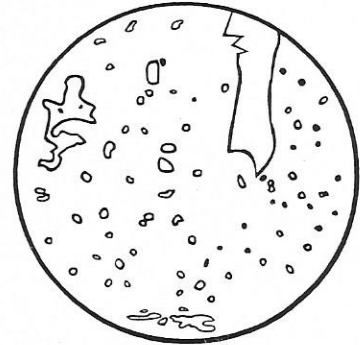


Mercury

Mercury is the closest planet to the sun and has almost no atmosphere. This means that there is no air on the planet. Because there's no air, there is not any weather.



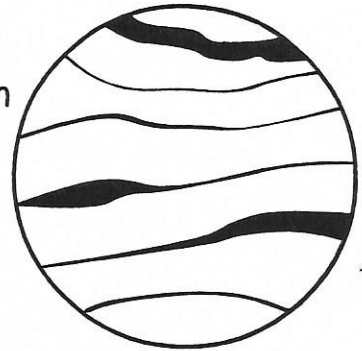
Mercury is a small planet. You can fit three of them inside of Earth. For example, if Earth were the size of a baseball, Mercury would be about the same size of a golf ball. Because Mercury is so small, it has less of a gravitational pull. Since there is less gravity than on Earth, you will weigh less. A person who weights 100 pounds on Earth will weigh about 38 pounds on Mercury.

It is a small, dark gray, rocky planet, which actually looks a lot like Earth's moon. Mercury has a dry, dusty surface that is covered with craters. Craters are round holes where meteors have hit the planet. It gets very hot on the planet in the daytime, but at night it gets very cold.

1. Mercury is the _____ planet to the sun.
2. How many times can Mercury fit inside the Earth? _____
3. Mercury has _____ gravity than Earth.
4. If you weigh 100 pounds on Earth, how much would you weigh on Mercury? _____
5. Because there is no atmosphere on Mercury, there is no _____.

Venus

Venus is the second planet from the sun. You can see Venus shining low in the western sky at night. It looks like a very bright star. It is the brightest object in the night sky except for the moon. It is so bright because has thick clouds that reflect the light of the sun.



Venus is sometimes called Earth's twin because Venus and Earth are about the same size, have similar weights, and are made from the same material. Because Venus is about the same size as Earth, gravity is close to the same on both planets. If you weigh 100 pounds on Earth, you would weigh 91 pounds on Venus. Another similarity between Venus and Earth is that they both have volcanoes that erupt on the surface.

Earth and Venus do have some differences. Venus has no moons. It is a dry, hot planet. Venus is covered with thick, yellow clouds and strong winds blow all the time. Unlike Earth, Venus does not have water.

1. Venus is the _____ planet from the sun.

2. How are Venus and Earth alike?

3. How are Venus and Earth different?

Earth



Earth is the third planet from the sun in the solar system. It is about 93 million miles away from the sun. It is very different than the other planets in our solar system. As far as we know, it is the only planet with air we can breathe, the only planet with plants and animals, and the only planet with liquid water. In fact, Earth's surface is almost three-fourths water. The average temperature is about 59 degrees. It is just right for us to live on.

Earth has air we can breathe. Our air is a mixture of gases that surround Earth. It is kept in place by Earth's gravity. If Earth were a much smaller planet like Mercury, its gravity would be too weak to hold the air around Earth. The air around Earth, including the ozone layer, protects us from harmful rays from the sun.

1. Earth is the _____ planet from the sun.

2. What holds the air around Earth? _____

3. How does the ozone layer help us?

4. How is Earth different from other planets?

Mars

Mars is the fourth planet from the sun. Mars is about half the size of Earth. Because Mars is smaller than Earth, its gravity is also less. If you weighed 100 pounds on Earth, you'd weigh about 38 pounds on Mars.



Mars' surface looks like a red desert. There are mountains, canyons, and craters. It is a dry planet without any liquid water. Mars has tall mountains and deep canyons. The soil is full of rust-colored iron dust. This makes Mars look red. It is believed that Mars once had rivers, streams, lakes, and maybe even an ocean. Today the only water on Mars is either frozen in the polar caps or underground.

It is very cold on Mars. Mars has very little atmosphere, but there is enough atmosphere to cause clouds and winds. Strong winds blow and cause big dust storms. It has two moons. A year on Mars is 687 Earth-days long. One day is about the same as on Earth: 24 $\frac{1}{2}$ hours long.

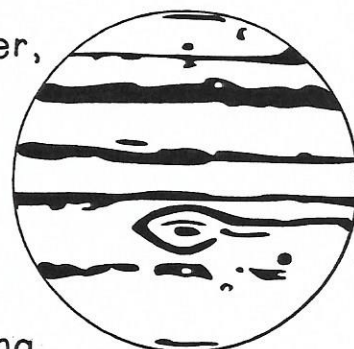
1. Mars is the _____ planet from the sun.

2. Describe what the surface of Mars looks like.

3. A year on Mars is _____ Earth-days long and one day is about _____ hours long.

Jupiter

Jupiter is the fifth planet from the sun. Jupiter, the largest planet, was named after the king of the Roman gods. It is larger across than eleven Earths! Jupiter has at least 27 moons, and one of the moons is larger than Mercury.



Jupiter is covered by thick clouds. It is freezing cold at the top of the clouds. It is very hot at the center of Jupiter. There is a great red spot that is a giant storm that is similar to a hurricane on Earth, but it is much larger. The red spot is as big as two Earths! It has been going on for more than 400 years.

If you weigh 100 pounds on Earth, you would weigh 214 pounds on Jupiter. This means that there is more gravity on Jupiter. Jupiter has no solid surface because it is made up of gasses. The bands of colors we see when we look at Jupiter are gases rising and falling.

1. Jupiter is the _____ planet from the sun.

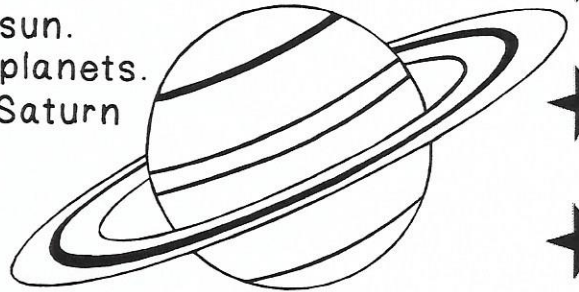
2. What is the red spot that can be seen on Jupiter?

3. There is _____ gravity on Jupiter than Earth.

4. Jupiter is made of _____ and has no solid surface.

Saturn

Saturn is the sixth planet from the sun.
Saturn is the least dense of all the planets.
This means that if you were to put Saturn
in water, it would float!



Like Jupiter, Saturn is a giant ball
of gas with a rocky center. It does
not have a solid surface. It is the second largest planet. It is
about ten times bigger than Earth. Saturn has 34 moons.

Seven thin rings circle the planet. The rings are made of bits
of ice and rock. These icy rings reflect light from the sun,
which makes it visible. They make Saturn one of the most
beautiful planets in the solar system. Clouds cover the planet.
Saturn is freezing cold at the top of the clouds. It is very hot
at the center. A year on Saturn is about 29 Earth-years long.
One day is about 10 Earth-hours long.

1. Saturn is the _____ planet from the sun.

2. Why could Jupiter float if you put it in water?

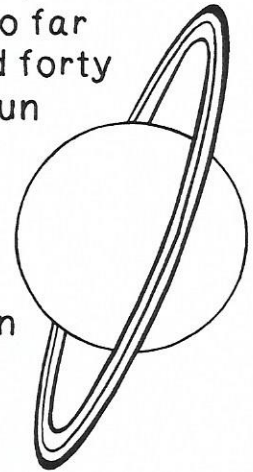
3. What are Jupiter's rings made of?

4. A year on Saturn is about _____ Earth-years long
and one day is about _____ Earth-hours long.

Uranus

Uranus is the seventh planet from the sun. It is so far away from the sun that light takes two hours and forty minutes to get there! Uranus is so far from the sun that it is very, very cold.

Uranus is a gas giant with a rocky center. It does not have a solid surface. It is the third largest planet and is about four times bigger than Earth. Like Jupiter, it has 27 moons. Uranus looks blue-green in color. A thick haze covers the planet. It is believed that Uranus was hit by another planet, and because of this, it was knocked off its rotation and now spins on its side.



Uranus has some rings. The rings are very thin and dark. The rings go around the top and bottom of the planet instead of around the middle like Saturn's rings.

1. Uranus is the _____ planet from the sun.
2. Uranus is about _____ times bigger than Earth.
3. Why do astronomers believe Uranus rotates on its side?

4. What do Uranus' rings look like?

Neptune

Neptune is the eighth and last planet in our solar system and is the fourth-largest planet. It is the smallest of the gas giant planets, but it is still about four times larger than Earth. Its gravity is greater than Earth's gravity. If you weigh 100 pounds on Earth, you would weigh 110 pounds on Neptune.



Neptune does not have a solid surface because it is made up of gasses. It looks blue-green and is covered with clouds. Neptune has at least eleven moons and has faint rings that are made of rocks and dust. Because it is so very far from the sun, it is very, very cold. Neptune has high winds and many storms. You can see these storms as dark spots on the surface. Its winds have been measured at 1500 miles per hour! Neptune has the strongest winds on any planet in the solar system.

1. Neptune is the _____ planet from the sun.
2. There are _____ moons that orbit Neptune.
3. The winds on Neptune can blow up to _____ miles per hour.
4. The dark spots on Neptune are _____.
5. Neptune is made of _____ and has faint _____.

Pluto

Pluto used to be the ninth planet in our solar system, but in 2009, was demoted and is no longer a planet. This is because in 2006, the International Astronomical Union made some new guidelines that all planets must meet. First, it has to orbit the sun. Secondly, it needs to be large enough for gravity to make into a sphere. Last, it cannot have any space debris floating around it.



Pluto does orbit the sun and is a sphere. The third guideline is what makes Pluto not a planet. It has a lot of "junk" floating around it. The Kuiper Belt is close by, which contains many ice particles. Ceres, the largest asteroid, is also near Pluto.

Pluto is so far away that it is very hard to see. It is covered with frozen gasses and has very weak gravity. In 2006, NASA launched a spacecraft that will reach Pluto in 2015 so we can learn more about it!

1. In _____ Pluto was demoted and is no longer a planet.

2. What are the three guidelines a planet must meet?

3. What objects are near Pluto?
