

Lesson 2: Milk Quality & Safety

Color Explosion Lab

Introduction

Milk is tested up to 17 times before it reaches the grocery store shelf to ensure it is safe for you to drink. Milk is tested for quality and safety at the farm level, in route to the dairy processing plant, and at several points during processing. It is tested to make sure it doesn't contain any harmful contaminants and is safe to drink.

In this lab, students will simulate testing milk. Students will test how milk reacts when food coloring is added to it. It takes a special ingredient to change the color of milk.

Materials Needed

- Milk (whole and Fat-Free)
- Water
- Food Coloring
- Paper Plates or Bowls
- Dishwashing Liquid
- Cotton Swabs

Procedure

As the students complete each step, have them answer the guiding questions to record what happens in this lab experiment.

1. Together, pour water in a bowl or plate. Drop food coloring into water. Record what happened on the handout (When food color is added to water, the water changes colors.).
2. Pour whole milk in a separate bowl or plate.
3. Put 2 – 3 drops of food coloring into whole milk.
4. Dip a clean cotton swab into the food coloring in the milk.
5. Then dip the cotton swab in dishwashing detergent liquid.
6. Touch the coated swab to the food coloring in the whole milk.
7. Do not stir the milk.
8. In a separate bowl or plate, pour fat-free milk in another bowl or plate.
9. Put 2 – 3 drops of food coloring into fat-free milk.
10. Dip the other end of the cotton swab in dishwashing detergent liquid.
11. Touch the coated swab to the food coloring in the fat-free milk.
12. Record the differences between the whole milk and fat-free milk reactions.
13. Complete the rest of the questions on the lab sheet.