

STEAM STORY TIME AT HOME: BREAD AND BUTTER!

Suggested Reading

- *Fry Bread* by Kevin Noble Maillard
- *Tony's Bread* by Tomie DePaola
- *From Wheat to Bread* by Stacy Taus-Bolstad
- *Walter the Baker* by Eric Carle
- *Everybody Bakes Bread* by Norah Dooley
- *The Little Red Hen* by Jerry Pinkney

Activity 1: Make some bread

Supplies:

- 3 cups Flour
- 1 cup Warm water (between 105 and 110 degrees Fahrenheit)
- 3 Tablespoons Sugar
- 1 Package yeast
- 3 Tbs Oil good for baking (ex: vegetable, canola, avocado)
- 1.5 tsp Salt
- 1 Gallon-sized Ziploc bag
- Baking tray

Prompt:

Making bread is a tasty way to show kids how science (and math) are part of our everyday lives. Yeast is a living, single cell fungus. You make it active again by adding warm water and sugar to it. The bubbles that start forming are carbon dioxide and are what will cause the bread to rise. Mixing all the ingredients together creates a new thing: dough! And, when you add heat, it changes again and becomes bread!

Directions:

1. Add 1 cup of flour to bag.
2. Add 3 Tablespoons white sugar, water, and yeast.
3. Squeeze air out of the bag and seal.
4. Mix/squish the bag to combine ingredients.
5. Let it rest for 10 minutes. Bubbles should be forming.
6. Open bag.
7. Add 1 cup flour, the oil, and salt.
8. Seal bag and squish again until ingredients are well combined.
9. Add last cup of flour and repeat step 8.
10. Remove dough from bag and place on lightly floured surface.
11. Knead the dough for 5-10 minutes, or until the dough is smooth.
12. Form dough into an oval shape. Place in greased pan.
13. Cover and let rise until it has doubled in size.
14. Heat oven to 375 degrees.
15. Bake for 25-30 minutes.
16. Remove and let it cool.
17. Enjoy with your freshly made butter!

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Activity 2: Make some butter

Supplies:

- Heavy cream (not light cream)
- Leak proof container

Prompt:

Heavy cream has a lot of fat in it. When you shake it, the fat starts to separate from the liquid. When you keep shaking it, the fat clumps together. Shake it enough and you will make whipped cream. Shake it even longer and you will make butter!

Tip:

This activity involves A LOT of shaking. If you have more than one child participating, it might make more sense to have one container (use a larger one than the one provided) so that it will be easier to share the shaking duties. You could also try out shaking yourselves and if it is going to all fall on one person (the grownup) to do, you can finish it with an electric whisk (like a hand held mixer, immersion blender with whisk attachment, or stand mixer).

Directions:

1. Put cream into the container ($\frac{1}{2}$ to $\frac{2}{3}$ full) and seal it shut.
2. Now, you shake, shake, shake!
3. After five minutes, stop shaking. Open the container and describe what you see. Is the cream still liquidy?
4. Seal the container, and shake, shake, shake!
5. It will take about 15 minutes for the butter to form with continuous shaking. You will know you are done when a solid mass forms. When you have a solid mass, observe it and describe what you see. Draw or write down your results.
6. Drain the buttermilk (the liquid left after making butter), which you can either save for baking or discard.

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Activity 3: Ewww! Mold!

Supplies:

- Slice of bread cut into 4 equal parts
- Small plate
- Plastic or paper bags, or other containers, depending on step 3

Prompt:

What is the best way to store bread? Or, if you would prefer, what is the quickest way to grow mold?

Things to consider: bread becomes stale when left out (meaning when not covered or inside something, it loses its moisture (water) that keeps it soft. To grow, mold has to have water (moisture), food (such as bread), air, and a comfortable temperature (between 40 and 100 degrees Fahrenheit).

Brainstorm different ways it might be possible to store bread so that it will stay fresh (meaning not go stale or grow mold) or ways to grow mold. When conducting experiments, scientists have a “control” group, meaning the group for which you do not do anything differently. For other groups they change something- by adding or taking away something

Directions:

1. Decide which question to answer: What is the best way to store bread, or what is the quickest way to grow mold?
2. Your control for either question will be a piece of bread on a plate on the counter. Do not cover it up, or put it inside anything.
3. Decide on 3 different ways to store the bread or grow mold.
4. Set up the other three pieces of bread according to what you decide in step 3. If you have not yet set up your control, do that now.
5. Now you wait. After a day has passed, observe the different pieces of bread. Has any mold grown? Is your bread stale?
6. Wait another day. Observe your bread again. What has changed? What has stayed the same?
7. If you can answer your question (store bread or grow mold) at this point, what did you learn? If you cannot answer your question, yet, repeat step 6 until you can.