



## MILK BUBBLES

### SCIENCE SAFETY

PLEASE follow these safety precautions when doing any science experiment.

- **ALWAYS** have an adult present.
- **ALWAYS** wear the correct safety gear while doing any experiment.
- **NEVER** eat or drink anything when performing any experiment.
- **REMEMBER** experiments may require marbles, small balls, balloons, and other small parts. Those objects could become a **CHOKING HAZARD**. Adults are to perform those experiments using these objects. Any child can choke or suffocate on uninflated or broken balloons. Keep uninflated or broken balloons away from children.

### INGREDIENTS

- Two Transparent Glasses
- Skim Milk
- Whole Milk
- Two Straws
- Ruler

### INSTRUCTIONS

**STEP 1:** Fill one of the transparent glasses one-fourth of the way with skim milk. Fill the other transparent glass one-fourth of the way with whole milk. Is the milk a solid or a liquid and why? Describe the milk in each glass by using its observable properties.

**STEP 2:** Place a straw in each glass. At the same time, have a friend blow through the straw into one of the glasses of milk, while you blow through a straw into the other glass of milk and observe.

**STEP 3:** Using a ruler, measure the height of the pile bubbles produced from blowing through the straw into each glass. Which type of milk produced the tallest pile of bubbles? Using these measurements, describe the differences between the skim milk and the whole milk. Which milk would be better for creating a cappuccino and why?

### EXPLANATION

The protein in the milk allows the bubbles to form a strong skin. While the whole milk creates some bubbles, the skim milk create more bubbles. The reason, the fat in the whole milk interacts with the proteins, which weakens the skin of the bubbles, allowing the bubbles to pop faster.



### SCIENCE BACKGROUND

Matter is anything that has mass and takes up space. Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties.

Measurements of a variety of properties can be used to identify materials. Different properties are suited to different purposes.

### I CAN STATEMENTS

- I can plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- I can analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.
- I can make observations and measurement to identify materials based on their properties.

### NEXT GENERATION SCIENCE STANDARDS CONNECTION

2 – Structure and Properties of Matter

5 – Structure and Properties of Matter

