

BREAD IN A BAG (AND BUTTER IN A BOTTLE!)

Explore the science of baking

Recipe #1: Bread in a Bag

What you'll need:

Ingredients:

- 3 cups of flour, divided
- 3 cups of extra-virgin olive oil OR 4 cups of melted butter
- 3 tbsp of sugar
- 1 package (2.5 tsp) of active dry yeast
- 1 cup of warm water
- 1 tsp of salt (optional)
- Cooking spray or grease

Tools:

- A large, resealable plastic freezer bag
- Mini loaf pans or muffin tins
- Clean dish towels
- An oven*
- Oven mitts

*Safety first! Always ask a grownup for help when using the oven.

Create:

1. Gather and measure out all of your ingredients.
2. Open your resealable freezer bag and add 1 cup of flour. Then, add all of your sugar, yeast and warm water.
3. Seal the bag tightly. Let as much air out of the bag as possible as you seal it.
4. Use your hands to squeeze and mix all the ingredients together. Make sure the bag is sealed shut first!



5. Once the ingredients are well combined, let the bag rest on the counter for about ten minutes.
6. Open the bag and add 1 more cup of flour. Then, add all of your oil and salt (if using).
7. Seal the bag again, let out the air and use your hands to squeeze and mix the ingredients together.
8. Open the bag one last time and add the final cup of flour.
9. Seal the bag, let out the air and repeat the squeezing and mixing one last time!
10. Lightly flour a space on your counter, then remove the dough from the bag and use your hands to knead it for about five minutes.
11. Spray or grease the loaf pans (or muffin tins, if using). Divide your dough and place it in the pans.
12. Cover each pan with a kitchen towel. Let the dough sit to rise for 30 to 60 minutes.
13. Check on your dough—it should have roughly doubled in size. It will keep rising in the oven, too.
14. Preheat your oven to 375 °F. Then, have a grownup help you place your bread in the oven. Bake it for about 25 minutes, or until it is golden brown.
15. Have a grownup help you remove the bread from the oven. Let it cool, then remove it from the pan.
16. While your bread is cooling, try the second recipe: butter in a bottle!



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Recipe #2: Butter in a Bottle

What you'll need:

- A container with a tight-fitting lid
- Heavy whipping cream (35%)
- Salt (optional)

Create:

1. Fill your container halfway with cream.
2. Close it tightly and shake, shake, shake for about 10 to 15 minutes, or until the sloshing sound stops and a solid lump has formed.
3. Add a pinch of salt, if using.
4. Spread the butter on your freshly baked bread!



Play:

Did you know that baking is science? For bread to rise, you need the right combination of yeast, sugar and flour—in other words, you need chemistry! Whether they are creating bread, cakes, cookies or other yummy treats, bakers rely on chemistry to make sure their creations turn out perfectly.

Like any other scientist, bakers also do lots of experimenting! With help from a grownup, you can experiment in the kitchen, too. Try adding different ingredients to your bread recipe, like cinnamon, raisins or seeds. What tasty creations can you come up with?

Here's a song you can sing while you bake! Try singing these words to the tune of "Row, Row, Row Your Boat."

*Mix, mix, mix the flour,
Sugar, oil and yeast.
Put the mixture in a bag,
Scrunch and softly squeeze!*

*Knead, knead, knead the dough,
Place it in the pan.
When the dough has risen up,
It's time to bake the bread!*

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How does yeast work?

Another key ingredient in bread is **yeast**. This is what makes bread rise. Yeast is a type of micro-organism that needs food, warmth and moisture to survive. When you added sugar to your dough, you provided food to the yeast. By adding warm water, you provided warmth and moisture. And when you covered your dough with a towel, you helped contain the warmth and moisture. This allowed the yeast to grow, which made your bread nice and fluffy!

Letting dough rest is also called **proofing**. To test whether your dough is proofed, you can gently poke it with your finger. If it springs back quickly, it needs more proofing time. If it springs back slowly, it is ready to bake!



Learn:

Where does flour come from?

One very important ingredient in bread is **flour**. Traditional flour is made from a plant called **wheat**. There are 20 varieties of wheat and 7 wheat species.

To plant wheat, the farmer starts by loosening the soil with a plow. Then, they use a large machine called a **grain drill** to plant the wheat seeds.

When wheat first starts growing, it is green like grass. Once it dries out and turns a golden brown colour, the farmer uses a large machine called a combine to harvest the wheat and store it in a big building called a **grain elevator**.

The wheat is eventually moved from the grain elevator to a **mill**, where it is ground down into flour. The new flour is sifted to remove large pieces of leftover grain shells or dirt. Then, it is packaged into bags of flour that you can buy at the grocery store!

Alternative flours can also be made from other grains and nuts, like oats, rice and almonds.