



## **Science Adventures: Take the Adventure Home**

*Fun hands-on science activities to engage your child in discovery learning  
Developed by Science Adventures' Andy the Science Wiz*

### ***Candy Chromatography***

Look at the ingredients on the back of a packet of M&M's. How many yellow dyes are listed? Why are their 4 yellow dyes in the ingredients but only one yellow colored M&M?

The word "chromatography" is derived from two Greek words: "chroma" meaning color and "graphein" to write. Chromatography is a way of separating chemicals that are combined together in a mixture.

In chromatography the chemicals are dissolved and placed at the bottom of something absorbent like a coffee filter. As water is pulled through the coffee filter by capillary action, the different chemicals will separate out. Some chemicals will dissolve quickly and will travel up the paper with the water while others will want to stick to the paper and stay low. When looking at mixtures of dyes you will see color trails for the different dyes used.

#### **What you will need:**

Bag of M&M's  
Coffee Filter  
Scissors  
Clear plastic cup  
Water

#### **What to do:**

Take the coffee filter and cut it into rectangular strips about 1 inch wide and long enough to reach from the bottom of your cup and fold over the rim.

Fill the cup with about ½ inch of water. Select a color of M&M. Dip the edge of the M&M into the water for a few seconds. While it is still wet draw a colored line across one end of the filter paper about ¼ inch from the bottom. Place the filter paper in the cup so that the bottom touches the water but the colored line is above it. Fold the top end of the filter paper over the rim to hold the filter in place or use a small piece of tape. Let it sit for a few minutes and observe what happens. Repeat for other colors.

How many of the M&M's had yellow in their color? What you are seeing dyes that make up each candy's color separating out on the filter paper pigments of any kind pure color -- they are usually mixtures of pigments give the right hue.



Try this experiment with Skittles!

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*About Andy the Science Wiz*

Andy Allan, scientist and educator with Science Adventures™, is passionate about inspiring a world of learners through hands-on science fun. Through the Science Adventures programs, and experiments like these, Andy offers children hands-on interactions with science that keeping children on the cutting edge of discovery.

*About Science Adventures*

Science Adventures children's Camps take science education out of the classroom to spark an interest in the world of science and discovery. The 2009 summer camps, now open for enrollment, incorporate hands-on, interactive lessons designed to offer children new ways to learn through exploration, teamwork and engaging projects. Science Adventures programs are offered to students ages 5 to 12 years. For more information visit [www.scienceadventures.com](http://www.scienceadventures.com).

