

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Class \_\_\_\_\_  
Yeast Respiration Lab  
(40 minutes)

**Objective:** To observe aerobic and anaerobic respiration of yeast in an enclosed, fluid environment, and in that way learn about cellular respiration as a whole.

**Problem:**

Will yeast placed in an enclosed environment with nutrients carry on cellular respiration?

**Hypothesis:**

**Prediction:**

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**Materials:**

Erlenmeyer Flask  
2/3 teaspoon yeast  
40 mL nutrient soln  
Latex balloon  
Spoon

**Procedure:**

- 1) Place 2/3 teaspoon of yeast in Erlenmeyer Flask, by filling a spoon to the point where the yeast is about level with the top of the spoon.
- 2) Heat the nutrient soln to 45°C on a hot plate
- 3) Add 40 mL of nutrient soln (45°C or room temperature depending on your group) to the Erlenmeyer Flask.
- 4) Cover the flask tightly with a balloon
- 5) Observe and make predictions.
- 6) 24 and 48 hours after setting up the experiment.

**Data Collection/Results:**

	<b>Observations inside the Flask</b>	<b>Circumference of Balloon (cm)</b>
<b>Original</b> <b>(Date _____)</b>	Initial	Initial
	End of class	End of class
<b>After 1 day</b> <b>(Date _____)</b>		
<b>After 2 days</b> <b>(Date _____)</b>		

**Analysis Questions/Conclusion:**

- 1) Did the balloons change in circumference during the period of this experiment? If so, how did they change? What specifically accounted for the changes if they occurred in this experiment?
- 2) Yeast is a facultative anaerobe. What does this mean?
- 3) What was the specific source of energy in the nutrient soln the yeast used for respiration?
- 4) The yeast began its respiration aerobically, but then after time completed it anaerobically. How do these two processes differ in terms of the products and energy yielded? List several ways in which the two respiration processes are similar?
- 5) How did the physical evidence collected in this investigation support your hypothesis?
- 6) How would changes in room temperature influence this investigation? Explain why in terms of your knowledge of reaction rates and respiration enzyme function.