Creating a Solar System Scale.

Procedure:

1) Measure the longest distance you can use, no more than 100 m. Measure this distance to the nearest meter and record it in Data Table 1. This distance will represent the distance between the Sun and the dwarf Planet Pluto (that is 39.4 AU OR 5.9 billion km).

2) To calculate the distance from the model sun to each model planet, you need to calculate a scaling factor. Determine the scaling factor by dividing the distance from step 1 above by the distance from the Sun to Pluto. Find this distance in Data Table 2. Record the scaling factor in Data Table 1. For example, if the longest distance usable is 78 m, then the scaling factor is 78 m ÷ 39.4 AU = 1.98 M/AU

3) Multiply the scaling factor from step 2 by the actual distance from the Sun to each of the planets in AU. Use the distances in Data Table 2. Record the answer in the column labeled "scale distance from Sun"

DATA TABLE 1		
Largest usable distance (meters)	Distance to Pluto (AU)	Scaling factor (m/AU)
	39.4	

DATA TABLE 2				
Planet	Distance from Sun (AU)	Distance to planet (km)	Scale distance from Sun (meters)	Actual diameter (Km)
Sun (*a star)	n.a.	n.a.	n.a.	1,391,980
Mercury	0.39	58,000,000		4,880
Venus	0.72	108,000,000		12,100
Earth	1.00	150,000,000		12,800
Mars	1.52	228,000,000		6,800
Jupiter	5.20	778,000,000		142,000
Saturn	9.54	1,430,000,000		120,000
Uranus	19.2	2,870,000,000		51,800
Neptune	30.1	4,500,000,000		49,500
Pluto	39.4	5,900,000,000		2,300