

The Water Cycle: Energy and Forces

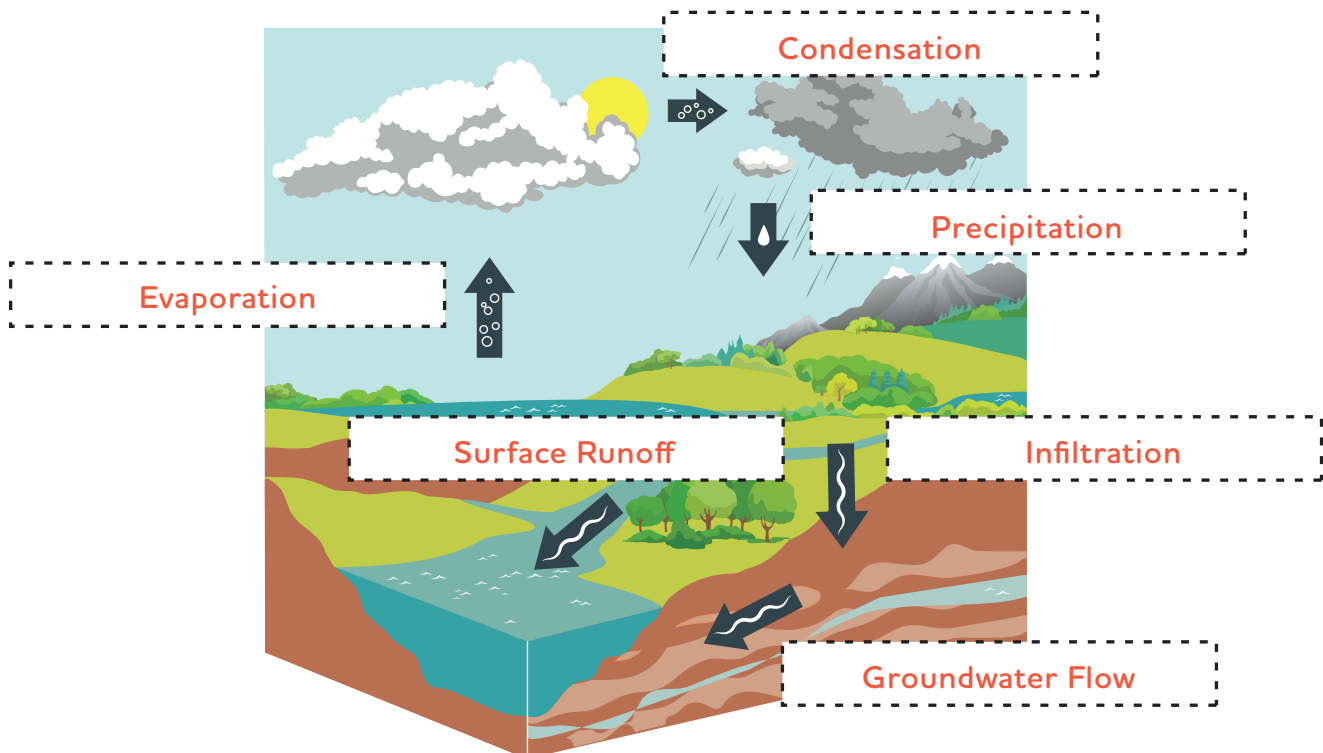


Show what you know about the water cycle by answering the questions below!

1. Vocabulary Matching: Draw a line to match the vocabulary term on the left with its definition on the right.

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|-------------------------|--|--|
| Precipitation | | The process of water changing from a liquid to a gas at the surface of a body of water |
| Condensation | | The process of water changing from a gas to a liquid |
| Evaporation | | The process of water falling from clouds toward Earth's surface |
| Surface runoff | | The process of water flowing along Earth's surface |
| Groundwater flow | | The process of liquid water moving from above the ground to below Earth's surface |
| Infiltration | | The process of liquid water moving below Earth's surface |

2. Label the Diagram: Use the vocabulary terms above to label the diagram below. You will use each term once.



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Answer the questions below. **Sample Answers**

3. Name at least three different forms of precipitation. Rain, snow, sleet, and hail
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4. Transpiration is when a plant releases water vapor through its stomata, which are pores in its leaves and stems. What other process in the water cycle is this most similar to? Explain your reasoning.
Transpiration is similar to evaporation. Evaporation, like transpiration, is the process of water changing from a liquid to a gas. The difference is that in transpiration the water is released from a plant, while in evaporation the water comes from a body of water.
5. Which process in the water cycle requires energy from the sun? Explain how you know.
Evaporation requires energy from the sun. Thermal energy is transferred from the sun to the water through radiation, causing the water to change from a liquid to a gas.
6. During which process in the water cycle does water release thermal energy? Explain how you know.
Condensation requires water to release thermal energy. Thermal energy is transferred from the water vapor to the surrounding air, causing the water vapor to condense into water droplets.
7. If you leave a cold glass of water outside on a hot summer day, water droplets form on the outside of the glass. Where does this water come from? What process in the water cycle causes this to happen?
Water droplets on the outside of a glass form as a result of condensation. When warm air comes in contact with the cold glass, heat is transferred from the air to the glass, causing the water vapor in the air to condense into liquid on the outside surface of the glass.
8. Which processes in the water cycle are driven by the force of gravity? Explain how you know.
Surface runoff, infiltration, and groundwater flow are driven by the force of gravity. Gravity is the force that attracts things towards the center of Earth, and it is responsible for pulling water under Earth's surface during infiltration. Gravity is also responsible for pulling water down a slope as surface runoff or toward a body of water through groundwater flow.