

# What is Gluten?

## Objectives

- ❖ Learn about what gluten is and compare the gluten contents in two different types of flour

## Duration

- ❖ 1 hour

Material	Quantity
Ruler	1
Juice Jug	1
Fork	1
Disposable Plastic Bowl	2
Cake Flour	1 cup
Bread Flour	1 cup
Measuring Cups	1 cup & ½ cup
Water	½ cup-¾ cup

## Procedure

- Ask your child if they can think of different foods that have gluten in them.
- Explain that gluten is a protein that is found in most grain products.

- Why is gluten so important?

- Answer: Without it, there would be nothing to hold the gas that makes bread rise. Think of gluten as the rubber of a balloon, the stronger it is, the more gas it can hold. But stronger isn't always better. For many baked goods, like pastries and pie crusts, it's important to avoid gluten development.

- Provide your child with a bowl, measuring cups, and fork

- Ask them to complete the following steps:

1. Place 1 cup of cake flour into a small bowl.
2. Slowly add ½ cup-¾ cup of water into the flour bowl while mixing with a fork. (It is very important not to add too much water to the mixture because we must keep the flour to exactly 1 cup in order to have the experiments consistent.)
3. The mixture should form a rough ball.
4. Sprinkle a spoonful of flour onto your work surface and knead the ball for 7 minutes.
5. Repeat this process with bread flour.

- Next, run water on their ball of dough. They will notice that a milky liquid will be washed away from the ball- this is the starch.

- Ask them to gently pull/stretch the dough apart while rinsing it.

- This process will be complete when only a stringy and sticky ball remains.

- Ask your child to measure the diameter of each ball and compare results & have them complete the following table.

Flour Type	Cake Flour	Bread Flour
Trial 1: Gluten Ball		
Diameter		
Trial 2: Gluten Ball		
Diameter		
Trial 3: Gluten Ball		
Diameter		
Average Gluten Ball		
Diameter		

- With the results found in the chart above, ask them to determine what the experiment concluded about cake and bread flour gluten contents.