

Shake it, Shake it Shake it! (Buttermaking)

WHAT'S THE Big Idea?

Change over
Time

Enduring Understandings

- All things change.
- We can impact how things change or do not change.
- Change occurs at different rates and on different scales (change can happen fast or slow; it can be a big change or a little change).

Objectives

- Children discover that liquids can change into solids.
- Children experiment with turning heavy cream into butter.

Directions

This activity can be done on its own, as part of a study on solid and liquids, or as part of a dairy unit.

1. Discuss with children their ideas on how butter is made. Record their ideas.
2. Read the book, *Brown Cow, Green Grass, and Yellow Mellow Butter* by Ellen Jackson. Did anyone have the right method?
3. Gather your group into a circle, explaining that they will all need to help turn this heavy cream into butter. Heavy cream is the thick, fat-rich part of milk with a fat content of 36–40%. If fresh, unpasteurized milk is left to sit, cream rises to the top. Allowing the cream to reach room temperature will speed the transformation into butter.
4. Fill a small glass or plastic jar with $\frac{3}{4}$ cup of heavy cream. Make sure the lid is on tightly, and hold it with two hands as you begin to shake it up and down. After demonstrating how to shake, pass the jar around the circle.
5. As the first person is shaking, ask everyone to shake their hands as you all sing the first verse of the Butter Song. Pass the jar with each new verse.
6. As each verse is sung, shake a different part of your body. Sing it louder, softer, sing it in the language of cows, sheep, pigs!
7. Check the jar occasionally by opening the lid. Pass

WHAT'S HAPPENING?

EVERY SEASON



Materials

- *Brown Cow, Green Grass, and Yellow Mellow Butter* by Ellen Jackson
- heavy cream, at room temperature
- a jar with a lid, capable of holding one cup of liquid
- small colander, a bowl, and butter knife
- soda crackers

“Shake It” Song

Sung to the tune of “I Have Something in My Pocket” or the “Brownie Smile Song”

We're going to make some butter,
Rich and creamy too,
With milk from a cow's udder
Before you can “moooo.”

Chorus:

So shake, shake, shake it,
Shake it if you can,
Shake it like a milkshake
And shake it once again.

Pour some cream into a jar,
Get a friend or two,
Make sure the lid is on tightly,
That's all you have to do.

Chorus

We're learning while we're churning,
Hey, this is lots of fun,
It's easy to make butter,
Let's eat it when it's done.

Chorus

Oh, listen very carefully,
It's sounding different now,
Hooray, it's finally butter!
Be sure to thank a cow.

Extensions

- With older children, divide them into groups of 3–5. Give each group a sampling of utensils such as a bowl, colander, fork, whisk, egg beaters, small jar with a lid, and beaters without the mixer, along with a ½ cup of heavy cream. After looking at the utensils, have each group write a plan for turning cream into butter, specifying what utensils they will use. Once they have a plan, begin the process. As students enjoy the benefits of their inquiry, have them evaluate the success of their plan.
- Chill butter in old-fashioned butter molds. Decorate the butter with sprigs of fresh herbs or edible flowers.
- Make flavored butters such as honey butter. Add raspberries and a bit of sugar.
- ***A Cow, A Bee, A Cookie and Me*** by Meredith Hooper and Alison Bartlett

it around so everyone can see that something is happening. It will thicken into a whipped-cream consistency, but it is not butter yet.

8. After 5–10 minutes, listen for the sound of liquid sloshing in the jar. A pale, thin liquid—the buttermilk—will be surrounding the butter. Sing the final verse.
9. Carefully, pour the contents of the jar into the colander. As the buttermilk passes through, a beautiful lump of yellow butter will remain. Rinse the butter with cold water to remove all of the buttermilk if you plan to store it. This is not necessary if you plan to eat the butter immediately. The buttermilk can be reserved for use in baking.
10. Spread the butter on crackers and eat. As you enjoy the butter, process and reflect on the experience with the children by engaging in a conversation guided by the discussion questions.

Discussion Questions

- What did you expect would happen to the cream before we started?
- What happened to the cream?
- Can you think of anything else that changes from a liquid to a solid? Or a solid to a liquid?