

Chromatography Butterfly

What do you need?

- 1 white cone-type coffee filter (or a paper towel or other paper cut in a circle)
- 1 water-based marker
- 1 small cup
- water
- 1 pipe cleaner
- Tools: scissors



What to do

1. Using your marker, draw a thick circle around the middle of the coffee filter about 2.5 cm from the bottom of the coffee filter.
2. Fold the coffee filter in half three times to make a cone shape.
3. Put a small amount of water in the cup. You only need a small amount of water and it should not be higher than 2 cm from the bottom of the cup.
4. Unfold the coffee filter a little to spread it out and place it in the cup. Be sure the water is lower than the marker line. If it isn't pour out a little water and try again.
5. Let the filter sit in the water. You should see (observe) the water moving up the coffee filter.
6. Once the water has reached the top edge of the filter, take it out of the cup and let it dry on a piece of paper.
7. When the coffee filter is dry, cut your pipe cleaner in half.
8. Scrunch the coffee filter in the middle and wrap your pipe cleaner around the middle to form a butterfly shape.



What's happening?

The coffee filter paper is made of small wood fibres with spaces between the fibres. The filter paper absorbs the water into the spaces between the fibres (in science this is called capillary action) and the water moves up the filter. Your marker has more than one colour of dye in it and as the water moves past the circle you made, the dye colours get carried by the water and separate out.

All insects, including butterflies, have 3 body parts, 2 antennae, and 6 (3 pairs of) legs. Butterflies have 2 sets of wings – one set near the head called forewings and one near the abdomen called hindwings. What is missing from your butterfly?

Do an experiment: Try the paper butterfly with different types of paper. Does it work with all types of paper you tried? Does it take longer or shorter for the water to move up the paper? Why do you think there are differences (if you observed any differences).