

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

### Cellular Respiration

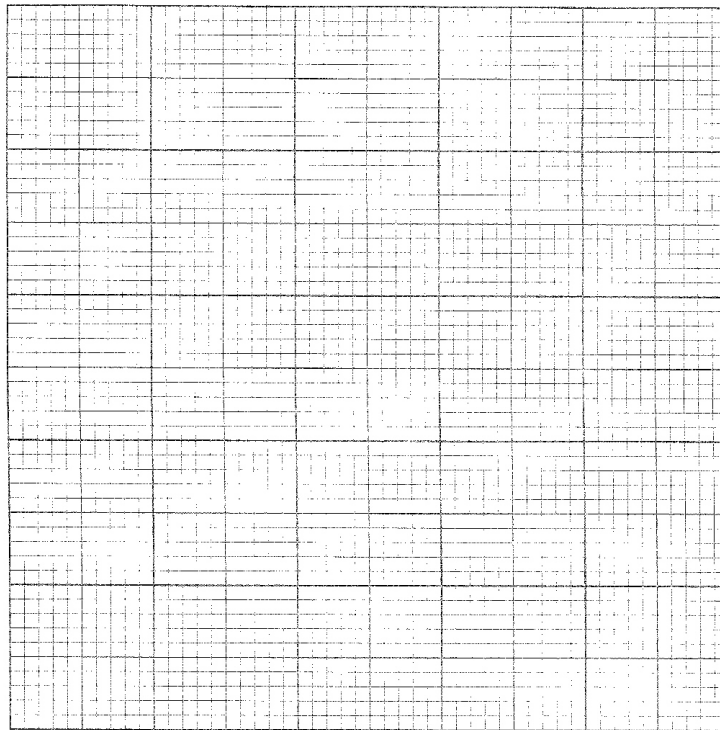
**Data Analysis – Graph the results below.**

Temp. (°C)	Time (min)	Beads Alone		Germinating Peas			Dry Peas and Beads		
		Reading at Time X	Diff.*	Reading at Time X	Diff.*	Corrected Diff.	Reading at Time X	Diff.*	Corrected Diff.
25	0	0.93		0.91			0.92		
	5	0.91	0.02	0.84	0.07	0.05	0.89	0.03	0.01
	10	0.90	0.03	0.77	0.14	0.11	0.87	0.05	0.02
	15	0.90	0.03	0.71	0.20	0.17	0.87	0.05	0.02
	20	0.90	0.03	0.64	0.27	0.24	0.85	0.07	0.02
10	0	0.95		0.92			0.91		
	5	0.94	0.01	0.88	0.04	0.03	0.90	0.01	0.00
	10	0.92	0.03	0.85	0.07	0.04	0.87	0.04	0.01
	15	0.93	0.02	0.83	0.09	0.07	0.86	0.05	0.03
	20	0.93	0.02	0.80	0.12	0.10	0.85	0.06	0.04

Identify the IDV: \_\_\_\_\_ (goes on X axis)

Identify the DV: \_\_\_\_\_ (goes on Y axis)

**Graph 5.1** Title: \_\_\_\_\_



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1. This activity uses a number of controls. What conditions must remain constant to assure validity?

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2. According to the graph what is the relationship between the amount of O<sub>2</sub> consumed and temperature?

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3. From the slope of the four lines on the graph, determine the rate of O<sub>2</sub> consumption of germinating and dry peas during the experiments at room temperature and at 10°C. Recall that rate =  $\Delta y / \Delta x$ . Record the rates in the table.

Condition	Show Calculations here	Rate (mlO <sub>2</sub> /minute)
Germinating peas/ 10°C		
Germinating peas/ room temp.		
Dry peas/ 10°C		
Dry peas/ room temp.		

4. How were the beads used in the lab? What two conditions did they allow you to measure the possible change in?

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5. What is the purpose of the KOH in this experiment?

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6. If you used the same experiment design to compare the results of respiration of a 25g reptile and a 25g mammal at 10°C, what results would you expect? Explain your reasoning.

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7. Why did the water move into the respirometers' pipettes?

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8. Where do you think possible sources of error might in this experiment?

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9. How might available nutrients affect the rate of cellular respiration in the seeds?

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10. Describe the relationship between the amount of O<sub>2</sub> consumed and time.

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