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What in the World?: Exploding Milk Colors

What do you need?: One pie plate, whole milk (about a cup), 3-4 different colors of food coloring, one bottle liquid soap.

What you do: Fill the pie plate with milk and allow it to come to room temperature. Add a few drops of food coloring to milk. Put a single drop of liquid soap in the middle of your plate, and watch your milk colors explode!

Tips: Ask: "How much milk should we use? What colors do you want to add? How many drops of blue are you going to use? What do you think will happen?"

Why this works: milk contains fats and proteins in solution. Any change in the solution (adding soap) affects these fats and proteins. The soap makes the fats and proteins twist, bend and change into all kinds of shapes. The soap has weakened the surface tension, which is the watery skin that holds the liquid's molecules together. When they move they mix the colors. Ask "What happened to the colors? Do you see new colors now? Why do you think the colors move?"

Value: Emotional — Satisfaction and enjoyment.

Physical — Sensory explorations of color, texture and shape.

Science Rocks — Prediction, experimentation, vocabulary, color awareness, changes in physical properties.

Variations: Write down predictions and results. Try with water, with skim milk, with cream, with Sprite, with cold or hot milk. Do you get the same results? Document the differences.

We did it!

Name

Signature/Stamp