9. Bottle Tone opposition

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The Problem

Take an empty bottle and blow air across its mouth to produce a sound. Now fill the bottle with some water and **study how the sound changes**.
Addressing the problem

<table>
<thead>
<tr>
<th>Theoretical Model/Sound Predictions</th>
<th>☹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Experimental Data</td>
<td>😞</td>
</tr>
<tr>
<td>Why The Sound Changes</td>
<td>☹</td>
</tr>
<tr>
<td>Relevant Variables Tested</td>
<td>😞</td>
</tr>
</tbody>
</table>
Strengths

Theory
• Had staring to calculating frequency

Practical
• Did a number of tests
Weaknesses

Theory
- No theoretical mode
- Theory was irrelevant

Practical
- Invalid data
- Not enough variable tested or controlled
- Does not explain how to measure frequency
- No graphs
- No comparison of data
Points for discussion

• How can you measure the frequency of a sound
• How would you be able to predict the frequency for a bottle
• How can you be sure your method was fair
• Explain conclusions