STEM in the PARK™

Science, Technology, Engineering, and Mathematics

Coffee Filter **Butterfly**

Materials Needed:

- 1 Coffee filter per butterfly
- 1 Pipe cleaner per butterfly
- Water Sprayer or a bowl of water
- Markers that are non-primary colors

What To Do:

1. Take a marker and draw anywhere on your coffee filter (several circles around the middle is suggested or you can try a different pattern as long as both sides match).

2. Once you have finished coloring, carefully spray your coffee filter with water or dip it into the bowl of water. If dipping the butterfly into a bowl of water, be sure not to get the marker directly wet. Also, be sure not to soak the coffee filter, it should simply be damp.

3. Watch as the colors separate.

4. Once colors have fully separated, take your pipe cleaner and carefully find the middle of the coffee filter so that each side is the same (symmetrical). Then, wrap the pipe cleaner around the middle of your coffee filter. You can then curl the ends of the pipe cleaners to make them look like antennas.

Observe...

1. What happened when you got the colors wet?
2. What colors and shapes do you see now?

Learn...

Science: This lesson demonstrates color separation. Color separation is when a color breaks into one of the three basic colors, also known as primary colors. These colors are red, yellow and blue. These colors are called primary because you can make all of the other colors by mixing primary colors. For example, you can make purple from blue and red. By doing this activity, you are able to see what colors you can make from primary colors.

Math: We made our coffee filters into butterflies. This is because butterflies are symmetrical. To be symmetric means both sides are exactly the same. Another way of thinking about symmetry is a reflection. Obviously our butterflies are not exactly symmetrical, however real butterflies are! Can you name other things that are symmetrical?

Investigate...

Take your butterfly home and try making one at home using a different color marker. What colors do you see? Does this make sense? How would you be able to make a symmetrical butterfly?

This activity is brought to you by the Science and Math Education in Action program at BGSU.

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