Safety during the lab \_\_\_\_\_\_ / 2

**Scientific Method** \_\_\_\_\_\_ / 2

* Correct order
* Ruler used to draw table
* Title and headings underlined
* Professional-looking scientific paper
* Clear communication of discussion of results

**Purpose** \_\_\_\_ /1

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| The purpose of this lab is to observe cellular respiration using yeast |

**Hypothesis** \_\_\_\_\_ /1

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| If/When …. then…because… If yeast is placed in cold water, then…If yeast is placed in warm water, then…If yeast is placed in warm water and covered, then…If yeast is placed in boiling water, then… |

**Materials & Apparatus** \_\_\_\_/1

List reagents used…

|  |  |
| --- | --- |
| * Beakers x 4 of the same size
* Graduated cylinders
* Yeast
* Sugar
* Measuring spoons
* Kettle
 | * Tongs
* Ruler (centimeters)
* 8 ½ x 14 Paper
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**Procedure & Safety Precautions** \_\_\_\_\_ / 4

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| * What steps did you take to conduct the experiment?
1. Gather safety equipment and tie back long hair
2. Obtain a 8 ½ x 14 paper and collect glassware
3. Add 1 tsp of sugar to each beaker
4. Label your beakers # 1 to 4
5. Determine how much water you need based on the size of the beaker (enough water to fill half the beaker)
6. Add water to your beakers (cold x 1, warm x 2 and boiling x 1)
7. Stir the water and sugar until dissolved
8. Add 1 tsp yeast to each beaker
9. Place cling rap over beaker #3
10. Set a 5 minute timer
11. After 5 minutes measure growth with a ruler
12. Repeat steps 10 and 11 until grow stops
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**Data/Observations/Calculations** \_\_\_\_ / 4

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| Data Table: in the table below write down your observations and measurements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Set up 1 | Set up 2 | Set up 3 | Set up 4 |
|  | Cold water | Room temp water | Room temp water sealed with cling rap | Boiling water  |
| After 5 minutes |  |  |  |  |
| After 10 minutes |  |  |  |  |
| After 15 minutes |  |  |  |  |
| After 20 minutes |  |  |  |  |
| After 25 minutes |  |  |  |  |
| After 30 minutes |  |  |  |  |
| After 35 minutes |  |  |  |  |
| After 40 minutes |  |  |  |  |
| After 45 minutes |  |  |  |  |
| After 50 minutes |  |  |  |  |
| After 55 minutes |  |  |  |  |
| After 60 minutes |  |  |  |  |

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**Discussion**  \_\_\_\_\_ / 5

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| Questions & Calculations:1. Which set up had the tallest foam? Why do you think this is the case?
2. Which set up had the smallest amount of foam? Why do you think this is the case?
3. What sources of error did you encounter in this lab? Did you get the expected results?
4. How do the results support the idea of cellular respiration? What hindered cellular respiration in certain temperatures? Explain.
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**Conclusion**  \_\_\_\_\_ / 3

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| * Restate the purpose of the lab (In this lab, I…../ In conclusion we found the ….)
* Was your hypothesis correct/incorrect? Explain.
* What tests determine if the yeast is actually still alive? Explain.
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 Total Score: \_\_\_\_\_\_\_\_\_\_/23