



Where Does Ice Cream Come From?

Introduction

What classroom wouldn't love a creamy delicious ice cream treat to sweeten up an afternoon at school? Introduce this lesson plan, and you'll engage your class in a fun, yet educational, 60-minute learning experience focused on where ice cream comes from.

Grade Level

2nd – 3rd grade

Time Requirements

60 minutes

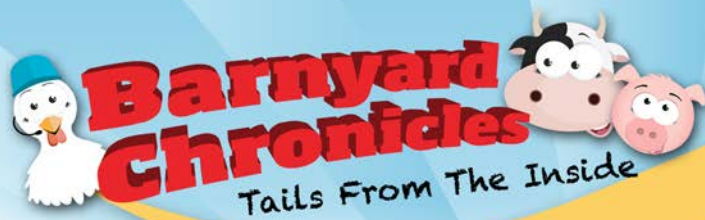
Learning Objectives

After completing this lesson, students will be able to:

- Explain where ice cream comes from
- Recognize the nutritional value of ice cream and other dairy products
- Use math and measurement to prepare an ice cream recipe
- Examine the physical changes of matter as ice cream freezes

Indiana Education Standards

- Standard 5: Measurement (2.5.5) – Estimate and measure capacity using cups and pints
- Standard 5: Measurement (2.5.5) – Estimate and measure capacity using cups and pints
- Standard 1: The Nature of Science and Technology (3.1.3) – Keep and report records of investigations and observations using tools, such as journals, charts, graphs, and computers
- Standard 3: Algebra and Functions (3.3.7) – Plot and label whole numbers on a number line up to 10



Barnyard Chronicles

Tails From The Inside



Materials

- Graph paper
- Ice cream ingredients
 - Milk
 - Sugar
 - Vanilla
 - Ice
 - Ice cream toppings
 - Two quart-size freezer bags (per student)
 - Gallon-size freezer bags (one per student)
 - Hand towels (one per student) – *optional*
 - Plastic spoons (one per student) – to sample the tasty treats!

** To minimize your material requirements for this lesson, consider asking students to donate the following: quart-size freezer bags, gallon-size freezer bags, kitchen towels or paper towels.*

Instructional Approach

1. The night before this lesson plan is introduced in class, assign the following as homework:
 - a. Poll 10 people (friends, family members, neighbors) asking them to respond to the following question:

Of the following, what is your favorite flavor of ice cream:

 - *Vanilla, chocolate, strawberry, chocolate chip, cookie dough, or other?*
 - b. Chart your responses on the sheet of graph paper provided, Clearly label each flavor and its corresponding tallied results.
 - c. Bring your completed graph to school the next morning, and be prepared to share your results with the class.
2. In class, ask students to share the results of their poll reporting what their group's favorite flavor was. Keep a tally of the collective results (by flavor) on the whiteboard or chalkboard. Once all students have shared their results, announce the winning flavor. Note: this introductory discussion based on the homework assignment is a fun way to engage the students in the topic. [5 minutes]
3. Introduce the lesson plan topic, **"Where does ice cream come from?"** [10 minutes]
 - a. Solicit responses to this question from students.
 - b. Ask, "What food group in the MyFood Pyramid does ice cream belong to? (*Answer: the dairy group*)"
 - c. Have students brainstorm a list of dairy products other than ice cream. (*Possible responses: milk, yogurt, cheese, cottage cheese, etc.*)
 - d. Ask, "What is the common factor among all of these dairy products?" (*Answer: they are made from milk*)
 - e. Discuss the nutritional value of milk and recommended servings per day for 2nd and 3rd graders.



Barnyard Chronicles

Tails From The Inside



4. **"Dairy Diner" - Activity [15 minutes]**
- Have students assemble in groups of 3 – 4.
 - Instruct each group to create a menu for a restaurant called the *Dairy Diner* where the house specialties are dairy items. Each group's menu must contain at least two breakfast items, two lunch items, and two dinner items – all of which contain a dairy product. Encourage students to be as creative as possible.
 - After 10 minutes, randomly select groups to share their menu items with the class.
 - Possible discussion questions:
 - What did you learn from this exercise?
 - Is there anything that surprised you?
 - What menu items from the *Dairy Diner* would you like to try?
 - Based on what you have learned about recommended daily requirements, do you think you get enough dairy products in your diet? If no, what action do you plan to take to improve this?

5. **"Math & Measurement Never Tasted So Good!" - Activity [20 minutes]**
With a little pre-planning and organization, this hands-on activity teaches students how to use math and measurement to assemble a simple, yet delicious ice-cream recipe.

Note: this recipe is intended to be an individual recipe where ideally each student could make his or her own ice cream treat. If teaching second grade students, however, you may choose to make this recipe in small groups and simply have each student taste their group's recipe. If teaching third grade students, you may opt to allow each student to make his or her own recipe.

- Ingredients (per single serving)
 - $\frac{1}{2}$ cup milk
 - $\frac{1}{2}$ teaspoon vanilla
 - 1 tablespoon sugar
 - 3 - 4 cups crushed ice
 - 4 tablespoons table salt
 - 2 quart-size freezer bags
 - 1 gallon-size freezer bag
 - 1 hand towel (gloves or folded-over paper towels) – *optional*



Barnyard Chronicles

Tails From The Inside



b. Instructions:

Place the milk, sugar, and vanilla in one quart-size bag. Remove as much air as possible from the bag and seal. (You want as little air as possible left in the bag). Place this bag inside the second quart-size bag and seal, again removing as much air as possible. (This prevents salt from potentially leaking into the first bag). Place both bags inside the gallon-size bag. Insert the ice, and then sprinkle the salt on top of the ice. Again, remove as much air as possible from the bag before sealing.

Finally, wrap the bag in a hand towel or cover with paper towels. Begin to shake and massage the bag in order to thoroughly mix the ingredients. Shake the bag for seven to eight minutes.

c. Observations:

As students massage the bags, ask them to comment on how the mixture is changing in feel and texture. Follow-up with comments on the physical changes of matter as the temperature lowers and creates a change of matter.

d. Results:

Direct students to sample their tasty treats!