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| Rate affecting factors lab instructions | |
| In this lab you will be performing four different lab tasks. Each task will demonstrate one of the four major rate affecting factors. You will take qualitative AND quantitative data. Your purpose is to be able to observe which factors affect the rate, which direction they affect the rate (faster or slower), and also to EXPLAIN why they affected the rate the way they did. | |
| Temperature  **Cold vs. Hot** | |
| **Equipment:** Alka Seltzer tablets x 2  Small Beakers x 2  Hot Plate x 1  Thermometer x 1  Timer (Phone) x 1  Beaker tongs x 1 | **Procedure:**   1. Fill both beakers with \_\_\_\_\_ mL of water 2. Place one beaker on the hot plate 3. Begin to heat the beaker on the hot plate until it reaches a temperature of \_\_\_\_\_\_ °C. Continue onto Step 4 while you wait for the water to heat up. 4. Have your timing device ready! Place an Alka Seltzer tablet into the beaker of cold water – *start the timer as soon as it hits the water.* 5. Continue timing until the foam has risen and then dropped down and disappeared – *NOTE: do not wait until all the bubbles have stopped or you will be here all day! Just wait until the top level of foam has disappeared.* 6. Remove the beaker of hot water from the hot plate. Place on the lab bench. 7. Repeat steps 4 and 5 using the beaker of hot water. 8. Rinse out the beakers to use for the Surface Area Task |
| Surface Area  **Small vs. Large** | |
| **Equipment:** Alka Seltzer tablets x 2  Small Beakers x 2  Timer (Phone) x 1  Mortar and Pestle x 1 | **Procedure:**   1. Fill both beakers with \_\_\_\_\_ mL of water 2. Have your timing device ready! Place an Alka Seltzer tablet into one of the beaker of – *start the timer as soon as it hits the water.* 3. Continue timing until the foam has risen and then dropped down and disappeared – *NOTE: do not wait until all the bubbles have stopped or you will be here all day! Just wait until the top level of foam has disappeared.* 4. Crush one of the tablets in the mortar and pestle until it is a fine powder. 5. Have your timing device ready! Pour the crushed Alka Seltzer tablet into the beaker of cold water – *start the timer as soon as it hits the water. Try to get all the powder in as fast as possible!* 6. Continue timing until the foam has risen and then dropped down and disappeared like before. 7. Rinse out the beakers to use for the Concentration Task |
| Concentration  **Low vs. High** | |
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| Catalyst  **Not Present vs. Present** | |
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