

# Make a Color Explosion in Milk!



Here is a mesmerizing activity. We've done this before and it never fails to captivate us! All you need is milk in a bowl, food dye, detergent and a Q-tip. You place a few drops of dye into the milk, dip the Q-tip into detergent and then very gently place the Q-tip into the water. The colors start racing around. The kids then dipped their Q-tip into the detergent again and gently placed it back in the milk in a different spot. The colors start moving and swirling about. It's really pretty to watch!



The action in this experiment is a bit complex. Our chemistry book showed how soap molecules have different properties. Our book explained it as one end being "oil-like" and the other, "water-like." Oil dissolves in the oil-like ends of the soap and becomes

surrounded by the water molecules. This experiment shows the movement of molecules as the fat molecules are interacting with the soap detergent molecules.

Steve Spangler explains this milk experiment this way,

“The molecules of fat bend, roll, twist, and contort in all directions as the soap molecules race around to join up with the fat molecules. During all of this fat molecule gymnastics, the food coloring molecules are bumped and shoved everywhere, providing an easy way to observe all the invisible activity. As the soap becomes evenly mixed with the milk, the action slows down and eventually stops.

Other sources explain that other factors are at work here such as breaking the surface tension of the liquid, etc. If your child is older you could discuss those other factors as well.

At any rate, it's a colorful fun experiment to do with anyone from pre-K on up. Who doesn't like watching colors swirl and whirl?!

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