Shrinking Plastics

Collect

- Oven or toaster oven
- #6 clear plastic
- Scissors
- Sharpies of various colors
- Single hole punch
- Parchment paper or Silpat baking mat
- Baking sheet
- Oven mitts
- Metal spatula or turner
- Trivet or cooling rack
- Adult safety partner

Prep your materials

1. Collect several peices of clear #6 plastic. This type of plastic is often used to make clam-shell containers used by bakeries and restaurants.
2. Wash the plastic well with soap and water. You want to make sure there is no greasy residue before you begin your project.
3. Preheat your oven to 350°F. If using a toaster oven, set it to bake before preheating.

Get creative

1. While the oven heats, cut a large shape out of your #6 plastic container. This will work best with a flat piece, like from the lid of a takeout container. You will want to make sure you cut a large enough shape—2”-3” long, so you have plenty of space to draw and decorate.
2. Decorate your plastic! Write a message to a friend or draw some colorful shapes. This is your canvas, so get creative.

TIP: Turn your shape into a charm for a bracelet or necklace by punching a hole at this step.

Bring on the heat

1. Cut a piece of parchment paper and line your baking sheet or lay down a Silpat mat on your baking sheet.

2. Lay the plastic shapes on the baking sheet, leaving space between each shape. This is important becasue if the shapes overlap while heating, they will stick to one another!
3. Once the over is at temperature, you are ready to shrink your plastic! Place the baking sheet inside the oven, close the door, and watch the plastic shrink. Notice how it curls as it shrinks down—don't worry, it will flatten back out.
4. After 30-60 seconds, the plastic will stop shrinking, flatten down, and you can remove the baking sheet from the oven and place it on a trivet or cooling rack.
5. Allow your shapes 20 seconds to continue cooling before using a spatula to pick up. The plastic will be warm, but no longer hot to the touch. Now you have your very own plastic shrinky charm!

What's happening?

You have just experienced a thermoplastic! The molecules of a thermoplastic are strongly bonded together when they are cold but loosen when heated. Because the molecules have been stretched from their original positions, there is potential energy in these types of molded plastics, similar to the stretch in a rubber band. As soon as the bonds that hold the molecules in place release, they will relax back to their original position; in this case, that is a much thicker piece of plastic with less surface area.