A STEM in the Park Take Home Activity

STEM in the PARK™

Science, Technology, Engineering, and Mathematics

Color Mixing Experiment

What you Need:

- Recycled water bottle/soda bottle
- Tape (to secure bottle lid)
- Funnel
- Baby oil/cooking oil
- Water
- Salt
- Candy colors (oil-based food coloring)
- Food colors (water-based food coloring)
- Small mixing bowls
- 2 Spoons/mixing tools

Vocabulary:

- **Primary Colors**: a group of colors in which all other colors can be created by mixing (red, yellow, and blue).
- **Secondary Colors**: a color created by mixing two primary colors. (Orange, green, and purple)
- **Tint**: a color mixed with white.
- **Shade**: a color mixed with black.
- **Density**: the compactness of a substance.

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Pre-Experiment Discussion:

1. Explain the 3 **primary colors**: red, yellow and blue.
2. Ask the child what they think will happen when 2 primary colors are mixed (will create a **secondary color**: orange, green, or purple).
3. Ask the child what they think will happen when you mix oil and water together.

Procedure:

1. To begin, choose 2 **primary colors** and set aside. (One must be water-based, the other oil based.)
2. Pour equal parts oil and water into separate mixing bowls.
3. Beginning with water, mix 2-3 pinches of salt until dissolved.
4. Add several drops of a chosen **food color** to the salt water and mix well.
5. Add several drops of another **candy color** into the oil and mix well.
6. Place the funnel inside the empty bottle and pour in entire water mixture.
7. Pour in entire oil mixture. **Ask the child what happened when the oil was poured into the water. Did they mix?**
8. Secure bottle lid with tape and have the child shake and move it about.

Post Experiment Discussion:

1. Ask the child what color was made when the contents in the bottle were shaken. (Explain that this is a secondary color.)
2. Ask the child what happens to the oil and water after they are done shaking it.
3. Ask the child which floats to the top, oil or water? Explain **density** and how oil is less dense than water, which is why it floats. Salt water is even less dense than water.

This activity is brought to you by the Family Center at the Toledo Museum of Art