

Topic: Science, condensation

Overview

This is one lesson on condensation. It is a part of a unit on the water cycle. It begins with a hands-on experience and includes a website. It is expected that students have already learned about evaporation.

Grades 2-3

Time Allotment

One 45-minute period

Learning Objectives

On completion of this lesson students will be able to:

- Describe the process of condensation
- List different places condensation occurs

This lesson addresses Va. SOLs: Science 2.3 and 3.9.

Media Components

- Websites:
 - <http://www.kidzone.ws/water/index.html> This website describes the entire process of the water cycle, breaking it down into different stages. It includes photographs.
 - <http://www.kidzone.ws/water/bactivity2.htm> This link provides the student handout.
- Multimedia projector
- Computer with internet access

Materials and Student Handouts

- Science learning logs
- Condensation handout-one per student
- One hotpot with water
- Gluestick-one per student

Teacher Preparations

- Fill a hotpot with water and have it handy where everyone in class can see it.
- Book the website or add it to the teacher's Portaportal.
- Print and duplicate student handout

Introductory Activity

Focus: I am going to turn on this hotpot. It is like a burner on the stove, and it will heat up the water inside. I want you to watch what happens above the hotpot. I will call you up two at a time to get a better look. Watch carefully to see what happens.

Activity: Turn on the hotpot and watch as steam begins to come out the top. Ask kids up two at a time to put their hands into the steam. Be sure to warn them not to keep their

hands in the steam to long or they will get burned. Tell them to notice what happens to their hands and think about why that happens.

Follow-up: We've learned before that the steam is actually water vapor and that it is the water in the hotpot evaporating. What happened to your hands? (They go wet.) Why? (Brainstorm reasons why students hands got wet. The water vapor is cooling down and condensing on the hands. The students may come up with this answer at this point or they may not. Either way is okay.)

Learning Activities

1. **Focus:** I am going to go to the internet site we looked at yesterday to learn about evaporation. We are going to look to find out what the next step of the water cycle is.

Activity: Using the computer and projector, go to <http://www.kidzone.ws/water/index.html>. Scroll down to the section on condensation. Have a student volunteer read the section out loud.

Follow-up: What is the stage of the water cycle after evaporation? (condensation) What happens during condensation? (Discuss what the website has said about condensation. Reinforce that condensation is when the water vapor cools down in the air. It changes from a gas back to a liquid in the form of tiny water droplets.)

2. **Focus:** We are going to think/pair/share. Hear is my question: What are some places we see condensation?

Activity: Have the students think about the question in their heads. Then have them brainstorm possible answers with the person sitting beside them.

Follow-up: Have student pairs share answers with the class. On the board, write down their answers and any other places we see condensation: clouds, on our hands when we put them in steam, glasses, mirrors, shower doors, windows, the outside of cups. Have students copy the list into their learning log.



3. **Focus:** Who can explain what happens during condensation? (Prompt student volunteers until a good explanation is given--condensation is when the water vapor cools down in the air. It changes from a gas back to a liquid in the form of tiny water droplets.) We're going to look at another example of condensation and put it in our learning logs.

Activity: Pass out the student copies of the condensation paper from internet site <http://www.kidzone.ws/water/bactivity3.htm>. Pass out the gluesticks. Have the students glue the papers into the learning logs on the next available page. Have student volunteers read the paper out loud. Discuss the experiment on the paper with the class.

Follow-up: (Have students fill in the blanks as you speak.) Condensation happens when water vapor gets _____ and turns from a _____ back into a _____. In the water cycle, condensation comes after _____. (cold, gas, liquid, evaporation)

Culminating Activities

Focus: Think in your head about what we have done today. What were we learning about? (Condensation) Why did I have you put your hand in the water vapor? (So that we could feel condensation)

	<p>Connecting with Condensation Emily Hahn Rockingham County Public Schools</p>	
-----------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

Activity: In your learning logs, write down what we have learned today and draw a picture of condensation.

Follow-up: Who would like to share what they wrote in their learning logs? (Have several students share what they wrote down and the pictures they drew.)

Assessment

- The students' verbal responses after writing in learning logs.
- The learning logs can be assessed for written and drawn understanding.
- The learning logs can also be assessed for a list of places condensation occurs.

Community Connections

- Invite a meteorologist as part of the entire unit to speak about the water cycle in relation to weather.
- A cafeteria worker can talk about condensation on pot lids.
- The school nurse can give safety tips concerning steam and burns.

Cross-Curricular Extensions

Writing

The students can write a story about a drop of water that goes through the water cycle.

Reading

Have available in the classroom or read water cycle books to the students. Examples: The drop goes plop: a first look at the water cycle. Goodwin, Sam. 2005, Picture Window Books or The magic school bus wet all over: a book about the water cycle. Cole, Joanna. 1996, Scholastic.

Adaptations This lesson can be broken into two shorter lessons. For Gifted students, you can have students explore ways to make water condense in the classroom. For students with visual handicaps, you can emphasize and repeat the physical touching of water as it condenses.

About the Author

Emily Hahn is a third grade teacher at Lacey Springs Elementary School in Rockingham County, Virginia.

This lesson was written as part of the Fall 2005 WVPT NTTI for the Virginia Enhancing Education Through Technology Ed Tech Grant awarded to the Shenandoah Valley Technology Consortium (SVTC).