Name: _____ Circle: A2 0r B4 Date: _____

Scale Model of Solar System

A solar system is a collection of planets, dwarf planets and other bodies that formed around a star. Our solar system has 8 planets orbiting our sun. These planets are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. There is a possible 9th planet orbiting beyond the Kuipier Belt. There are also at least 5 named Dwarf Planets, asteroids and other objects located in the solar system.

You will build a scale model of the solar system using the information in the following tables. You will need to use TWO scales—one for the diameter of the planets and the other for the average distance each planet is from the sun. You will use the metric system for your model measurements.

Objective: To make a scale model of our Solar System demonstrating the relative sizes of the planets and their relative distances from the sun.

Approach: Using the two charts below, work with your partner(s) to determine appropriate scales for the distances and diameters. For the distance scale you can use 11 sheets of 11 inch-long paper to place all of the planets including the dwarf planets and potential planet 9.. Use the full length of the allotted paper. For the diameters, you will place the sun diameter as the full width (8.5 inches).

Calculate your scale using these assigned dimensions for the model. You will show the Sun as a semi-circle at one end of the connected paper sheets. Pick a distance to Planet 9 that uses almost the full length of the papers.

Additional instructions:

- Each group member must do the calculations for the two scales and turn in completed tables. You may check each other after doing the calculations and determine correct scale values together if there is disagreement among the values.
- You also need to include at least 5 facts about the planets. (Their relative order from the Sun is NOT to be used as one of them.)
- Color the planets. Points will be given for neatness and use of color
- Place the names of all partners on the back of your diagram.

Grading Rubric:

Item	Points
Accuracy in scales	20
Accuracy in scale drawing	20
Facts on planets	40
Additional facts about other members of Solar System	10
Neatness/use of color	10
TOTAL	**100**

Name: _____ Circle: A2 0r B4 Date: _____

Distance of the planets and other objects from the Sun in Astronomical Units (AU)

Planet	Actual Distance from the Sun (AU)	Model Distance (cm)
Mercury	0.38	
Venus	0.72	
Earth	1.00	
Mars	1.52	
Ceres (Dwarf)	2.80	
Jupiter	5.20	
Saturn	9.52	
Uranus	19.2	
Neptune	30.1	
Pluto (Dwarf)	39.7	
Number 9?	602.0	

Diameters of the planets and Sun

Planet	Actual Diameter (Km)	Relative Diameter Compared to Earth	Model Diameter (cm)
Mercury	4,800		
Venus	12,100		
Earth	12,760		
Mars	6,800		
Ceres (Dwarf)	952		
Jupiter	143,000		
Saturn	120,500		
Uranus	51,100		
Neptune	49,500		
Pluto (Dwarf)	2,370		
Number 9?	13,700 (est.)		