Follow the Sunlight

Model one place's day and night.

6.1.a "Construct an evidence-based explanation of how the relative positions of the sun and Earth result in observable phenomena, including day and night cycles, length of year, and seasons."

NAME _____ DATE _____

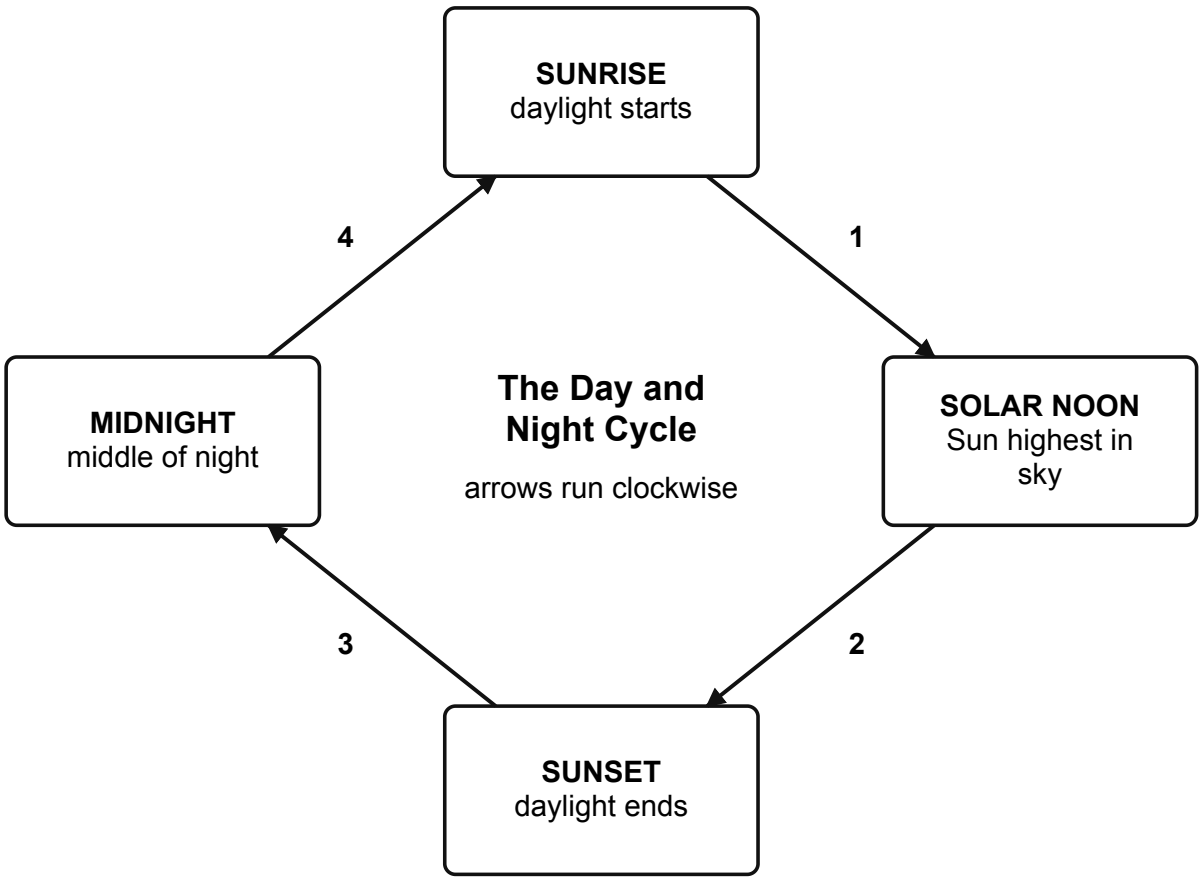
1 LABEL THE MODEL

Word bank below

Pairs need a ball with a marked place and a flashlight. Hold the light still and rotate the ball; pause with the mark entering light, facing it, leaving it and facing away. Match those positions to the four stages, fill the arrow boxes and use your observations as evidence.

WORD BANK

- Spin takes place into light
- Spin takes place into night
- Spin turns place away from Sun
- Spin turns place toward Sun



Arrow numbers match the response boxes on the next student section.

Label the arrows

Use the word bank to write the process for each numbered arrow.

Arrow 1	Arrow 2

Arrow 3	Arrow 4

2 RUN THE MODEL

Use your finished diagram

1. Which next shown stage follows sunset in the model? Describe where your mark faces relative to the light at that stage.

2. Use your model observations to explain why a place changes from daylight to night without the light moving around the ball.

3. About how long is a typical sunrise-to-sunrise cycle? Explain why the ball's quick rotation is not a realistic time scale.

3 CHECK IT

Before you turn it in

- [ ] I rotated the model and observed a marked place.
- [ ] I used relative position to explain light and darkness.
- [ ] I distinguished the model's timing from a real day.

TEST THE MODEL

What does this model leave out about the Sun and Earth?

ANSWER KEY

Follow the Sunlight

GRADE 6 · 6.1.a

PART 1 · COMPLETED MODEL

ARROW	FROM	TO	PROCESS
1	SUNRISE daylight starts	SOLAR NOON Sun highest in sky	Spin turns place toward Sun
2	SOLAR NOON Sun highest in sky	SUNSET daylight ends	Spin turns place away from Sun
3	SUNSET daylight ends	MIDNIGHT middle of night	Spin takes place into night
4	MIDNIGHT middle of night	SUNRISE daylight starts	Spin takes place into light

PART 2 · RUN THE MODEL

1. **Midnight; the marked place faces away from the light. Other times occur between these selected stages.** (Which next shown stage follows sunset in the model? Describe where your mark faces relative to the light at that stage.)
2. **The ball rotates, moving the mark from its illuminated side to its dark side. Earth's rotation similarly changes a place's position relative to sunlight.** (Use your model observations to explain why a place changes from daylight to night without the light moving around the ball.)
3. **About 24 hours. A hand-rotated ball demonstrates relative positions but speeds up the process; it does not measure the real duration.** (About how long is a typical sunrise-to-sunrise cycle? Explain why the ball's quick rotation is not a realistic time scale.)

TEST THE MODEL (SAMPLE ANSWERS)

- It does not show Earth's yearly trip around the Sun.
- It does not show how Earth's tilt affects seasons.

Supply a ball, removable mark and flashlight per pair or station. Mark a low-latitude place for this typical-day model; the activity does not model polar day/night. Solar noon is not necessarily 12:00 on a clock. This worksheet focuses on a day/night explanation; year and season mechanisms are identified as model limitations, not fully assessed. Source: Lunar and Planetary Institute, SkyTellers: Day and Night.