

Sky Motion Detectives

Connect Earth's rotation to changes you see in the sky.

SC.4.E.5.4 "Relate that the rotation of Earth (day and night) and apparent movements of the Sun, Moon, and stars are connected."

NAME _____

DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline facts that tell how Earth's rotation changes day and night. Circle each statement about how the Sun, Moon, or stars seem to move, then draw a line from each circled statement to a rotation fact that helps explain it.

A Turning View of the Sky

- ① At sunrise, Maya sees the Sun near the eastern horizon. By afternoon, it seems to travel across the sky. The Sun is not racing around Earth each day. Earth spins, or rotates, west to east. As Maya's place turns toward the Sun, daylight begins. When it turns away, night begins. This turning repeats every day.
- ② Earth's rotation also changes what Maya sees at night. As her part of Earth turns, stars seem to rise in the east and move westward. They are not actually circling Earth each night. The Moon can also seem to move across the sky because Earth rotates. However, the Moon also travels around Earth, so its position compared with the stars changes a little from night to night.
- ③ Imagine Maya watches the sky from the same yard for several hours. First, the Sun appears low in the east. Later, it appears farther west. After dark, a bright star seems to move the same direction across the sky. These are apparent movements, or movements that seem to happen from Maya's view. Earth's rotation connects all of these daily changes. It turns Maya and her yard, changing the direction she faces in space.

2 ANSWER WITH EVIDENCE Use the passage

1 What direction does Earth rotate?

2 How does Earth's rotation cause day and night for Maya?

3 How do the Sun and stars appear to move across the sky?

4 Why can the Moon be in a slightly different place compared with the stars on different nights?

3 YOUR TURN Your own words

In the two panels, sketch the same yard in early morning and late afternoon. Show where the Sun appears in each panel, then write one sentence explaining how Earth's rotation causes the Sun's apparent movement.



PART 1 • READ AND MARK

Underline facts that tell how Earth's rotation changes day and night. Circle each statement about how the Sun, Moon, or stars seem to move, then draw a line from each circled statement to a rotation fact that helps explain it. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What direction does Earth rotate?	Earth rotates from west to east.
2	How does Earth's rotation cause day and night for Maya?	Day begins when Maya's place turns toward the Sun. Night begins when her place turns away from the Sun.
3	How do the Sun and stars appear to move across the sky?	The Sun appears to move from the eastern sky toward the west. Stars seem to rise in the east and move westward.
4	Why can the Moon be in a slightly different place compared with the stars on different nights?	The Moon travels around Earth, so its position compared with the stars changes a little from night to night.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Panel 1: A yard with the Sun low near the eastern horizon. Panel 2: The same yard with the Sun farther west in the sky. Earth rotates west to east, so the Sun appears to move across the sky from east toward west.

Accept sketches that show the Sun low in the east in the morning and farther west later in the day. The written explanation should connect the Sun's apparent movement to Earth's west-to-east rotation.