

Activity Instructions

The carton of milk or cream must be removed from the refrigerator and brought to room temperature before performing the *Swirly Whirly Milk* activity. It should take approximately two hours to bring the milk or cream to room temperature.

The following items are needed for the activity:

- a shallow dish - a clear dish is best, to be able to see what is happening under the surface of the liquid, but a shallow bowl, aluminum pie tin, or plastic or paper bowl will work as well
- a 500 mL carton of whole milk (3.25%) at room temperature - milk with higher fat content works best
- food colouring - four different colours will lead to a more colourful demonstration
- liquid dish soap - enough for 3-4 drops
- a flat and stable desk - shaking and movement of the desk should be avoided so that the *Swirly Whirly Milk* solution is not disrupted before the soap is added
- two to three cotton swabs
- a cup of water

Step 1

Carefully pour the room temperature milk into the shallow dish forming a layer about 1/2 in. (1 cm) deep, enough to completely cover the bottom of the dish (**Figure 1**).



Figure 1



Figure 2

Step 2

Put one drop of each of the four food colouring colours onto the surface of the milk, placing all of the colours in the centre of the dish, as in **figure 2**.

Step 3

Dip a cotton swab into the glass of water to wet the tip of the swab. Gently touch the milk solution with the wet tip of the cotton swab, while ensuring that the mixture is not stirred (**Figure 3**). At this point, nothing should happen to the colours.



Figure 3

Step 4

Place a drop of liquid dish soap on the end of another cotton swab. Place the soapy end of the cotton swab into the middle of the milk and hold it there for 10 to 15 seconds. Watch the burst of colour (**Figure 4**).



Figure 4

Step 5

Add another drop of soap to the tip of the cotton swab and try it again. Experiment with placing the cotton swab at different places in the milk (**Figure 5**).



Figure 5