



UNLEASH THE YEAST

Grade Level

K-6

Length of Lesson

30-45 minutes

Objective

Students will be able to explain how yeast releases gases to leaven bread.

Materials

- One 0.25 oz packet of yeast
- One clear plastic soda bottle (16 oz or less)
- 1 teaspoon of sugar
- Warm water
- 1 balloon
- Optional: [Scientific Inquiry Worksheet](#)

Standards

NGSS

K-LS1-1; 2-PS1-4; 2-LS2-2; 3-LS1 -3

Lesson Summary

In this lesson, students will observe a simple experiment showing how yeast releases carbon dioxide gas when it interacts with sugar. They will be able to compare this process to how yeast works in baking to leaven bread.

Suggested Sequence of Events:

1. Read [From Wheat to Bread](#) by Kim Binczewski to gain student interest.
2. Read through the [Wheat Ag Mag](#) as background information.
3. Complete the activity following the procedures:
 - Fill the bottle with about one inch of warm water.
 - Add the yeast packet and gently swirl the bottle a few seconds.
 - Add the sugar and swirl it around some more.
 - Blow up the balloon a few times to stretch it out, deflate it and then place the balloon over the neck of the bottle.
 - Let the bottle sit in a warm place for about 20-30 minutes, or longer depending on the temperature of your room. The balloon should begin to inflate.
4. How does it work? As the yeast eats the sugar, it releases carbon dioxide, which fills the bottle and then overflows into the balloon, inflating it. Discuss this with students.
5. Optional: Utilize our [Scientific Inquiry Worksheet](#) as a student worksheet to accompany this activity.



picture of experiment, taken after 30 minutes

TEACHER RESOURCES

Extension Ideas

- Allow students to modify variables in this water bottle experiment to see how they impact the results. What would happen if there was more yeast? More sugar? If the water was a different temperature? If the room was colder or warmer?
- Compare the process of yeast releasing carbon dioxide to human and plant respiration.
- Bake bread in your class. Examine the holes in the bread caused by yeast.
- Learn what gluten is. Extract Gluten from a dinner roll by dropping a thawed roll into a bowl of water and repeatedly squeezing it until the water turns cloudy and all that remains is a stringy, white substance. This is the gluten which helps to hold the bread together.
- Complete the Wheat Milling activity to learn how wheat grain is harvested and processed.
- Go to agintheclassroom.org to contact your County Ag Literacy Coordinator for free classroom sets of our Ag Mags.

