Chemical Energy Experiment

Question: How does changing the amount of vinegar affect the mechanical energy of a balloon?

Hypothesis: If there is more vinegar, then the balloon will

<table>
<thead>
<tr>
<th>Ml of vinegar</th>
<th>Circumference In cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 ml</td>
<td></td>
</tr>
<tr>
<td>4 ml</td>
<td></td>
</tr>
<tr>
<td>6 ml</td>
<td></td>
</tr>
<tr>
<td>8 ml</td>
<td></td>
</tr>
<tr>
<td>10 ml</td>
<td></td>
</tr>
</tbody>
</table>

Questions: **ANSWER IN COMPLETE SENTENCES**

1. Was your hypothesis correct or incorrect? Why?

2. What form of energy is found in vinegar?

3. What form of energy is found in the balloon as it inflates?

4. What was the energy transformation for this experiment?
   
   _____________________________ energy was used to make
   _____________________________ energy
5. What happened to the circumference for each balloon as the amount of vinegar increased?

6. What caused the balloon to inflate more?

7. What was the independent and dependent variable for this experiment?
   IV - ____________________________________________
   DV - _________________________________________

8. Make a LINE GRAPH of the data.

   Circumference
   Of
   balloon

   Amount of Vinegar
Directions:
1. Use the plastic dropper to fill the tubes with vinegar.
   a. In the first tube, add 2 ml of vinegar.
   b. In the second tube, add 4 ml of vinegar.
   c. In the third tube, add 6 ml of vinegar.
   d. In the fourth tube, add 8 ml of vinegar.
   e. In the fifth tube, add 10 ml of vinegar.

2. Use the graduated cylinder to measure 10 mL of baking soda.

3. Gently pour the baking soda into the balloon. Shake the balloon so that the baking soda goes all the way into the balloon. You may want to use the funnel for pouring the baking soda into the balloon.

4. Carefully stretch the balloon over the top of the falcon tube labeled 2 ml.

5. Lift the balloon so that all of the baking soda falls into the falcon tube.

6. Measure the circumference of the balloon by wrapping a string around the center of the balloon. Pinch the string where the ends meet then measure that length of string in centimeters on the ruler. Record the circumference in Table A.

Repeat steps 2-6 for 4, 6, 8, and 10 ml of vinegar.