

# \*Imagine<sup>TM</sup> Your Story\*



2020 Summer Reading

15-MINUTE SCIENCE EXPERIMENT

## Sharpies & Solubility

Sharpie markers  
3 small plastic cups labeled water, vinegar and alcohol  
3 coffee filters  
white vinegar  
rubbing alcohol  
water

1. Draw several circles in the center of 3 coffee filters. Fold the coffee filters in half twice.
2. Consider the questions, "Are Sharpie pens really permanent?" and write a hypothesis in a notebook. Next, make predictions about what will happen to the ink after the coffee filters are placed in each liquid
3. Gently place the folded coffee filters in each cup and observe any changes for about 10-15 minutes
4. Lastly, draw what you observe and describe the results of their test.

### What is Solubility?

Solubility is the ability of a substance (the solute), to mix into a liquid (the solvent). A solvent is any substance that dissolves a solute. A solute is any substance, liquid, solid or gas, that is dissolved by a solvent. Permanent markers, like Sharpies are hydrophobic, or "water fearing". Hydrophobic substances will not dissolve in water. This is why trying to remove permanent marker with water doesn't work

### What's Happening?

The ink molecules in the Sharpie are soluble meaning they will dissolve in a different solvent. The rubbing alcohol (solvent) dissolves the ink molecules and carries them with it as it spreads across the coffee filter. When left over night, the ink is almost completely dissolved and has been carried to the top edges of the coffee filter.



Thank You to the Rotary Club of Attleboro for sponsoring this project



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