Earth and Sun Investigation 1

Study Guide • Facts to Know for the Quiz

Part 1 Track the Sun

- The Sun appears to rise in the east, move across the sky, and set in the west.
- The Sun appears highest in the sky near noon.
- Earth rotates on its axis. This rotation causes the Sun's apparent daily motion.

Part 2 Understand Shadows

- A shadow forms when an object blocks light. The shadow points away from the Sun.
- If the Sun is in the east, the shadow points west. If the Sun is in the west, the shadow points east.
- A low Sun makes a long shadow, as in the morning and late afternoon. A high Sun makes a short shadow, usually shortest near noon.
- Shadow length and direction change during the day in a predictable pattern.

Part 3 Read Temperature Data

- Read a graph title, times, temperature labels, and units. Compare the values to find increases, decreases, and the highest and lowest temperatures.
- Our graph will show: 8 AM—58°F; 10 AM—64°F; noon—72°F; 2 PM—78°F; then the temperature will drop slightly by 4 PM.
- The lowest temperature was 58°F at 8 AM. The highest was 78°F at 2 PM.
- From 8 AM to 2 PM, the temperature rose 20°F (78 − 58 = 20). From 2 PM to 4 PM, it decreased slightly.
- The temperature rose, then dropped slightly. The daytime temperature increase is evidence that sunlight warmed the area.

Part 4 Apply the Big Ideas

- Solar energy includes light and heat from the Sun. Sunlight can warm Earth's surfaces.
- Thick clouds can block sunlight, so less solar energy reaches the ground.
- For a fair temperature investigation, measure the same place at set times and keep the measuring tool and other conditions consistent.
- The Sun appears brighter than other stars because it is much closer to Earth.

Investigation 1 Vocabulary

These are our vocabulary words for Investigation 1 that you should know for the quiz.

Shadow: The dark area created by an object that stops light.

Orientation: A position or arrangement in relation to an object.

Sun: The star at the center of the solar system around which everything else orbits; a source of light.

Compass: A tool used to determine direction. Its magnetic needle points to Earth's magnetic north.

Rotation: The motion of an object turning or spinning, like a top.

Axis: The imaginary line on which an object turns. Earth's runs from the North Pole to the South Pole.

Revolution: Traveling around something else. Earth does this around the Sun every 365.25 days, or about one year.

North Star: Polaris, the star positioned over Earth's North Pole.

Day and Night: The time between sunrise and sunset; and the time between sunset and sunrise.

Orbit: To move or travel around an object in a curved path.

Sunrise: The time in the morning when the Sun first appears over the horizon.

Sunset: The time in the evening when the Sun goes below the horizon.