

**Team Lab Notebook (TLN)**  
*Exploring Cellular Respiration (Lab #3)*

Team Name:

By: (Enter the full names and team roles of the team members who are present at today's lab)

Date:

**Activity 1. Background Research on Metabolism (4 pts)**

Refer to the Lab #3 student instructions in your lab manual for instructions on constructing a concept map. After completing your map on a whiteboard, record your final concept map in the space below.

## Activity 2. Developing a hypothesis and prediction

Our team developed the following hypothesis and experimental prediction (3 pts):  
*Remember that a good hypothesis does more than simply state a pattern; it attempts to account for one phenomenon in terms of another. Also remember that experimental predictions refer specifically to a predicted effect on that which is being measured in your experiment.*

What important information or observations did your group use to formulate this hypothesis (1 pt)?

What are the dependent and independent variables used in your hypothesis (2 pts)?

**Activity 3: Testing your prediction (10 pts)**

*Be sure to look over Activity 3 in the Lab #3 Student Instructions before writing up your procedures. The description of your procedures should be detailed enough to allow someone to replicate your experiment without having to consult you on the methods you used.*

After a team discussion, our group decided on the following experimental procedure for testing our hypothesis. *(Write these in past tense (describing what you did) rather than as a set of instructions to be followed.)*

#### **Activity 4. Summarizing and interpreting your data (10 pts)**

Graphically summarize the data you have gathered for all your trials for both your experimental and control group (s). Calculate all descriptive statistics and do all graphing in MS Excel. Save your MS Excel spreadsheet to your section's folder on the desktop. STAPLE a printout of this spreadsheet, which includes your data table, graphical summary, and the results of your statistical test to your TLN. Be sure your team name and lab section are at the top of the printout.

#### **EVERYONE ON YOUR TEAM...PLEASE READ BEFORE PRINTING FROM MS EXCEL!! – SAVE A TREE!!!**

- 1. Before you print anything you must get permission from your instructor!!!**
2. Make sure your Team Name, and Lab Section are at the top of your spreadsheet.
3. Use the mouse to highlight the area on the spreadsheet you wish to print. This should include anything you want to appear on the page, including graphs.
4. Choose "File", then "Print Area", then "Set Print Area" from the MS Excel menu bar.
5. Choose "File", then "Page Setup". Then set the scaling to "Fit to 1 Page". Choose "Print Preview" to make sure the page looks good before you print it. If all looks good, choose "Print" at the top of this print preview page.
- 6. If your file does not print right away, DO NOT try to print it again. Call your instructor over for help!**
7. STAPLE the printout to your TLN.

#### **Inferential Statistics**

Our null ( $H_0$ ) and alternative ( $H_A$ ) statistical hypotheses for this experiment were:

**$H_0$ :**

**$H_A$ :**

After running the statistical test we obtained the following p value for our experiment:

Our conclusions regarding our null ( $H_0$ ) hypotheses is:

What does your decision regarding the null hypothesis mean in the context of the experiment you are conducting (how temperature affects cellular respiratory rate)?

**Individual Activity 5. Conclusions (10 individual pts)**

**Each individual member of the lab team should write up conclusions for this lab separately.** You may consult with each other but your writing should be your own. Be sure to consult the questions in Activity 5 of the Lab #3 student instructions before you write your conclusions. *(Try and finish this before the end of lab, but if you run out of time, complete it at home and bring it to the next lab.)*

**Complete the cleanup checklist BEFORE you leave lab**

- Our work area is clean.
- Our gas sensor equipment is put back in the rack on the center tables, cords are untangled, and coiled neatly, but NOT wrapped around the probe.
- Our lab table and stools are wiped down.
- Trash is discarded.
- Gas sensor chambers (bottles) and glassware is washed with soap, rinsed, dried and returned to the center table.
- Class common work area is clean and materials/instruments/specimens are returned to their proper place.
- Any computer files you saved are in your section's folder on the desktop.
- All applications (LoggerPro, Excel, Word etc...) on the computer are closed.
- The computer should remain on.
- The settings on the computer are as they were when you entered the lab (background, toolbar setup etc..).

\_\_\_\_\_ Your lab instructor must initial here, indicating that your work area is clean before you may leave the lab.

**Failure to clean up, or leave lab without your instructor's initials, will result in 10 points deducted from this week's TLN grade.**

**Please do not forget to complete the Peer Evaluation form, and turn it in to your lab instructor before you leave.**