

Shadow Clock Escape

Earth, Sun, Moon & the Solar System

Name: _____

Date: _____

Circle the best answer for 1 and 2. Answer 3 in complete sentences.

1. At 8:00 a.m., which way will a tree's shadow point?

- (A) East
- (B) West
- (C) Straight down, no shadow
- (D) North

2. What causes day and night?

- (A) Earth orbiting the Sun
- (B) Earth rotating on its axis
- (C) The Moon's orbit
- (D) The tilt of Earth

Read: A student measured a stick's shadow in Indianapolis: 9:00 a.m. = 80 cm pointing west. 12:30 p.m. = 30 cm pointing north. 4:00 p.m. = 75 cm pointing east.

3. What explains the changes in the shadow's length and direction? Use the data.

Use Claim-Evidence-Reasoning: Claim, Evidence, Reasoning.

Shadow Clock Escape: Exit Ticket

Total: 5 points. Mastery: 4 or more.

#	Answer	Points
1	(B) West	1 point
2	(B) Earth rotating on its axis	1 point
3	Claim: The shadow changed because Earth rotates, so the Sun's position in the sky changed. Evidence: The shadow was 80 cm at 9:00 a.m., 30 cm at 12:30 p.m., and 75 cm at 4:00 p.m. Reasoning: When the Sun is low in the morning and evening, shadows are long and point away from it (west, then east). At midday the Sun is highest, so the shadow is shortest.	3 points: Claim: Earth's rotation changes the Sun's position; Evidence: cites lengths and directions; Reasoning: low Sun = long shadow; shadows point away from the Sun.