

Marker Chromatography

Youth will gain hands-on experience with chromatography and deepen their understanding of how mixtures can be separated into their component parts.

Chromatography – a process for separating components of a mixture. To get the process started, the mixture is dissolved in a substance called the mobile phase, which carries it through a second substance call the stationary phase. The different components of the mixture travel through the stationary phase at different speeds, causing them to separate from one another termed retention time.

**Materials:**

* Primary Solvent (Water)
* Filter Paper cut in strips (Coffee Filter, Rice Paper, or Paper Towel)
* Clear Container to hold the Solvent
* Markers (Water Soluble) – Black and Grey work best
* Scissors
* Optional Solvent (Rubbing Alcohol)
* Towel or Paper Towels to help with clean up

**Instructions:**

1. **Preparation:**
   * Cut Filter Paper into strips.
   * Draw Baseline with marker – make sure the baseline is a few centimeters from the bottom of the filter paper strips
2. **Preparing the Solvent:**
   * Pour the solvent into your clear container. Make a note of whether you are using water or rubbing alcohol
     1. If using Rubbing Alcohol add a few centimeters into container. Making sure to cover the bottom of container
3. **Chromatography Process:**
   * Carefully place the filter paper strips into the clear container, ensuring that the baseline is above the solvent level.
   * Observe how the solvent travels up the filter paper strips carrying the marker pigments with it. It will take a little time at first.
     1. The longer you allow the solvent to travel the more pigments you may see and the more they will spread
4. **Remove and Dry:**
   * Once the solvent has traveled a sufficient distance up the filter paper strips, remove the filter paper and place on a towel or extra paper towels to dry