

Year 3 Level M Day 86 Science

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Purpose:

To see how water reacts to static electricity, and test what changing different factors will do to it.

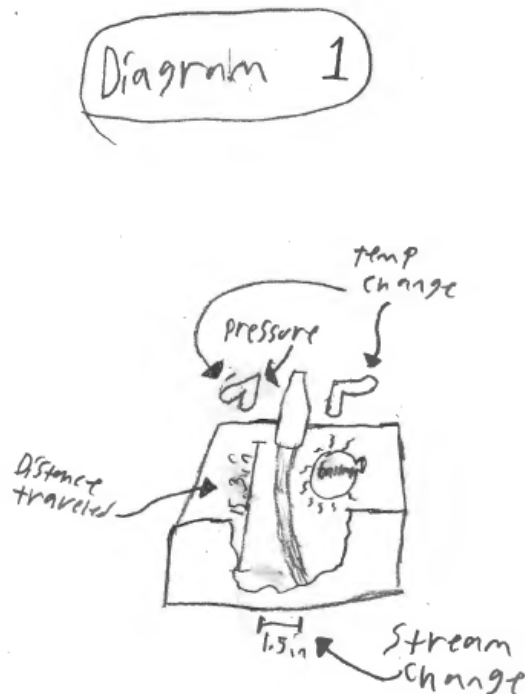
Materials:

1. Balloon
2. Hair
3. Ruler
4. Water Stream

Prosedure:

1. Collect measurements of how far the water travels from spout to sink.
2. Rub balloon against one of the items from material 2 for about 20 seconds.
3. Put balloon near water spout (2-3 inches), and watch the water stream bend; measure the angle.
4. Measure the difference between different water stream pressures.
5. Measure the difference between different water stream temperatures

For reference, see diagram 1.



Above is an example of how I did this experiment. The handles are what I used for pressure changes, and temperature changes. I used a balloon to gather static electricity, and bend the water stream. I measured a distance of 15.3 inches from spout to sink as shown on the left of the drawing. I measured how much the stream moved in multiple tests as show at the bottom of the image. Overall this is how I did my experiments.

Results:

Distance from spout to sink: 15.3 in

Test 1 stream thickness: .5 in Test 2 stream thickness: .25 in

Test 1 stream change: high pressure, traveled .6 in.

Test 2 stream change: low pressure, traveled 1.5 in.

Test 3 temperature change, and consistent pressure: Same results around .6 to 1.5 inches traveled, and temperature had no effect.

Conclusion:

Stream pressure (which changes speed and thickness), effects how much the static electricity changes angle of the stream in a span of 15.3 inches travel. At low pressure thin streams, the static electricity has a larger effect because of the lower velocity, and less water molecules to move. At a high pressure thick streams, the static electricity has less of an effect on the stream because of the higher velocity and amount of water. This means that the static electricity's range of effect does less when the water leaves that range quickly, and in this case a faster thicker moving stream will be affected very little. I found in my results that temperature does not affect how much the static electricity changes its trajectory.

Scources:

<http://www.weatherwizkids.com/experiments-bend-water.htm>

<https://sciencebob.com/bend-water-with-static-electricity/>