

Orbit Motion Models

Use a model to show how the Sun, Earth, and Moon move.

3.9.A “construct models and explain the orbits of the Sun, Earth, and Moon in relation to each other; and”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Circle the three complete sentences in the first paragraph that name a moving object and tell whether it travels around another object. This helps you notice the orbit relationships a model must show.

Three Objects in Motion

- ① Think of the Sun, Earth, and Moon as three moving objects in space. Earth travels around the Sun. The Moon travels around Earth. The Sun does not travel around Earth. These paths are called orbits. An orbit is a repeating path around another object. A model can help you show which object moves around which.
- ② Use three objects of different sizes for a model. A large ball can stand for the Sun. A medium ball can stand for Earth. A small ball can stand for the Moon. Hold the Sun still. Move Earth in a wide circle around the Sun. Then move the Moon in a smaller circle around Earth.
- ③ While you move the objects, say what each path shows. Earth’s wide path shows Earth orbiting the Sun. The Moon’s smaller path shows the Moon orbiting Earth. Keep the Moon near Earth as both move around the Sun. This model is not the real size or distance, but it shows the correct relationships among the three objects.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Describe Earth's path in the model.

2 Describe the Moon's path in the model.

3 Why does the model use a wide circle for Earth and a smaller circle for the Moon?

4 What should you do with the Sun object while you move the Earth and Moon objects?

3 YOUR TURN _____ Your own words

Draw a three-panel model. In panel 1, label the Sun, Earth, and Moon. In panel 2, draw an arrow showing Earth's orbit around the Sun. In panel 3, draw an arrow showing the Moon's orbit around Earth, then write one sentence explaining how Earth and the Moon move around the Sun.

PART 1 • READ AND MARK

Circle the three complete sentences in the first paragraph that name a moving object and tell whether it travels around another object. This helps you notice the orbit relationships a model must show. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Describe Earth's path in the model.	Earth moves in a wide circle around the Sun.
2	Describe the Moon's path in the model.	The Moon moves in a smaller circle around Earth.
3	Why does the model use a wide circle for Earth and a smaller circle for the Moon?	The wide circle shows Earth orbiting the Sun. The smaller circle shows the Moon orbiting Earth.
4	What should you do with the Sun object while you move the Earth and Moon objects?	Hold the Sun object still.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Panel 1: The Sun, Earth, and Moon are labeled. Panel 2: An arrow shows Earth moving in a wide circle around the Sun. Panel 3: An arrow shows the Moon moving in a smaller circle around Earth. Earth and the Moon move around the Sun together.

For the marking job, students should circle the three sentences stating that Earth travels around the Sun, the Moon travels around Earth, and the Sun does not travel around Earth. Accept models with clear labels and arrows that show Earth orbiting the Sun and the Moon orbiting Earth.