Student Pages Name_____

Title: Yeast and Carbon Dioxide

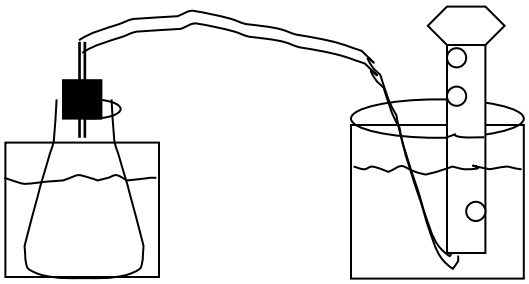
Purpose: Respiration is the process by which living things breakdown sugar to gain energy. Yeast perform this process through fermentation. In fermentation, sugar is broken down into carbon dioxide and alcohol. We will concentrate on measuring the carbon dioxide to measure the rate of respiration by the yeast.

Materials:

250 mL Ehrlmeyer flasks, thermometer, 50 mL graduated cylinder, rapid rise yeast mixture, sugar, water, heat source, one-holed #5 stopper, glass tube, plastic tubing, warm water, ice

Procedures:

1. The Control for this experiment is 100 ml of yeast solution, one level teaspoon sugar and 25 degree C temperature (room temp).
2. Your group needs to change one variable and write a hypothesis. When you have decided what to do, write your hypothesis on the board. Watch what others write, no two groups can have the same one.
3. Set up the apparatus as pictured below. The flask should sit in 300 ml of water with a known temperature or if room temperature is used, no flask is needed.
4. Fill the graduated cylinder with water and invert it into the bucket of water. Hold it in place with your hand.
5. When you are ready, start by adding your sugar and putting the stopper on. Wait 5 minutes to make the first observation. Write down the volume of gas in the graduate. (You will have to read the graduate upside down)
6. Make another observation at 10, 15, and 20 minutes. Fill in your groups' data as you go.
7. Write down the contents for each group the data table. Put your results on the board for all students to copy.



Hypothesis: If we , then

Data:

Our group: 5 minutes_____10 minutes_____
15 minutes_____20 minutes_____

Class data:

Contents of tube	**Amount of gas**
Control	

Analysis:

1. Which tube acted as the control?

2. Why did we do a control?

3. What gas is the yeast producing?

4. Where does the yeast get the substances to make the gas?

5. What does the yeast get when it breaks down sugar?

6. What seemed to be the best conditions for yeast respiration?

7. What puts holes in bread?

Conclusion: