

Name: _____ Date: _____

If the Sun were one meter across...

What would be the relative sizes of the planets and their orbits?

Mark the place of each planet and draw it's correct size.

Body.....	Diameter..... (km)	Orbit..... (km)	Diameter..... (meters)	(cm)	Orbit..... (meters)	(cm)	(Other?)
Sun	1392000		1.0				
Mercury	4800	58 million	0.003		41.7		
Venus	12000	108 million	0.008		77.6		
Earth	12700	150 million	0.009		107.8		
Mars	6700	228 million	0.005		163.8		
Jupiter	140000	778 million	0.100		558.9		
Saturn	120000	1427 million	0.086		1025		
Uranus	52000	2871 million	0.037		2062		
Neptune	50000	4497 million	0.036		3231		
Pluto	2300	5913 million	0.002		4248		

The scale is 1 millimeter = 1392 kilometers for the above solar system model. Neptune would be 3.6 centimeters across at a distance of 3.2 kilometers from the 1 meter ball representing the Sun.

Note the orbit of Pluto is closer to the Sun than Neptune for a portion of the time, but the above orbit distance is a mean distance.

Standards that this activity fits:

Wyoming:

NGSS:

(Astronomy Cafe) <http://www.astronomycafe.net/qadir/q360.html>

(Wyoming Science Standards) http://edu.wyoming.gov/downloads/standards/Standards_2008_Science_PDF.pdf

(Next Generation Science Standards) <http://www.nextgenscience.org/next-generation-science-standards>

(Concepts) <http://www.nextgenscience.org/sites/ngss/files/Appendix%20G%20-%20Crosscutting%20Concepts%20FINAL%20edited%204.10.13.pdf>

Think about this...

How does this astronomy activity fit into the following disciplines:

	Patterns	Cause and Effect	Scale, Proportion, and Quantity	Systems and System Models	Energy and Matter	Structure and Function	Stability and Change
Science: Biology							
Science: Chemistry							
Science: Earth Science							
Science: Physics							
Technology							
Engineering							
Mathematics: General							
Mathematics: Algebra							
Mathematics: Geometry							
Mathematics: Trigonometry							
Mathematics: Calculus							

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(Wyoming Science Standards) http://edu.wyoming.gov/downloads/standards/Standards_2008_Science_PDF.pdf

(Next Generation Science Standards) <http://www.nextgenscience.org/next-generation-science-standards>

(Concepts) <http://www.nextgenscience.org/sites/ngss/files/Appendix%20G%20-%20Crosscutting%20Concepts%20FINAL%20edited%204.10.13.pdf>