

Name _____ Date _____

A 3-D Model of the Earth and the Moon

Background: Models are used when building the “real thing” would be impractical. Can you think of some things that you own that are models?

What is one common characteristic of your models? _____

Today we’re going to make a scale model of the Earth and moon to answer this question: *How many of the Earth’s Moons could fit into the Earth?*

Your Prediction: _____ Moons

Play Dough Activity

Answer these questions when prompted to do so.

1. Approximately _____ Moons fit into the Earth.

1a. Your model of Earth is approximately _____ inches in diameter.

2. Your model of the Moon is approximately _____ inches in diameter.

3. Based on your model, the Earth’s diameter is _____ times as big as the Moon’s diameter. To calculate this, divide the Earth’s diameter that you measured by the Moon’s diameter that you measured.

4. Now we want to place our moon the correct distance from Earth. From scientific experiments we know the Moon is approximately _____ times the Earth’s diameter from the Earth.

5. Now calculate how many inches apart to make the Earth and Moon in your model.

Your Earth model is _____ inches in diameter multiplied by the answer in #4 _____ = _____ inches that the Moon is away from the Earth in your model.

6. The Earth's actual diameter is just about 8000 miles. The Earth's moon orbits (copy from #4) _____ Earth diameters away. How many miles is this? _____ miles away

7. The Space Shuttle typically flies between 200-400 miles above the Earth. How far above your model would you put the Space Shuttle?
_____ inches

8. The sun is approximately 93,000,000 miles from the Earth. How many Earth diameters is that? _____ Earth diameters

9. How many inches from the Earth would you place the Sun in your model?
_____ inches. How many feet is this? _____ feet

10. The sun is about 1,000,000 miles in diameter. How many earth diameters is that? _____ Earth diameters

11. How big would you need to make the Sun in your model?
_____ inches