

Moving Space Neighbors

Read how Earth, the moon, and the Sun move in space.

4.6.a "the motions of Earth, the moon, and the sun;"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each sentence that tells how Earth or the moon moves. Circle the words that tell what that motion causes or changes.

Motions We Can Observe

- ① At sunrise, the Sun seems to climb across the sky. The Sun is not traveling around Earth each day. Earth rotates, or spins, once about every 24 hours. As your part of Earth turns toward the Sun, it has day. As it turns away, it has night. This rotation makes the Sun appear to move from east to west.
- ② Earth also travels in an orbit around the Sun. One trip takes about 365 days, or one year. Earth's axis is tilted as Earth travels. During part of the orbit, a hemisphere is tilted toward the Sun and receives more direct sunlight. During another part, it is tilted away and receives less direct sunlight. These changes help cause seasons.
- ③ The moon orbits Earth about once every 27 days. It also rotates. As it moves, the Sun always lights half of the moon. From Earth, we see different amounts of its lit half. These changing views are moon phases. A full cycle of phases takes about 29.5 days because Earth and the moon are moving around the Sun.

2 ANSWER WITH EVIDENCE Use the passage

1 Why does the Sun appear to move from east to west during a day?

2 How does Earth's tilted axis help cause seasons?

3 Why do moon phases happen?

4 What does Earth orbit, and what does the moon orbit?

3 YOUR TURN Your own words

Make a three-panel motion sketch. In panel 1, show Earth's rotation causing day and night. In panel 2, show Earth orbiting the Sun with its tilted axis. In panel 3, show the moon in two positions around Earth so a viewer on Earth would see different amounts of the moon's lit half. Use arrows and labels in every panel.

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PART 1 • READ AND MARK

Underline each sentence that tells how Earth or the moon moves. Circle the words that tell what that motion causes or changes. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Why does the Sun appear to move from east to west during a day?	Earth rotates, making the Sun appear to move from east to west.
2	How does Earth's tilted axis help cause seasons?	As Earth orbits, its tilt causes a hemisphere to be tilted toward or away from the Sun. It receives more direct sunlight when tilted toward the Sun and less when tilted away.
3	Why do moon phases happen?	The Sun always lights half of the moon, but as the moon moves around Earth, we see different amounts of its lit half.
4	What does Earth orbit, and what does the moon orbit?	Earth orbits the Sun, and the moon orbits Earth.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Panel 1: Earth has a curved arrow showing rotation. The side facing the Sun is labeled day, and the opposite side is labeled night. Panel 2: Earth has an arrow showing its orbit around the Sun. Its axis is slanted, and the hemisphere tilted toward the Sun is labeled more direct sunlight. Panel 3: The moon is shown in two places in its orbit around Earth, with the Sun lighting half of the moon in both places. The views from Earth show different amounts of the lit half.

Accept sketches that show correct motion with arrows and clear labels. In panel 3, accept any two moon positions that correctly show the Sun lighting half of the moon and different visible amounts of that lit half from Earth.