Candy Corn Chemistry

Simple Science Activity

Purpose:	In this activity, students will investigate changes in matter using a seasonal favorite – candy corn.
Standard(s):	**S5P1. Obtain, evaluate, and communicate information to explain the differences between a physical change and a chemical change.** a. Plan and carry out investigations of physical changes by manipulating, separating and mixing dry and liquid materials. **S8P1. Obtain, evaluate, and communicate information about the structure and properties of matter.** d. Construct an argument based on observational evidence to support the claim that when a change in a substance occurs, it can be classified as either chemical or physical. (Clarification statement: Evidence could include ability to separate mixtures, development of a gas, formation of a precipitate, change in energy, color, and/or form.)
Materials:	For each group: • 3 plastic cups • Permanent marker • Cooking Oil • Vinegar • Water • Candy corn
Procedures:	1. Start by labeling one cup "water". Then fill the cup about half full with water. 2. Label the second cup "Oil". Fill the second cup about halfway with cooking oil. 3. Label the third cup "Vinegar". Fill the third cup about halfway with vinegar. 4. Add a piece of candy corn to each cup. 5. Observe.
Science Behind It:	Candy corn is a "mellow creme" meaning that is made from corn syrup and sugar that has a marshmallow-like flavor. This is injected into a mold in three colors (white, orange, and yellow) and then allowed to sit for 24 hours until it hardens. After it hardens, the candy corn is coated with a confectioners glaze of oil and edible wax to make it shiny.

	All matter is made up of molecules. Molecules are held together by the bonding of positive and negative charges. To dissolve something, the molecules in a solid and the molecules in a liquid need to be attracted to each other using these positive and negative charges. If the molecules are not attracted to each other, the solid will not dissolve. The sugar in the candy corn and the water both have positive and negative charges that attract each other. Eventually, the water will break all the bonds between all the sugar molecules in the candy corn causing it to completely dissolve. The vinegar molecules can't attract the sugar molecules as well, so the candy corn doesn't dissolve well in vinegar. The oil molecules have no positive or negative charges, so the candy corn does not dissolve at all in oil.
Questions to Ask:	• What will happen when we put the candy corn in the various liquids? • What would happen if the liquids were hotter? Colder? • What do you think would happen if we used another type of candy?