The water cycle Answer Key

Grades 6–8 / Revision 1 / 45 minutes per lesson

Lesson 1 Where can water go?

Learning goals

Use evidence to support, extend, or revise a model and state a limitation.

Explain evaporation and condensation while distinguishing invisible vapor from visible droplets.

Question 1 wc-q1

Illustrative scenario: An impermeable shallow tray contains less visible water the next day. No water spilled or leaked. Explain where water could have gone, and suggest one observation that would help check your explanation.

Some liquid water may have evaporated into invisible water vapor in the surrounding air. The water still exists. Comparing water amounts over time and checking the container for leaks can help investigate this explanation. This scenario is illustrative, not a measured experiment.

Review status: Unreviewed draft

Evidence: Explains a plausible state change without saying water ceases to exist.

Evidence: Suggests a check and distinguishes inference from direct observation.

Question 2 wc-q2

Predict what could happen outside a cold, sealed container. Sketch an initial explanation with surrounding air, invisible water vapor, and possible liquid droplets. Describe a room-temperature comparison and explain the direction of energy transfer.

Water vapor in the surrounding air can cool and condense into liquid droplets on a cold surface. Energy transfers from the warmer surroundings and vapor toward the cooler surface. Compare otherwise similar sealed cold and room-temperature containers and check for leaks. Observe what happens before deciding whether the prediction is supported.

Review status: Unreviewed draft

Evidence: Distinguishes invisible gas from liquid droplets.

Evidence: Identifies surrounding air as a possible source.

Evidence: Proposes a relevant comparison without inventing observed results.

Exit ticket wc-q3

Water appears outside a sealed cold lunch container. Explain a possible source of this water. Use your comparison or the illustrative scenario to support your explanation, and state what the evidence does not establish.

Vapor from the surrounding air can cool and condense on the container. A colder surface may collect droplets while a similar room-temperature surface does not, if that is actually observed. This supports condensation but does not prove that the exact water from the earlier tray reached this container.

Review status: Unreviewed draft

Evidence: Identifies surrounding vapor and condensation.

Evidence: Uses evidence conditionally rather than inventing results.

Evidence: States a relevant limitation.

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Lesson 2 Different routes and model limits

Learning goals

Model more than one possible route among water reservoirs.

Explain roles of energy and gravity in selected processes.

Use evidence to support, extend, or revise a model and state a limitation.

Question 1 wc-q4

Illustrative scenario: Rain enters soil near a tree. Trace a possible route by which some water can return to the air. Explain a different fate for water that remains underground. Which statements are explanations, rather than direct observations?

Roots can take up soil water, and leaves release water vapor through transpiration. Other water can infiltrate and remain in soil or groundwater storage. These are possible explanations. A diagram alone does not prove that a particular parcel took this route or establish its travel time.

Review status: Unreviewed draft

Evidence: Connects uptake and transpiration correctly.

Evidence: Allows storage and different routes.

Evidence: Separates the schematic explanation from measured evidence.

Question 2 wc-q5

Use evidence to support, extend, or revise your earlier model. Show two possible water routes. Explain one energy transfer and one role of gravity, then state a limitation of your model.

A sound model can include evaporation and condensation on one route, and root uptake and transpiration on another. Evaporation requires energy; condensation transfers energy away. Gravity contributes to precipitation and downhill runoff. An initially correct model may be supported or extended. The schematic does not establish amounts, rates, or all possible routes.

Review status: Unreviewed draft

Evidence: Uses evidence to support, extend, or revise the model.

Evidence: Shows different plausible routes and correct mechanisms.

Evidence: States a specific model limitation.

Exit ticket wc-q6

Correct two problems in this claim: Water follows one fixed circle, and the Sun pulls rain down.

Water has multiple pathways. The Sun supplies energy supporting processes such as evaporation; gravity contributes to rainfall moving downward.

Review status: Unreviewed draft

Evidence: Rejects the unique compulsory route.

Evidence: Distinguishes energy from gravity.

Sources and scope

The linked references support factual checking. They do not endorse this lesson or establish full standards coverage. Office edits do not synchronize back to the website.

https://www.usgs.gov/water-science-school/water-cycle
https://gpm.nasa.gov/education/water-cycle
https://www.nextgenscience.org/pe/ms-ess2-4-earths-systems