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Activities

Building A Solar System

Name: _____ Date: _____

In this Planet Diary activity, you'll experiment with changing the scale of the solar system to compare planetary size and distance.

Directions

- Go to the Exploratorium's Build a Solar System. Read the instructions below *To Do and Notice*, then scroll to the interactive table below the heading *Solar System Model*.
- What if the Sun was one-inch wide? Enter "1" in the Sun's Body Diameter column (outlined in red), then click *Calculate*. Use the data to complete the first row of the table for question 1 in the Workspace. Round to the nearest whole number.
- This time, make the Sun one-yard (36 inches) wide. enter "36" in the Sun's Body Diameter column and click *Calculate*. (Remember to first delete any number in the green-outlined box.) Fill-in the second row of the table.
- What if the Sun were a mile wide? Enter "63,360" (why this number?) and click *Calculate*. Complete the bottom row of the table.
- Imagine building a solar system model with Earth scaled to one inch in diameter. How big would the Sun be? How far would Earth be from the Sun? Use Build a Solar System to experiment changing the Sun's diameter to see how Earth's diameter changes. Make Earth's diameter as close to one inch as possible (it won't be exact). Then answer questions 2 and 3.
- Where are the planets in space right now? Go to Solar System Live to find out!

Workspace

1.

Sun Diameter (inches)	**Sun Diameter (mm)**	**Earth Diameter (inches)**	**Earth Diameter (mm)**	**Earth Radius (feet)**	**Earth Radius (meters)**
1					
36					
63360					

2. When Earth's diameter is one inch, what's the Sun's diameter? Express your answer in feet and inches, rounding to the nearest inch.

3. If Earth was scaled to one inch, would its orbit fit inside your classroom?

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