

Condensation

2nd or 3rd Grade

Bret Underwood

Benchmarks:

SLC 11: Students will demonstrate an understanding that the water cycle includes when matter evaporates and condenses.

Purpose:

This lesson is designed to help students through the scientific process in finding out what happens to water when it evaporates through the observation of condensation.

Materials:

- Plastic Cups for each group
- Lots of Ice (and somewhere to store it)
- Paper Towels
- Water Cycle Model
- Hot Lamp
- Hot Plate
- 2 pots

Initial Model (from *Evaporation*):

- When water is wiped on something it eventually dries up (Evaporates). The water:
 - Goes into the air
 - Disappears

Pre-Demonstration:

Break the class up into groups of 4-5 students and give each group a cold plastic cup and some ice. Ask each group to fill their plastic cup with ice, put it on a paper towel, and write down their observations of the cup.

Initial Demonstration:

Bring the class back together. Talk about what was done last time, and review the model that was developed. Put some water in a hard plastic top like the one to be used for the Water Cycle model. Put a paper towel on the other side that the water is on and ask a student to feel it and see if it is wet.

Pull out the Water Cycle model and set it up so that there is some water in the “sea,” a hot lamp as a “sun,” and some ice up in the “clouds.” Put this in a visible place for students to see.

Initial Observations:

- (Pre-Demonstration) The cup was cold
- The paper towel was dry/water cannot get through the plastic

Procedure:

Ask students to make observations of their cups.

Discussion:

What do the students notice about their cups? Anything different? Anything the same? Where did the water on the side of the cup come from? We call water coming out of the air like this Condensation.

Target Revised Model:

- When water is wiped on something it eventually dries up (Evaporates). The water:
 - Goes into the air
 - Disappears
- When the air is cooled down, water comes out of the air (Condenses).*

Demonstration:

Bring a pot of water to the point where steam starts escaping. Hold a bowl or pot of ice above the steam.

Target Observations:

- The water is turning into steam
- There is water on the bottom of the bowl, where the steam is hitting it.
- The water on the bottom of the bowl is cool

Target Revised Model:

- When water is wiped on something it eventually dries up (Evaporates). The water:
 - Goes into the air
 - Disappears
- When the air is cooled down, water comes out of the air (Condenses).
- Steam is just water that is in the air, it can Condense back into water if you cool it down.*

Procedure:

Have students observe the Water Cycle model.

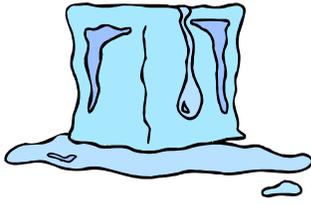
Discussion:

What is happening on the clouds? Where is the water coming from? What do we know (from *Evaporation*) is happening to the water in the “sea?” Do we have proof now that the water does not disappear when it dries out? What happens to the water when it drips back down into the “sea?” Does it stay there, or will it evaporate again? Can you connect that dripping with rain?

Target Revised Model:

- When water is wiped on something it eventually dries up (Evaporates). The water:
 - Goes into the air
 - ~~-Disappears~~
- When the air is cooled down, water comes out of the air (Condenses).

-Steam is just water that is in the air, it can Condense back into water if you cool it down.
-*Water can evaporate, condense, evaporate, condense, etc... in a cycle called the Water Cycle*



Condensation Data Sheet

Names:



	Is the cup wet or dry?	Is the paper towel wet or dry?	Is the cup cold or warm?
First time you observe	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>
Second time you observe	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>



Any other observations you made:
