**Scientific Process Data Table Practice**

**Class Copy!!**

**In your journal,** for each of the following scenarios:

* Identify the **variables** and the **groups**. Include at least 3 likely controlled variables.
* **Construct a data table** and add in your own (pretend) data. Be sure to include **appropriate** **headings**, **units**, and a **title**, as well as room for extra trials when possible. Don’t forget to **use a ruler** for neat data tables.

|  |  |
| --- | --- |
| **1.** After studying about recycling, members of John’s biology class investigated the effect of various recycled products on plant growth. John’s lab group decided to do an investigation on how grass compost effects the growth of bean plants. The group hypothesized that older grass compost would produce taller bean plants. Three flats of bean plants (25 plants/flat) were grown for 5 days and initial measurements of bean height were taken. The plants were then fertilized as follows: (a) Flat A: 450 g of 3 month-old compost, (b) Flat B: 450 g of 6 month-old compost, and (c) Flat C: 0 g compost. The plants received the same amount of sunlight and water each day. At the end of the 30 days the group recorded the height of the plants (cm). | Include:  1. Manipulated Variable  2. Responding Variable  3. 3 Controlled variables  4. Experimental Group  5. Control Group  6. Data Table |
| **2.** In Chemistry class, Allen determined the effectiveness of various metals in releasing hydrogen gas from hydrochloric acid. Several weeks later, Allen read that a utility company was burying lead next to iron pipes to prevent rusting. Allen hypothesized that less rusting would occur with more active metals. He placed the following into four separate beakers of water: (a) 1 iron nail, (b) 1 iron nail wrapped with an aluminum strip, (c) 1 iron nail wrapped with a magnesium strip, (d) 1 iron nail wrapped with a lead strip. He used the same amount of water, equal amounts (mass) of the metals and the same type of iron nails. At the end of 5 days, he rated the amount of rusting as small, moderate, or large. He also recorded the color of the water. | Include:  1. Manipulated Variable  2. Responding Variable  3. 3 Controlled variables  4. Experimental Group  5. Control Group  6. Data Table |
| **3. Procedure (read this- don’t actually perform the procedure)**  1. Cut a paper towel into strips 2 cm x 22 cm.  2. Fill a beaker with water. Add several drops of food coloring.  3. Place the paper towel strip 1 cm into the colored water for the time intervals 10, 15, 20, 25, 30, 35, 40 seconds.  4. At the end of each time interval, mark the water levels with a pencil. Then measure the height the liquid rose (in mm) and record the data.  5. Repeat steps 1 to 4 for a total of 3 trials.  6. Calculate the average height the liquid rose (mm). | Include:  1. Manipulated Variable  2. Responding Variable  3. 3 Controlled variables  4. Experimental Group  5. Control Group  6. Data Table |
| **4. Procedure: (read this- don’t actually perform the procedure)**  1. Place 75 ml of water in a beaker  2. Record the initial temperature of the water ( oC).  3. Measure the designated amount of the calcium chloride, such as 0, 1, 2, 3 scoops.  4. Add and stir the designated amount of the chemical for 2 minutes.  5. Record the temperature ( oC ) of the water at the end of 2 minutes.  6. Calculate the temperature change of the water.  7. Record the data. | Include:  1. Manipulated Variable  2. Responding Variable  3. 3 Controlled variables  4. Experimental Group  5. Control Group  6. Data Table |

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