

A STEM in the Park

Take Home Activity

STEM

in the **PARK**™

Science, Technology, Engineering, and Mathematics

Colors on the MOOOoove

What you Need:

- 1/4 cup Whole Milk
- A shallow bowl
- Liquid dish detergent
- Food coloring (red, yellow, blue)
- Cotton swab



What To Do

1. Pour your milk into the shallow bowl
2. Gently add 1 drop of each color of food coloring in 3 different places
3. Do not disturb the bowls
4. Gently dip a clean cotton swab into the center of the milk in the bowl – What happens?
5. Now dip the other end of your cotton swab into the dish detergent, and then carefully touch the center of the milk with the tip of swab with dish detergent. What happens?

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Learn:

- The color of a substance can help scientists determine what the substance might be. Color changes also can help scientists understand information about what type of chemical reactions may be taking place and about the what the products of the reaction might be.
- Chemists suspect that the swirling of colors in the milk toward the edges of the bowl when the detergent swab is touched in the milk is due to way the detergent molecules surround the tiny fat globules in mile.

Investigate...

Try the same experiment with skim milk, 2% low fat milk, and half & half. Rank these different milk products in terms of fat content. Also note how much the colors spread in each type of milk when you add them dropwise. Finally order them from least to greatest amount of movement and change you see in the colors when you dip the dish detergent tip in the bowl. Is there a relationship?

This activity is brought to you by the Toledo Local Section of the American Chemical Society

