## Experimental Design Graphic Organizer

**Question:**
Who can accurately taste the difference between soda brands: Boys or girls?

<table>
<thead>
<tr>
<th>Is this a comparison or the relationship between two things?</th>
<th>Comparison</th>
</tr>
</thead>
</table>

**What is this about?**
Soda Brand, Boys VS Girls

<table>
<thead>
<tr>
<th>What is the Dependent Variable (DV)?</th>
<th>Accuracy of Guesses</th>
</tr>
</thead>
</table>

**What affects the DV?**
- **Boys or Girls**
- Taste Buds
- Frequency of Drinking Soda
- Volume
- Temperature
- What you ate for lunch
- Flat Soda
- Labels, Caps
- Cups
- Order

How will I manage the effect of these? (Look to right)
- **INDEPENDENT VARIABLE**
  - Ignore
  - ½ of a Dixie Cup
  - Ice Cold All Day
  - Ignore
  - Keep tightly Closed
  - Remove Labels
  - Same Color, Size
  - Random Order of tasting

**Options:**
- Set levels at _________
- Hold IV constant at _______
- Equal numbers of ___&___
- Use same subject at different times: ________________
- Divide equally between control and experimental groups
- Observe and measure

### From the list above, circle or highlight the Independent Variable (IV).

**Comparison:**
Is this control VS experimental? No  OR  Is this group VS group? Yes

<table>
<thead>
<tr>
<th>What is the first group or control?</th>
<th>Girls</th>
<th>What is the second group or experimental?</th>
<th>Boys</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>What am I measuring or observing?</th>
<th>Units?</th>
<th>When will I measure?</th>
<th>What formula will I use?</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV: Accuracy of Guesses</td>
<td>None</td>
<td>After Tasting</td>
<td>None</td>
</tr>
<tr>
<td>IV: Boys VS Girls</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Hypothesis:**
If [I.V.] Boys and Girls taste unlabeled soda,

Then [D.V.] _______________ will have a higher accuracy of guessing.

<table>
<thead>
<tr>
<th>How will data look if I am correct?</th>
<th>_______________ will have higher accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>How will data look if I am wrong?</td>
<td>_______________ will have lower accuracy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Dependent Variable</th>
<th>Constant</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part of the experiment changed by the experimenter</td>
<td>Part of the experiment that changes because of the IV- is measured or observed to get data</td>
<td>Parts of the experiment that remain the same to prevent affecting the experiment’s outcomes</td>
<td>Level of the IV that you compare back to- unchanged or in the natural state</td>
</tr>
</tbody>
</table>
Experimental Checklist

Complete the checklist below and check each step as it is completed.

<table>
<thead>
<tr>
<th>What could go wrong in this experiment?</th>
<th>How can I prevent or deal with these problems?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spilled soda, teacher mixes up soda, Flat, cheating</td>
<td>Teacher will be careful, students will not cheat</td>
</tr>
</tbody>
</table>

- Make a timeline showing the events in your experiment and the times you will measure or observe.
- Write a clear procedure that other people can follow step by step.
- Create an organized data table.
- Complete the experiment.
- Make adjustments to the written procedure if necessary and explain changes.
- Display the data in an organized chart or graph (if possible).
- Complete required follow up for the experiment (questions, lab report, evaluation, etc.).
- Complete the sections below on results and the next step.
- Sign and date this form.

Results:
When (I.V.)

Then (D.V.)

SCIENCE DOES NOT STOP: What is my next step?  What NEW questions need to be answered?

Name
Date