

FIG at Home

CHROMATOGRAPHY BUTTERFLIES

Create colorful butterflies using markers, coffee filters, and simple science.

MATERIALS

- White coffee filters
- Washable markers
- Glass jar (you can use plastic, but it will be much harder to see the colors travel)
- Clothespins or clips
- Water
- Paper towels or tray
- String
- Optional: pipe cleaners

INSTRUCTIONS

1. Color the middle of a white coffee filter. Make sure to leave plenty of white space at the top for the marker pigment to travel up.
2. Fold the coffee filter in half. Fold it in half again. And then one more time.
3. Fill your jar $\frac{3}{4}$ of the way with water.
4. Dip the bottom $\frac{1}{2}$ - 1 inch of the colored coffee filter into the water.
5. Keep the coffee filter dipped for about 15 minutes. Use clothespins or clip to keep the filter in place.
6. Watch the colors as they travel upwards to the white parts of the coffee filter. This separation of color as it travels through the water and paper is called chromatography.
7. Once the color has traveled to the top of the coffee filter, remove it from the jar. You might be surprised to find almost all of the color has traveled away from the center of the coffee filter to the top. You might also notice that there are colors there that weren't there before. The most surprising is the color black. What happens if you retry this activity and put a big black dot in the middle of your coffee filter?
8. Dry them completely on a paper towel or tray.
9. Once they are completely dry, scrunch or fold the middle portion of the coffee filter together and either tie a string around it or use a pipe cleaner to fasten the butterfly.



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