

Candy Experiments

(All experiments taken directly from <http://www.candyexperiments.com>.
Teaching points and lab sheets added by <http://www.10millionmiles.com>.)

M & M Chromatography

What you need:

- A rectangle of coffee filter paper
- Dyed candy such as M&Ms, Skittles, or Reese's Pieces
- A glass filled with a half-inch of water
- A pencil

What to do:

1. Place drops of water on a flat surface, such as a plate, a cookie sheet, or tinfoil.
2. Place candy on water and let color dissolve.
3. Crease the coffee filter paper vertically (to help it stand up).
4. Dab or paint a drop of candy-colored water onto the paper, an inch from the bottom. If you're testing several colors, label each with pencil.
5. Stand the paper up in the water, with the water level below the color splotch. (If the paper doesn't stand, check [here](#) for tips on folding or clipping the paper in place.)
6. Watch the water seep up to the top edge of the paper.

What's happening:

When water seeps up the filter paper, it separates the different colors so you can see them. M&M brown works especially well--the different dyes separate out into a rainbow.

You can try this experiment with anything that contains dye, including juice, markers, or ballpoint pen (that's why it's better to mark your labels with pencil).

Teaching Point: Every science experiment begins with a good question. An "hypothesis" is your smartest guess *before* you do the experiment. The "results" are what really happened in the experiment.

Dissolving Skittles

What you need:

- Identical pieces of candy
- Hot and cold water
- Cups

What to do:

1. Fill one cup with hot tap water and one with cold water (for better results, add ice cubes).
2. Put one candy in the hot cup and one in the cold cup.
3. Watch to see which dissolves faster.

What's happening:

Because molecules move faster when it's hot, the candy in hot water dissolves much faster. The candy in ice water might take all night to dissolve.

With chocolate, the difference is even more impressive. Since the cocoa butter in chocolate doesn't dissolve in water, chocolate placed in cold water just sits there. But chocolate in hot water melts and mixes with the water.

Teaching Point: When you do an experiment, make sure that you treat everything equally. We are going to use the same size containers with the same amount of water, so that the only thing that's different is the temperature of the water. We are also going to place equal amounts of Skittles in each container. Then we'll know for sure that one group dissolved faster only because of the water temperature!

Sink-or-Float Candy

What you need:

- Different kinds of candy, such as chocolates, sugar candy, 3 Musketeers bar, Kit Kat bar
- water

What to do:

1. Drop the candy in the water.
2. Watch what happens: does it sink or float?
3. If you have a 3 Musketeers bar, poke it to break the chocolate shell. Do you see bubbles escaping?

What's happening:

Some kinds of candy, such as Kit Kats, 3 Musketeers, and marshmallows have air trapped inside. This makes them float.

Teaching Point: When we do experiments, it's important to keep good records of our process *and* results. Let's carefully attach the wrapper of each candy in the left hand column and mark the results in the correct row.

Acid Test

What you need:

- Fruit-flavored or sour candy, such as LemonHeads, Nerds, WARHEADS, or sour gummy candy
- Baking soda

What to do:

1. Dissolve the candy in a half-cup of water.*
2. Sprinkle a spoonful of baking soda into water.
3. Watch for bubbles. If it bubbles, the candy is acidic.

What's happening:

When you dissolve acidic candy in water and add baking soda, the reaction produces carbon dioxide gas. This is what makes the bubbles.

For more fun, try testing candy like Skittles, StarBursts, or Sweet Tarts. Do these candies contain as much acid as really sour candies?

*If the candy is taking too long to dissolve, try crushing it first. You can also get quick results using Pixy Stix or candy covered by sour powder.

Teaching Point: It's important to make a "control" when doing a science experiment. All you have to do is set up the experiment *without* the thing that you're wondering about. That means, you'll put candy in a bowl of water *without* adding baking soda. Observe what the water does to that candy. That is your "control". Then, when you add baking soda to another bowl of candy and water, you'll see the difference and know what the baking soda did vs. what the water did.

M & M Chromatography

Question: Which colors are mixed to make a brown m&m?

Hypothesis:

Results:

Dissolving Skittles

Question: Do Skittles dissolve faster in hot or cold water?

Hypothesis:

_____ Hot _____ Cold

Results:

_____ Hot _____ Cold

Sink-or-Float Candy

Question: Does the candy sink or float?

| Candy | Sink | Float |
|-------|------|-------|
| | | |
| | | |
| | | |
| | | |

Acid Test

Question: Does the candy have acid in it? (Does it bubble when we add baking soda?)

| Candy | Bubbles | No Bubbles |
|--------------|----------------|-------------------|
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