

SCIENCE FESTIVAL FAMILY EXPERIMENT GUIDE: COOL COLORS



Instructions:

Adult: Cut your coffee filter into four strips approximately 4 inches long and 1 inch wide. Pass the strips to your student.

Student: Fill your cup with an inch or two of water.

Student: Choose a black or brown colored marker and draw a horizontal line one inch from the bottom of your

filter strip. (Adults may need to help younger children find the right place)

Student: Drape the strip over the edge of the cup so that the bottom of the strip is just touching the water and the marker line is above the water and not touching it.

Together: Observe what happens as the water soaks up the filter paper.

Together: Follow the same steps with the other color markers.

Questions for after:

K-2nd Grade:

- What happened to each color as the water moved up the paper?
- Why do you think that happened?
- Which colors moved the farthest?

3rd-5th Grade:

- Would this work with every color, why or why not?
- Why did some colors travel farther than others?
- Can you explain why the colors separated?

How It Works:

Colored ink looks like it is made of just one thing when they are really made of many parts, we call this a solution. The water dissolves the ink and carries it along the paper, causing the different chemicals in the solution that make up the ink to be left at different places on the paper. The colors at the top of the paper moved more quickly and the colors at the bottom of the paper moved slowly. The color black isn't really black, but a combination of colors. This is also true of green, orange, brown and many other colors.

Vocabulary:

Chromatography (“color writing”): A way of separating the different-colored chemicals that make up a substance.

Solution: a mixture of 2 or more components or parts.

Real-World Application:

Forensic investigators and chemists can help police departments solve crimes by using chromatography to determine which chemicals started a fire or whether blood samples contain high concentrations of alcohol or other drugs.

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