

## Scale Models of the Planets

### **Goal of the activity:**

This activity gives students a true sense of the scale of the solar system planets. Many models and drawings of available through various sources exaggerate the size of the small planets and under size the size of the larger planets and the sun.

### **Materials Required:**

1. Yellow Streamer Material
2. Plain Paper and Bristol Board
3. Compass
4. Pencil Crayons, Pencils and/or Paints

### **Instructions:**

First start by visiting “Build a Solar System” web page at [http://www.exploratorium.edu/ronh/solar\\_system/](http://www.exploratorium.edu/ronh/solar_system/)

This web page allows you to determine the size and orbits of the various planets based on the size of the Sun. If you start with a Sun size of 5000mm your smallest planet Pluto is 8.1 mm and the largest planet Jupiter is 501.1mm.

In the corner of your classroom measure 2.5 meters and place a mark on the floor. At the 2.5 meters point, measure 2.5 meters up from the floor and mark this point with an “X”. Tape the end of the yellow streamer to the lower corner of the wall and continue on a gradual arc to the “X” position. The yellow streamer represents  $\frac{1}{4}$  of a 5000mm Sun. Have the students then use a compass and ruler to draw and colour the rest of the solar system on plain paper and Bristol board. Place the planets in their order on the wall. Note the scale orbital radius. It is impossible to draw the planets to scale and place them in their scaled orbits within the classroom.

<b>Solar System Body</b>	<b>Size: mm</b>	<b>Orbit Radius in Meters</b>
Sun	5000	
Mercury	17.4	208
Venus	43.4	388
Earth	45.7	537
Mars	24.2	818
Jupiter	501.1	2.8 Km
Saturn	418.2	5.1 Km
Uranus	168.6	10.3 Km
Neptune	163.2	16.1 Km
Pluto	8.1	21.2 Km