Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period \_\_\_\_\_\_\_\_

**Independent Work Temperature of Water vs. Evaporation and Condensation**

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| --- | --- | --- |
| **QUESTION/PURPOSE:** **Manipulated Variable (MV)** **Responding Variable(RV)**  How does the temperature of water affect evaporation and condensation? | | |
| **HYPOTHESIS (IF, THEN, BECAUSE)** **:** (**Predict**) **Manipulated Variable (MV)** **Scientific Reason (WHY)**  **Responding Variable (RV)** | | |
| **Manipulated Variable Units** | **Responding Variable Units** | **Controlled Variable(s) Units** |
| **PROCEDURES: Manipulated Variable (MV)**  **Responding Variable (RV)**  **Controlled Variable(s)**  **Repeated Trials**  **Logical Steps**     1. Make predictions about what you think will happen inside the 2L bottle when it is filled with hot and cold water. Use the data table on the reverse. 2. Pour ice water into a 2L pop bottle until it is 3 inches high. Cap the bottle. 3. Write **DETAILED** observations about what you see. 4. Rub an ice cube on the outside of the bottle. Write **DETAILED** observations about what you see. 5. Empty the cold water out, rinse the bottle with hot water. 6. Pour hot water into a 2L pop bottle until it is 3 inches high (as hot as your faucet will provide). Cap the bottle. 7. Write **DETAILED** observations about what you see. 8. Rub an ice cube on the outside of the bottle. Write **DETAILED** observations about what you see. | | **MATERIALS Measuring Device**  **1 cup hot water**  **1 cup ice water**  **2 ice cubes**  **1 2L pop bottle** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **DATA TABLE: Title (Manipulated vs. Responding) Trials**  Directions: Write at least 3 sentences in each prediction **Units Averages**  and observation box. Describe everything you see.      **TITLE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**   |  |  |  |  | | --- | --- | --- | --- | | **Water in Capped Bottle** | **Prediction**  **(What I think will happen inside the bottle)** | **Observations**  **What happened in the bottle before the ice.** | **Observations**  **What happened in the bottle after the ice.** | | **Hot Water** |  |  |  | | **Cold Water** |  |  |  | |

**CONCLUSION:**

1. What happened to the water in each bottle?
2. In which bottle did you observe the most evaporation and condensation? Why do you think this happened?
3. Were you able to change the amount of condensation that occurred inside your bottle? If so, how?