THE STANDARD

Water Cycle Through Earth's Systems

Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.

ANCHORING PHENOMENON

The Sealed Terrarium That Lives for Years

A glass jar with soil, a plant, and a little water, sealed shut. No watering, no air exchange, nothing added. The plant stays alive for months or years. Some sealed terrariums have lasted over 50 years. Same water, same plant, going round and round. Students will keep circling back to this all week.

> DRIVING QUESTION
>
> *"How can a sealed system keep a plant alive for years with no new water added?"*

INVESTIGATIVE 1

Morning Dew on Grass

Walk across a lawn early in the morning and your shoes are soaked. It hasn't rained. The grass is wet because overnight, the ground cooled below the air's dew point, and water vapor in the air condensed back into liquid right on the blades. Same condensation process happening in the terrarium, only on a bigger scale. Use this one to sharpen the condensation lens the anchor is pushing on.

> DRIVING QUESTION
>
> *"Where does the water on the grass come from if it didn't rain?"*

INVESTIGATIVE 2

A River That Runs Dry

A wide river that flows year-round suddenly dries to cracked mud during a long drought. The riverbed is still there. The watershed is still there. But the cycle's timing has shifted. Less rain falling, more evaporation, less runoff reaching the river. Same kind of imbalance as the terrarium drying out, only on a regional scale. Use this one to show that the cycle still runs during drought, just unevenly.

> DRIVING QUESTION
>
> *"If water on Earth never goes away, how can a whole river run dry?"*