C2 W13

Experiment Title: Humming Glass (#162)

The Scientific Method by Emoticons

Purpose

To show how *friction* can cause a glass to vibrate.

Hypothesis

Rubbing my finger around the rim of the glass

Fill in the circle for the correct answer:

○ **WILL** make the glass hum

○ **Will *NOT*** make the glass hum

Materials

- dishwashing liquid
- small shallow bowl
- tap water
- sink or large pan
- stemmed glassware (this will work better if the glass is very thin)
- vinegar

Procedure

1. Use the dishwashing liquid to make a warm, soapy water solution in the pan/sink.
2. Wash the glass and your hands in the warm, soapy water, & rinse well.
3. Place the glass on a table.
4. Pour a thin layer of vinegar into the small bowl.
5. Hold the base of the glass against the table with one hand.
6. Wet the index finger of your other hand with vinegar & gently rub your wet finger around the rim of the glass.

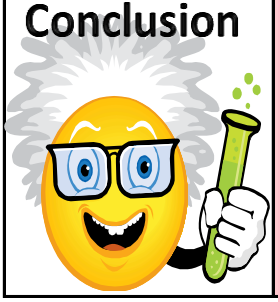
Results

When I rubbed my finger along the rim of the glass it:

Did hum

Did NOT hum

Conclusion



Washing the glass and your hands removes any oil that might act as a lubricant.
The vinegar also *dissolves* any oil that might be present and *increases the friction* between your skin and the glass.
Rubbing your finger around the rim causes the glass to *vibrate* because your finger skips and pulls at the glass. This causes the glass to vibrate.
The pitch of the sound you hear is due to *frequency* (number of vibrations per second).