

GROW YOUR PALS PROGRAM GUIDE



THE NATIONAL FFA MENTORING PROGRAM

Sponsored by



LESSON 1.25

Rock-n-Roll Ice Cream

Unit: FIELD TO FORK

PRECEPTS

A. Action

- A1. Work independently and in groups to get things done



Lesson Type:
Small Group

NATIONAL STANDARDS

- CS.01.01.01.c. Work independently and in group settings to accomplish a task.
- FPP.03.01.04.a. Discuss common food constituents (e.g., proteins, carbohydrates, fats, vitamins, minerals).
- FPP.03.01.05.a. Identify common food additives (e.g., preservatives, antioxidants, buffers, stabilizers, colors, flavors).
- NL-ENG.K-12.12 – Applying Language Skills
- NM-MEA.PK-2.1 Understand Measurable Attributes of Objects and the Units, Systems, and Processes of Measurement
- NM-MEA.PK-2.2 Apply Appropriate Techniques, Tools, and Formulas to Determine Measurements
- NS.K-4.1 Science as Inquiry

STUDENT LEARNING OBJECTIVES

As a result of this lesson, the student will ...

- List the ingredients used to make ice cream.
- Explain how ice cream is made.





TIME

Instruction time for this lesson: **30 minutes.**



RESOURCES

National FFA Organization PALS Materials, ©2009



TOOLS, EQUIPMENT AND SUPPLIES

- ✓ One large (2 lb., 7oz.) coffee can with lid
- ✓ One one-pound coffee can with lid
- ✓ One pint of half-and-half or light cream
- ✓ One half cup sugar
- ✓ One teaspoon vanilla
- ✓ Six - seven cups crushed ice
- ✓ Three-quarter cup rock salt
- ✓ Toppings, such as sprinkles, fudge or candy, may be desired
- ✓ PPALS1.25.SG.AS.A- one per student
- ✓ PALS1.25.SG.AS.B- one per student
- ✓ PALS1.25.SG.ASSESS.A

KEY TERMS



The following terms are presented in this lesson and appear in ***bold italics***:

Half-and-half

Vanilla

Rock salt



CONTENT OUTLINE

I. Ingredients in ice cream

A. Milk

1. Milk can be collected from all female mammals. However, the milk we drink and use to make ice cream usually comes from cows
2. ***Half-and-half*** is a form of milk that contains a higher fat content than whole milk. Cream is also a form of milk that contains a slightly higher fat content than whole milk and ***half-and-half***
3. Milk fat is what gives ice cream its creamy texture

B. Salt

1. Salt is a mineral that is dug up from under the ground
2. **Rock salt** is used in the ice cream making process to help speed up the freezing process

C. Vanilla

1. **Vanilla** is a sweet extract from a plant called an orchid which is found mostly in Mexico
2. **Vanilla** is added to ice cream to give the ice cream a sweeter taste

D. Crushed ice

1. Ice is simply frozen water
2. Ice helps cool off the cream until it freeze

II. How ice cream is made:

- A. In the smaller coffee can, combine **half-and-half**, sugar and **vanilla**; stir well
- B. Put the lid on tightly
- C. Place a thin layer of crushed ice on the bottom of the larger coffee can; sprinkle with one tablespoon **rock salt**
- D. Place the small can inside the large can
- E. Pack the area between the cans with crushed ice and **rock salt** using about two tablespoons **rock salt** for every cup of crushed ice
- F. Put lid tightly on the large can
- G. Roll can back and forth for about 10-15 minutes (protect counter top or floor with a towel or roll on a cement floor)
- H. Lift out smaller can and carefully remove lid
- I. Scrape down sides and stir all of the ice cream together
- J. If the ice cream is too soft, repack large can with fresh ice and **rock salt**; replace lid; roll back and forth a few minutes more or until firm
- K. Add your favorite toppings and enjoy!

INTEREST APPROACH

Prepare for today's lesson by organizing all of the ingredients and equipment needed to make the ice cream. Also, be sure to have plenty of napkins and cloths ready for any accidental spills.



Hello everyone! Today is a beautiful day, and I am so excited to work with my PALS! Today we have a very special activity that I think we will all enjoy. We are going to make a sweet treat. But before I tell you what treat we are going to make, I want to play a guessing game. Sit very quietly as I give you three hints about the treat we are making. Then, I will see who can guess what the treat is. Are you ready?

Share the following hints with the PALS group to suggest what you will be making during today's activity. Remind the students to listen quietly to all of the hints before they try to guess.



Hint #1: I am cold and creamy.

Hint #2: I am made from milk that comes from cows.

Hint #3: I am great topped with sprinkles, chocolate and even gummy bears.
What am I?

Allow your PALS partners to share their thoughts.



Very good! Today we are going to make ice cream, one of the yummiest treats in the world. Is everybody ready?

SUMMARY OF CONTENT AND TEACHING STRATEGIES

OBJECTIVE 1. | List the ingredients needed to make homemade ice-cream



Provide the students with copies of PALS1.25.SG.AS.A, which contains a list of the necessary materials as well as step-by-step procedures for making the ice cream. Then, discuss the source and importance of each of the ingredients used: cream, ice, salt and vanilla.



I am so glad everyone is excited as I am to make delicious ice cream. Before we get started, we need to make sure we have everything we need to make our ice cream as delicious as possible. Take a look at the list of ingredients and tools that are outlined on your worksheet. Let's go through each of these as a group. When I point to a tool or ingredient, check it off of your list. Ready?

*Go through each ingredient and tool one-by-one to allow the students to check off each of these on the worksheet PALS1.25.SG.AS.A. Take additional time to discuss the importance of the four major food ingredients: cream or half-and-half, ice, **rock salt** and **vanilla** flavoring.*



One large (2lb., 7oz.) coffee can with lid

One one-pound coffee can with lid

One pint **half-and-half** or light cream

one half cup sugar

One teaspoon **vanilla**

Six to seven cups crushed ice

Three-quarter cup **rock salt**

Explain the purpose of each of the four food ingredients found in the homemade ice cream.



I. Ingredients in ice cream

A. Milk

1. Milk can be collected from all female mammals. However, the milk we drink and use to make ice cream usually comes from cows
2. **Half-and-half** is a form of milk that contains a higher fat content than whole milk. Cream is also a form of milk that contains a slightly higher fat content than whole milk and **half-and-half**
3. Milk fat is what gives ice cream its creamy texture.

B. Salt

1. Salt is a mineral that is dug up from under the ground.
2. **Rock salt** is used in the ice cream making process to help speed up the freezing process

C. **Vanilla**

1. **Vanilla** is a sweet extract from a plant called an orchid found mostly in Mexico
2. **Vanilla** is added to ice cream to give the ice cream a sweeter taste

D. Crushed ice

1. Ice is simply frozen water
2. Ice helps cool off the cream until it freezes



Great! It looks like we have everything we need. Let's get to the fun part . . . making a sweet treat.

OBJECTIVE 2. | Describe the steps in the basic ice cream-making process.



Now that we have gathered all of our ingredients and equipment, let's start making our ice cream. Everyone will need to work together and follow the directions closely in order for our treat to turn out as creamy and yummy as possible.

Remind students to refer to PALS1.25.SG.A for the directions for today's activities.



Let's start with the first step: mixing the **half-and-half**, sugar and **vanilla** in the smaller coffee can. Remember, it is very important we measure our ingredients precisely. Take another look at your worksheet to help me remember how much of each ingredient we need.

How much **half-and-half**? *one pint*

How much sugar? *one half cup*

How much **vanilla**? *one teaspoon*

May I have a volunteer to stir these ingredients well?

Great! Now, let's work together to complete each of the other steps in the ice cream making process. Help me out by reading each step as our volunteers follow the directions.

Encourage PALS to help read the directions as several volunteers work together to follow the directions. You may wish to rotate through volunteers to allow each student in your PALS group an opportunity to help.



1. In the smaller coffee can, combine **half-and-half**, sugar and **vanilla**; stir well.
2. Put the lid on tightly.
3. Place a thin layer of crushed ice on the bottom of the larger coffee can; sprinkle with one tablespoon **rock salt**.
4. Place the small can inside the large can.
5. Pack the area between the cans with crushed ice and **rock salt** using about two tablespoons **rock salt** for every cup of crushed ice.
6. Put lid tightly on the large can.
7. Roll can back and forth for about 10-15 minutes (protect counter top or floor with a towel, or roll on a cement floor).

Completing step seven will take several moments. Therefore, as students roll the coffee can to freeze the ice cream, work with the students to complete PALS1.25.SG.AS.B.



8. Lift out smaller can and carefully remove lid.
9. Scrape down sides and stir all of the ice cream together.
10. If the ice cream is too soft, repack large can with fresh ice and **rock salt**; replace lid; roll back and forth a few minutes more or till firm.
11. Add your favorite toppings and enjoy!



REVIEW / SUMMARY



Yummy! Thank you for working so hard to make this delicious ice cream. Now, let's add our favorite toppings and enjoy this delicious treat.

As your PALS team members enjoy their ice cream, review by asking them the following questions. Allow volunteers to answer and discuss each to ensure each team member understands.



Cream and **half-and-half** are milk products that contain a high percentage of what?

Fat



What helps freeze the ice cream by speeding up the melting of the ice?

Rock Salt



Vanilla is derived from what type of plant?

Orchid



After mixing the ingredients and placing the small can in the larger can, how long does it take to freeze the ice cream until it is ready?

10-15 minutes



Great! Thank you so much for another fun afternoon. I hope each of you have enjoyed making and eating our delicious homemade ice cream. See you all again soon.

APPLICATION



Large Group Idea

On their own, PALS will conduct a survey of at least 10 of their family, friends, teachers and neighbors that are not in their small group to determine their favorite flavor of ice cream. Use PALS1.25.SG.AS.C to complete this activity. Then, compare results as a large group to create a bar graph together to show data collected from each student.



One-on-One Suggestion

*Give each student an opportunity to further explore the process of making ice cream and developing new food product ideas by allowing them to create their own recipes for a flavor of ice cream. They may choose to try creating ice cream from fat free milk or even chocolate. You may also experiment by eliminating key ingredients such as the **rock salt** or varying the length of time to roll the can as the ice cream freezes. Then, each individual will follow their own recipe and discuss the results based on taste and appearance. Discuss with the PAL team members the reasons for their particular results.*

PALS1.25.SG.ASSESS.A | EVALUATION ANSWER KEY

You may choose to gauge the group's understanding verbally using the questions on page 12. Or, after reviewing the key points, group members may complete PALS1.25.SG.ASSESS.A on their own. This assessment will take about 3-8 minutes. Read the questions aloud for younger groups.

ANSWER TO EVALUATION:

1. Fat
2. Rock salt
3. Orchid

PALS1.25.SG.AS.A

How to Make Homemade Ice Cream

Equipment and Ingredients

- One large (2lb., 7oz.) coffee can with lid
- One one-pound coffee can with lid
- One pint half-and-half or light cream
- One half cup sugar
- One teaspoon vanilla
- Six to seven cups crushed ice
- Three-quarter cup rock salt

Procedures

1. In the smaller coffee can, combine half-and-half, sugar and vanilla
2. Stir well.
3. Put the lid on tightly.
4. Place a thin layer of crushed ice on the bottom of the larger coffee can; sprinkle with one tablespoon of rock salt.
5. Place the small can inside the large can.
6. Pack the area between the cans with crushed ice and rock salt using about two tablespoons of rock salt for every cup of crushed ice.
7. Put lid tightly on the large can.
8. Roll can back and forth for about 10-15 minutes (protect counter top or floor with a towel, or roll on a cement floor).
9. Lift out smaller can and carefully remove lid.
10. Scrape down sides and stir all of the ice cream together.
11. If the ice cream is too soft, repack large can with fresh ice and **rock salt**; replace lid; roll back and forth a few minutes more or till firm.
12. Add your favorite toppings and enjoy!

PALS1.25.SG.AS.B

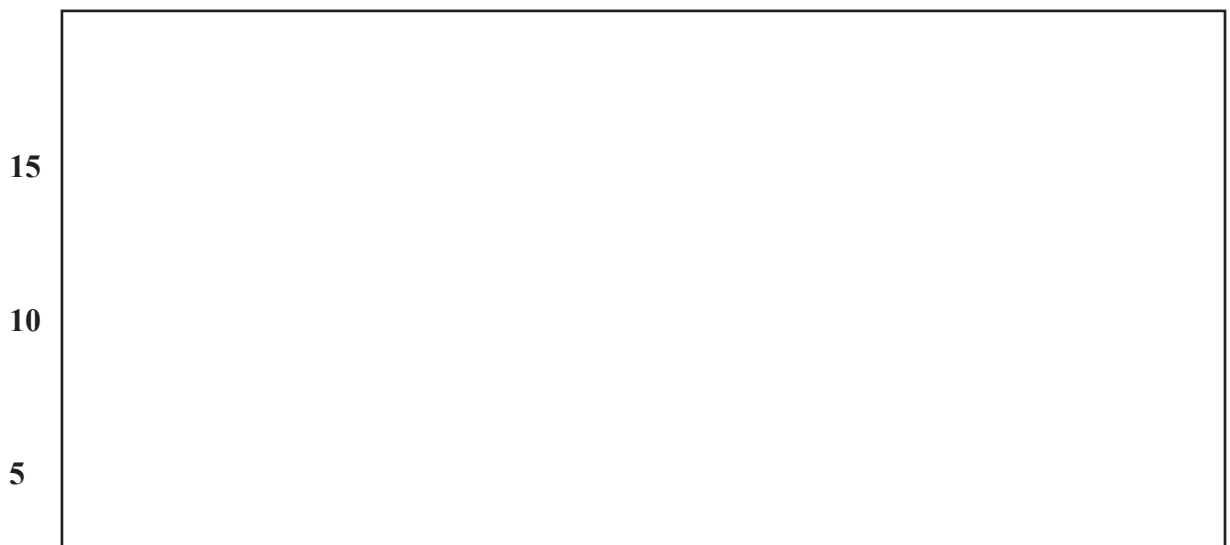
Student Name: _____ Date: _____

What is your favorite flavor of ice cream?

Part A: Interview your friends and family to see what is their favorite flavor of ice cream. Collect this data in the chart below, using tally marks for each person.

Flavor	Number of People Who Prefer This Flavor:
Chocolate	
Vanilla	
Strawberry	
Mint Chocolate Chip	
Cookie Dough	

Part B: Create a bar graph that illustrates the data collected above. Color each bar of the graph the color of the flavor it represents. For example, chocolate would be brown and strawberry would be pink.



PALS1.25.SG.ASSESS.A

Student Name: _____ Date: _____

Chocolate

Vanilla

Strawberry

Mint Choc. Cookie

Word Bank:

Fat

Orchid

Rock Salt

1. Cream and half-and-half are milk products that contain a high percentage of what?
2. What helps freeze the ice cream by speeding up the melting of the ice?
3. Vanilla is derived from what type of plant?