

Name _____

Modeling the Water Cycle

Background Information: Water is essential for life on Earth. It is recycled through the WATER or HYDROLOGIC CYCLE, which involves the following processes:

EVAPORATION – the changing of water from a liquid to a gas

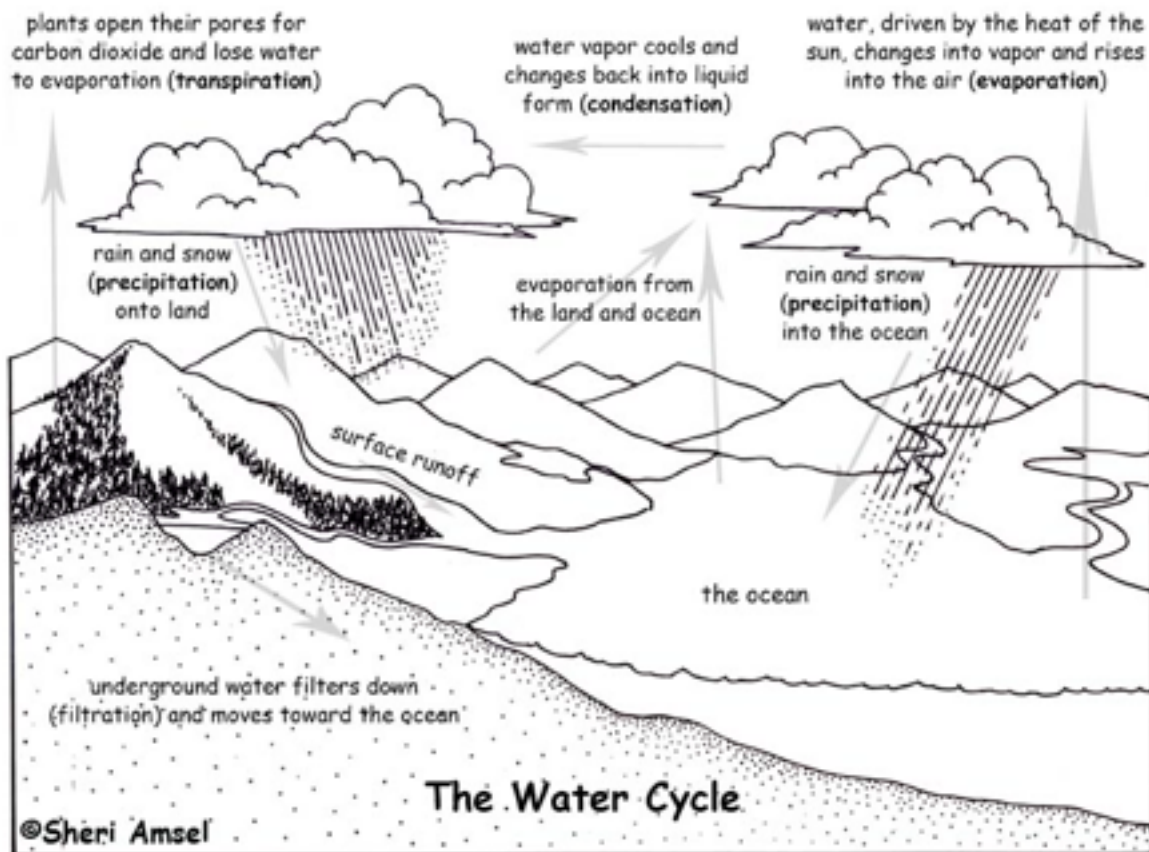
CONDENSATION – the changing of water from a gas to a liquid

PRECIPITATION – the process by which water molecules condense to form drops heavy enough to fall to the earth’s surface

TRANSPIRATION – the process by which water is carried through plants from roots to leaves, where it changes to vapor and is released to the atmosphere

SURFACE RUNOFF – the flowing of water over land from higher to lower ground

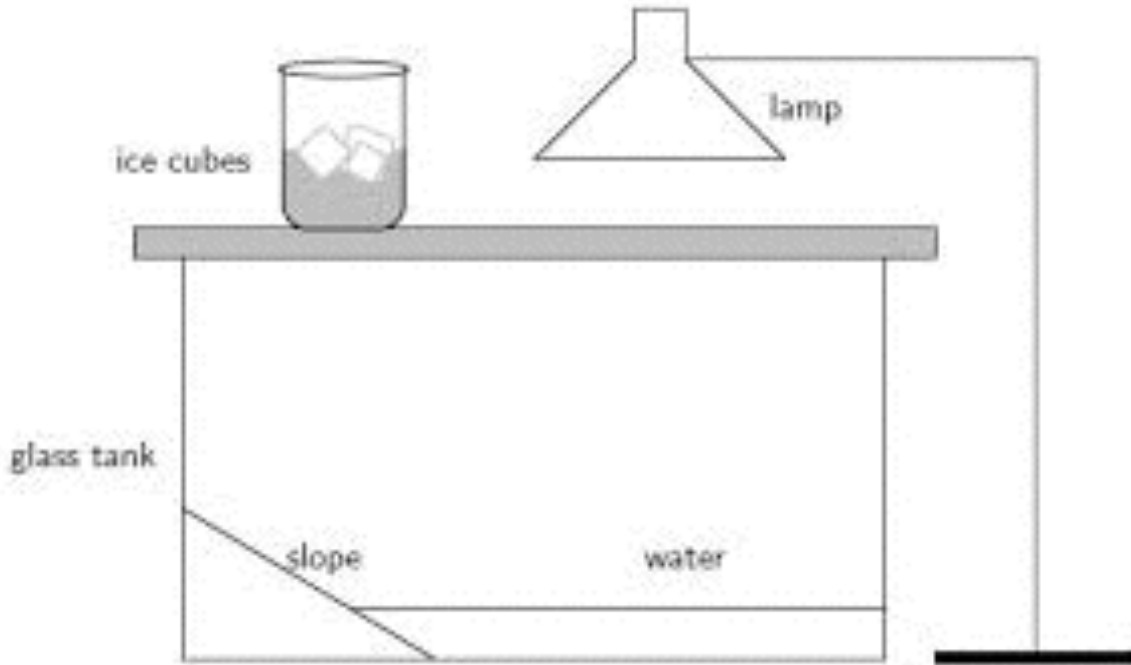
MODELS are often used to think about processes that happen too slowly, too quickly, or on too small a scale to observe directly, or that are too large to be changed deliberately, or that are potentially dangerous.



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Procedure:

1. Mrs. Reese will setup the following demonstration:



2. Observe the model. Record your observations below:

Questions & Conclusions:

1. Which part of the investigation simulated evaporation?
2. Which part simulated condensation?
3. Which part simulated precipitation?
4. What is the energy source and what does it represent?
5. What processes of the water cycle are NOT represented?
6. How could we demonstrate transpiration in this investigation?
7. Would condensation occur in the box without the ice? Explain your answer.
8. After observing this investigation, explain why water is considered a renewable resource. (Use a dictionary to look up renewable if necessary.)
9. The system you observed is a model of the way the actual water cycle works. Why might scientists use a model like this in their research into the water cycle in the real world?
10. What are some reasons that using such a model might be a problem?

11. Draw a Labeled diagram of the water cycle model made in class, Label where you observed Evaporation, Condensation, Precipitation, and the energy source.

12. Describe how the model used in class demonstrates the water cycle. Be sure to include the terms evaporation, condensation, and precipitation. Also describe the role of the sun and gravity in your explanation.