

_____ Name _____ Date _____

NOTES: Inner Planets

They are called terrestrial Planets. Terrestrial Planets are - like earth because they are dense and rocky.

MERCURY

1. On mercury you would only weigh 38% of what you weigh here on Earth.
2. Your weight here on Earth has to do with surface gravity, which is less on less massive planets.
3. A day on Mercury is 59 days on earth.
4. The motion of a body orbiting another body in space is called a REVOLUTION.
5. So Mercury's period of rotation is nearly 59 Earth days long.

A YEAR ON MERCURY

1. A year on Mercury is only 88 Earth days long.
2. A year is the time that it takes a planet to go around the earth once.
3. The amount of time that it takes an object to revolve around the sun once is called its period of revolution.
4. So 88 Earth days is 1.5 Mercurian days, Mercury revolves around the sun once.

VENUS

1. Earth's Twin?
2. Venus is more like Earth than any other planet.
3. Venus is slightly smaller, less massive, and less dense than Earth.
4. Venus is different than Earth in that the sun rises to the West and sets to the East.
5. This is because Venus and Earth rotate in opposite directions.
6. Earth has a PRO-GRADE ROTATION.
7. PRO-GRADE ROTATION - appears to spin in a counter-clockwise rotation when

viewed from above at its North Pole.

8. RETROGRADE ROTATION - A planet spinning in a clock-wise rotation. (Venus)

THE ATMOSPHERE OF VENUS

1. Venus has the most dense atmosphere of the terrestrial planets.
2. Venus has 90 times the pressure of Earth's atmosphere.
3. The air in Venus is mostly made up of carbon dioxide, which is mixed with some of the most destructive acids known.
4. The carbon dioxide traps the thermal energy from the sunlight, this is called THE GREENHOUSE EFFECT.
5. Because of this Venus' surface temperature is 464 degrees Celsius.
6. It's the hottest planet in the solar system.

MAPPING VENUS'S SURFACE

1. Between 1990 and 1992, the Magellan spacecraft mapped the surface of Venus using radar waves.
2. The radar waves traveled through the clouds and bounced off of the planets surface.
3. Data from this showed that Venus like Earth has volcanoes.

EARTH: AN OASIS IN SPACE

WATER ON EARTH

1. Earth formed at just the right distance away from the sun to keep its water from freezing and boiling away.
2. This is also known as being a Goldilocks planet: not too hot not too cold.

EARTH FROM SPACE

1. NASA has a program called Earth Science Enterprise, and its goal is to study earth-using satellites in the same manner that they study other planets.
2. It is studying Earth as a global system made up of smaller systems.

3. These smaller systems include the atmosphere, land, ice, the oceans, and life.
4. The program will also let us know how humans effect the global environment.
5. By studying the Earth from space scientists hope to understand how different parts of the global system interact.

MARS: OUR INTRIGUING NEIGHBOR

1. Most of the information that we have on Mars comes from the spacecrafts Viking 1 and Viking 2, which landed on Mars in 1976, and Mars Pathfinder, which landed on Mars in 1997.

THE ATMOSPHERE ON MARS

1. Because of its thin atmosphere and its distance from the sun it is a cold planet.
2. Midsummer temperatures range from -13 degrees Celsius to -77 degrees Celsius.
3. The air pressure on mars is about the same as 30km above Earth's surface and that's higher than most planes fly.
4. The pressure is in fact so low that any liquid water would quickly boil away.
5. The only water found on Mars's surface is in the form of ice.

WATER on MARS

1. Even though liquid water can not exist on Mars's surface today there is strong evidence that it existed in its past.
2. The fact that there is evidence that shows that water could have existed on mars suggests that it once had a warmer climate and a thicker atmosphere.

WHERE IS THE WATER NOW?

1. Mars has 2 frozen ice caps made of both frozen water and frozen carbon dioxide.
2. The icecaps do not have enough water to create a thick atmosphere or rivers.
3. because of craters seen to have a sort of mud slide in them scientists believe that the water may in fact be frozen beneath the Martian soil.

MARTIAN VOLCANOES

1. Mars has a rich volcanic history.

2. Mars has 2 large volcanic systems.

3. The largest of which is the Tharsis region, it stretches over 8,000km across the planet.

MISSIONS TO MARS

1. The Mars Express Orbiter was launched in 2003 to help scientists determine the composition of the Martian atmosphere and climate.

2. In 2004 NASA landed the Twin Rovers and they were rovers designed to gather information that may help scientists to determine if life ever existed on Mars. In addition information gathered by these rovers may help scientists prepare for human exploration to Mars.