

# APPLY IT TO AG!

Your Directions to Ag Connections

# USE SCIENCE TO MAKE MAGIC MILK

Learn about science by using common kitchen items to turn milk into a rainbow.

## Materials:

- Clear, shallow dish or bowl
- Milk (whole or 2%)
- Liquid food coloring (the more colors the better)
- Dish soap
- Q-Tips

## Background Information:

- There are three states of matter: solid, liquid and gas. Milk is a liquid.
- Liquids have a property known as surface tension, due to the cohesive forces of the liquid's molecules.
- Milk is homogenized (the fat is broken up into tiny pieces and blended back into the milk).
- Adding dish soap weakens the milk's bond by attaching to its fat molecules. As the dish soap diffuses into the solution, it surrounds the fat in the milk.

## Directions:

- Pour a thin layer of milk into a clear container enough to cover the bottom.
- Add 3-4 drops of each color of food coloring to the milk. Try not to mix the colors.
- Predict what is going to happen when you put a Q-Tip soaked in dish soap into the milk.
- Place a drop of dish soap on the Q-Tip. Put the Q-Tip in the center of the dish with the milk in it. Gently place it around the milk but DO NOT stir.
- Notice that the food coloring streams away from the point where the soap touched the milk and the colors in the milk continue to move, even when the Q-Tip is removed.
- Place the Q-Tip in different places in the milk and watch in amazement as the colors move across the surface.
- Write your responses to the questions on the Use Science to Make Magic Milk Worksheet on the next page.

