still only considered a medium-hot, yellow star. Some stars are even hotter and some are not as hot as our sun. In fact, our sun is not as hot as it used to be.

Scientists believe that all stars are made of more or less the same things: hydrogen, helium, and smaller amounts of other basic substances. But just because stars are made from huge amounts of hydrogen and helium doesn't mean that all stars are the same—they aren't. The amount of substance or mass that makes up each star can vary. And the substances that make up some stars are more packed together than in others.

Stars have different ages, too. Some stars in the universe were literally just born yesterday, and some—like the sun—are believed to be billions of years old. But our sun is not at the end of its life either; many scientists believe our sun still has **billions** of years yet to live! So stars can be very different from each other.

Our sun seems large to us, and it is. In fact, it's so large that more than one million Earths could fit inside it! That's a lot of Earths—and just one Earth is pretty big. But believe it or not, our sun is small compared to many other stars. There are stars in the universe that are two thousand times as big as the sun! Our sun seems very bright to us, and it is. But there are stars that are more than four million times as bright! Even so, there are stars that are smaller than our sun and some that are less bright. So you see, stars can differ in size, mass, color, brightness, temperature, and age. But the one thing that most stars have in common is that they exist in groups called galaxies.

Do you remember how we defined our solar system as a neighborhood of planets, asteroids, and other objects in orbit around a star? Well,

a galaxy is a **cluster** of many stars that orbit around together as an even bigger neighborhood—like a country. So, a galaxy is basically a gigantic country of stars. But all galaxies are not the same; they come in many shapes and sizes. Some galaxies are **spiral**. Some galaxies are elliptical in shape. Still other galaxies are **irregular** in shape, with no particular pattern.

This is a view of a spiral galaxy like the **Milky Way**, looking down on it. Astronomers know what the Milky Way Galaxy looks like, but no person or spaceship has ever traveled outside of the Milky Way to take a picture of the whole galaxy. Scientists have figured out by using modern scientific instruments that the Milky Way is a **spiral** galaxy and looks very much like other **spiral** galaxies that we can take pictures of. As you can see, this spiral **galaxy** has a bright center, or hub, of many bright stars with star-studded arms swirling out from it amid clouds of gas.

How many stars do you think are in one galaxy? A single galaxy usually contains between one **billion** and a few hundred **billion** stars. And that's not even counting any planets or other objects that may be in orbit around all of those **billions** of stars. In addition to **billions** of stars, galaxies also contain clouds of gas and pieces of dust which can eventually come together to form new stars.

And don't forget—galaxies also include the space in between the stars that are in it. There is a huge amount of space in space! Stars in the Milky Way Galaxy can be one hundred thousand **light-years** away from each other, or they can be five **light-years** away from each other, but most are somewhere in between.

A **light-year** is the distance that light travels in one year. Light travels at a speed of 186,282 miles per second. So one l**ight-year** is nearly six trillion miles! That's about six thousand billion miles. And you thought a **billion** was big! Well, as you can see, stars in the same galaxy are very far away from each other. Those are **astronomical** distances!

As you look out at the Milky Way, you may wonder about the other galaxies out there. One of the closest galaxies to our Milky Way Galaxy is called the Andromeda (/an*drom*eh*dah/) Galaxy. The Andromeda Galaxy is a **spiral** galaxy like our Milky Way. Even though Andromeda is the closest **spiral** galaxy to our galaxy, the Andromeda Galaxy is still very far away, and there is still much that remains unknown about it. Several other small **irregular** galaxies lie between the Milky Way Galaxy and the Andromeda Galaxy.

Now you know a lot more about our school's "space address." We live on the planet Earth. Earth is the third planet from the sun in our solar system, one of four small, rocky planets. Our solar system is just one planetary system located in one of the **spiral** arms of the Milky Way Galaxy.

You may be thinking about all of the other galaxies that exist besides our galaxy. There are **billions** of galaxies in the universe. Another **astronomical** number! "Wait," you may be thinking, "let me get this right".

"There are **billions** of galaxies . . . and all of them have billions of stars in them? Wow—that's so big I can't even get my mind around it!" The universe truly is an incredibly gigantic and vast place.

Glossary:

1. **astronomical**—really large; enormous in number, size, or distance
2. **atoms**—the tiny particles from which all substances are made
3. **cluster**—a number of things of the same kind that are together in a group
4. **fuse**—join together (fusion)
5. **irregular**—uneven; not regular in shape, size, or other characteristics
6. **light-years**—distance traveled by light over a period of years; a measure of length used in astronomy
7. **spiral**—curved in shape; gradually winding around a center point

NAME: _____

DATE: _____

Compare and Contrast Two Texts

Reading "Galaxies and Stars"	Read-Aloud "Galaxies"

Compare and Contrast Summary

Directions: using your notes from the graphic organizer, write a paragraph about how the two texts are most similar and another paragraph about how they are different.

NAME: _____

DATE: _____

Word Sort

Identify the headers. Read the words in the box and circle the letters that have the /j/ sound. Write the words under each header that match the header's spelling pattern.

'j' > /j/	'dge' > /j/	'g' > /j/
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

'dg' > /j/	'ge' > /j/
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

budge	game	beige	cabbage	great
hedging	Jill	gemstones	gadget	botch
cage	gerbil	abridging	gallery	tonnage
gypsy	gelcap	ghastly	ajar	enjoy
appendage	smudge	adjective	injury	judgment
porridge	wedged	giant	pledge	fudge

NAME: _____

DATE: _____

Dictionary Skills

Use the following portion of a dictionary page to answer the questions below.

jester **jiffy**

jet 1. *noun* A stream of liquid forced out a small opening. 2. *noun* A plane powered by jet engines. 3. *verb* To travel by jet.

jewel 1. *noun* A gem used in jewelry. 2. *noun* A thing greatly valued.

1. What are the two guide words on the page? _____

2. What are the two entry words on the page? _____

3. How many definitions are there for *jet*? _____

4. Would the word *jest* be on this page? _____

5. Circle the words that would come before *jester* from the following list:
   jeep, *jigsaw*, *jettison*

6. Which definition of *jet* matches the use of the word in the sentence:

   When you shake up a soda and open it, a *jet* of soda will shoot out of the can opening. _____

   What part of speech is *jet* in this sentence? _____

7. Choose one of the two remaining definitions for *jet* and write a sentence using *jet* in that form. _____

   _____

   _____

8. Which definition of *jewel* matches the use of the word in the sentence:

   The smallest puppy in the litter was the *jewel* of the bunch.

   _____

   What part of speech is *jewel* in this sentence? _____

9. Write a sentence using definition 1 for *jewel*. _____

   _____

   _____

NAME: _____

DATE: _____

Constellations

1. How many constellations can be seen in the night sky?
   A. 40 constellations can be seen in the night sky.
   B. 64 constellations can be seen in the night sky.
   C. 88 constellations can be seen in the night sky.
   D. 48 constellations can be seen in the night sky.

   page _____

2. Why might the stars in constellations look brighter than other stars?
   A. The stars look brighter because they are closer to the Earth.
   B. The stars look brighter because they are reflecting light of other stars.
   C. The stars look brighter because they are hotter than other stars.
   D. Both A and C

3. What is another name for the constellation Ursa Major?

   _____

   page _____

4. What group of stars is within the constellation Ursa Major?

   A. The Little Dipper is within the constellation Ursa Major.

   B. The Big Dipper is within the constellation Ursa Major.

   C. Ursa Minor is within the constellation Ursa Major.

   D. Polaris is within the constellation Ursa Major.

   page _____

5. Why is Polaris different from other stars in the sky?

   A. It is part of the Big Dipper.

   B. It never stays in the same place.

   C. It is not really a star.

   D. It stays in the same place all year.

   page _____

6. Pretend you are outside on a clear night. Describe the steps you would take to locate Polaris.

   _____

   _____

   _____

   _____

   _____

   page _____

"Escape at Bedtime"

By Robert Louis Stevenson

The lights from the parlour and kitchen shone out
Through the blinds and the windows and bars;
And high overhead and all moving about,
There were thousands of millions of stars.
There ne'er were such thousands of leaves on a tree
Nor of people in church or the Park,
As the crowds of stars that looked down on me,
And that glittered and winked in the dark.

The Dog, and the Plough, and the Hunter, and all,
And the star of the sailor, and Mars,
These shone in the sky, and the pail by the wall
Would be half full of water and stars.
They saw me at last, and they chased me with cries,
And soon had me packed into bed;
But the glory kept shining and bright in my eyes,
And stars going round in my head.

NAME: _____

DATE: _____

Practice Conjunction *so*

Create an Effect *to go with the* Cause *listed below, adding the conjunction* so, *to make a compound sentence. Draw two lines under* so.

1. Today is Saturday _____

_____

_____

_____.

2. There is no school in summer _____

_____

_____

_____.

3. The merry-go-round was lots of fun _____

_____

_____

_____.

4. Pink cotton candy is my favorite flavor _____

_____

_____

_____.

Create a Cause *to go with the* Effect *listed below, adding the conjunction* so, *to make a compound sentence. Draw two lines under* so.

1. _____

_____

_____ the leaves dropped off of the trees.

2. _____

_____

_____ we opened presents.

3. _____

_____

_____ Mother ran to answer the phone.

4. _____

_____

_____ Tom put his foot on the brake and stopped the car.

NAME: _____

DATE: _____

Dear Family Members,

Over the next few days, your child will be learning more about the universe, one theory of its possible origins, and space exploration, focusing on key figures such as Nicolaus Copernicus and Mae Jemison.

Below are some suggestions for activities that you may do at home to reinforce what your child is learning about astronomy.

1. Space Exploration

Over the next few days, your child will be learning about NASA-led space exploration. You may want to review with your child that space exploration is one way astronomers learn more about the universe. Your child will hear about the Apollo 11 mission to the moon and the astronaut Mae Jemison. Ask your child to share what they remember about these two topics. (Neil Armstrong and Buzz Aldrin were the first to set foot on the moon; they traveled on a rocket; etc. Mae Jemison was the first female African American astronaut.) You may wish to supplement what your child has learned by visiting the website www.NASA.gov to research current NASA endeavors and the most recent astronauts and space explorations.

2. Stargazing

Go outside one evening and stargaze with your child. Point out any constellations you know and have your child share with you any of the constellations s/he has learned. You may also wish to point out any of the planets visible in the night sky, like Venus or Mars. If you have access to technology, such as a computer tablet or smartphone, you may wish to use a stargazing application.

If you live in a city, it may be hard to see stars because light pollution will interfere with the light from the stars. Sometimes the outskirts of a city, or even a high point in the city, have less light pollution, making stars more visible. You may want to consider traveling to one of these areas to stargaze. You may also wish to visit a science museum or planetarium to observe constellations more closely.

3. Universe Theories

Your child will be hearing one theory of how the universe may have begun called the Big Bang theory. Share with your child that there are many theories of how the universe began. You may wish to research some of these different theories together, discussing what a theory is with your child.

4. Words to Use

Below are several of the words that your child will be learning about and using. Try to use these words as they come up in everyday speech with your child.

- *expanding*—The balloon is expanding with each breath I blow into it.
- *constellations*—Ancient peoples created stories about groups of stars that made patterns called constellations in the night sky in the shapes of people, animals, and other objects.
- *theory*—The Big Bang theory says that all matter in the universe was compressed in a small, hot, dense speck that suddenly expanded.
- *opposed*—In Copernicus's time, many people opposed the idea that the sun was at the center of the solar system.

5. Read Aloud Each Day

It is very important that you read with your child every day. Set aside time to read to your child and to listen to your child read to you. Please refer back to the list of recommended resources related to astronomy that may be found at the library, as well as the list of informational websites.

Be sure to praise your child whenever s/he shares what has been learned at school.

NAME: _____

DATE: _____

Anticipatory Guide for "Space Exploration"

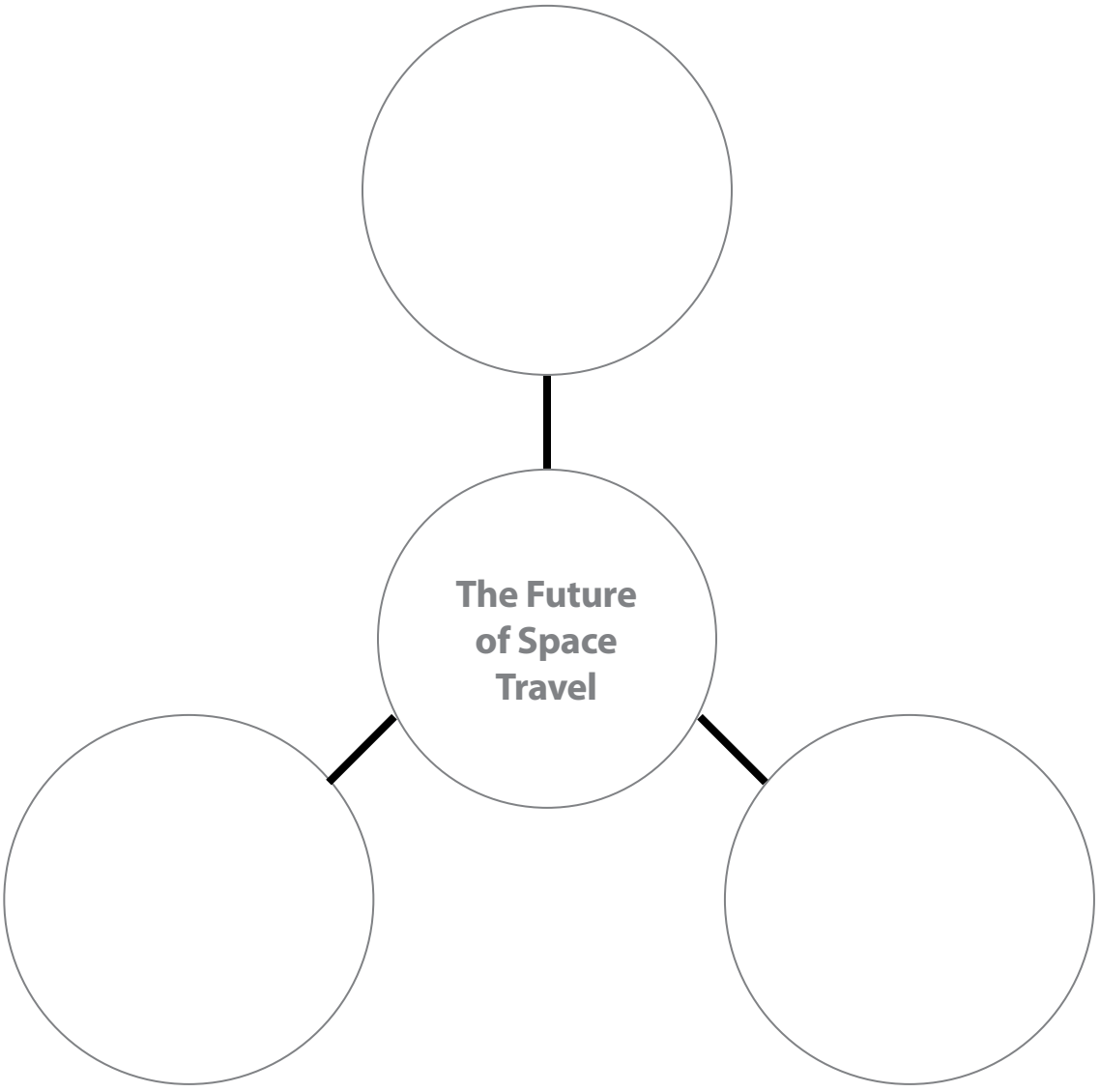
Before Listening	Statement	After Listening
T or F	Our solar system is geocentric.	T or F
T or F	Neptune wasn't discovered until more powerful telescopes were invented.	T or F
T or F	Observatories are built on mountains so they are closer to the stars.	T or F
T or F	The Hubble Space Telescope orbits the solar system.	T or F
T or F	The first human being to go into space was Soviet cosmonaut Yuri Gagarin.	T or F
T or F	Astronaut Buzz Aldrin was the first man to walk on the moon.	T or F
T or F	The Apollo 11 space capsule was not a reusable spacecraft.	T or F

If you could rename this Read-Aloud, what would you name it? Why?

NAME: _____

DATE: _____

The Future of Space Travel: Opinion



The Future of Space Travel

NAME: _____

DATE: _____

Blank Busters

gnat	skinny	knotted	recently
flannel	knighted	nearby	understand
design	knobby	manned	knowledge
channel	annoy	gnarly	knuckle
campaign			
Challenge Word: *very/vary* **Challenge Word:** *enough* **Content Word:** *astronomer*			

Fill in the blanks in the sentences below with one of the spelling words in the box. Only if needed, add a suffix to the end of a word in order for the sentence to make sense: –s, –ed, –ing, –er, *or* –ly.

1. The bothersome TV show was so _____ that I begged my family to change the _____.

2. My _____ silly uncle conducted a lavish _____ to be _____ Sir Uncle Fred!

3. Scientists called _____ study stars, planets, and satellites that are _____ by astronauts.

4. In the pasture is a tree that is so old that its branches are _____ and _____.

5. The _____ nightgowns were warm.

6. When the lights went out, I fumbled around in the dark and ran my _____ into a closed door.

7. Teachers make it so easy to _____ difficult topics and they love to fill our heads with _____.

8. I had searched for months but _____ discovered there is a library right around the corner which is _____ enough for me to walk to it.

Write three sentences using spelling words of your choice that were not used in the first ten sentences. Make sure to use correct capitalization and punctuation. You may use the Challenge Words or Content Word in your sentences.

1. _____

_____

2. _____

_____

3. _____

_____

NAME: _____

DATE: _____

10.1 ACTIVITY PAGE

Spelling Assessment

As your teacher calls out the words, write them under the correct header.

'nn' > /n/

_____

_____

_____

_____

_____

_____

'gn' > /n/

_____

_____

_____

_____

_____

_____

'n' > /n/

_____

_____

_____

_____

_____

_____

'kn' > /n/

_____

_____

_____

_____

_____

_____

Challenge Word: _____

Challenge Word: _____

Challenge Word: _____

Content Word: _____

Dictated Sentences

1. _____

_____

_____

_____

2. _____

_____

_____

_____

Exploring Space

1. What did Galileo discover with his telescope?
   A. Galileo discovered Mars with his telescope.
   B. Galileo discovered Jupiter with his telescope.
   C. Galileo discovered four of Jupiter's moons with his telescope.
   D. Galileo discovered the Andromeda Galaxy with his telescope.

   page _____

2. What is the Hubble Telescope?
   A. It is a telescope in an observatory in Texas.
   B. It is a telescope launched into space by NASA.
   C. It is Galileo's first telescope.
   D. It is a large telescope NASA put on the moon.

   page _____

3. If the Hubble Telescope took a picture of Jupiter, describe what the picture would look like.

4. Who was the first American astronaut to go into space?

page _____

5. When did the first rocket ship go to the moon?

   A. The first rocket ship went to the moon in 1969.

   B. The first rocket ship went to the moon in 1961.

   C. The first rocket ship went to the moon in 1972.

   D. The first rocket ship went to the moon in 1965.

page _____

6. What is gravity and why is it a challenge for rocket ships?

page _____

NAME: _____

DATE: _____

Triangle Connections

Directions: Using your notes and the glossary in your Student Reader, select three words we've studied in the unit so far and arrange them in a triangle shape. Then, connect the first word to second word with a line and write on the line how the two words are connected. Next, draw a line from the second word to the third word and write on the line how those two words are connected. Finally, draw a line from the third word to the first word and write the connection.

First word:

Second word:

Third word:

NAME: _____

DATE: _____

Reading/Writing Choice Board

Directions: Select activities in three of the boxes below after you complete your reading. Write your responses on a separate sheet of paper, making sure to include the numbers of the activities you chose. When completing the activities, write in complete sentences using correct spelling, capitalization, and punctuation.

1. Create a graphic organizer and compare and contrast two ideas in the text.	2. What is the main idea of the text? List three details from the text that support the main idea.	3. Write a sentence describing the author's purpose.
4. Write three questions you still have after reading the text.	5. Write a list of three new words you learned in the text, their definitions, and use them in a sentence.	6. Describe how one of the images in the chapter helps you to understand the text.
7. Find three sentences that show comparing or contrasting. Write the sentences and underline the comparing and contrasting word or words.	8. Write a sentence describing the author's purpose (persuade, inform or entertain).	9. Write three new things that you learned from the text.

Exploring Space

As you have learned in the last chapters, people have been interested in studying space since ancient times. It was possible to see only some stars and planets with the naked eye. Since they were far, far away, it was impossible to see anything in very much detail.

In 1609, an astronomer named Galileo [ga-li-LAE-oe] created a telescope that he used to observe the night sky. Galileo's telescope made things appear three times larger. Using his telescope, he discovered four of the many moons that orbit the planet Jupiter. He also observed the planet Saturn and the Milky Way.

Since Galileo's time, scientists have created more and more powerful telescopes. Some telescopes are housed in large **observatories** on Earth. Often, these **observatories** are on the top of mountains, far away from any cities or lights. This allows astronomers to clearly see the stars and planets.

Other telescopes are **launched** into space using rockets. They travel far above Earth and have a better view of the universe than telescopes on Earth. One of these telescopes is the **Hubble Telescope**. It was launched in 1990 by **NASA**, the American group of scientists who study outer space. The **Hubble Telescope** is still in space today, orbiting Earth. Since its **launch**, it has sent back thousands of photos to **NASA**. **Hubble's** photos have led to many new discoveries about the universe. For example, using photos from **Hubble**, scientists now think that the universe is about 13 to 14 billion years old!

Besides sending telescopes into space, **NASA** has also launched rocket ships into space. Scientists believed it was too dangerous for

humans to ride the first rocket ships into space. They did not know what effects space travel might have on humans. So, **NASA** first sent apes into space on rocket ships. "Why apes?" you might ask. Think back to what you learned in a previous reader about animals. Apes are mammals and belong to same group of animals, called primates, as humans. By studying the apes, scientists hoped to learn how space travel might affect humans. In 1961, **NASA** sent the first American **astronaut** into space on a rocket ship. His name was Alan Shepard. He stayed in space for only 15 minutes.

After 1961, **NASA** sent more **manned** flights into space. These flights orbited Earth but did not stop or land anywhere in space. Then, in 1969, the United States sent a rocket ship to the moon. The rocket ship was called **Apollo 11**.

Have you ever tried to throw a ball up in the air? The ball goes up at first. Then, it comes back down. No matter how hard you throw it, it comes back down because of **gravity**. **Gravity** is a force of **attraction** that pulls things toward one another. Earth's **gravity** pulls the ball back down to Earth.

Earth's **gravity** is a challenge for rocket ships like **Apollo 11**. In order to fly off into outer space, the rocket ship has to push up with a lot of force. It has to push up with so much force that **gravity** cannot pull it back down.

Apollo 11 fired a lot of strong rockets. It lifted off and went up slowly at first. Then, it got faster and faster. This is what it looked like after a few seconds. After just a few seconds more, it shot up out of Earth's atmosphere and into outer space.

NAME: _____

DATE: _____

"Gravity"

What exactly holds all of this stuff together in this huge universe? Why don't all these stars and planets just go flying off in any direction all over the universe? Why do they stick together in groups and clusters like solar systems and galaxies? These are excellent questions, and the answer is . . . **gravity**!

Gravity is an invisible **force** of attraction between objects. It's the **force** that holds galaxies and solar systems together. It's the **force** that keeps us firmly planted on planet Earth instead of flying off into space. It's the **force** that keeps Earth orbiting around the sun, and keeps the moon orbiting around Earth. You can't see **gravity** or touch it, but **gravity** is present between everything in the universe that has mass. Because of **gravity**, every single bit of **matter** in the universe pulls on every other piece of **matter** in the universe.

You and I exert a pull on each other, but because we have very little mass in our bodies compared to celestial bodies, our **gravitational pull** on each other is very small—so small we can't feel it at all.

Gravity depends greatly on mass . . . so what exactly is mass? Mass is just the amount of **matter** in an object. You and I are small compared to, say, a planet, or a star. We're made of less "stuff," so our mass is much, much smaller. Mass is important when you are trying to understand **gravity,** because the larger the mass, the larger the **gravitational pull**. So objects with really large masses, like stars and planets, have a really big **gravitational pull** on other objects. And objects with really small masses, like you or me,

have really small gravitational pulls on other objects—so small we don't even notice the pull at all. The more mass an object has, the more **gravity**, or pull, it is capable of. Because Earth has so much mass compared to all of the things that are on the surface of the Earth, its surface **gravity** keeps the things on Earth from flying off into space. You, your house, your bed, a ball you throw up into the air—all of these things stay on Earth due to **gravity**! Even the Earth's atmosphere and the oxygen we breathe are held close to Earth by its **gravitational pull**!

Gravity also causes you to have weight when you stand on a scale! Earth's **gravity** pulls down on you. The more mass you have, the harder the pull, and the higher the numbers on the scale. Think about an astronaut who is standing on the moon. The astronaut stays on the surface of the moon because of the moon's **gravity**. If the astronaut stood on a scale on the moon, the astronaut's weight would be six times less than the weight of the same astronaut on a scale on Earth! So, a person who weighs sixty pounds on Earth would weigh only ten pounds on the moon—about the weight of a bag of flour—because the moon has less mass than Earth, and its **force** of **gravity** is not as strong.

But the astronaut does not get pulled off the moon and back through space to Earth! Earth still has a larger mass than the moon, and it still has a larger **gravitational pull** than the moon. But because the astronaut is far away from Earth and very close to the moon, the **gravitational pull** of the moon has the most effect. It keeps the astronaut on the moon.

That's another important thing to know about **gravity**—the distance between two objects affects the **gravitational pull** between them. Objects that are close to each other pull harder than objects that are farther away. The effect

of an object's **gravitational pull** lessens as you get farther away from it. The sun has a lot more mass than Earth does. But the sun is also a lot farther away, and because we are on the surface of Earth, Earth's **gravity** has a much bigger effect on us, keeping us firmly on Earth—one of the many benefits of **gravity**!

The sun contains ninety-nine percent of all the mass in our solar system. Because the sun has more mass by far than anything else in the solar system, it also has more **gravity** than anything else in the solar system. The sun's **gravity**—or **force** of attraction—is so strong that it constantly pulls the planets toward it.

You may be wondering why the planets don't crash into the sun if the sun is pulling on them. Don't worry; that never happens because the planets are also moving really fast in their own orbits around the sun.

The combination of the planets' own speed and the sun's **gravitational pull** toward it is what keeps the planets constantly circling in orbit around the sun. It's a perfect balance—the planets continue in their predictable movements around the sun.

Sometimes **gravity** is so powerful that a **black hole** is formed: an object or area with an extremely strong **gravitational pull**. There are many **black holes** in space, and a **black hole's gravity** is so strong that once something gets close enough, nothing can escape its **gravitational pull**—not even light! Astronomers find **black holes** in space by noticing the movement of objects around them. You can't see **gravity**, but you can observe the way the **force** of **gravity** affects objects. Scientists are still learning about **black holes**, like many others things in outer space.

On a clear night we can often see the moon moving across our night sky. Have you ever been curious about why Earth has a moon? Many scientists think that about four and a half billion years ago there was a massive collision between Earth and a very large asteroid. The information they have gathered shows that the moon may have formed from the leftover debris from this amazing impact. Earth's **gravity** was able to hold the moon in its orbit. There is a strong **gravitational pull** between Earth and the moon. The moon's **gravity** pulls on all of the things on the Earth—including people! But the Earth's **gravity** is strong enough to keep us on Earth.

The moon's **gravity** also pulls on Earth's oceans, but the Earth's **gravity** pulls back—and it's a good thing it's stronger! The moon's **gravity** is just strong enough that it can move the water on Earth enough to cause **tides** in the oceans. **Tides** cause the regular rise and fall of the ocean's waters. People can see the effects of **tides** if they are at the seashore.

High **tides** cause the waves to come high up on the beach, and when low **tides** occur, the waves don't come up as far. Low **tide** is a good time to walk the beach and look for shells and creatures that live in the sand.

So, yes, the powerful effects of **gravity** can explain a lot of interesting things in the universe—it's what holds our moon in orbit around Earth. It's what causes ocean **tides** on Earth day after day. **Gravity** is why we stay on Earth and why objects we throw into the air come back down. **Gravity** even helps create new stars and planets by helping pull together the gases and dust that form them. We can't see **gravity**, but we can see its effects all around us—on Earth, in our solar system, and throughout our galaxy!

Glossary for "Gravity"

1. **gravity**—the force or pull created by the mass of objects in the universe toward each other
2. **force**—a pull or a push on an object or system
3. **matter**—the substances all objects on Earth are made of; all substances that take up space
4. **gravitational pull**—the force that draws all objects in the universe toward each other
5. **black hole**—an object or area in space that has such strong gravity that not even light can escape from it
6. **tides**—the periodic or regular rise and fall of the surface of large bodies of water on Earth that is caused by the interaction of the moon's gravity with Earth

NAME: _____

DATE: _____

Gravity Experiment

Directions: Follow your teacher's directions for conducting the experiment. You will record your predictions, results, and conclusions on this page.

Objects dropped		My prediction	Result
Experiment number 1	**Marble** **Paper**		
Why did this happen?			
Experiment number 2			
Why did this happen?			

Objects dropped		My prediction	Result
Experiment number 3			

Why did this happen?

Write a summary of the gravity experiment and what you learned:

NAME: _____

DATE: _____

11.3 TAKE-HOME

Dear Family Members,

Please help your child succeed in spelling by taking a few minutes each evening to review the words together. Helpful activities for your child to do include: spelling the words orally, writing sentences using the words, or simply copying the words.

Spelling Words

This week, we are reviewing the spellings of /ae/, /k/, /s/, /j/, and /n/ that students have already learned. Your child will be assessed on these words.

Students have been assigned two Challenge Words, *different* and *thought*. Challenge Words are words used very often. The Challenge Word *different* does follow the spelling patterns for this week as the 'n' is pronounced /n/.

The Content Word for this week is *atmosphere*. This word is directly related to the material that we are reading in *What's in Our Universe?* The Content Word is an optional spelling word for your child. If your child would like to try it but gets it incorrect, it will not count against him or her on the test for trying. We encourage everyone to stretch themselves a bit and try to spell this world.

The spelling words, including the Challenge Words and the Content Word, are listed below:

1. yesterday	8. annoy	15. character
2. quickly	9. knowledge	16. budget
3. jewel	10. refrigerate	17. accomplish
4. recently	11. gymnasium	18. listen
5. subject	12. design	**Challenge Word**: *different*
6. awaited	13. digest	**Challenge Word**: *thought*
7. fascinate	14. kindness	**Content Word**: *atmosphere*

Student Reader

The chapters your child will read this week in *What's in Our Universe*? include information about the space shuttle and the international space station. Students may read chapters about Dr. Mae Jemison, Nicolaus Copernicus, and the Big Bang. Be sure to ask your child each evening about what he or she is learning.

Students will take home text copies of the chapters in the reader throughout the unit. Encouraging students to read a text directly related to this domain-based unit will provide content and vocabulary reinforcement. Please remind your child that the glossary can be used for finding the meaning of the bolded words.

NAME: _____

DATE: _____

Reflection 3-2-1

Write a sentence for each of the categories below:

Write three things you learned from "Gravity."

1.

2.

3.

Write two things that you already knew about gravity before reading "Gravity."

1.

2.

What is the one question about gravity that did not get answered from the reading or the discussion about the text?

1.

NAME: _____

DATE: _____

Grammar Review

Circle the sentence that is punctuated correctly.

1. A. "she was so glad to see her friend remarked Sally."
   B. "She was so glad to see her friend," remarked Sally.
   C. "She was so glad to see her friend?" remarked Sally.
   D. "She was so glad to see her friend, remarked Sally."

2. A. "The tunnel was dark long and scary, said Ted."
   B. "The tunnel was dark, long, and scary," said Ted.
   C. "The tunnel was dark, long, and scary, said Ted."
   D. "The tunnel was dark long, and scary," said Ted.

3. A. Mrs. Black asked "Do you have your reader open."
   B. Mrs. Black asked "Do you have your reader open?"
   C. Mrs. Black asked? "Do you have your reader open."
   D. Mrs. Black asked, "Do you have your reader open?"

NAME: _____

DATE: _____

Nicolaus Copernicus

1. How would you like to present the world with a new idea about how something works? What if, besides being new, your idea was so different from the ideas that people had believed for so long that people were opposed to even listening to your ideas? That kind of fierce **opposition** is exactly what a man named Nicolaus Copernicus experienced hundreds of years ago when he had a new idea about astronomy.

Nicolaus Copernicus was a regular person, just like you. He was born in Poland in 1473 and was raised by his uncle because both of his parents died when he was about ten years old. Copernicus went to universities in Poland and Italy and became a clergyman and doctor.

Copernicus studied many subjects, including math, philosophy, church law, and medicine. But his favorite subject of all—and the thing that he had a big new idea about—was astronomy.

As you have learned, astronomy is the study of the stars, space, and the universe, and astronomers are scientists who study these amazing phenomena. Long before Copernicus was born, the Greek philosopher Aristotle observed that the sun appeared to "rise" in the east and "set" in the west. Because Aristotle observed this **diurnal** motion of the sun with his own eyes, he—and many others—believed that the Earth was stationary and that the sun and all of the planets orbited around it. These observations and the strong belief in this way of looking at the universe shaped people's views for a very long time.

2. For more than one thousand years before Copernicus was born, most astronomers and other people believed that the universe was **geocentric**. In

other words, scientists thought that Earth was the center of the solar system and the universe. They believed Earth stood still and the sun and all of the planets and the moon circled around it, while the stars remained fixed in a rotating sphere that was farther away.

You have heard that most people believed the **geocentric** theory of the universe for more than one thousand years. Why? Because it was the best explanation anyone had come up with for why the sun and planets appeared to move the way they did. All of our observations were from Earth. Remember, people did not have all of the scientific tools back then that we have today, such as artificial satellites, spaceships, and high-powered telescopes. These tools have greatly expanded modern understandings of space through new opportunities for observation and gathering data. Think about the difference between a person standing on Earth looking around and a person in an airplane looking down on the Earth-bound person. The person in the airplane can see a much wider scope of Earth. Powerful telescopes have given us this new kind of perspective when we look up into space.

Most Greeks, including the famous philosopher Aristotle, believed the **geocentric** theory. There were a few exceptions, such as the Greek astronomer Aristarchus who, after much study, concluded that the sun was much larger than Earth, and that it was Earth that moved around the sun. His new idea, called a **hypothesis**, was never accepted by ancient astronomers, but after many, many years, Aristarchus's ideas greatly influenced other astronomers in their studies.

3. Most ancient Romans believed the **geocentric** theory. During this time it was the official position of the powerful Roman Catholic Church. Most astronomers were afraid to question it or explore other **hypotheses,** though

there were others before Copernicus who were trying to work out alternative explanations. When Copernicus was born in 1473, almost everyone in Europe believed in this **geocentric** theory, too. And almost everyone had no idea that this view of the universe was about to change!

How could so many people have a completely different view of the universe than we do today? The answer is easy. All of what we know about the way the universe works—all of science—comes from the observations and **logical** thinking of regular people, just like you and me. Astronomers have always used scientific theories to explain the movement of the stars and planets. Scientific theories aren't necessarily complicated or hard to understand—they are just possible explanations of how or why things happen. But remember, scientific theories aren't just guesses. They are ideas that are based upon evidence and careful observation of the world—such as observing where the stars appear in the sky every night.

Sometimes, however, what we think we are seeing is not what actually is, such as the world looking flat but actually being round.

4. A long time ago stargazers spent a lot of time outside looking at the night sky and noticed patterns in the sky. Early astronomers knew that the planets had different movements than the stars which circled around Polaris once a day. Astronomers observed that the planets moved slowly across the night sky along a certain pathway. But people had also started noticing some odd things about the motion of the planets as they followed this pathway. One of these odd things was that sometimes Mars and other planets made a strange backward loop in the sky. Scientists had tried to explain this motion using the **geocentric** theory of the universe, but the explanations became pretty

complicated. Still, most people didn't question that Earth was the center of the universe.

But Copernicus asked himself the question: if the planets were orbiting around Earth, why would they follow such complicated patterns? He didn't think they would, and so he used his **logical** mind to come up with a different scientific **hypothesis** that would better explain this strange looping motion. Copernicus also had the work of Aristarchus long before to add to his own studies. In science, often the work of one scientist is built upon the work of the many scientists who have come before him or her.

5. What was the scientific **hypothesis** that Copernicus decided upon? It was a **heliocentric hypothesis** of the universe. Does this idea sound familiar? This was the **hypothesis** of Aristarchus more than one thousand years earlier! By using mathematics to make careful **calculations** of the positions of the sun, planets, and other celestial bodies, Nicolaus Copernicus came to the same conclusion: that the sun was at the center of everything. He believed that Earth orbited around the sun along with the rest of the planets. Copernicus also **hypothesized** that the Earth is spinning and rotates on its own axis.

Of course, we now know that the Earth does rotate on its own axis. And we also know that although the sun isn't the center of the universe, it is the center of our solar system. So, the **heliocentric** scientific **hypothesis** Copernicus presented in the 1500s (that was built upon the scientific **hypothesis** Aristarchus had presented more than one thousand years earlier) was much closer to the truth than the **geocentric** theory that had been held for so many years.

Unfortunately, similar to Aristarchus, Copernicus's **hypothesis** was not widely accepted by people during his lifetime. For one thing, people thought

that if the Earth was spinning, all the things on it would be thrown off the Earth and into space. They didn't understand that the force of gravity holds us firmly on Earth! Another part of the reason for this is that Copernicus's ideas were not published until literally the day he died.

But another part of the reason that the **heliocentric hypothesis** was not widely accepted was that Copernicus's ideas challenged the belief held by most people that humans were at the center of the universe. This was very difficult for many people to accept, so change came slowly. Still, as with the studies of Aristarchus, the studies of Copernicus greatly influenced the astronomers who came after him, including the great Italian astronomer Galileo Galilei.

6. Galileo was inspired by the work of Copernicus and became one of the first astronomers to build and use a telescope to study space in more detail. As you heard earlier, Galileo discovered four of Jupiter's moons. He observed that the moons orbit Jupiter instead of Earth. His discoveries provided further evidence that Aristarchus and Copernicus were—although in the great minority—correct in their **heliocentric** theories!

Nicolaus Copernicus had made careful observations of the stars and other celestial bodies. He recorded these observations with great attention. But it was his willingness to ask questions—even when unpopular—that led him to a clearer answer. Each time you ask questions to help understand something better, you are following in the footsteps of the great astronomer Nicolaus Copernicus. Asking questions to get closer to the truth is what the scientific process is all about. Copernicus's questioning mind and careful observations led him to a new **hypothesis** about the arrangement of what

we now know as the solar system. Though people were slow to accept his **hypothesis**, the astronomers who followed Copernicus gathered more and more evidence, so that today the **heliocentric** view is the accepted theory. It's important to remember that new information and evidence often change our views about the world!

Glossary for "Nicolaus Copernicus"

1. **calculations**—mathematical methods used to answer a question
2. **diurnal**—having a daily cycle or occurring daily as a result of the Earth's 24-hour rotation around its axis
3. **geocentric**—having the Earth as the center
4. **heliocentric**—having the sun as the center
5. **hypothesis**—an idea that is based on observation and experimentation but that is not commonly accepted (hypotheses, hypothesized)
6. **logical**—makes sense in an organized, step-by-step way
7. **opposed**—resisted; was against (opposition)

NAME: _____

DATE: _____

Reader's Theater—Nicolaus Copernicus

What's My Line?

Your role: _____

Write out the dialogue that you will be presenting during Reader's Theater. Make sure that you know when you are supposed to speak by listing the line that comes before yours. Example:

Line before you speak (put the name of the character who speaks before you here, for example, Astronomer 1): "I think that the Earth is at the center of solar system."

Your line (put the name of your role here, for example, Copernicus): "I disagree! I think the Sun is the center of the solar system."

NAME: _____

DATE: _____

Dictionary Skills

Use the following portion of a dictionary page to answer the questions below.

name **neck**

name 1. *noun* A word used to call a person, place, or thing. 2. *noun* A bad word or phrase used to hurt someone. 3. *noun* A person's reputation. 4. *verb* To state the name of something. 5. *verb* To select someone for a job.

neat 1. *adjective* Not messy. 2. *adjective* Great or exellent.

1. Would the word *narrate* be on this page? _____

2. Circle the words that would come before *name* from the following list: *nails*, *nag*, *namely*

3. Which definition of *neat* matches the use of the word in the sentence:

   My desk at school is always *neat*. _____

   What part of speech is *neat* in this sentence? _____

4. Write a sentence using definition 2 for *neat*. _____

   _____

   _____

5. Write a sentence using definition 1 for *name*. _____

_____

_____

6. Write a sentence using definition 2 for *name*. _____

_____

_____

7. Write a sentence using definition 3 for *name*. _____

_____

_____

8. Write a sentence using definition 4 for *name*. _____

_____

_____

NAME: _____

DATE: _____

Compare and Contrast: Chapter 9 and Chapter 10

Chapter 9 "A Walk on the Moon"	Chapter 10 "What's it Like in Space?"

What is most similar about the two texts?

NAME: _____

DATE: _____

Reader's Theater Reflection

What was your favorite part of Reader's Theater?

What was your least favorite part?

Would you like to do a Reader's Theater activity again? Why or why not?

NAME: _____

DATE: _____

Suffix Review

Reminder:

- *–ous* means "full of"
- *–ive* means "relating to"
- *–ly* means "in a _____ way"
- *–ful* means "full of"
- *–less* means "lacking"

If the sentence shows an example of the correct meaning of the underlined word, write yes *on the blank that follows. If the sentence does not show an example of the correct definition of the underlined word, write* no.

1. Dana came up with an inventive way to hang art in her room and made the arrangement look like all the other rooms in the house. _____
2. I saw the hopeless look in my brother's eyes when I told him Dad was running late and we probably wouldn't make it to the movie tonight. _____
3. Dad keeps poisonous cleaning supplies locked up in the shed so no one can accidentally get into them and get sick. _____
4. He drove dangerously through the neighborhood, taking his time and slowing down when he saw people walking or riding bikes. _____
5. The principal appreciatively presented the teacher with her award, thanking her for her hard work and dedication. _____
6. I had a painful gash on my knee from falling on the playground that throbbed and ached. _____
7. At the craft store, she bought supplies to make a decorative frame to hang on a wall that needed some decoration. _____

8. His fearless attitude prevented him from trying new things since he was scared of almost everything. _____

9. We drove through the mountainous area and could see nothing but flat farmland all around. _____

10. Workers used the powerful crane to lift the steel beams high up to the top of the building to put them in. _____

Write a sentence for each word like the previous ones that you can answer with yes.

1. *creative*

_____

_____

_____

2. *furiously*

_____

_____

_____

3. *fearful*

_____

_____

_____

Nicolaus Copernicus

Do you remember in the very first chapter of this reader you learned that long ago, people believed that the sun moved around Earth? This seemed to make sense. Each morning at the start of the day, the sun rose in the east. At the end of the day, the sun set in the west—exactly opposite from where it had come up. To explain this change, people said the sun moved around Earth. This is what the Greeks and other ancient people believed. But you also learned in the first chapter that this was not true.

About the same time that Christopher Columbus landed in America, a man named Nicolaus Copernicus was studying math and astronomy at a university in Poland. He later moved to Italy where he also studied medicine and law.

But Copernicus' real love was astronomy. He knew that since ancient times, people believed that the sun moved around Earth. Copernicus began to carefully observe and record the movement of the sun, planets, and stars. After much research, Copernicus decided that the belief that the sun moved around Earth could not be true. Copernicus' observations led him to believe just the opposite! He realized that instead, Earth was moving around the sun! He also believed that as Earth orbited the sun, it also completed a full rotation each day.

All of Copernicus' ideas came from viewing space without the help of a telescope. He wrote down what he observed from a cathedral bell tower. He also used math to help him prove his point. Finally, Copernicus wrote a book explaining his new ideas about how the universe worked. His fellow scientists went to work trying to prove him wrong, but they couldn't. Most were amazed by his discovery!

However, Copernicus' ideas were different from what people had believed for thousands of years. They believed that Earth and humans were the center of the universe. Many of the teachings of the church at that time were also based on this belief. Copernicus had dared to suggest that Earth was not the center of the universe. Instead, he said, the sun was at the center! Many in the church disagreed with Copernicus' ideas and spoke out against them. So, his beliefs were not widely accepted while he was alive.

In fact, even after Copernicus died, the church continued to argue against the view that the sun was at the center of the universe. Some scientists agreed with Copernicus' ideas. Galileo agreed with Copernicus and was punished and put in jail for a long time.

Today we know, of course, that Copernicus was right. It took great **courage** to speak up and suggest an idea that was so different from what people had always believed. But that is how science works. Even today, scientists continue to learn new things about the universe, so our knowledge is always changing and growing.

NAME: _____

DATE: _____

15.1 ACTIVITY PAGE

Spelling Assessment

As your teacher calls out the words, write them under the correct header.

/n/	/ae/	/s/
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

/k/	/j/
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Challenge Word: _____

Challenge Word: _____

Content Word: _____

Dictated Sentences

1. _____

_____

_____

_____

2. _____

_____

_____

_____

NAME: _____

DATE: _____

The Space Shuttle

If a statement is true, write "true" on the line. If a statement is false, write "false" on the line.

1. A space shuttle only carries astronauts into space. _____

   page _____

2. Booster rockets help space shuttles get off the ground and overcome Earth's gravity to get into space. _____

   page _____

3. The last space shuttle mission took place in July, 2013. _____

   page _____

Answer the following questions on the lines provided.

4. How is a space shuttle different from the Apollo 11 spacecraft?

   _____

   _____

   _____

   _____

   page(s) _____

5. What are the other ways NASA is planning to explore space?

page _____

NAME: _____

DATE: _____

15.3 ACTIVITY PAGE

Connecting Sentences

Directions: Read the mixed-up sentences from a paragraph below. In the spaces, write the number for the correct order of the sentences, 1, 2, 3, 4, or 5.

There is no land on Jupiter.	
The two main gases are hydrogen and helium.	
The planet is a big ball of swirling gases.	
Jupiter is a planet, but it is a very different kind of planet from Earth.	
There are also other gases on Jupiter, and all of them are blowing and swirling around.	

The Space Shuttle

Interest in manned space **exploration** soared after Apollo 11. Other astronauts went to the moon. But scientists were also interested in exploring other parts of space beyond the moon. It was very expensive and took a lot of time to build and send spaceships into space. Do you remember that when Apollo 11 returned from space, it landed in the sea? It was not able to land safely on the ground, so this type of spacecraft always had to land in the sea. Once it landed in the sea, this kind of spacecraft could not be used again.

In 1981, a **reusable** spacecraft, called a **space shuttle**, was built. It was able to fly up into space and then zoom back down to Earth. When it returned to Earth, the pilot was able to land the spacecraft on a runway almost like an airplane. It glided down from space and landed on a runway, but it had to be a very long runway.

The **space shuttle** was flown back into space again and again. It **shuttled** back and forth between Earth and space. That is why it was called the **space shuttle**.

The image on the previous page shows the launch of a **space shuttle**. The **space shuttle** itself is the white part that looks like a jet plane. The other parts are **booster rockets**. The **booster rockets** helped the **space shuttle** get off the ground. They helped the **space shuttle** overcome Earth's gravity. Once the **space shuttle** was up into space, it dropped the **booster rockets** because it no longer needed them.

In the thirty years between 1981 and 2013, different **space shuttles** carried astronauts up into space on many missions. The **space shuttle** was

also used to bring **research** equipment and tools into space. The astronauts did many experiments to find out more about space. Scientists were **especially** interested in learning about what effect the lack of gravity would have on humans and other living things.

The **space shuttle** was also used to help build an amazing **space station**. Astronauts could live at the **space station** for months at a time. Often, the **space shuttle** carried supplies back and forth from Earth to the **space station**. It also provided a ride home to Earth when it was time for the astronauts to return.

The last **space shuttle** mission took place in July 2013. NASA scientists and Americans were proud of everything the astronauts had accomplished in thirty years. With the end of the **space shuttle** missions, NASA is planning other ways to explore space. Those plans include launching **unmanned** probes and **satellites**. NASA scientists hope to learn more about the moon's gravity and are even talking about trying to explore asteroids!

NAME: _____

DATE: _____

16.1 ACTIVITY PAGE

Read-Aloud: Mae Jemison

Directions: complete the questions below while listening to the read-aloud.

1. Why is Mae Jemison famous?

2. Describe Jemison's mission as an astronaut.

3. NASA considers many applications for the astronaut program. What kinds of characteristics and skills do you think made Jemison a good candidate for NASA?

4. What kind of international work did Jemison do to help people around the world?

5. Why did NASA stop taking applications for new astronauts for a period of time when Jemison was interested in joining NASA?

Dr. Mae Jemison

1. The events of Mae Jemison's life listed below are in the wrong order. Use the numbers 1–7 to put them in the right order.

   _____ Joins the Peace Corps and goes to Africa

   _____ Graduates from high school at the age of 16

   _____ Becomes the first African-American female astronaut to go into space

   _____ Attends Stanford University

   _____ Is one of 15 people chosen out of 2,000 applicants to be an astronaut

   _____ Goes to medical school

   _____ Retires from NASA and becomes a professor

2. Why do you think Mae Jemison is a good role model for others? Can you name any other people that you have learned about in previous lessons who would be a good role model?

Dr. Mae Jemison

Do you know what a role model is? A role model is someone who sets an example for others by the way he or she lives. Many students admire people who are famous athletes, movie stars, or singers and use them as role models. They see them on TV, in newspapers and magazines, and decide they want to be like them. But some of the best role models are people that you probably would not see on TV or in newspapers. They have jobs such as doctors, teachers, or policemen. Some are scientists and astronauts. One such person is Mae Jemison.

Mae Jemison was born October 17, 1956, in Decatur, Alabama. Her family moved to Chicago, Illinois when she was young. Mae always took great pride in her schoolwork. She was interested in science, but was also interested in the arts. She finished high school early at age 16! From there, she went to Stanford University in California. Most college students focus on only one topic of study because college is so challenging. Mae focused on and excelled in two topics of study—**chemical engineering** and **African-American studies**!

After Stanford, Mae entered medical school to become a doctor. She wanted to use her medical training to help people in Africa and countries where people were poor. So, she joined the **Peace Corps** as a **volunteer**. **Health care** in Africa was often not very good. Mae treated patients and also helped train other **health care** workers. She worked hard to help improve **health care** in the countries where she worked.

After the **Peace Corps**, Mae came back to the United States. She set her sights on a different goal. Her greatest dream was to become an astronaut and

travel into space. She decided to apply to NASA to become an astronaut. But the first time she applied, she was not accepted. Instead of giving up, she tried again and NASA accepted her the second time! She was one of only 15 people chosen from a group of 2,000 people who wanted to become astronauts!

Her training to become an astronaut was hard. She had to get into great shape and train to get used to being free of the effects of gravity in space. She also had to study and pass many tests about space travel. Mae Jemison succeeded in both.

In 1992, Mae was chosen for a mission on the ***Endeavour*** space shuttle. A rocket launched the ***Endeavour*** into orbit around Earth. Mae became the first African-American female astronaut in space!

The mission was to study the effects of **weightlessness** on plants and animals. Mae conducted experiments during the mission with fellow astronaut Jan Davis. They collected information that the scientists at NASA could study. The mission was a great success.

After her successful mission, Mae retired from NASA. She became a professor at Dartmouth College, sharing her love of science and space with other students. She also started her own company called The Jemison Group, Inc. Mae's company continues to work with people in poor countries, searching for ways that science can help improve these people's lives. Mae Jemison is truly a role model that we can all admire!

NAME: _____

DATE: _____

Scoring Rubric

	4	3	2	1
Organization	Writing is organized logically, with a strong introduction to the topic, several supporting details, and a strong conclusion.	Writing is organized logically, with an introduction, several details, and a conclusion.	Writing is organized logically but may be missing an introduction, some details, or a conclusion.	Writing is not organized logically and may be missing a topic sentence, details, and a conclusion.
Writing	Writing is clear and interesting to read, with many descriptive words and details. There are at least three paragraphs with appropriate linking words.	Writing is clear and easy to read, with some descriptive words and details. There are at least two paragraphs with some linking words.	Writing is unclear or without supporting details. Paragraphs are incomplete or unclear. There are few linking words to tie ideas together.	Writing is difficult to read because of missing words, sentences, or incomplete ideas and contains no paragraphs. There is a lack of linking words.
Conventions	Correct sentence structure, grammar, punctuation, and capitalization.	Mostly correct sentence structure, grammar, punctuation, and capitalization with one to two errors.	Mostly correct sentence structure, grammar, punctuation, and capitalization with three to four errors.	Sentence structure, grammar, punctuation, and/or capitalization are incorrect with more than five errors.
Spelling	There are zero to two spelling errors.	There are three to four spelling errors.	There are four to five spelling errors.	There are more than six spelling errors.

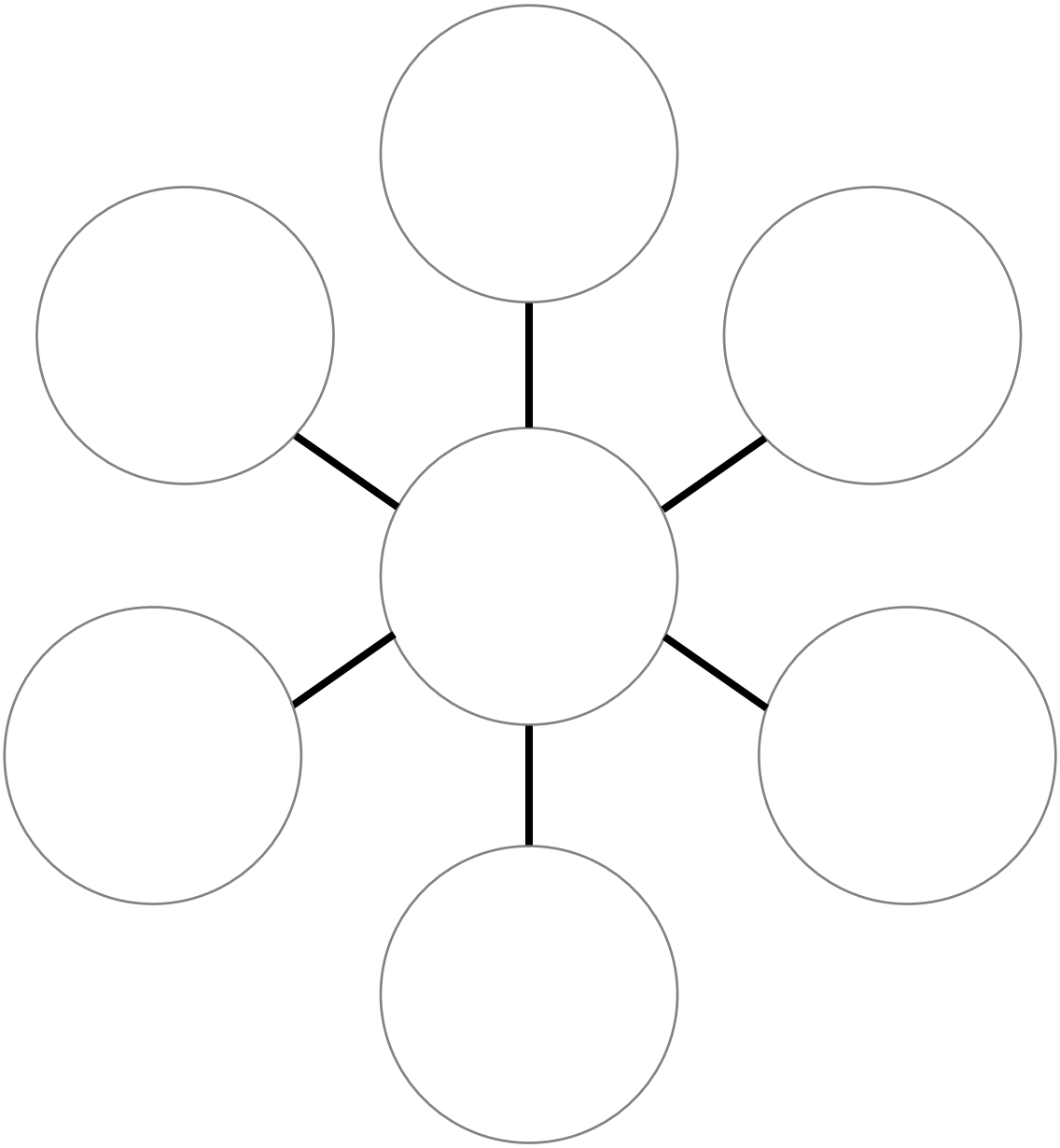
NAME: _____

DATE: _____

17.2 ACTIVITY PAGE

Planning: Informative Writing

"A Day in the Life of an Astronaut on the International Space Station"



NAME: _____

DATE: _____

17.3 ACTIVITY PAGE

Directions: Read the story below and answer the questions.

Stargirl

"Wow!" said Billy Jones. "What an awesome ride!"

"Oh, no!" said Mrs. Jones. "I think I'm going to be sick!"

The Jones family had just come off The Gorgon, the new roller coaster in Mega Adventure Land.

Billy had enjoyed the ride. His mom had not. She felt dizzy and sick to her stomach.

"Are you really going to be sick, Mom?" Billy asked. He had never seen his mom get sick.

Meanwhile, Billy's sister Jen was tapping away on her pocket calculator.

"I calculate that the g-force on that last plunge was about 3.5 g's!" she said. "That's three times the force of gravity on the surface of Earth! That's roughly what the astronauts in the space shuttle experience during re-entry!"

Billy rolled his eyes. It was just like Jen to take an awesome ride and turn it into a science lesson.

Jen was nuts about science and especially about astronomy. She had read every astronomy book in the school library. She could tell you about the atmosphere of Venus, the rings of Saturn, and the Great Red Spot on Jupiter. She knew why Pluto was no longer counted as a planet. She knew everything about Apollo 11 and the moon landings. She had a big photograph of the first moon landing on her bedroom door. Below the photo, Jen had written,

"One small step for man, one giant leap for mankind." Jen's hero was Dr. Mae Jemison, a female astronaut, who went up in the space shuttle.

Jen already knew more about astronomy than either of her parents. Mr. and Mrs. Jones wanted to help her learn more, but they were not quite sure how to do it. That's why Mr. Jones was so happy when he spotted the flyer.

"Beth!" he called out, as he came in. "Look at this!"

It was a blue flyer. Mr. Jones had found it at the bagel shop. It said, "Astronomy Camp!"

Mr. and Mrs. Jones studied the flyer. The camp would be held during the summer, on the campus of a college a few hours away. The flyer said the camp was for kids 12 to 17 years old.

"It's perfect!" said Mr. Jones.

Mrs. Jones did not reply. A funny look came over her face.

"What?" asked Mr. Jones. He had seen that look before. "What's the matter?"

"Jen is only twelve," said Mrs. Jones.

"So?" said Mr. Jones. "It says right here the camp is for ages 12 to 17."

"She'll be the youngest one there!" said Mrs. Jones. "Plus, she's never been away from home before! She might get scared."

"Oh, nonsense!" said Mr. Jones. "She'll be fine! This is right up her alley. She's going to love it!"

Six weeks later, Mr. and Mrs. Jones loaded up the car and drove Jen to astronomy camp. Mrs. Jones was nervous. She bit her fingernails all the way there.

The camp director gave a welcome speech. It was a speech designed to make worried moms worry less. The speech made Mrs. Jones feel better, but she was still worrying when she hugged Jen good-bye.

"Call me tonight!" she said. "Promise you will!"

"I will," said Jen. "I promise."

It was a long ride home. Mrs. Jones cried most of the way. Every so often, she would call out, "My baby girl!"

By the time they got home, the sun had set, although if Jen had been there, she would have pointed out that the sun does not really rise and set. Earth rotates on its axis, and that's what gives us days and nights.

Mr. Jones parked the car and opened the door for his wife. Inside, he got her a glass of water and sat next to her on the couch.

"Why hasn't she called?" Mrs. Jones said, tearfully. Just then, the phone rang.

Mrs. Jones grabbed the phone. "Are you okay?" she sobbed.

Jen did not hear her mom sobbing. She was too busy describing her first day at camp.

"It was so fun!" she said. "First we learned about comets. Did you know that Halley's Comet is visible from Earth every 76 years? It will come around again in 2061.Then, we learned about galaxies and solar systems. Did you know that there are millions of galaxies in the universe? Our professor, Dr. Phillips, is so cool! He told us that there are probably lots of solar systems out there that are a lot like our galaxy. That means they have a hot star at the center, like our sun, and some planets orbiting around . . ."

"Is she okay?" asked Mr. Jones.

Mrs. Jones nodded. Then, she held out the phone.

From the earpiece, Jen's voice, overflowing with joy and excitement, drifted out into the air: "After lunch, we learned about the Hubble Space Telescope. It's a telescope that floats up in space. . ."

Mr. and Mrs. Jones felt a tremendous sense of relief. They knew that their daughter was safe and happy—and getting smarter every day.

NAME: _____

DATE: _____

1. Where is the family at the beginning of this selection?

2. List five things Jen knew about astronomy:

3. Why was it like Jen to take an awesome ride and turn it into a science lesson?

4. Arrange the events from the selection in order from one to five.

_____ Jen called to tell her family about the first day of astronomy camp.

_____ Jen's dad saw a flyer for astronomy camp and thought Jen would like it.

_____ Jen calculated the g-force on the last plunge of the roller coaster ride.

_____ Jen's mother cried most of the way home.

_____ Jen's family took her to astronomy camp.

5. Which of the following was not something Jen learned about during her first day at astronomy camp?

A. The Hubble Space Telescope

B. The Big Bang

C. Galaxies

D. Halley's Comet

Fluency Assessment

The Hoba Meteorite

A meteorite is a rock from outer space. There are lots of rocks floating 14
around in space. If one of these rocks gets close to Earth, it will be attracted 30
by Earth's gravity. It will begin to move closer to Earth. As the rock gets 45
closer, Earth will exert a stronger and stronger gravitational pull on it. The 58
rock will start moving faster and faster. It will also heat up. Eventually, it 72
will turn into a special kind of fireball known as a meteor. 84

Many meteors burn up before they reach Earth. A few make it all the 98
way to our planet and smack into the ground. If a meteor reaches Earth, we 113
say it is a meteorite. 118

Someday you may see a meteor in the night sky. They are hard to see 133
during the day, but at night it is much easier. Some people refer to meteors 148
as "shooting stars." That's not quite the right term. Meteors are more like 161
rocks than stars. But they do look like falling stars when they come zipping 175
through the night sky. 179

More than 35,000 meteorites have been found on Earth. Some of 190
these are tiny pebbles. Others are large boulders. The Hoba meteorite 201
is the largest meteorite ever discovered on Earth. It weighs more than 213
60 tons. 215

The Hoba meteorite is in the African country of Namibia. It has 227
never been moved to a museum. It is still lying where it fell. That's mainly 242
because of its size. It would be very difficult to move. 253

The Hoba meteorite was discovered in 1920. A farmer was plowing 264
his fields with an ox. He heard a metallic scratching noise. Then, his plow 278
stopped suddenly. The farmer tried to dig around the rock and discovered 290
that it was huge. A scientist came to look at it. He concluded that it was 306
a meteorite. 308

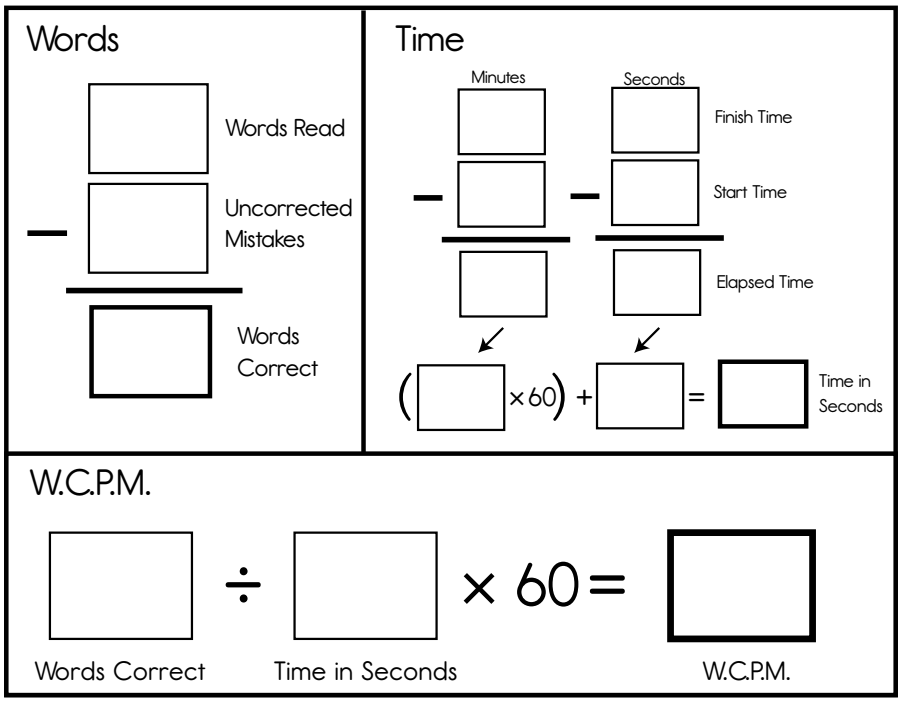
Scientists think the Hoba meteorite fell to Earth about 80,000 years ago. 320
It is about 84% iron and 16% nickel. Thousands of tourists come to see it 335
each year. 337

W.C.P.M. Calculation Worksheet

Student: _____ Date: _____

Story: *The Hoba Meteorite*

Total words: 337



Compare the student's W.C.P.M. scores to national norms for Winter of Grade 3 (Hasbrouck and Tindal, 2006):	
W.C.P.M.	National Percentiles for Winter, Grade 3:
146	90th
120	75th
92	50th
62	25th
36	10th

Comprehension Total _____/ 4	
Answers Correct	Level
4	Independent comprehension level
3	Instructional comprehension level
1-2	Frustration comprehension level
0	Intensive remediation warranted for this student

NAME: _____

DATE: _____

Singular Possessive Nouns

Rewrite each sentence, changing the group of words in parentheses to a singular possessive noun.

Example: (The light of the sun) is warm on my face.

The sun's light is warm on my face.

1. (The child of my aunt) came to visit us.

_____

_____

2. (The car belonging to my friend) was hit by a truck.

_____

_____

3. (The phone call from my teacher) made my mother very happy.

_____

_____

4. (The cage belonging to the hamster) needed to be cleaned.

_____

_____

Write the singular possessive noun and what belongs to each singular possessive noun on the appropriate blanks.

Example: The boy's picture was hung in the front hall.

Singular Possessive Noun: boy's What belongs to him/her/it? picture

1. Hank's skateboard is purple.

Singular Possessive Noun: _____ What belongs to him/her/it? _____

2. The giant's footsteps in the hall were thunderous.

Singular Possessive Noun: _____ What belongs to him/her/it? _____

3. The horse's mane blew in the wind as he ran around the track.

Singular Possessive Noun: _____ What belongs to him/her/it? _____

4. The artist's portrait was so realistic that I thought it would speak to me.

Singular Possessive Noun: _____ What belongs to him/her/it? _____

NAME: _____

DATE: _____

Reading/Writing Choice Board

Directions: Select activities in three of the boxes below after you complete your reading. Write your responses on a separate sheet of paper, making sure to include the numbers of the activities you chose. When completing the activities, write in complete sentences using correct spelling, capitalization, and punctuation.

1. Create a graphic organizer and compare and contrast two ideas in the text.	2. What is the main idea of the text? List three details from the text that support the main idea.	3. Write a sentence describing the author's purpose.
4. Write three questions you still have after reading the text.	5. Write a list of three new words you learned in the text, their definitions, and use them in a sentence.	6. Describe how one of the images in the chapter helps you to understand the text.
7. Find three sentences that show comparing or contrasting. Write the sentences and underline the comparing and contrasting word or words.	8. Write a sentence describing the author's purpose (persuade, inform or entertain).	9. Write three new things that you learned from the text.

NAME: _____

DATE: _____

Plural Possessive Nouns

Rewrite each sentence, changing the group of words in parentheses to include a plural possessive noun.

Example: (The statues belonging to the sculptors) are very lifelike.

The sculptors' statues are very lifelike.

1. (The neighbors of my cousins) came to visit us.

_____

_____

2. (The bicycles belonging to my friends) are all brand new.

_____

_____

3. (The cards from well-wishers) made my brother feel very loved.

_____

_____

4. (The leashes belonging to my cats) should be replaced.

_____

_____

Write the plural possessive noun and what belongs to each plural possessive noun on the appropriate blanks.

Example: The boys' pictures were taped to the refrigerator.

Plural Possessive Noun: boys' What belongs to them? pictures

1. The painters' spots to paint are near the ocean.

Plural Possessive Noun: What belongs to them?

_____ _____

2. The magicians' tricks fooled all of us.

Plural Possessive Noun: What belongs to them?

_____ _____

3. The kittens' ears all twitch when I open a can of cat food.

Plural Possessive Noun: What belongs to them?

_____ _____

4. The plumbers' tools are shiny and new.

Plural Possessive Noun: What belongs to them?

_____ _____

NAME: _____

DATE: _____

Performance Task

Task 1: Follow along with "The Big Bang Theory" as your teacher reads it aloud. Highlight or underline key ideas and details as you read along. Complete Activity Page 19.2 after reading.

The Big Bang Theory

The universe is everything that exists—all matter, all energy, and all the space between things and even all of time! It includes things that you can see and many, many more that you can't see. The universe is so big, that we don't even know for sure how big it is! One question you may be asking yourself is how the whole thing got started. Where did the universe come from?

Scientists learn more about the universe every day. The new discoveries they make help form ideas—or **theories**—about the universe. A theory is an explanation about something or a reason for something.

Scientific theories are not just guesses—they are explanations based on evidence or information that scientists get by making observations and taking measurements. Frequently there are several different theories that seek to explain the same phenomenon. So, scientists gather new data to help select between these theories. They share the data and study it to look for patterns and answers to their questions.

Today, there is a common theory about how the universe first developed called the **Big Bang Theory**. It is a **theory** that is well-tested and widely accepted by many scientists, but not by everyone. The **Big Bang Theory** seeks to explain how the universe may have come to be. And it began with—a tiny speck!

According to the **Big Bang Theory**, before the universe was the way it is today, it was believed to be very different. There were no billions of galaxies. There was no Milky Way. There were no stars at all. No sun, no solar system, no planets, no Earth, no moons, no asteroids, no comets. There may not have even been time or space! All of the ingredients to make everything we see today were there; they were just in a very different form. It's hard to imagine, but the **Big Bang Theory** traces the universe back to a point where all of what we can now see in the universe was compressed into a teeny-tiny speck. This speck was jam-packed full of, well—everything! It was unbelievably dense and crowded.

This speck was also super-hot. Hotter than anything on Earth. Hotter than the sun!

Around fourteen billion years ago, something amazing happened to all that compressed stuff. Kaboom! A bursting forth! A moving outward! A rapid unfolding! It's been called many things by many people, but this amazing thing that happened is believed to be the "**Big Bang**"—the birth of the universe. It was hot, and it was sudden, and it was powerful. In a fraction of a second, space that had not been there before was suddenly everywhere all at once. Tiny new particles formed and began crashing into each other, creating energy and eventually joining to form larger bits of matter. The universe kept expanding and expanding—all of its matter spreading out as the universe kept getting larger! And as the universe expanded, it began cooling down a little at a time.

According to this theory, the newborn universe was nothing like it looks now, an estimated fourteen billion years later. Back then there were no stars yet—and there wouldn't be for the first one hundred million years

after the Big Bang! The universe kept expanding and cooling. Substances kept crashing into each other, and brand new bits of matter were formed. Eventually new gases formed. As these gases began to cool, they collapsed because of gravity, and formed the first stars. The universe kept expanding and stretching, and more and more stars were born. Then galaxies formed. About nine billion years after the Big Bang, our sun and solar system were born when gases collapsed in on themselves and formed our sun. That was believed to be a little over four and a half billion years ago, but the expansion of the universe, and the creation of new stars, still goes on today.

Performance Task, Part 1a

Directions: Answer the questions below about "The Big Bang Theory" with evidence from the text. Use the information below to help you during the class discussion.

1. What is the difference between a theory and a fact?

2. What was the "Big Bang"?

3. What was the effect of the Big Bang?

4. In the space below, fill in the spaces showing the sequence of events from the Big Bang until our solar system was born.

   1. Big Bang
   2. _____
   3. _____
   4. _____
   5. _____
   6. Our solar system

Performance Task, Part 1b

Directions: after reading Chapter 14, "The Big Bang," answer the questions below to prepare you for the class discussion.

1. What did scientists using telescopes notice about the stars and galaxies?

2. Why is Edwin Hubble important to the Big Bang Theory?

3. Who are the three astrophysicists who proposed the Big Bang Theory?

4. Draw a timeline that shows the scientists and their contributions to the Big Bang Theory in order.

Performance Task, Part 1c: Compare and Contrast Texts

Directions: Compare and contrast the two texts we read about the Big Bang Theory. List the key ideas and details from the texts. You may use your notes to complete the graphic organizer. On the second page, list the biggest similarities and differences between the two texts.

Read-Aloud: "The Big Bang Theory"	Reading: "The Big Bang"

List the biggest similarities between the two texts:

List the biggest differences between the two texts:

NAME: _____

DATE: _____

Revision Checklist

Ask yourself these questions as you reread and revise your writing:

1.	Do I have a good topic sentence?	
2.	Do I have a good concluding sentence?	
3.	Are there any parts that do not make sense?	
4.	Do my sentences flow well in this order?	
5.	Do I have a good variety of sentence structures?	
6.	Could I combine any of my sentences?	
7.	Do I have a good variety of descriptive words?	
8.	Is my writing interesting?	
9.	Is this my best work?	

Performance Task, Part 2a

Task: Your class has created a model of the Big Bang Theory to present at your school's Science Fair. One person from your class will be chosen to read their explanation of the Big Bang to an audience at the fair. Your assignment is to write a paragraph explaining the Big Bang Theory so that it may be chosen to be read aloud. Remember to make it interesting so that it catches the listener's attention, but also make sure that your information is accurate.

You may use all of your notes from Lesson 19 as well as information from "*What's in Our Universe?*" to plan and write your paragraph.

Make sure you have the main idea and supporting details from the information you gathered. A good informative paragraph has:

- A topic sentence with the main idea
- An organization that shows the sequence of events
- Details that support the main idea and the sequence
- Clear and specific language that includes academic and content vocabulary and sequencing words
- A concluding sentence
- Correct spelling, grammar, capitalization, and punctuation.

Use the graphic organizer on the following page to plan your paragraph.

Title:
Topic sentence:
Supporting detail number 1 in the sequence:
Supporting detail number 2 in the sequence:

Supporting detail number 3 in the sequence:
Supporting detail number 4 in the sequence:

Concluding sentence:

Performance Task, Part 2b

Directions: Write your informative paragraph about the Big Bang Theory below.

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Acknowledgments

These materials are the result of the work, advice, and encouragement of numerous individuals over many years. Some of those singled out here already know the depth of our gratitude; others may be surprised to find themselves thanked publicly for help they gave quietly and generously for the sake of the enterprise alone. To helpers named and unnamed we are deeply grateful.

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We would like to extend special recognition to Program Directors Matthew Davis and Souzanne Wright, who were instrumental in the early development of this program.

Schools

We are truly grateful to the teachers, students, and administrators of the following schools for their willingness to field-test these materials and for their invaluable advice: Capitol View Elementary, Challenge Foundation Academy (IN), Community Academy Public Charter School, Lake Lure Classical Academy, Lepanto Elementary School, New Holland Core Knowledge Academy, Paramount School of Excellence, Pioneer Challenge Foundation Academy, PS 26R (the Carteret School), PS 30X (Wilton School), PS 50X (Clara Barton School), PS 96Q, PS 102X (Joseph O. Loretan), PS 104Q (the Bays Water), PS 214K (Michael Friedsam), PS 223Q (Lyndon B. Johnson School), PS 308K (Clara Cardwell), PS 333Q (Goldie Maple Academy), Sequoyah Elementary School, South Shore Charter Public School, Spartanburg Charter School, Steed Elementary School, Thomas Jefferson Classical Academy, Three Oaks Elementary, West Manor Elementary.

And a special thanks to the CKLA Pilot Coordinators, Anita Henderson, Yasmin Lugo-Hernandez, and Susan Smith, whose suggestions and day-to-day support to teachers using these materials in their classrooms were critical.

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ISBN 9781681610368