Sun-Powered Cycle

Trace water and test sunlight's effect.

S6E3.b "Plan and carry out an investigation to illustrate the role of the sun's energy in atmospheric conditions that lead to the cycling of water."

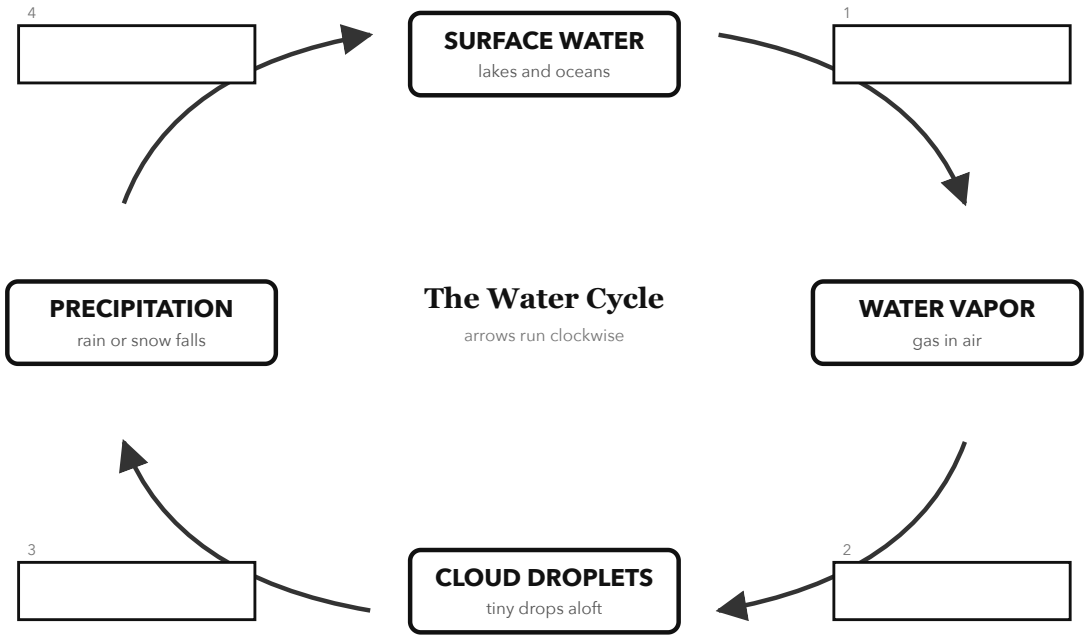
NAME _____ DATE _____

1 LABEL THE MODEL

Word bank below

Write one word-bank process in each numbered box to show how water moves from one stage to the next. Then plan and carry out the sunlight investigation in Questions 1-3, using your measurements as evidence.

WORD BANK collection · condensation · evaporation · precipitation



2 RUN THE MODEL

Use your finished diagram

1. Plan a fair test of sunlight's effect on water loss. Use two identical marked clear cups with equal starting water, place one in sunlight and one in shade for the same amount of time. What will you keep the same, and what will you measure before and after the test?

2. Carry out your test. Make a two-row data table for the sun cup and shade cup. Record each starting and ending water level, calculate each change, and identify which cup lost more water.

3. Use your data and the arrow from SURFACE WATER to WATER VAPOR. Which process does your evidence support, and how does the Sun help water enter the atmosphere?

3 CHECK IT

Before you turn it in

- [ ] I filled in all four process boxes.
- [ ] I kept important test conditions the same.
- [ ] I used measurements as evidence.

TEST THE MODEL

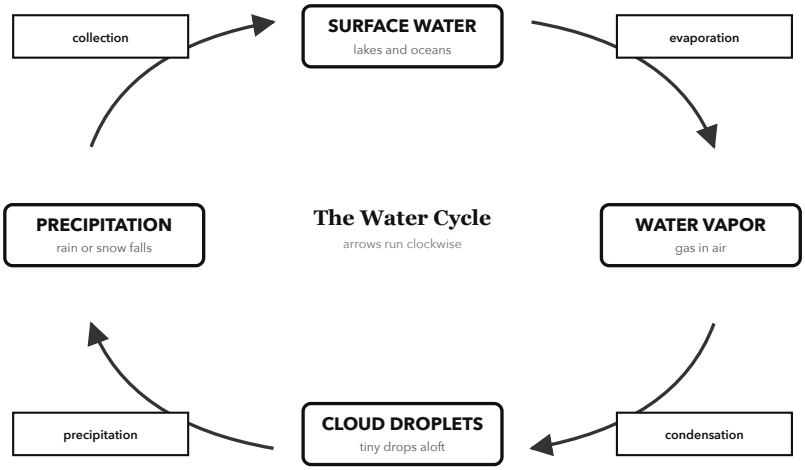
What is one part of the real water system that this model leaves out?

ANSWER KEY

Sun-Powered Cycle

GRADE 6 · S6E3.b

PART 1 · COMPLETED MODEL



PART 2 · RUN THE MODEL

1. **Keep the cup type, starting water amount, and test time the same. Measure the water level or volume in each cup before and after.** (Plan a fair test of sunlight's effect on water loss. Use two identical marked clear cups with equal starting water, place one in sunlight and one in shade for the same amount of time. What will you keep the same, and what will you measure before and after the test?)
2. **Student data vary. In a fair test, the cup in sunlight should usually show the larger decrease in water level.** (Carry out your test. Make a two-row data table for the sun cup and shade cup. Record each starting and ending water level, calculate each change, and identify which cup lost more water.)
3. **Evaporation. The Sun warms surface water, causing more liquid water to become water vapor in the atmosphere.** (Use your data and the arrow from SURFACE WATER to WATER VAPOR. Which process does your evidence support, and how does the Sun help water enter the atmosphere?)

TEST THE MODEL (SAMPLE ANSWERS)

- The model leaves out water soaking into the ground.
- The model leaves out wind moving water vapor and clouds.

Cycle order: evaporation, condensation, precipitation, collection. Accept student investigation data that compare equal amounts of water over equal times, with evidence that the sun cup lost more water under fair test conditions.