Learning Objectives

1) Understand that our solar system is made up of planets, dwarf planets, moons, asteroids, and our star, the Sun.
2) Understand what a star, a planet, and a dwarf planet are.
3) Know that each planet and dwarf planet rotates on an axis and orbits the sun.
4) Realize that there are currently 8 planets in our solar system: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune;
5) Realize that there are currently three dwarf planets in our solar system; Ceres, Pluto, and Eris;
6) Understand the difference between a planet and a dwarf planet.

Suggested Activities

1. **Make a Model of the Solar System**
Ask students to work in pairs or small groups. Using classroom supplies (or have students brainstorm supplies they can bring from home to complete the project) have groups construct a small scale model of the solar system. Students should make sure that their planets are comparatively sized, that they are the correct colors and composition (encourage creativity when constructing the gas planets), and that their orbits are as accurate as possible.

Anticipatory Set

1. Have a "Solar System Quiz" to see what the students already know. Ask them questions such as: Which planet is the largest? (Jupiter). Which planet is closest to the sun? (Mercury). Which planet is called the red planet? (Mars). What is the largest object in our solar system? (The Sun).
Include questions that focus on recent changes in how we think about our solar system such as: How many planets are in our solar system? (8). Which dwarf planet is the largest? (Eris).

Test

True/False

1) The Sun is the largest object in our solar system. ___T ___F
2) Solar wind is the force that pulls the planet's orbit around its sun (star). ___T ___F
3) All of the planets and dwarf planets in our solar system orbit the sun. ___T ___F
4) All planets and dwarf planets have a spherical shape. ___T ___F
5) Uranus rotates on its side like the other planets do. ___T ___F
6) Which of the following is true about Jupiter?
   a) It is the largest planet in our solar system
   b) It is a gas planet
   c) The Great Red Spot is a storm on its surface
   d) All of the above.
7) Which planet is known as Earth's sister planet?
   a) Venus b) Mars
   c) Mercury d) Ceres
8) Ceres is:
   a) Small, about the size of Texas
   b) Is a dwarf planet
   c) Lies inside of the Asteroid Belt
   d) All of the above
9) Mercury has so many craters because:
   a) It is so close to the sun
   b) It has very little atmosphere
   c) It orbits slowly around the sun
   d) It is very large
10) Which planet is called the red planet?
   a) Mars b) Mercury
   c) Eris d) Neptune

Answers:

1T, 2F, 3T, 4T, 5F, 6D, 7A, 8D, 9B, 10A

Additional Resources

International Astronomical Union www.iau2006.org
Nat'l Aeronautics & Space Admin www.nasa.gov

Vocabulary

Axis – The invisible line on which a planet rotates.

Dwarf Planet – An object just like a planet, except it is smaller and has other objects, like asteroids, in its path around the sun.

Gravity – The invisible force that pulls objects toward the center of an object, like a planet or the sun.

Moon – Large rocky object that orbits a planet.

Orbit – One complete turn around the sun.

Planet – An object that is round, orbits the sun, and whose path is free of other objects.

Revolve – to move around an object in a circular motion.

Rotate – to spin.

Sunspot – A dark region on the surface of the sun that is cooler than the area around it.

Solar system – Literally means "sun system," the sun and the planets.

Solar Wind – Particles that are blown out from the sun into space.