

Can You Find the Gluten?

What do cookies, pancakes, biscuits, and breads have in common? They are all made with flour! Flour is made of wheat that has been ground up and is used in cooking. Flour is made up of starch and protein. The protein in it is called gluten and is what we will be exploring today. Gluten is what gives baked goods their structure.

Materials Needed to Discover Gluten:

- Medium size bowl
- 1 cup flour (any kind)
- 1 tablespoon measuring spoon
- 1 cup measuring cup
- Access to water (sink)
- Spoons
- Towels
- Plate

Step 1: Flour

Take a small amount of flour and rub it between your thumb and forefinger. Describe the texture below. Is it soft? Grainy? Rough?

Type of Flour Chosen	Texture of Flour

Step 2: Dough

1. Measure one cup of your flour into a measuring cup. Fill your cup slightly overflowing and then slide the back of a table knife across the top of the measuring cup so that it is flat on the top.
2. Add about two tablespoons of water and stir with a big spoon
3. Add more water one tablespoon at a time and continue to mix after each addition until you have a firm dough.
4. Use your hands and form your dough into a ball and knead for about 10 minutes until the dough is smooth.
 - a. To knead the dough, use the heels of your hands, push down on the dough and stretch it away from you, fold it in half, then turn it a quarter of the way and repeat. If you would like a visual of kneading follow this link:
<https://www.youtube.com/watch?v=ySOj0fFWo1U>

5. Make observations about your dough

What did the dough feel like before kneading?	What did the dough feel like after kneading?

Step 3: Find The Gluten!

This step will help us wash away the starch to leave behind only the gluten (protein).

1. Place your dough in a medium mixing bowl filled with water.
2. Pull and squeeze the dough in the water many times.
 - a. When the water becomes cloudy, pour it out and refill with clean water. Repeat as many times as necessary.
 - b. When water is clear or nearly clear, the process is complete. The starch is gone, and only gluten remains!
3. Observe the texture and appearance of the gluten.

Texture of Gluten	Appearance of Gluten

