

YEAST: IT'S ALIVE!

We know we can't have *chometz* on Pesach – anything leaven.

Discover the microbes that make *chometz* in this lesson!

Experiment 1: Feeding Yeast

Yeast is a living microorganism.

In this activity, we're going to see how yeast eats, breathes, responds to its environment, and reproduces.

Materials

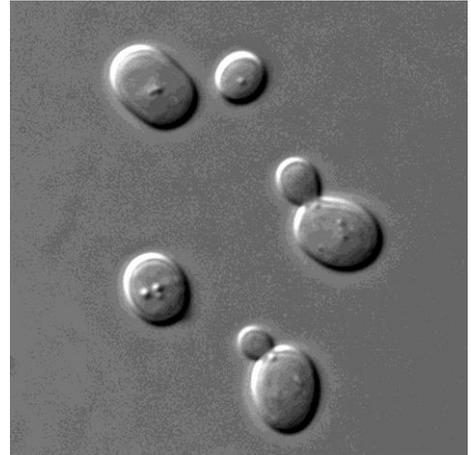
- glass or plastic cups
- teaspoon
- sugar
- active dry yeast
- warm water (110° to 115°F)
- ice water
- thermometer (to test water temperature)

Procedure

- Fill two cups with $\frac{1}{2}$ cup warm water
- Fill one cup with $\frac{1}{2}$ cup ice water
- Add a teaspoon of yeast to each cup
- Add sugar to one of the warm cups, and to the cold cup
- Set a timer for 10 minutes
- When the time's up, check the result.

Explanation

Yeast are single celled organisms, members of the fungus kingdom. Here is a picture of yeast under microscope. Some yeasts eat sugars and other carbohydrates. In the process they give off carbon dioxide gas and alcohols. This process is called fermentation. It is the carbon dioxide gas that makes the bubbles in your cup. These same bubbles make bread rise, becoming light and fluffy, full of air pockets.



How can you prove that yeast are living organisms, and that the gas is not simply produced by a chemical reaction – like baking soda and vinegar? Let your cup of yeast, sugar, and warm water sit for a day. Prepare a new cup with just sugar and warm water. Add a teaspoon of your first cup to the new cup. Repeat this for a few days. Each new cup will bubble like the first. This shows us that the yeast are growing and reproducing. If it was a chemical reaction, the yeast would get used up and diluted each day, and stop fermenting the sugar.

Win Prizes!

Send us pictures or videos of your experiments, or draw an illustration explaining how yeast eats, breathes, responds to its environment, and reproduces. Submissions will be entered into a raffle for prizes!