Model the Sun/Earth System

**Measure** out a scale model of the actual distances of planets in the solar system!

**Show** the model of the sun.

**Ask:** If the sun were this size, how big do you think the earth would be?

**Draw** predictions on a whiteboard or chalkboard.

This model is based on a 2,000,000,000 to 1 scale.

As a group, **calculate the size** of the earth model from the actual diameter of Earth (12,756km)

\[(12,756 \text{ km} \div 2,000,000,000 \times 100,000 \text{ cm/km} = .6 \text{ cm})\]

**Hypothesize** the distance between the sun and Earth at this scale.

**Calculate the distance** on the worksheet to test the hypothesis.

**Discuss** how the answer compares to the hypothesis.

**Calculate** the distance for other planets in the solar system!

**Measure** the distance between the inner planets by going outside and using the measuring wheel or a tape measure. Have one person stand where each planet would be.

**Look** around! What do you notice? If you had placed the outer planets where would they be? Use landmarks such as people’s homes, businesses, and features of geography to help students understand how far away each of the outer planets would be for their model to remain to scale. A good way to estimate distance is by thinking about how long it takes to walk there: about 100 meters per minute.