

Water Cycle

Grades: 1st-5th

Duration: 30 minutes

Program Description

Can you dance and act out the water cycle? Students will do this and also see a model of evaporation, condensation and evaporation.

Louisiana GLE:

Grade 1 Science

1. Ask questions about objects and events in the environment (e.g., plants, rocks, storms) (SI-E A1)
2. Pose questions that can be answered by using students' own observations and scientific knowledge (SI-E-A1)
3. Predict and anticipate possible outcomes (SI-E-A2)
5. Use the five senses to describe observations (SI-E-A3)
37. Illustrate how water changes from one form to another (e.g., freezing, melting, evaporating) (ESS-E-A3)

Grade 1 English Language Arts

45. Speak clearly at a speed and volume appropriate for the purpose and setting
53. Use active listening strategies
54. listen and respond to information presented in a variety if ways,

Grade 2 Science

1. Ask questions about objects and events in the environment (e.g., plants, rocks, storms) (SI-E A1)
2. Pose questions that can be answered by using students' own observations and scientific knowledge (SI-E-A1)
4. Predict and anticipate possible outcomes (SI-E-A2)
6. Use the five senses to describe observations (SI-E-A3)
10. Use a variety of appropriate formats to describe procedures and to express ideas about demonstrations or experiments (e.g., drawings, journals, reports, presentations, exhibitions, portfolios) (SI-E-A6)
44. Give examples of how the Sun affects Earth's processes (e.g., weather, water cycle) (ESS-E-B5)

Grade 2 English Language Arts

20. Apply basic reasoning skills
38. Adjust speaking tone and volume to suit purpose and audience
42. Deliver informal presentations that demonstrate an understanding of a topic
44. Use active listening strategies, including asking for clarification and explanations

Grade 3 Science

1. Ask questions about objects and events in the environment (e.g., plants, rocks, storms) (SI-E A1)
2. Pose questions that can be answered by using students' own observations and scientific knowledge (SI-E-A1)
4. Predict and anticipate possible outcomes (SI-E-A2)
6. Use the five senses to describe observations (SI-E-A3)
11. Use a variety of appropriate formats to describe procedures and to express ideas about demonstrations or experiments (e.g., drawings, journals, reports, presentations, exhibitions, portfolios) (SI-E-A6)
22. Investigate and explain conditions under which matter changes physical states: heating, freezing, evaporating, condensing, boiling (PS-E-A4)
48. Identify examples of the processes of a water cycle (e.g., evaporation, condensation, precipitation, collection of runoff) (ESS-E-A3)

Grade 3 English Language Arts

21. Apply basic reasoning skills
38. Give and follow precise directions and instructions
42. Use active listening strategies
43. Assume the role of contributor and active listener

Grade 4 Science

1. Ask questions about objects and events in the environment (e.g., plants, rocks, storms) (SI-E A1)
2. Pose questions that can be answered by using students' own observations and scientific knowledge (SI-E-A1)
4. Predict and anticipate possible outcomes (SI-E-A2)
7. Use the five senses to describe observations (SI-E-A3)
11. Combine information, data, and knowledge from one or more of the science content areas to reach a conclusion or make a prediction (SI-E-A5)
12. Use a variety of appropriate formats to describe procedures and to express ideas about demonstrations or experiments (e.g., drawings, journals, reports, presentations, exhibitions, portfolios) (SI-E-A6)
24. Illustrate how heating/cooling affects the motion of small particles in different phases of matter (PS-E-A4)
58. Draw, label, and explain the components of a water cycle (ESS-E-A3)

Grade 4 English Language Arts

34. Adjust pacing to suit purpose, audience, and setting when speaking
35. Interpret, follow, and give multi-step directions
37. Demonstrate active listening strategies, including asking questions, responding to cues, and making eye contact
38. Adjust speaking content according to the needs of the audience
45. Paraphrase or summarize information from a variety of sources

Grade 5 Science

5. Describe the properties and behavior of water in its solid, liquid, and gaseous phases (states) (PS-M-A5)
12. Identify the Sun as Earth's primary energy source and give examples (e.g., photosynthesis, water cycle) to support that conclusion (PS-M-C3)
51. Describe naturally occurring cycles and identify where they are found (e.g., carbon, nitrogen, water, oxygen) (SE-M-A7)

Grade 5 English Language Art

32. Adjust diction and enunciation to suit the purpose for speaking
33. Use complete sentences and standard English grammar, diction, syntax, and pronunciation when speaking
35. Restate or describe oral directions/procedures for tasks

- 36. Adjust volume and inflection to suit the audience and purpose of presentations
- 38. Demonstrate active listening strategies
- 39. Deliver formal and informal presentations for a variety of purposes, including:
- 41. Participate in group and panel discussions

Key Terms

Condensation-the process of changing from a gas to a liquid

Evaporation-the process of changing from a liquid to a gas

Freezing-the process of changing from a liquid to a solid

Melting-the process of changing from a solid to a liquid

Precipitation-the process of water vapor cooling in the atmosphere, changing to water, and falling back to earth as rain

Reservoir- A natural or artificial pond or lake used for the storage and regulation of water.

Water Cycle- The cycle of evaporation and condensation that controls the distribution of the earth's water as it evaporates from bodies of water, condenses, precipitates, and returns to those bodies of water. Also called hydrologic cycle.

Connections to Permanent Exhibits: These exhibits are found in Red River Gallery.

Staying Alive: Get a close-up view of Louisiana animal life in a variety of terrariums and aquariums. Where can you see evidence of the water cycle? Can you explain why this is happening?

Resources!

The Water Cycle

Kids Zone

<http://www.kidzone.ws/water/>

Great website with activities, interesting facts about the water cycle, pictures and much, much more.

NASA Kids

NASA

<http://kids.earth.nasa.gov/droplet.html>

This is an interactive game where children can follow a drop through the water cycle and encounter all kinds of different challenges.

USGA Water Science Basics-The Water Cycle

USGA

<http://ga.water.usgs.gov/edu/watercycle.html>

Take a trip through the water cycle.

Pre-Visit Activity

Water, Water Everywhere

Life Cycle of an Ice cube

Post-Visit Activity

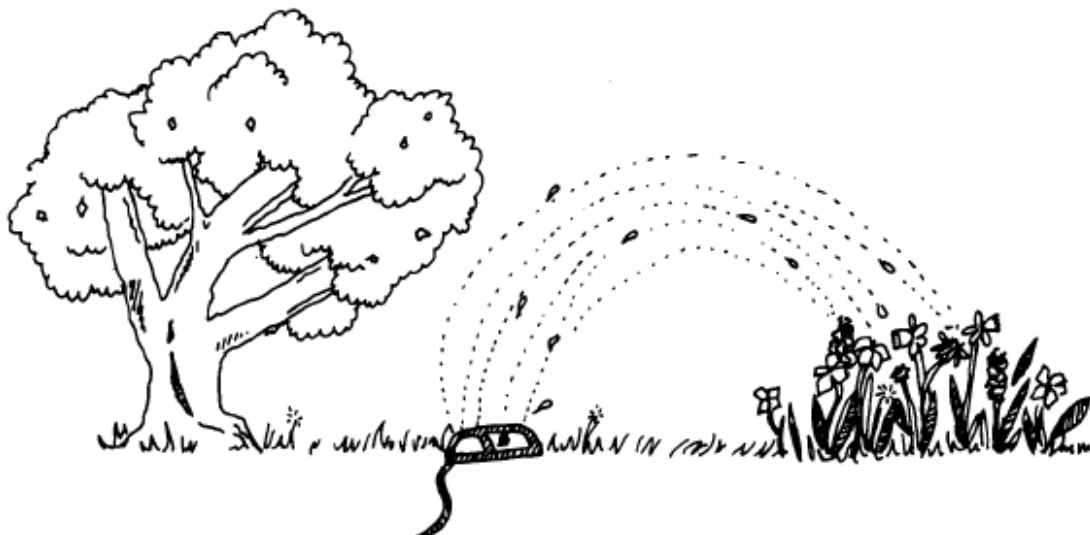
Condensation

Water, Water Everywhere

List below all the ways you can think of that we use water other than to drink. One way is given to help you get started.

1. to water our lawns, vegetables and flowers
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

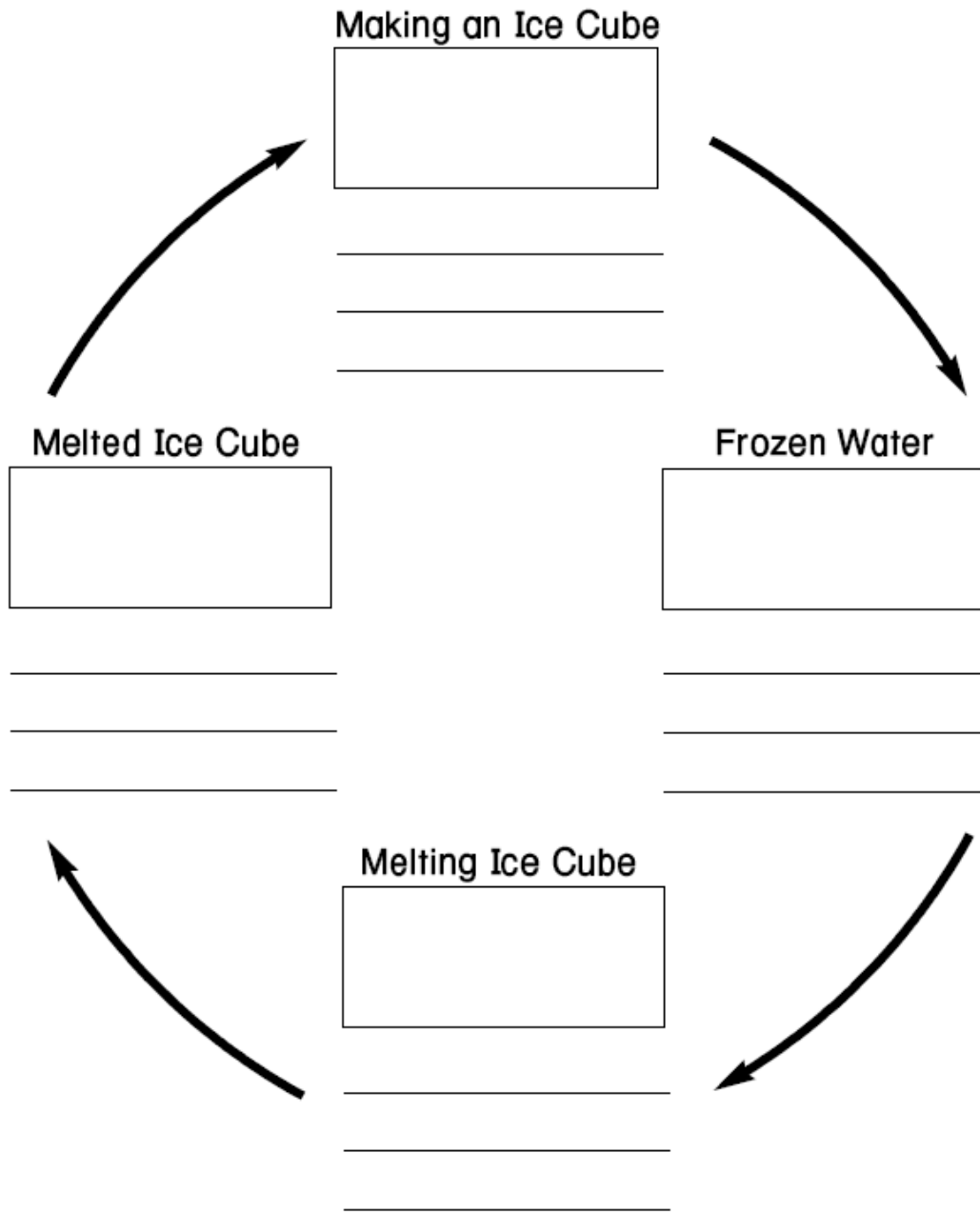
Use the back of this sheet if you need more space to write.



Name _____ Date _____

Life Cycle of an Ice Cube

Show the life cycle of an ice cube. Draw a picture to go with each label. Then write a sentence to describe each picture. Use the words **solid**, **liquid**, and **gas**.



Condensation

Objectives

- Students will use their observation skills to draw conclusions.
- Students will learn about the water cycle, condensation, and evaporation.

Materials

- Four Identical drinking glasses
- Ice water
- A Refrigerator and freezer
- Journal

Procedure

1. Start with a mini lesson about **water** and its many forms. Here is some basic information: Water is constantly being recycled in the water cycle, through **evaporation** and **condensation**. You have to understand that water comes in different forms, or states of matter. There's liquid water, solid water (ice), and water as a gas (water vapor).

Here's how it works:

Let's say you're painting with watercolors. The paint is wet when you brush it onto the paper, but later it dries. Why? The water molecules in the paint escaped into the air. (They evaporated.) These water molecules floating in the air are called **water vapor**. You can't see them, but they are there. When the water molecules in the paint escape into the air, only the color remains on the paper.

What happens next? Well, when warm air containing water vapor hits something cool, the water molecules turn into a liquid. (**They condense**.) That's why drops of water collect on the outside of a cool glass. The cool air close to the glass causes water molecules in the air to slow down and condense against the side of the glass.

The back and forth process of evaporation and condensation is called the **water cycle**, and it is how the earth recycles water. When the sun warms the earth, water evaporates into the air. As the water vapor rises and meets cooler air, it condenses back into water again, forming clouds and rain which falls to the surface of the earth.

Instructions for the Project:

2. Fill one of the glasses with the ice water and set it on a table. Wait briefly.
3. Feel the outside of the glass. How did it get wet? Where did the water come from? Is it necessary for the glass to be filled with water for moisture to form on the outside? **Write** your answers in your journal.
4. Set one of the empty glasses on a table as a control. Place a second empty glass in the refrigerator, and the third in the freezer.
5. After about 10 minutes, remove the glasses from the refrigerator and freezer. Line up the three glasses on the table and **record** your observations in your journal.