1. In this Earth/Moon model, how big is the Sun and where should it be?

2. What information do you need to answer this question?
Review scale models

Diameter of the Sun: 1,390,000 km
Distance to Earth: 150,000,000 km
Scale of model: 1 cm = 1,063 km

Scaled diameter: 1,390,000 km ÷ 1,063 km/cm
= 1,308 cm ≈ 13 m

Scaled distance: 150,000,000 km ÷ 1,063 km/cm
= 141,110 cm ≈ 1.4 km
Locate the Sun

- Where would Earth be if this classroom were the Sun?
Focus question

• Where are the planets in the solar system?
Focus question

Answering the focus question is a two-phase task.

a. Calculate the scaled size and orbital radius for each planet.

b. Construct the model solar system by placing the scaled planets along a length of thread.
The model-making process

Notebook sheet 45, *Scale Model 1 of the Solar System*
The model-making process

a. Transcribe each planet’s name and radius, using data from “Sun, Planets, and Satellites in the Solar System.”

b. Calculate the planet’s diameter by multiplying the radius by 2.
The model-making process

c. Record the distance from the Sun, but first convert it from the unit “thousands of km” in the book to “km” on the table.
d. Calculate the scaled diameter and distance by using the scaling factor.
Answer the focus question

• Where are the planets in the solar system?
Summarize the model

1. Where would Jupiter be in this model?
2. What could we do to make the whole solar system model fit in the room?
Homework

Make a second model using Google Earth™ to place the planets in our community at a scale with a 1 m Sun, so 1 m = 1,390,000 km.

Use notebook sheet 46, Scale Model 2 of the Solar System, to list the location of the planets in the community.
Share ideas

Pair up and discuss with a partner what was surprising about the scale model.

Think about how using a model makes it easier to understand the scale and proportion of solar system objects.