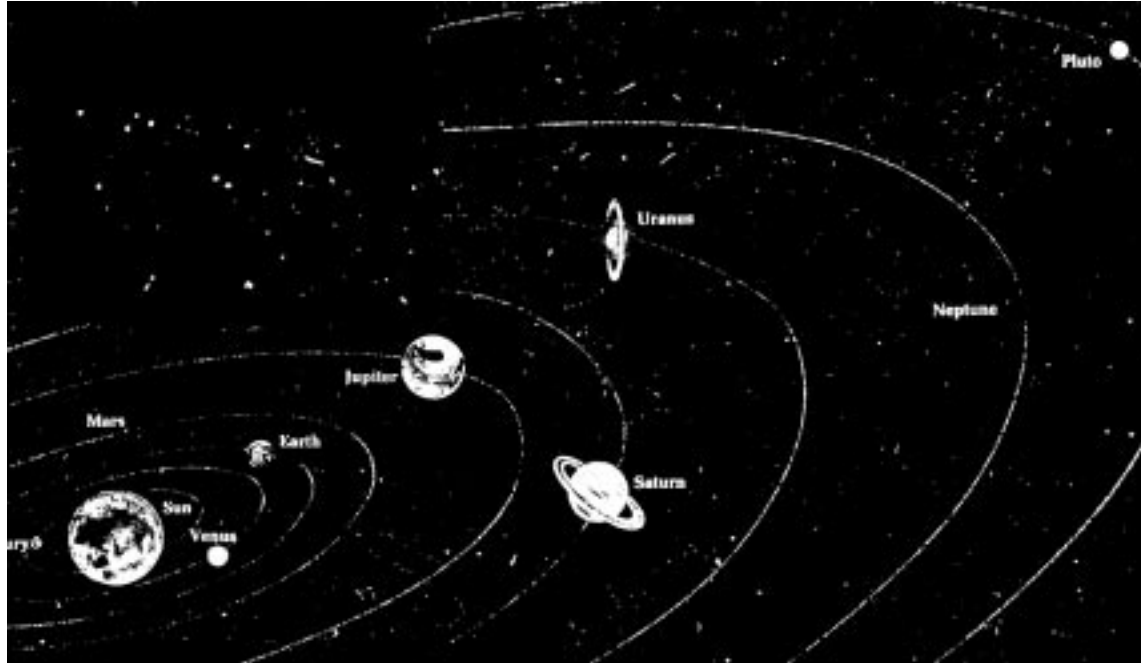


# APPENDIX ACTIVITY 2: Make a Scale Model of the Solar System



You have made a scale model showing the size of the planets. The next step is to make a model showing how far they are from the Sun.

## Make a Scale Model of the Planets in Orbit

**Materials:** meter stick or metric tape measure

- 1 At this one-billionth scale, how far is the Earth from the Sun? Go outside with the scale models of the Sun and the planets. Find a large space such as a playing field. Put the Sun on the ground at one end of the field. Walk away from the Sun and stop where you think the Earth belongs at this scale.

- 2 Referring to the data table on the left of this page, look at the actual distance from the Sun to the Earth and the scaled distance. You will see that the Earth is 150 meters away from the Sun at this scale. Put the scaled Earth on the ground at this distance.
  - 3 Where would Mars be at this scale? Closer to the Sun? Farther away? Walk to the place where you think Mars belongs.
  - 4 Look again at the data table. Find the scaled distance from the Sun to Mars and measure off this distance. Put the paper cut-out of Mars there.
  - 5 Now use the data table to correctly position Mercury and Venus. Again put the paper cut-outs there. You have now completed what are called the inner planets.
  - 6 The outer planets are even farther away. In fact, they are so far away in this scale model that they will probably not fit on your school property. Try Jupiter.
- Do the same for Saturn, Uranus, Neptune and Pluto. Use a map of the area around your school to mark where these planets would be.
- 7

<i>Distances from the Sun</i>		
<i>Planet</i>	<i>Actual Distance</i>	<i>Scaled Distance</i>
<i>Mercury</i>	<i>58,000,000 km</i>	<i>58 m</i>
<i>Venus</i>	<i>108,000,000 km</i>	<i>108 m</i>
<i>Earth</i>	<i>150,000,000 km</i>	<i>150 m</i>
<i>Mars</i>	<i>228,000,000 km</i>	<i>228 m</i>
<i>Jupiter</i>	<i>778,000,000 km</i>	<i>778 m</i>
<i>Saturn</i>	<i>1,424,000,000 km</i>	<i>1,424 m</i>
<i>Uranus</i>	<i>2,867,000,000 km</i>	<i>2,867 m</i>
<i>Neptune</i>	<i>4,488,000,000 km</i>	<i>4,488 m</i>
<i>Pluto</i>	<i>5,910,000,000 km</i>	<i>5,910 m</i>

*Scaled distance is 1 billionth of actual distance*

