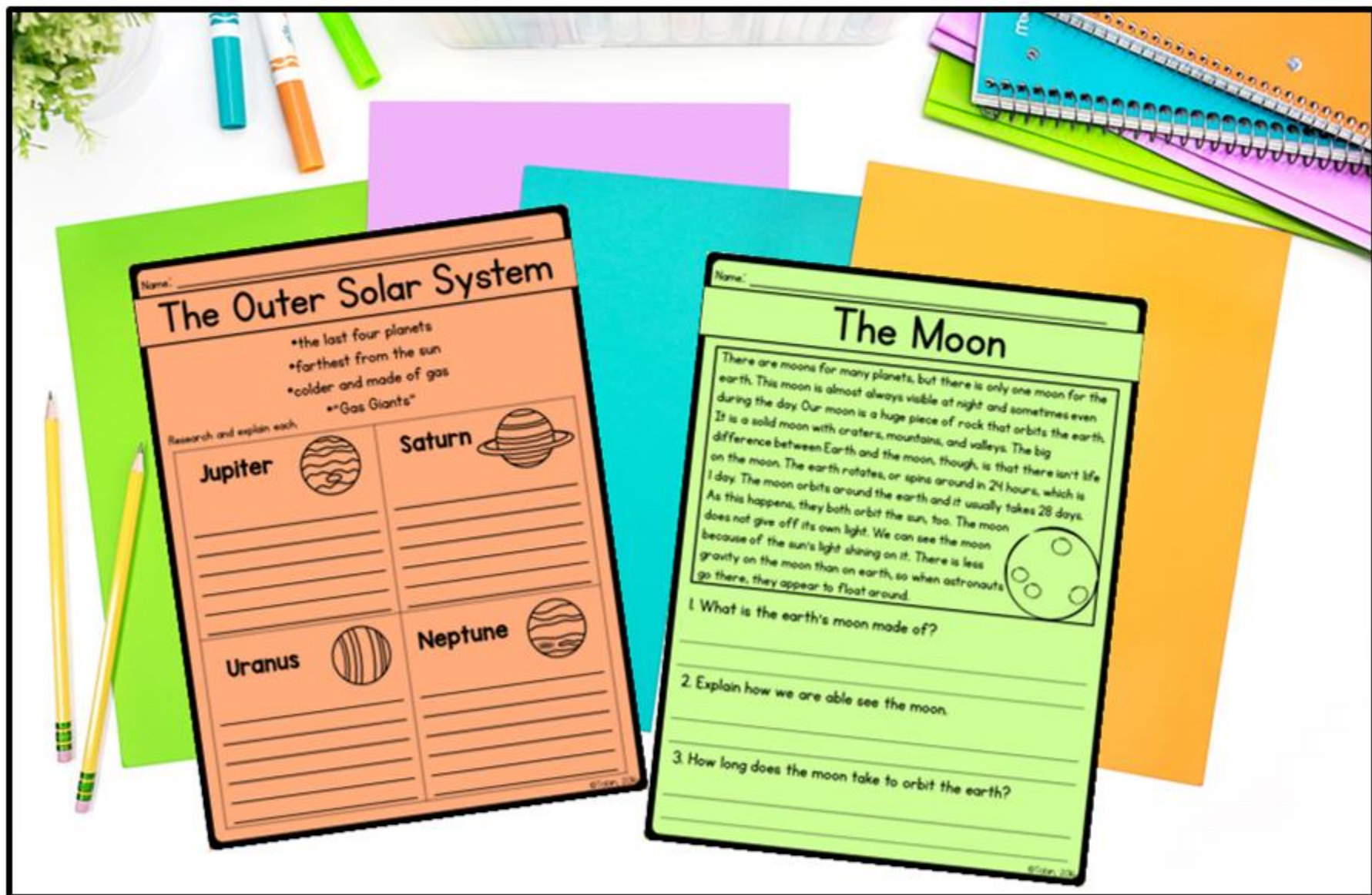


Space Unit



The Outer Solar System

- *the last four planets
- *farthest from the sun
- *colder and made of gas
- **"Gas Giants"

Research and explain each.

Jupiter



Saturn



Uranus



Neptune



The Moon

There are moons for many planets, but there is only one moon for the earth. This moon is almost always visible at night and sometimes even during the day. Our moon is a huge piece of rock that orbits the earth. It is a solid moon with craters, mountains, and valleys. The big difference between Earth and the moon, though, is that there isn't life on the moon. The earth rotates, or spins around in 24 hours, which is 1 day. The moon orbits around the earth and it usually takes 28 days. As this happens, they both orbit the sun, too. The moon does not give off its own light. We can see the moon because of the sun's light shining on it. There is less gravity on the moon than on earth, so when astronauts go there, they appear to float around.



1. What is the earth's moon made of?
2. Explain how we are able to see the moon.
3. How long does the moon take to orbit the earth?

What Teachers Have Said...



"This resource was perfect. Not only was it engaging for my students and aesthetically pleasing to look at, it also saved me from having to research information and then teach the students - each page of the booklet taught my students about a different aspect of space, and then even formatively assessed their knowledge! I would hands down recommend this resource when learning about outer space with your students."

"This was a nice digital edition to our Space unit. Once the daily lesson was complete, the students used their independent time to complete the slides about the various objects in our solar system. Loved it because it allowed my students to work independently or in a small group. Students loved learning about space."

Topics Covered

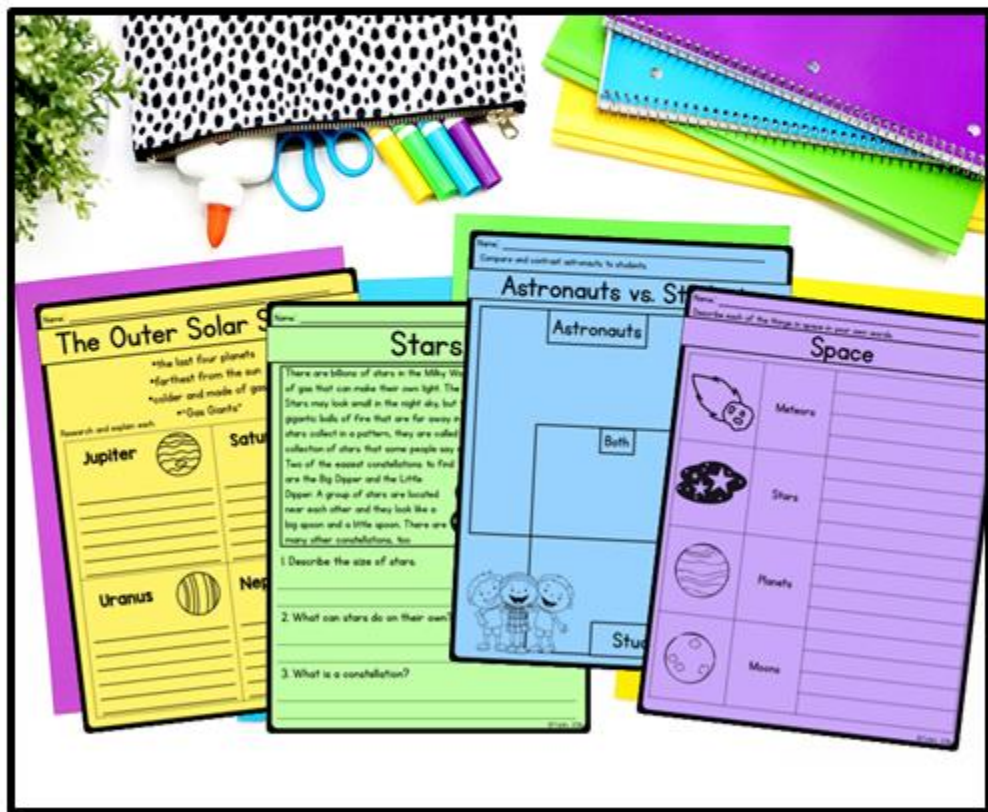
This Space unit is intended to be used as supplemental resources for your science unit.

Topics Covered:

- Eight Planets
- The Sun
- The Moon
- Astronauts
- Other Space Objects

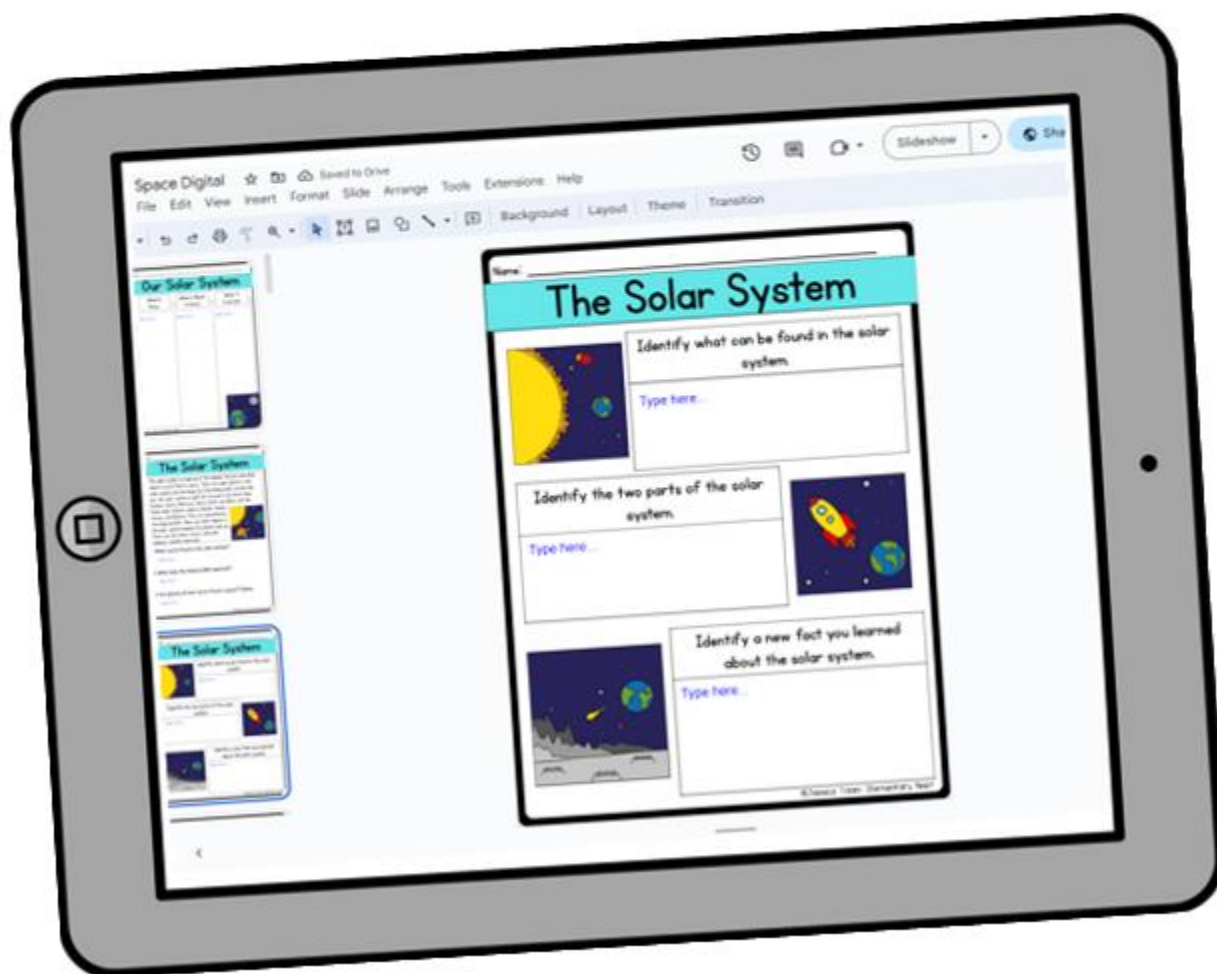
Types of Resources Included:

- KWL Charts
- Passages
- Comprehension worksheets
- Fact writing worksheets
- Vocabulary worksheets
- Mini books & questions



Digital Conversion

The passages and worksheets have been digitally converted to Google Slides.



Inner Planets

Name: _____

Our Solar System

What I Know	What I Want to Know
-------------	---------------------

Name: _____

The Solar System

The solar system is made up of the planets, the sun, and objects around them in space. There are eight planets in our solar system and one large sun. Everything orbits around the sun. The solar system is split into two parts: the Inner Solar System, which is Mercury, Venus, Earth, and Mars, and the Outer Solar System, which is Jupiter, Saturn, Uranus, and Neptune. They are separated by the Asteroid Belt. There are other objects in the solar system besides the planets and sun. There are also stars, moons, asteroids, meteors, comets, and more.

1. What can be found in the solar system?

2. What does the Asteroid Belt separate?

Name: _____

The Solar System

Identify what can be found in the solar system.

Identify the two parts of the solar system.

Identify a new fact you learned about the solar system.

Name: _____

Mercury

When looking at all the planets in a row, Mercury is the planet that sits closest to the sun, but that does not mean it is the hottest. Mercury is about 60 million miles from the sun and revolves very slowly. Since it is closest to the sun, the side that faces the sun gets really hot. On the side that faces away from Mercury, it is very cold. Mercury is covered with craters made by asteroids and comets. It also has no water on it, which means that no life can survive on Mercury.

1. Where is Mercury located in the solar system?

Name: _____

Mercury

All About Mercury



Fact #1	Fact #2	Fact #3

Name: _____

Venus

The second planet away from the sun is Venus. It is the hottest planet in the Inner Solar System. It is the hottest planet of them. There are thick clouds of water vapor around Venus that trap in the heat. This makes it hard to see the planet's surface. Venus is the brightest planet in the solar system. So bright, it can sometimes be seen in the sky during the day. A year in Venus lasts for 225 Earth days. It takes 262 days since that is how long it takes to orbit around the sun. Venus is the planet that is closest to the earth.

1. Where can Venus be found in the solar system?


2. Why is it hard to see the surface of Venus?

3. How does a year on Venus compare to Earth?

Name: _____

Venus

All About Venus



Fact #1	Fact #2

Name: _____

Earth

Earth is the third planet from the sun. It is the only planet in the Solar System that has life. The temperature is perfect for survival. This is because of the distance from the sun. It's also the only planet with water. Animals and plants can survive. When it is winter, it is sometimes hard to see because of the clouds that collect above it. Earth has one moon that orbits around it. Earth takes 365 days to orbit around the sun and this affects the seasons on Earth. The Earth's axis is tilted. The part that is tilted toward the sun gets warmer (summer weather). The part that is tilted away from the sun gets colder (winter weather).

1. Where can Earth be found in the solar system?


2. What makes Earth different from the other planets?

3. What controls the seasons on Earth?

Name: _____

Earth

All About Earth



Fact #1	Fact #2

Name: _____

Mars

Mars is the fourth planet from the sun and is the second planet in the Inner Solar System. It is called the Red Planet because there are reddish rocks that cover it. This is because of a mineral called iron oxide. Mars is very similar to Earth. Both planets have polar ice caps. The day lengths are similar. Mars has seasons, but they are much longer than Earth's. Mars is one of the smallest planets in the solar system. There are mountains, craters, and a large basin on Mars. Mars has two moons that orbit around it, named Phobos and Deimos.

1. Where can Mars be found in the solar system?


2. How is Mars similar to the earth?

3. What can be found on Mars?

Name: _____

Mars

All About Mars




Fact #1	Fact #2	Fact #3

Outer Planets

Name: _____

Jupiter

Jupiter is the fifth planet from the sun. It is part of the Outer Solar System, which consists of four gas giants. It is the largest planet in our solar system. Jupiter takes 12 years to orbit the sun, compared to Earth's 1 year. It spins around its axis, compared to Earth's 24 hours. This spinning causes storms. Jupiter has a constant storm called the Great Red Spot. It has lasted for over 300 years. Jupiter is so large that it has 64 moons. Much of the planet's surface is made of hydrogen and helium.




- Where can Jupiter be found in the solar system?
- What does Jupiter's quick rotation cause?
- What does Jupiter have a lot of?

Name: _____

Jupiter

All About Jupiter




Fact #1	Fact #2

Name: _____

Saturn

Saturn is the sixth planet from the sun. It is part of the Solar System, meaning it's one of the gas giants. Saturn is identified because of the large rings around it. These rings are made of ice, rocks, and dust. This second largest planet has a diameter 9.5 times that of Earth. Saturn has 18 moons that rotate around it. Compared to Earth, Saturn takes over 29 years to orbit the sun. It rotates on an axis quicker than Earth, though. It spins around in 10 hours, which can cause hurricanes and storms. Saturn is made up of mostly hydrogen and helium, making it the least dense and lightest planet in space.



- Where can Saturn be found in the solar system?
- What can be found around Saturn? What is it made of?

Name: _____

Saturn

All About Saturn




Fact #1	Fact #2	Fact #3

Name: _____

Uranus

Uranus is the seventh planet from the sun. It is one of the gas giants that is part of the Outer Solar System. Uranus has 27 moons that orbit around it. This planet is the smallest out of the four gas giants, but is still much larger than Earth. Uranus is bluish green in color because of the planet being made up of methane and ammonia. The atmosphere around it is made up of hydrogen and helium. Uranus is unique because it has thin rings and spins in a different direction than other planets. This is because the planet appears to be lying on its side.




- Where can Uranus be found in the solar system?
- Explain Uranus' size.
- How is Uranus' rotation different from other planets?

Name: _____

Uranus

All About Uranus




Fact #1	Fact #2	Fact #3

Name: _____

Neptune

Neptune is the eighth and last planet in the solar system. It is the last gas giant found in the Outer System. It has the fastest rotation of any planet. It has a constant storm called the Great Dark Spot. It takes Neptune 165 Earth days to orbit around the sun. It has a much longer distance than Earth does. However, Neptune has slightly shorter days than Earth. It spins on its axis in only 19 hours, compared to Earth's 24 hour day. Neptune has a large white cloud that rotates around its atmosphere. It is called Scooter because it scoots around the planet.




- Where can Neptune be found in the solar system?
- Can Neptune go around the sun as quickly as Earth?
- Explain Scooter.

Name: _____

Neptune

All About Neptune







Fact #1	Fact #2	Fact #3

Name: _____

The Inner Solar System

- *the first four planets
- *closest to the sun
- *warmer
- *made of rocks

Research and explain each.





Mercury		Venus	
Earth		Mars	

Name: _____

The Outer Solar System

- *the last four planets
- *farthest from the sun
- *colder and made of gas
- **Gas Giants*

Research and explain each.

Jupiter		Saturn	
Uranus		Neptune	

The Sun and the Moon

Name: _____

What About Pluto?

For a very long while, Pluto was the ninth planet in our solar system. However, it was recently ruled out as a planet and is no longer considered one of the solar system's main planets. The reason for this is its size and orbit. The size of Pluto is much smaller than all the other planets. Its orbit also follows a different path than the other planets. It is now a dwarf planet instead of one of the solar system's main planets. It was changed to a dwarf planet in 2006.

1. What was Pluto considered in the past?
2. As of 2006, what is Pluto?
3. Why did this change?

Name: _____

Pluto

All About Pluto



Fact #1	Fact #2	Fact #3

Name: _____

Stars

There are billions of stars in the Milky Way galaxy. Some stars are so hot that they can make their own light. The stars we see in the night sky are just a tiny fraction of all the stars in the universe. Stars may look small in the night sky, but they are actually huge balls of fire that are far away in space. When stars collect in a pattern, they are called constellations. Two of the easiest constellations to find are the Big Dipper and the Little Dipper. A group of stars are located near each other and they look like a big spoon and a little spoon. There are many other constellations, too.

1. Describe the size of stars.
2. What can stars do on their own?
3. What is a constellation?

Name: _____

The Sun


The sun is a large ball of burning gases. It is actually one large star. It is at the center of the solar system. Planets and other bodies orbit in a circle around the sun. The sun is over 90 million miles away from Earth. The heat on the sun is so hot that nothing could ever survive on it. It is about 10,000 degrees Fahrenheit and gets even hotter towards the core. This heat may be dangerous, but it is necessary for the solar system and the earth. On the earth, people get light and heat for survival. The sun also gives the earth its seasons. When the earth orbits the sun, it also rotates. Seasons and weather patterns are due to the orbiting and rotating.

1. What is the sun?
2. Explain the sun's heat.

Name: _____

The Sun

Identify six facts about the sun.



Name: _____

The Moon

There are moons for many planets, but there is only one moon for Earth. This moon is almost always visible at night and sometimes during the day. Our moon is a huge piece of rock that orbits Earth. It is a solid moon with craters, mountains, and valleys. The big difference between Earth and the moon, though, is that there is no atmosphere on the moon. The earth rotates, or spins around in 24 hours, every 1 day. The moon orbits around the earth and it usually takes 28 days. As this happens, they both orbit the sun, too. The moon does not give off its own light. We can see the moon because of the sun's light shining on it. There is less gravity on the moon than on earth, so when astronauts go there, they appear to float around.

1. What is the earth's moon made of?
2. Explain how we are able to see the moon.
3. How long does the moon take to orbit the earth?

Name: _____

The Moon

Draw yourself on the moon.



Explain what you would see and how you would feel on the moon.

Name: _____

Moon Phases

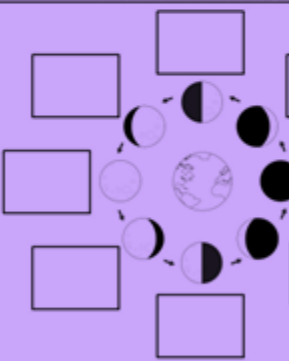
There are different phases of the moon. Just like the sun, the moon is a ball of rock. The amount of the moon you can see in the night sky changes. Sometimes it's full, sometimes it's half, and sometimes it's missing. These are all phases. The moon does not give off its own light. What humans can see of the moon is the light reflecting off the moon from the sun. The amount of moon we can see depends on the amount of earth that is blocking these sunbeams.

The first phase of the moon is the new moon. Next is the waxing crescent moon. Waxing means it is appearing to get more moon is visible after this, until the quarter moon and the waxing gibbous. The gibbous phase is between quarter and full moon. Finally, we can see the full moon about 14 days after the new moon. Then, it changes back to a waning gibbous, which gets smaller, and a crescent moon.

Describe the moon phases in your own words.

Name: _____

Moon Phases

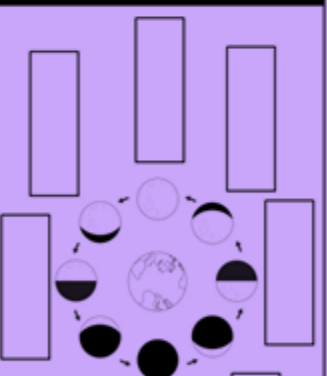


last quarter	new moon	waning gibbous
waxing gibbous	waning crescent	waxing crescent

Name: _____

Moon Phases

Draw one to two sentences, explain each moon phase.



Astronauts and Space Objects

Name: _____

Astronauts

For thousands of years, scientists have studied the moon and space. They have used telescopes, studied stars and planets, and studied moon phases. In the last century, astronauts have expanded these studies by going into space. An astronaut is a person who is trained to go into space on a spacecraft. In 1969, Neil Armstrong was the first astronaut to set foot on the moon. Since then, 18 more people have walked on the moon. Not all astronauts go to space to walk on the moon. Many of them go up for different expeditions, such as studying planets or comets. In the United States, astronauts must be trained by NASA.




1. What is an astronaut?
2. What did Neil Armstrong do?
3. How has the study of space changed over the years?

Name: _____

Meteors, Asteroids, and Comets

Space is much more than just planets, stars, and the sun. Other things move about space. A few of these are meteors, asteroids, and comets. A meteor is also known as a shooting star. They can get as large as a softball and when they enter Earth's atmosphere, they get hot enough to streak across the sky. A comet is ball of ice, dust, and rocky debris that flies through the sky. They orbit in the solar system much like a planet. An asteroid is similar to a comet in that it is a body of rock and metal. Asteroids appear slightly different, without a glow or tail.



1. Explain what a comet is.
2. How is an asteroid different from a comet?
3. What causes a meteor to look like a shooting star?

Name: _____

Space



Write an informational magazine article about space.

Name: _____

Compare and contrast astronauts to students.

Astronauts vs. Students

Astronauts	Both	Students
------------	------	----------

Name: _____

Describe each of the things in space in your own words.

Space

	Meteors	
	Stars	
	Planets	
	Moons	

Name: _____

Which planet is the most interesting? Explain why you think that.

Mini Books



These fold-and-go mini books contain three pages of nonfiction material, followed up with three comprehension questions.