

# Marker Chromatography

Materials needed: Coffee filter or paper towel, washable marker, cup, water, stapler/paperclip

1. Flatten out a coffee filter and draw a thick circle in the middle using a *washable* marker (black and brown work best!)
2. Fold the filter in half twice, then connect the edges with a staple or a paper clip to create a cone.
3. Place the cone in a cup filled with a small amount of water, *with only the tip of the cone touching the water.*
4. Watch the color of the filter change!
5. After a couple minutes, remove your filter from the cup, slide the staple or paper clip out, and lay the filter out on a flat surface to dry.

Note: You can replace the coffee filter with a piece of paper towel of roughly the same size.



Experiment with different colored markers! You can even draw half your circle in one color and the other half in a different color to get a unique design.



# Chromatography Creations

With your dry and colored filters, you can make many different things to display your designs.

## Flowers

1. Layer 2 dry colored filters on top of each other. On the back side of your flower, scrunch up a pinch of the filters and tie into place with a pipe cleaner.
2. Flip the filter over, and you have a flower! Try this method with multiple filters and various colors.



## Butterflies/Bows

1. Lay the dry colored filter flat, then fold it accordion style.
2. Wrap a small piece of pipe cleaner around the middle of the filter. You can use the excess pipe cleaner to create antenna to make a butterfly or attach a bobby pin to the filter to make a hair bow.





# How does it work?

**Chromatography** is used to separate a mixture of pigments.

When the filter is dipped into water, the water carries the pigments from the marker as it moves through the paper. Each pigment moves at a different speed, which is why some colors ends up near the edges of the filter, and others near the middle.

## How is Chromatography used in our Laboratory?

The Michigan Department of Environment, Great Lakes, and Energy and the Michigan Department of Health and Human Services work together to determine which fish are safe to eat.

Laboratory scientists **test fish** for possible chemical contamination using column chromatography. Fish are processed and then added to columns to check for the **presence of chemicals**.

Results are reported in the Michigan Fish Advisory. This advisory is available so that you can see which fish have been tested for chemicals and are **safer for you** and your family to eat.

