

Chromatography

Summary

In this activity, we will be exploring STEAM, and learning about the science behind a cool art project. When we use markers, we only see them produce one color at a time. By using a technique called chromatography, we will separate the individual colors within a marker that give it its color.

Materials

- Coffee filter
 - Paper towels are a good alternative
- Craft stick or pencil
- Clothes pin
- Washable markers
- Clear cup
- Water

Steps to Follow *(All activities must be done with adult supervision)*

1. *What is a mixture and a solution, how are they different, and can you name and example?*
 - a. *A mixture occurs when you mix two or more things together and a reaction does not occur. If you mix some salt and sugar together you have a mix of both.*
 - b. *A solution is a special mixture that involves a solvent that can dissolve a solute. Imagine a hot cup of tea dissolving a sugar cube or some honey.*
2. Using your markers, draw or write anything you'd like on the coffee filter.
3. We will fold the paper in half 3 times so that it will fit in the cup of water.
 - a. Lay your filter out flat, so that it is a circle
 - b. Fold in half so that the filter resembles a taco shell
 - c. Fold in half again so that the filter resembles a pizza slice (large wedge)
 - d. Fold the large wedge once more so that it resembles a tiny piece of pie (small wedge).
4. Using your clothespin, attach the craft stick to the top of the folded coffee filter on the curved edge.
5. Add a small amount of water into a cup. You will want just enough water so that only the tip is submerged when the filter is placed in the cup.
6. *What happens when the water touches the colored part of the filter?*
 - a. *The colors were pulled from the paper and some blended together.*
 - b. *Chromatography is a technique used in chemistry to extract the contents of a solution by dissolving them. Like dissolves like!*
 - c. *A washable marker gets its name because its ink dissolves easily in water for cleanup, while a permanent marker doesn't dissolve in water.*

