

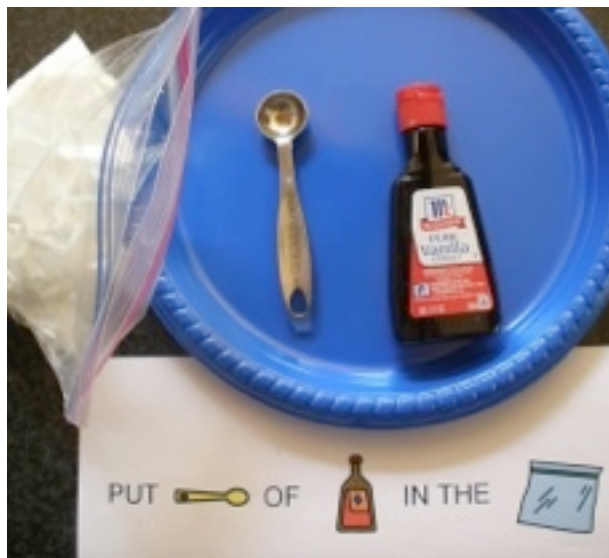


# Ice-Cream in a Bag

Family Fun Magazine's answer to fancy ice cream machines and old-fashioned hand-cranked contraptions is a pair of Ziploc bags with hardly any cleanup. Making ice cream is a fun way to demonstrate basic scientific principles in a meaningful context (*Physical Sciences / Chemistry: States of Matter*). Best of all; the end result is an edible reward! There are many recipes available for making ice cream in a bag (there's even recipes for making ice cream in a can), but be sure to look for recipes that use coarse salt instead of rock salt as a precaution for students who like to explore things orally.

You will need (for each serving):

- 2 tablespoons of sugar
- 1 cup half and half
- ½ teaspoon vanilla extract
- 1 pint-size Ziploc bag
- 1 gallon-size Ziploc bag
- ½ cup coarse salt (table salt works too)
- Enough ice cubes to fill the gallon bag halfway up
- Measuring cups and spoons
- Spoons for eating
- Dish towels, mittens, or oven mitts to protect hands from the cold
- Latex gloves if preparing for others



Combine the sugar, half & half and vanilla extract in the pint-size Ziploc bag. Seal tightly and set aside. Place the coarse salt in the gallon-size Ziploc bag and fill it half way with ice cubes. Place the sealed pint-sized bag inside it and seal the large bag tightly. Shake the bag until the ice cream mixture hardens, about 5 minutes. Take the smaller bag out of the large one and carefully wipe off any salt. Spoon into cups, or eat the ice cream right out of the bag. Serves one.



Break the activity down into logical steps and consider how to make it work best for your students. You can have each student assemble their own ice cream bag (*following directions*), assemble multiple bags for their peers (*sequencing*), or assemble bags cooperatively (*social skills and communication*). You can do this as a one-time science-based activity, or make it a predictable Friday afternoon activity throughout the summer. Before making the ice cream, prep for the activity with some hands-on exploring. Focus on language and concept development. In a small group, explore each ingredient in their respective bottle, bag or carton. Open the containers (this is a skill in itself) and explore the contents on a sensory level. Smell them, taste them and touch them. Identify what senses are



being used to get information (*Life Science / Biology*). Work on simple object identification, vocabulary building and categories. Identify attributes and properties, e.g., heavy or light, hard or soft, rough or smooth, solid or liquid (*Physical Sciences/Chemistry & Physics: Properties of Material & States of Matter*), wet or dry, hot or cold (*Earth & Space Science: Energy in the Earth System*). Look for shared properties. Explore the tools and packaging material. Locate the top, bottom and sides of the Ziploc

bags. Identify the inside and the outside. Compare the sizes. Demonstrate how to open and close the bags (*pincer grasp*). Encourage *social & communication skills* by passing items around the circle as you explore

them. Give each student an ingredient to explore. Let them share what they observe with their peers (*Listening and Contributing*).

For students working on entry-level skills, set out pre-measured ingredients on a tray. Provide clear, concise directions, with enough time to process each direction. Use hand-under-hand assistance as needed and label each step as you perform it, with emphasis on action words, e.g., "reach out," "pick up," "put in" (*grasp and release*). Hint: To prop the Ziploc bag open for easy inserting, place it in a sturdy cup, glass, or jig and curl the edges down around the edge. For students on higher levels, work on developing *measuring skills* and the ability to follow a recipe (using the appropriate medium, including the use of picture cues and tangible symbols as needed).

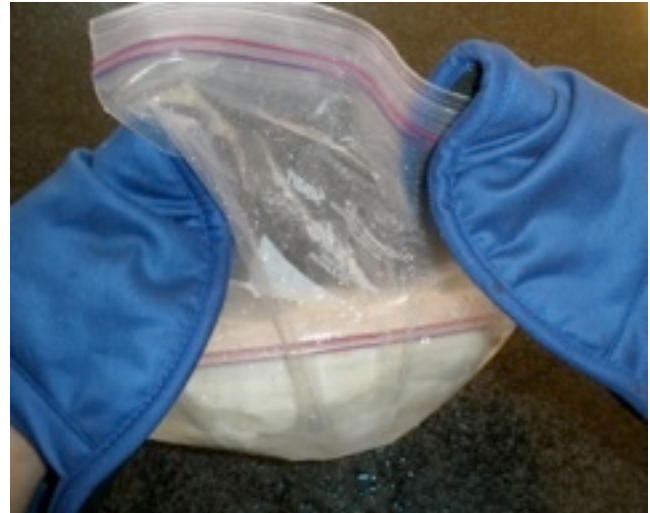
Think about setting the activity up as a series of sequential workstations with each step as a separate station. Divide the workspace into mixing stations and freezing stations. Stock each station with the needed material. For instance, the sugar station will need a box of pint-size Ziploc bags, a container of sugar and a tablespoon-measuring spoon. The ice cube station will need a tub of ice cubes (using a tray with a single layer of loose ice cubes makes it easier for students working on grasp and release). The shaking station will need creative ways to keep hands warm (the bags can get very cold during the shaking process).

Set out choices, such as oven mitts, or mittens. Make the shaking station a fun one. Try shaking the bags to music, or have a contest to see whose bag solidifies first. Position reliable checkers along the assembly line to make sure that each bag is properly sealed and prevent salty ice cream. Design simple instruction cards for each station (using the appropriate medium), or try programming one-step Big Mac switches with auditory directions at each station. Students can proceed down the workstations independently to



make their own bag (with staff assistance as needed), or work as a team to make bags cooperatively. To structure the activity cooperatively, assign a student to each of the workstations and pass the bag along, assembly-line style, until all steps are completed. Model appropriate social skills for passing, and use personal communication devices and switches as necessary to facilitate communication.

Incorporate ice cream-themed activities into classroom instruction. Read supplementary stories about ice cream (e.g., [Ice Cream: The Full Scoop](#) by Gail Gibbons). Add ice cream-related words to your list of monthly vocabulary words, e.g., define "solid," "liquid," "shake," "freeze" and "ice cube." Make ice cubes. Use it as an opportunity to talk about solids and liquids, and that water can change form with a change in temperature (*States of Matter*). Count out ice cubes



(*counting skills*). Sort big and little Ziploc bags (*classification*). Count out pairs of latex gloves (*number concepts*). Find all the spoons on a tray of assorted silverware (*discrimination*). Go to the market and purchase the ingredients (*social skills, communication and money skills*). Sort the groceries into like groups and put them away (*classification*).

Think about repeating the ice cream activity once a week to develop independence and create a predictable structure. Keep the jobs the same or rotate them. Try experimenting with different flavors in place of the vanilla, such as chocolate syrup, or maple syrup. Set out a topping station (opening jars and boxes in a meaningful setting is an excellent way to work on functional hand skills). As your students gain skill, invite another classroom to come make ice cream in a bag, let your students guide them through the



activity. If the activity is a success, think about marketing ice cream in a bag as a seasonal class-run business project (*money skills*). You could even package the dry ingredients and Ziploc bags with a recipe card and instructions to add the wet ingredients. Sell them to staff, students, family or friends.

Make follow-up experience-stories (*Language & Composition*) to document

the activity. Let the students write their own stories, or scribe what they dictate. For nonverbal students with no vision, or limited vision, help them make a book using objects from the activity. Build in choices. Let them decide what they want to include by choosing from among the things you used in the project. Use your computer to make switch operated stories with voice out-put and Mayer-Johnson pictures (or import pictures you took while making ice cream) using an authoring software program, such as Intellipics Studio. If you don't have access to special education software you could make electronic books using



PowerPoint.

Enjoy the ice cream!