

Name_____

Food Science: Bread Dough Challenge

Did you know that yeast is actually alive? In the bread-making process, it is alive until the heat of the oven kills it. Yeast is a common leavening agent used to make bread and other bakery products. The first use of yeast to bake bread is unknown, but the earliest definite records come from Ancient Egypt.

*What makes bread
dough rise?*

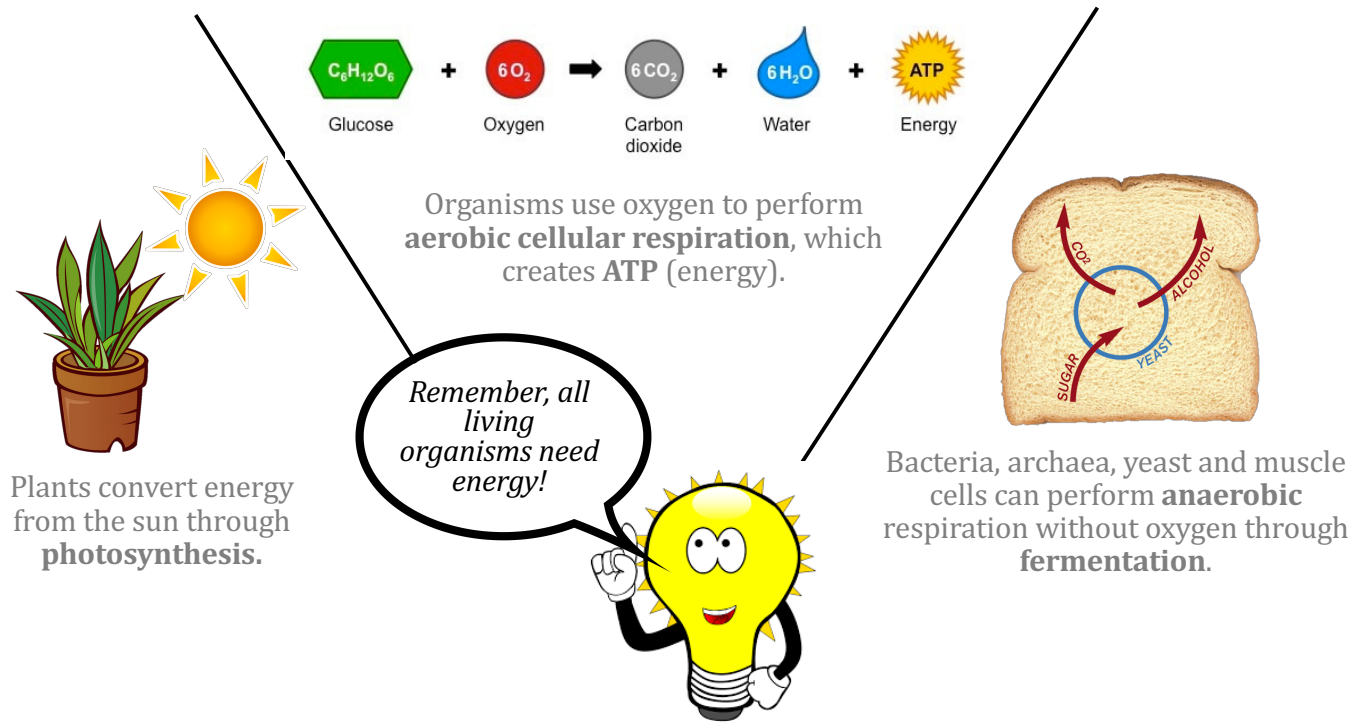
What is yeast?

*How do yeast cells get
energy?*

*What factors speed or
slow the process of
dough rising?*




Putting the Science in Context



1. Which ziploc bag(s) expanded? Why?
2. What gas did the yeast produce?
3. What molecule does the yeast use for energy?
4. What type of cellular respiration do yeast cells use? How do you know?
5. How do you think you could make this reaction faster or slower?

Bread Dough Challenge

How can you make the fastest rising bread dough?

	
<i>Bread Dough</i>	
INGREDIENTS	DIRECTIONS
1/3 cup warm water	1. In a bowl, mix together the yeast, warm water, and sugar.
1 tablespoon sugar	2. Add the oil and flour and stir to combine.
1 teaspoon yeast	3. Knead dough for 2 minutes.
1 cup flour	4. Roll dough into a ball and place in a glass jar for observation.
1 teaspoon oil	

1. List as many variables you can think of that could affect rising time.
2. What variable will your group test?
3. How will you revise your recipe to test this variable?
4. Make a hypothesis below about how manipulating this variable will impact the final outcome of the bread dough.

Food Science Team Recommendation:



recipe

Quick-Rising Bread Dough

INGREDIENTS

DIRECTIONS

1. Using all the results from your experiment, place the best recipe and preparation instructions in the recipe card above.
2. Provide a scientific analysis below for your recommendation explaining why it is the best procedure for making quick-rising bread dough.