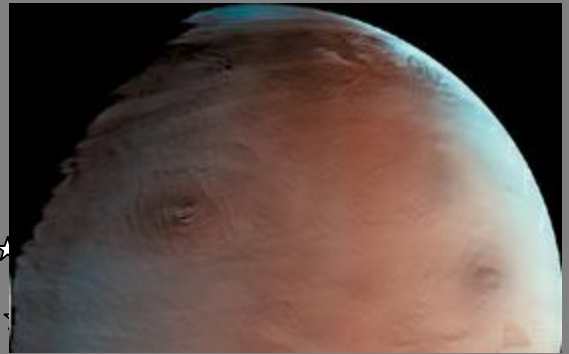


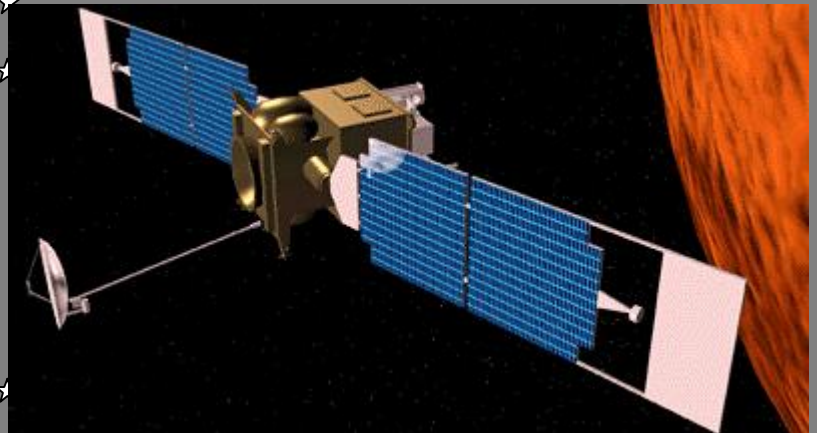
# Mars and Beyond!



Mars taken by Mars Orbital Camera



Family Portrait of Jupiter's Great Red Spot and the Galilean Satellites



Mars Global Surveyor

By Nancy Wilkinson

**Mars and Beyond**  
**Lesson 9**  
**The Planets and their Diameter**

**Objective:**

- 1) Students will find the comparative diameter of the planets.

**Materials Needed:**

- 1) Table on the page 42. (You might want to make an overhead of this table.)
- 2) Rulers and yard sticks
- 3) Worksheet Lesson 9 (To save copying costs, you can have the students copy the chart on their own paper)
- 4) Tag board

**Opening Activity:**

- 1) Place the table on page 42 on the overhead.
- 2) Read the following excerpt to the students:  
The diameter of a planet is the distance from one side of the planet through the middle. Which planets are smaller in diameter than the Earth's? Which planets have a larger diameter? (*Smaller Diameter – Mercury, Venus, Mars, Pluto, Larger Diameter - Jupiter, Saturn, Uranus, Neptune*)

**Activity:**

- 1) Tell the students that the Earth's diameter is 12,756 kilometers.
- 2) Calculate what percentage the other planets are compared to the Earth's size. To do this:
  - a) Divide the other planets diameter by the Earth's diameters.
  - b) Change the decimal into a percent.
- 3) Have the students complete the chart on Worksheet Lesson 9.

**Closure:**

If the diameter of the planet is one inch, what would the diameters of the other planet be? Use tag board to draw the diameter of the planets.

Planet	Diameter	Comparative Diameter Size in inches
Mercury	4,880	0.38
Venus	12,104	0.95
Earth	12,756	1.00
Mars	6,787	0.53
Jupiter	142,800	11.19
Saturn	120,600	9.45
Uranus	50,800	3.98
Neptune	48,600	3.81
Pluto	3,000	0.24

**Mars and Beyond**  
**Worksheet Lesson 9**  
**The Planets and Their Diameter**

Name \_\_\_\_\_ Period \_\_\_\_\_

Directions:

- 1) Calculate what percentage the other planets are compared to the Earth's size. To do this:
  - a) Divide the other planets diameter by the Earth's diameters.
  - b) Change the decimal into a percent.
- 2) Fill out the chart below.

<b>Planet</b>	<b>Diameter</b>	<b>Percentage of Diameter</b>
Mercury	4,880	
Venus	12,104	
Earth	12,756	
Mars	6,787	
Jupiter	14,2800	
Saturn	120,600	
Uranus	50,800	
Neptune	48,600	
Pluto	3,000	



Mariner 10 launched November 4, 1973 was the seventh successful launch in the Mariner series and the first spacecraft to use the gravitational pull of one planet (Venus) to reach another (Mercury).

**Mars and Beyond**  
**Worksheet Lesson 9 - Answers**  
**The Planets and Their Diameter**

Directions: Fill out the chart below.

<b>Planet</b>	<b>Diameter</b>	<b>Percentage of Diameter</b>
Mercury	4,880	38%
Venus	12,104	95%
Earth	12,756	100%
Mars	6,787	53%
Jupiter	14,2800	1,119%
Saturn	120,600	945%
Uranus	50,800	398%
Neptune	48,600	381%
Pluto	3,000	24%

Pioneer 10 was launched March 3, 1972. This mission was the first to be sent to the outer solar system and the first to investigate the planet Jupiter, after which it followed an escape trajectory from the solar system. The spacecraft achieved its closest approach to Jupiter on December 3, 1973. As of Jan. 1, 1997 Pioneer 10 was at about 67 Astronomical Units (AU) from the Sun. It is heading outward from the Sun at 2.6 AU/year. The spacecraft is heading generally towards the red star Aldebaran, which forms the eye of Taurus (The Bull). The journey over a distance of 68 light years to Aldebaran will require about two millions years to complete.



Viking 2 – 9/9/1975 - Mars Orbiter and Lander