Name: _____ **Date:** _____

Planet Facts Worksheet

Planet	Distance from the Sun (AU*)	Approximate Distance from the Sun (km)	Radius (km)	Diameter (km)
Mercury	0.387	57,910,000	2,440	4,879
Venus	0.723	108,200,000	6,052	12,104
Earth	1	149,669,000	6,378	12,756
Moon	1	150,072,000	1,737	3,474
Mars	1.524	228,096,000	3,397	6,794
Jupiter	5.203	778,400,000	71,492	142,984
Saturn	9.537	1,429,725,000	60,268	120,536
Uranus	19.191	2,870,980,000	25,559	51,118
Neptune	30.069	4,498,250,000	24,764	49,528
Pluto	39.481	5,906,370,000	1,195	2,390
Distance from the Earth to the Moon = 403,000 km (or 40,300,000,000 cm)				
Distance from the Earth to Mars = 78,000,000 km (or 7,800,000,000,000 cm)				

*AU=Astronomical Unit, which is the average distance from the Earth to the Sun (149,669,000 km)

Scale: For every Centimeter in our Scale Models there are 63,800,000 centimeters in the Real World

Instructions

1. Earth balloon students: inflate your model to approximately 20 cm (7¾"). Use a ruler to measure your balloon (be careful not to puncture the balloon with sharp ruler edges). Tie off your balloon when the appropriate size is reached.

2. All students: What is the scale of the model that was just made? _____

   (Hint: Using the table above, divide the diameter of Earth, in centimeters, by the size of your balloon. You must first convert the diameter to centimeters, because your model is in centimeters. To convert to centimeters, you multiply your number by 100,000; 1 km = 100,000 cm.)

3. All students: Using the same scale of the Earth (blue balloon) model, calculate the size that the Moon and Mars should be.

   (Hint: You will need to divide the planet's diameter by your scale. Do not forget to convert the listed diameter to centimeters, because your scale is in centimeters.)

   The equations should look like:

Moon: _____ (cm) ÷ _____ = ____ cm
Diameter (centimeters) Scale

Mars: _____ (cm) ÷ _____ = _____ cm
Diameter (centimeters) Scale

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4. White and Red balloon students: Inflate your Moon and Mars models, according to your answers in Question #3.

5. All students: Demonstrate how far apart you think the Earth and the Moon are by holding your balloons in the air. What is your estimate?

   Estimated distance between the Earth and the Moon: _____ circle: cm / meter
   Group's Estimate

6. All students: Calculate the actual distance between the Earth and the Moon (at the same scale you used to determine their size). Hint: divide the distance between the Earth and the Moon by 63,800,000.

   Write the equation here: _____ (cm) ÷ _____ = _____
   Distance between Earth and Moon Scale Group's Calculation

   Was your group's estimate close to the actual number? ____ yes ____ no

7. All students: Compare the size of your Mars model with your Earth and Moon models. Hold your Earth and Moon models at their actual distance apart (as calculated in Question #6 above).

   How far away do you think Mars will be at the same scale? Hold your balloons in the air where you think Mars lies. Measure the distance.

   Estimated distance between the Earth and Mars: _____ cm / meters / km
   Group's Estimate

8. All students: Calculate the actual distance between the Earth and Mars (at the same scale you used to determine their size). Hint: divide the distance between the Earth and Mars by 63,800,000.

   Write the equation here: _____ (cm) ÷ _____ = _____
   Distance between Earth and Mars Scale Group's Calculation

   Was your group's estimate close to the actual number? ____ yes ____ no