

**Lawson State Community College**  
**Evaluation Form for Scientific Method Lab**



Recorder/Writer: \_\_\_\_\_ Teacher: \_\_\_\_\_

Title of Experiment: \_\_\_\_\_

Date Submitted: 1/24/08 Lab Partner(s): \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Possible Points	<u>Criteria</u>	Points Earned
0 - 10	Clear and appropriate hypothesis.	10
0 - 5	Appropriate title is given to graph.	0
0 - 5	Clear legend is included for graph.	4
0 - 10	X and Y axes are correctly labeled.	0
0 - 10	Scale is accurate and proportional.	10
0 - 10	Data is accurately graphed.	10
0 - 40	Clear and concise conclusions. Answers to all questions.	37
0 - 10	Overall- neatness, grammar, adheres to format, etc.	4
	Lab grade----->	<u>75</u>

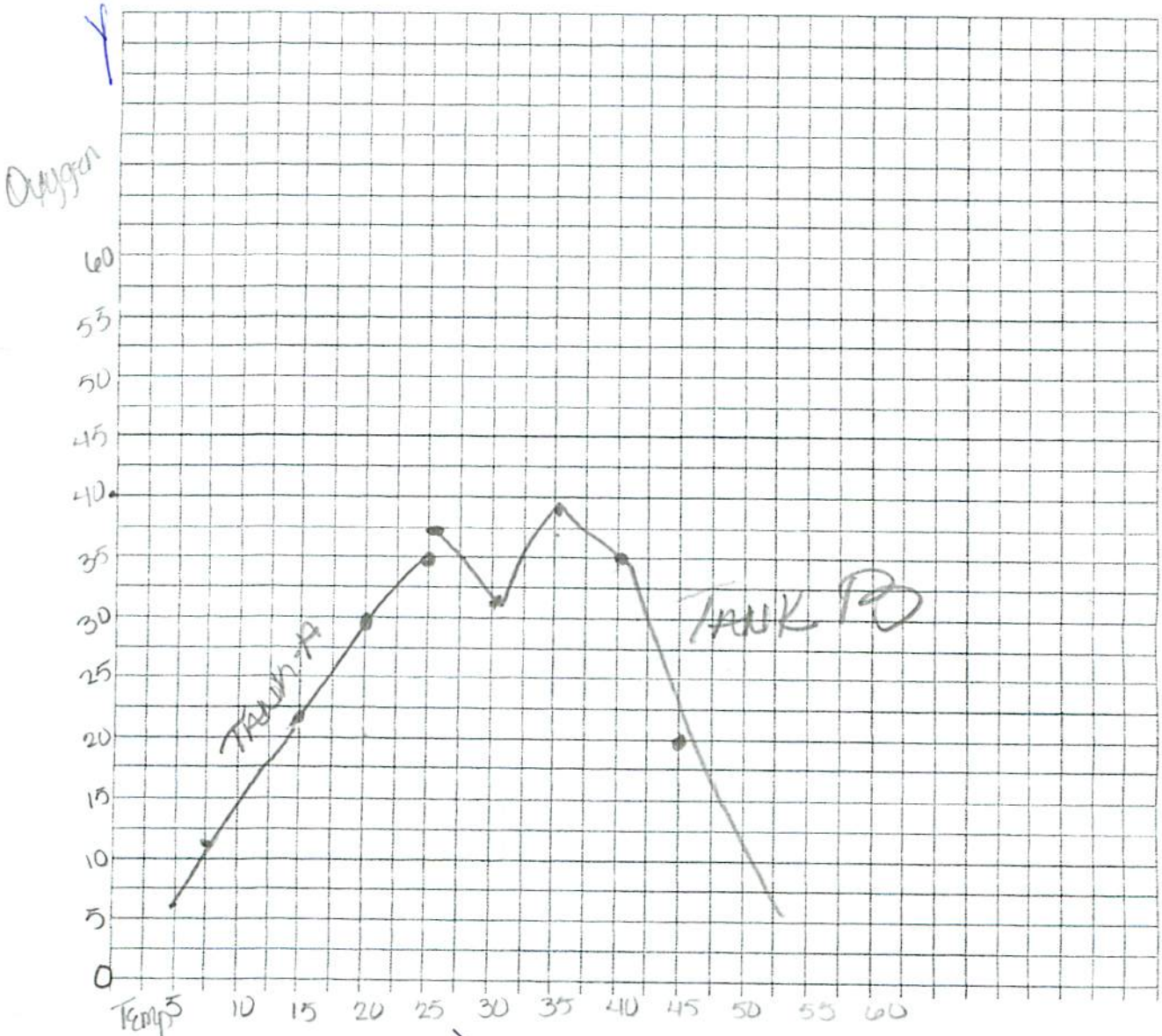
**Teacher Comments:**

5. What is the variable factor in the above experiment?

Oxygen and temperature

Line Graph the above data and then answer the questions that follow.

TITLE:



Comments  
- Did not label x & y axis  
- Title missing  
- did not use colored pencils in graph (legend)

## Scientific Method and More.

Directions: Read the following story, then follow the directions that follow.

A marine biologist conducted a study of the ability of vertebrate blood to carry oxygen. He believed that a low environmental temperature would cause the organism's blood to carry less oxygen than blood at a higher temperature. The following reflects the scientist's experiment and the data he collected.

- Two tanks of salt water, each containing 25 gallons, was set up in the lab.
- Each tank was filled with the same types of organisms ( perch and salmon ).
- The same type of aerators were added to each tank to supply dissolved oxygen to the fish.
- To one of the tanks, marked TANK A, the temperature was decreased at increments of 5 degrees C every 20 minutes.
- The second tank, marked TANK B, the temperature is raised at increments of 5 degrees C every 20 minutes.
- Blood was removed from each of the fish and measured for its oxygen content.
- Below is the results from the above experiment.

Temperature in Degrees C	Amount of Dissolved Oxygen found in fish in Tank A -ml/g	Temperature in Degrees C	Amount of Dissolved Oxygen found in fish in Tank B -ml/g
25	35	25	35
20	30	30	32
15	23	35	39
10	12	40	35
5	8	45	20

1. What is the hypothesis of the above experiment?

A low environmental temperature would cause the organisms' blood to carry less oxygen than blood at a high temperature. →

2. Is the above experiment a controlled experiment?

yes. This is not asking you about a control group.

3. Explain your answer to question 2.

It is a controlled experiment because the temperatures in both tanks were manipulated.

4. What term would be used to denote a person who studies blood?

Blood is called a hematologist.

A person who studies

1948

1. The first part of the report deals with the general situation of the country and the progress of the work during the year. It is followed by a detailed account of the work done in each of the various departments.

2. The second part of the report deals with the financial position of the country and the progress of the work during the year. It is followed by a detailed account of the work done in each of the various departments.

3. The third part of the report deals with the administrative and legal aspects of the work done during the year. It is followed by a detailed account of the work done in each of the various departments.

4. The fourth part of the report deals with the social and economic aspects of the work done during the year. It is followed by a detailed account of the work done in each of the various departments.

5. The fifth part of the report deals with the cultural and educational aspects of the work done during the year. It is followed by a detailed account of the work done in each of the various departments.

6. The sixth part of the report deals with the health and medical aspects of the work done during the year. It is followed by a detailed account of the work done in each of the various departments.

7. The seventh part of the report deals with the scientific and technical aspects of the work done during the year. It is followed by a detailed account of the work done in each of the various departments.

8. The eighth part of the report deals with the military and defense aspects of the work done during the year. It is followed by a detailed account of the work done in each of the various departments.

9. The ninth part of the report deals with the foreign relations and international aspects of the work done during the year. It is followed by a detailed account of the work done in each of the various departments.

10. The tenth part of the report deals with the general conclusions and recommendations of the work done during the year. It is followed by a detailed account of the work done in each of the various departments.

Legend:

6. What is the dependent variable?

Oxygen + ~~temperature~~

7. What is the independent variable?

temperature

8. Based on the above data, is the scientists hypothesis correct? yes

\*What are the controls used in the above experiment?

Extra Credit:

\*10. Change the data in the chart from ml/g. to dl/g. Place the answers in the chart below.

Temperature in Degrees C	Amount of Dissolved Oxygen found in fish in Tank A -dl/g	Temperature in Degrees C	Amount of Dissolved Oxygen found in fish in Tank B -dl/g
25		25	
20		30	
15		35	
10		40	
5		45	