

Explore Our Solar System

Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune!

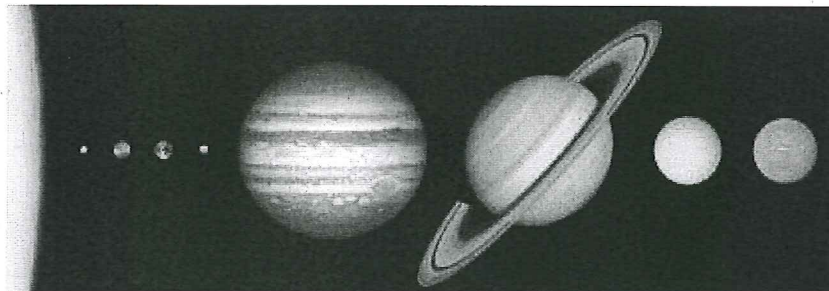
Eight planets **orbit**, or revolve around, the sun. The planets and the sun are parts of our solar system.



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Which planet is shown here?

The **sun** is a star. It is a giant ball of hot gas.



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Mercury is the closest planet to the sun. It has mountains, cliffs, and plains.

Venus is the hottest planet. It can reach up to 850 degrees. That is hot enough to melt a rocket ship!

Earth is the planet pictured on the cover. It is our home. It is the only planet that has the oxygen and water that people, animals, and plants need to live.

Mars is a cold planet. It is sometimes called the Red Planet because it has reddish soil.

Jupiter is the largest planet. It is made of thick gases. If you tried to land a rocket ship, you would sink into the planet!

Saturn is the second-largest planet. Like Jupiter, it is made mostly of gases. Its rings are made up of rock, ice, and dust.

Uranus is cold and windy. It was the first planet to be discovered with a telescope, in 1781.

Neptune is called the Blue Planet. It is the coldest planet because it is farthest from the sun.

Stay Smart!

Ring Around the Planets

Jupiter, Saturn, Uranus, and Neptune are gas planets. They all have rings. Only Saturn's rings are thick enough to be seen easily from Earth.

- To remember the order and names of the planets, repeat this silly sentence: My very excellent mother just served us nachos.

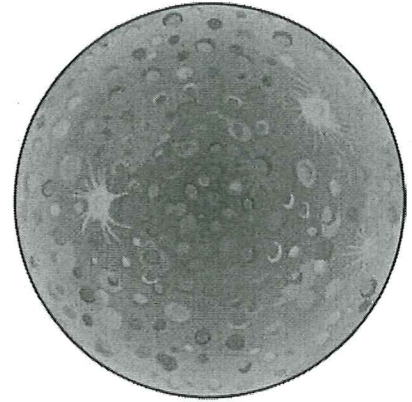
Name _____

Mercury

Learn facts about Mercury.

Read the passage and answer the questions.

Mercury is a small planet closest to the sun. Mercury is only slightly larger than Earth's moon. During the day temperatures reach around 800 degrees Fahrenheit. Since the planet has no atmosphere to hold the heat in, the nighttime temperatures can drop to -290 degrees Fahrenheit.



Mercury's year is a short 88 days. Mercury is a heavy planet made mainly of iron. Mercury looks a lot like Earth's moon because it is scarred by craters. Because Mercury is so close to the sun, it is hard to see from Earth. It is sometimes called the "evening star" or the "morning star" because it is only visible when the sun is rising and setting.

1. Why do the temperatures on Mercury change so much from day to night?

2. How long does it take for Mercury to orbit the sun?

3. Why did people call Mercury the "evening star"?

4. What is Mercury made of?

Name _____

Venus

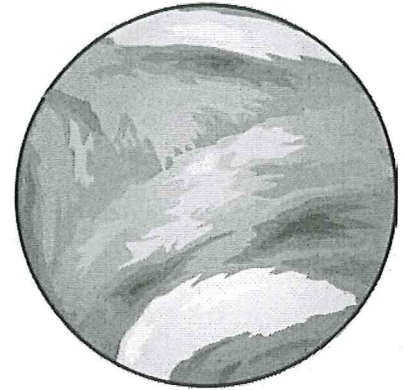
Learn facts about Venus.

Read the passage and answer the questions.

Venus and Earth are similar in mass, density, size and composition (what they're made of), but that is where the similarities end. Venus is covered in a thick, rapidly spinning atmosphere made mostly of carbon dioxide.

Since it is so close to Earth and because of the way the clouds reflect the sun, Venus appears to be the brightest planet. The thick atmosphere traps in heat and creates surface temperatures of over 880 degrees Fahrenheit. It takes Venus about 225 Earth days to orbit around the sun. Venus' day, the amount of time it takes to rotate on its axis, is about 117 Earth days.

That would make one long morning!



1. What do Earth and Venus have in common? _____

2. What is the atmosphere made of? _____

3. Describe what is unique about Venus' day? _____

4. Why does Venus appear to be the brightest planet? _____

5. If Earth and Venus are close to each other, why is there no life on Venus?

Name _____

Earth

Learn facts about Earth.

Read the passage and answer the questions.

Our very special planet is the only one that we know of that can support life. Everything we need to live is here, protected by a thin atmosphere. Earth is the fifth-largest planet in the solar system. It is the third planet from the sun. The four seasons we experience are caused by the 23.5-degree tilt of Earth axis. Oceans that are at least 2.5 miles deep cover 70 percent of the Earth. Our atmosphere is made up of 78 percent nitrogen, 21 percent oxygen, and one percent of other substances. Earth is orbited by one moon. The Earth's rapid spin and molten iron-nickel core cause a magnetic field.



1. What causes the four seasons? _____

2. What amount of Earth is covered by oceans? _____

3. What is the Earth's atmosphere made of? _____

4. What causes the Earth to have a magnetic field? _____

5. List one thing new that you learned about Earth. _____

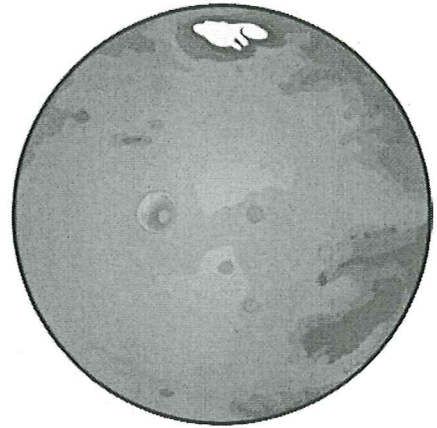
Name _____

Mars

Learn facts about Mars.

Read the passage and answer the questions.

Mars has always been exciting to scientists because its composition and temperature are most like Earth's. Scientists believe that Mars once had rivers, lakes, streams, and even an ocean. The only water found on Mars today is either frozen or underground. This is because Mars' atmosphere disappeared into space and the liquid water evaporated. Mars is often called the "Red Planet" because its surface is red; it is covered in red dirt and rocks. Spacecraft have actually landed on Mars so that scientists could learn more about it. Mars has two moons named Deimos and Phobos.



1. Why would scientists think there might have been life on Mars?

2. Where is the water on Mars? _____

3. Why is Mars called the "Red Planet"? _____

4. What are the names of Mars' moons? _____

5. Why is there no liquid water on Mars? _____

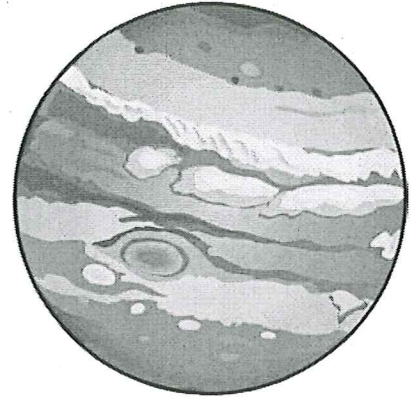
Name _____

Jupiter

Learn facts about Jupiter.

Read the passage and answer the questions.

Jupiter is the largest planet in our solar system. It has four planet-sized moons and many smaller satellites. It is so big that more than 1000 Earths could fit inside it. Jupiter is a very stormy place, covered in clouds that are made mostly of ammonia. One storm cloud is so



large that it's known as the Great Red Spot, and has been raging for hundreds of years. Jupiter is called a gas giant because it has no solid surface. Its atmosphere slowly gets thicker and thicker until it reaches the liquid ocean of hydrogen and water. Jupiter has three faint rings.

1. List two unique things about Jupiter. _____

2. How many Earths could fit inside Jupiter? _____

3. Why is Jupiter known as a gas giant? _____

4. What is the surface of Jupiter like? _____

5. What is the ocean made of? _____

Name _____

Saturn

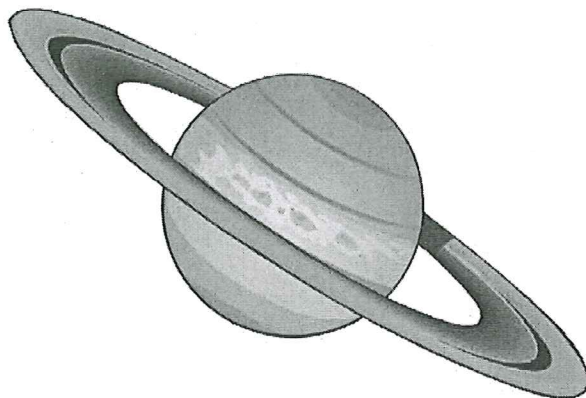
Learn facts about Saturn.

Read the passage and answer the questions.

Saturn is the second-largest planet and is a gas giant like Jupiter. Under clouds of methane, hydrogen, and helium, the sky slowly turns into a giant ocean of liquid chemicals.

Saturn is the least dense planet in our solar system; it is made mostly of hydrogen and

helium. Because it is so lightweight and spins so quickly, Saturn is not perfectly round like the other planets. Saturn is surrounded by thousands of small rings made of rocks and ice. It also has 140 natural satellites, like moons and pieces of debris.



1. How is Saturn similar to Jupiter? _____

2. What are the clouds made of? _____

3. Describe the surface of Saturn. _____

4. Why is Saturn not perfectly round? _____

5. Describe some of the things surrounding Saturn. _____

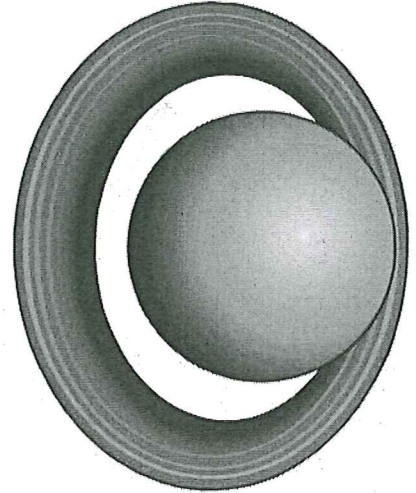
Name _____

Uranus

Learn facts about Uranus.

Read the passage and answer the questions.

Uranus spins on an axis that often points straight toward the sun. Scientists believe that its horizontal axis is a result of a large object hitting Uranus. Uranus has some of the brightest clouds in the solar system, and eleven rings. Uranus is a gas giant, with no solid surface. Its atmosphere is made up mostly of hydrogen and helium, with traces of methane, water, and ammonia.



The methane gives Uranus its blue-green color. Uranus has 27 known moons; five of these are large and the rest are smaller.

1. What is unique about Uranus' axis? How might this have been caused?

2. How many rings does Uranus have? How many moons? _____

3. What is the atmosphere made of? _____

4. Why does Uranus give off a blue-green glow? _____

5. List two new things you learned about Uranus. _____

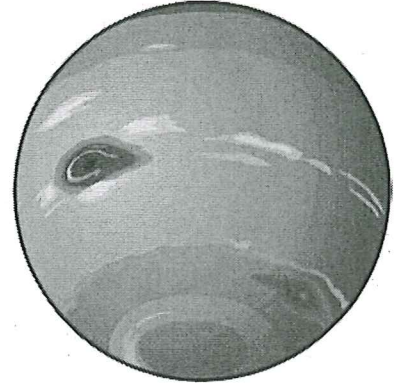
Name _____

Neptune

Learn facts about Neptune.

Read the passage and answer the questions.

The eighth planet from the sun was the first planet to be discovered by mathematical predictions instead of through observations of the sky. Astronomers thought there was another planet because of the changes in Uranus' orbit.



Neptune is the smallest of the four gas giants. Its atmosphere is similar to the other gas giants and is made of hydrogen, helium, and methane. Neptune has the strongest winds of any planet in our solar system.

There is a large storm like on Jupiter that is called the "Great Dark Spot." The winds near the large storm are believed to reach close to 1,200 miles per hour!

1. What was special about the way Neptune was discovered? _____

2. What is Neptune's atmosphere made of? _____

3. What is the large spot on Neptune and what is it called? _____

4. What does Neptune have in common with the other gas giants? _____

5. List two unique things about Neptune. _____
