Name _____ Date _____

Video Lab: Cellular Respiration

TO GO: HTTPS://MY.HRW.COM/CONTENT/HMOF/SCIENCE/HIGH_SCHOOL_SCI/NA/GR9-12/HMD_BIO_9780547688442_/DLO/VIDEOLABS/INDEX.HTML?VID=6

OBJECTIVES:

- **Demonstrate**_____
  _____
  _____

- **Describe** _____
  _____
  _____

MATERIALS:

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

Review the Safety Symbols: What do they mean?

_____
_____
_____

_____
_____
_____

_____
_____
_____

_____
_____
_____

_____
_____
_____

Procedure:

1. Put on safety goggles, gloves, and a lab apron. Fill the _____ with _____ until it's halfway full. Add some of the acid-base indicator, _____ to the _____ in the cup. Gently swirl _____ to mix the solution.

CAUTION: Bromothymol blue is a _____ and _____ irritant.

2. Get a _____ and place it _____. Blow a _____ through the _____ being very careful not to get any of the solution in your _____ or on your _____.

   Note any changes to the solution's appearance (color). _____
   _____

CAUTION: Be careful not to accidentally drink the solution while blowing into the straw.

3. Get three more plastic _____. Label them "_____," "_____" and "_____."

4. Fill cup A with_____, fill cup B with _____ _____, and fill cup C with _____ to the same _____ as the other two cups. To _____ of the cups, add some of the _____indicator. As before, gently _____ the cups to make sure that the _____ is _____ in each.

5. Add _____ teaspoon of baker's _____to each cup. Swirl the cups, and observe the appearance of the cups about _____ until _____ is passed. At the end of _____ minutes, examine the _____of each solution in each of the three cups with a _____ _____.

Review the Safety Symbols: What do they mean?

_____
_____
_____

_____
_____
_____

Analyze and Conclude:

1. **Drawing Conclusions.**

   What happened to the indicator as exhaled air bubbled through the solution?

   _____

   _____

   _____

   What caused this change?

   _____

   _____

   _____

2. **Scientific Methods.** **Evaluating Results**

   Did the yeast produce a similar color change? Explain your answer.

   _____

   _____

   _____

3. **Scientific Methods.** **Evaluating Results**

   Did temperature affect the yeast's production of carbon dioxide? Explain your answer.

   _____

   _____

   _____

4. **Scientific Methods.** **Summarizing Results.**

   What did you observe on the surface of the solutions?

   _____

   _____

   _____

5. **Predicting Outcomes.**

Will adding sugar to the yeast solution affect the respiration rate? Make a guess. Then, design a method for inquiry that would test the effects of various sugar concentrations on yeast metabolism.

_____

_____

_____

_____

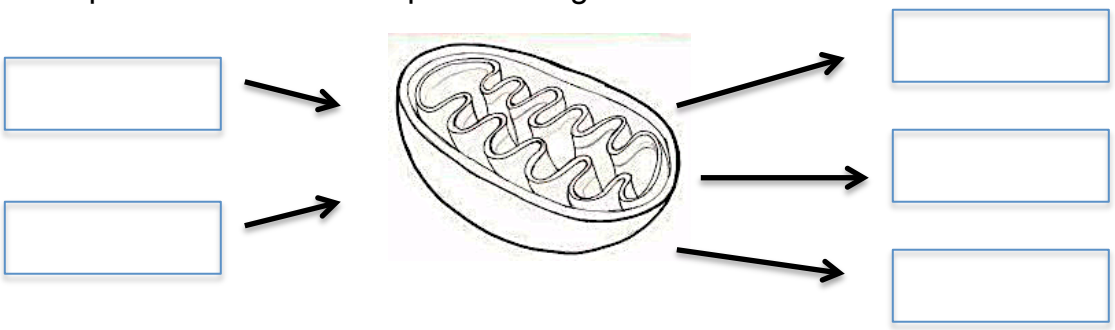
_____

_____

_____

_____

Complete the Cellular Respiration diagram below.



Show the results of the experimental set-up by **adding color** to the appropriate cup.