Objective
Tie-dye fabric using dyes made from Kool-Aid™ and vinegar.

What You Need
Packets of unsweetened Kool-aid ™ in dark colors
Vinegar
Small bowls
Warm water
Rubber bands or string
12-inch square pieces of white cotton fabric
Stir sticks/spoons
String or wire, and clothes pins or paper clips (to hang your masterpiece up to dry).
Tray or pie pan (as a "splash" collector)
Gloves (optional)
To Do and Observe
Make your dye – for each color:
1. Pour ½ cup of warm water into a small bowl.
2. Add ½ cup of vinegar.
3. Add 2 packages of Kool-Aid™
4. Stir the ingredients to mix.
5. Place the small bowl in the tray or pie pan.

Prepare and dye your fabric:
1. Fold and twist the square of white fabric.
2. Use rubber bands or string to tightly hold the twisted fabric in place. Complicated twisting will make interesting dye patterns. Experiment.
3. Dip the cloth into a bowl of dye. Squeeze excess dye back into the bowl.
4. Remove the string or rubber bands.
5. Hang the fabric square to dry.

What's Going On
Dyes are substances that color materials. All dyes are compounds made of molecules. Material may absorb the dye or a chemical reaction between the molecules in the dye and material may bind the dye to the cloth. A mordant is a substance that helps fix the dyes to the material so that the color does not fade. In this activity, Kool-Aid™ is used to dye cotton cloth. The colored molecules in Kool-Aid™ form a chemical bond between the fiber and dye molecules. The mordant added is vinegar, a traditional fixing reagent, which helps bind the dye to the cloth. This mordant is not strong enough to hold the dye permanently - it works better for art pieces than for clothes such as t-shirts.
Parent/Teacher Tips
Try natural dyes made from fruits and vegetables. Frozen blueberries, blackberries, and beet juice work well. Prepare dyes by blending the fruit or vegetable in a food processor and filtering off the pulp. The resulting liquid makes a dye. Try dyeing hard-boiled eggs with Kool-Aid™, dyes, etc. Try tie-dyeing t-shirts by following the directions on commercial fabric dyes.