



Yeast Fermentation Inquiry

Name: _____

1. Think about how you can design an experiment to test this question, keeping in mind the inclusion of an appropriate control. Remember, a simple design makes for elegant results. Describe the water levels in each graduated cylinder at equilibrium. Why do you think this happened?
2. Identify some different factors that could impact yeast fermentation of sugars.
3. Select one to be your independent variable in your experiment. There are many avenues to explore, including a comparison of carbon sources, concentration gradients, temperatures, etc. affect sugar utilization.
4. Write down your experimental question here:
5. Record your hypothesis here:
6. Was your hypothesis supported by the data? Why or why not?





Yeast Fermentation Inquiry

Guided inquiry to measure the amount of carbon dioxide produced during ethanol fermentation in yeast

Fermentation is a process that converts sugar to organic acids, gases or alcohol in the absence of oxygen. It can occur in bacteria, yeast and human muscle tissue.

In this activity, we will be conducting an experiment to measure the amount of CO₂ produced during ethanol fermentation in yeast. However, you will have the opportunity to vary one factor in the fermentation process. (Consider "normal" conditions to be 2% glucose at 37C.)

Materials:

- Baker's Yeast
- Various Sugars (e.g. sucrose, glucose, fructose, lactose, maltose, etc.)
- Tubes or vials (e.g. 15 ml conical tubes, glass test tubes, or gas-collection vials)
- Container wider than the tubes or vials to hold a bath of water
- Markers
- Water
- Water bath or hot plate to vary temperature
- Something to move consistent volumes of liquids (Micropipettes and tips, glass pipets and bulbs, straws if need be, etc.)
- Timers

Preparation:

1. Turn your jar, which has been sterilized in the dishwasher, on its side. Start loading vegetable spears
Prepare baker's yeast packet at 7% w/v in water
2. Prepare sugar solutions at 20% w/v in water



