Properties of Water

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Properties of Water Lab # 3

Properties of Water

Materials: A Ruler, 2 pennies, dropper, soapy water and distilled water

Vocabulary:

Adhesive - When water sticks to a surface/clinging.

Cohesive - Water's attraction to itself by hydrogen bond.

Capillary action - Carries water against gravity from roots to leaves.

Surface tension - The resistance of water molecules to separate from each other.

Solute - Substance dissolved in liquid.

Solution - Combination of liquid and solute.

Procedure:

Test # 1: Using a penny and a dropper find out how many drops of water a penny can hold on its surface. Do the same test using soapy water. Create a data table to record the data. Using your knowledge of the properties of water come up with an explanation for your observations.

Test # 2: Using the penny form the water test, add water drops by drop until there is a bubble or skin on top. Record how many drops you used. Now experiment to see how strong the surface tension is on the water bubble. How much weight can it hold? How strong is the adhesion? Be creative and come up with a way to experiment on the surface tension.

Test # 3: Using the dropper squirt water on the whiteboard/ window and record your observations. Repeat but squirt the water 10 cm to the right of the original, record data, repeat again at 5 cm from the original and repeat again at 1 cm from the original. Explain what might have happened. Do you think the same thing would happen on a glass window, plastic?

Data & Analysis:

Test # 1:

Types of water	# of Drops
Distilled Water	20
Soapy Water	12

Because of the property of water cohesive, the soapy water had less adhesion since their cohesion was lesson due to the soap. The soapy water had less surface tension.

Test # 2:

Our group used 13 water drops. It held around 12 pipe cleaners. The adhesive is not strong. Another way we could experiment on the surface tension of water would be to try a different coin as a surface or use another way to measure the capacity of the water against material.

Conclusion:

To conclude test # 1, water has many properties such as adhesive, cohesive, capillary action and surface tension. The adhesive allows the water to stick onto the coin. With the water's hydrogen bonds it will self attract this helps from breaking apart. In test # 1 we used a penny to test how many drops of distilled water it can hold. It held 20 drops. When we used soapy water the penny held 12 drops. This shows that distilled water has more surface tension then soapy water because the cohesion was decreased with soap.

To conclude test # 2, water has many properties such as adhesive, cohesive, capillary action and surface tension. The adhesive allows the water to stick onto the coin. With the water's hydrogen bonds it will self attract this helps from breaking apart. In test # 2 we used a clean penny to test how many drops of water it can hold. It held 13 drops to get a bubble. To test the surface tension we add pipe cleaners onto the penny. It held around 12 pipe cleaners This shows that the water had a strong resistance to the pipe cleaners but the water's natural adhesive is weak.