Standards:

HS-PS1-5. Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

Introduction:

How many colors make up the marker that you use? You may think that your black marker is only black, but with this experiment you will be able to extract the different colors that make up the color of your marker. With a salt water solution the colors are more likely to stick to the paper as it travels along with the water. The water does not have enough room in its molecules for the color to be absorbed, thus, the color not fading out as it travels along the paper.

Materials:

- Water
- Salt
- Chromatography paper
- Flat bowls or a bread baking tin dish
- 4-8 different colored markers (washable markers)
- Tape
- A place that the paper can be tape on and hanged
- Measuring spoon
Safety:
- Always have an adult with you to help you during your experiment.
- Always wear eye protection and gloves when doing chemistry experiments
- Conduct this experiment in a well-ventilated area.

Procedure:
1. Line up your blotting paper and the lids of the markers that will be used in the experiment.
2. Leaving at least a half inch at the bottom of the paper. Place a large enough dot of each color at the bottom of the paper. Make sure each dot is evenly spaced apart.
3. Tape the paper to a place where it can hang above the bowl/dish. Leave at least a half inch of space between the dish and the paper.
4. Take enough water that will cover the bottom of the dish and mix it with about ¼ teaspoon of salt.
5. Slowly pour the salt water solution into the dish until it reaches the edge of the paper. Make sure the water does not submerge the dot.
6. Watch as the water gets absorbed by the blotting paper and the water slowly begins to travel up.

Data and Observations:
Record your observations in this space

What did you see? Anything you were not expecting? Describe it here.

Questions:
Do colors that you least expect come out of some of the marker colors?
What colors came out of the color black?

Why does the color travel up? Did the water affect the way it travels?

References:

Comments:
Washable markers work better than permanent markers (Sharpie).