

Name:

Date:

## Experiment: Fat in Food Milk Race



### Equipment

Glass tube with scale (50 mL) or burette, beakers, funnel, stopwatch

### Materials

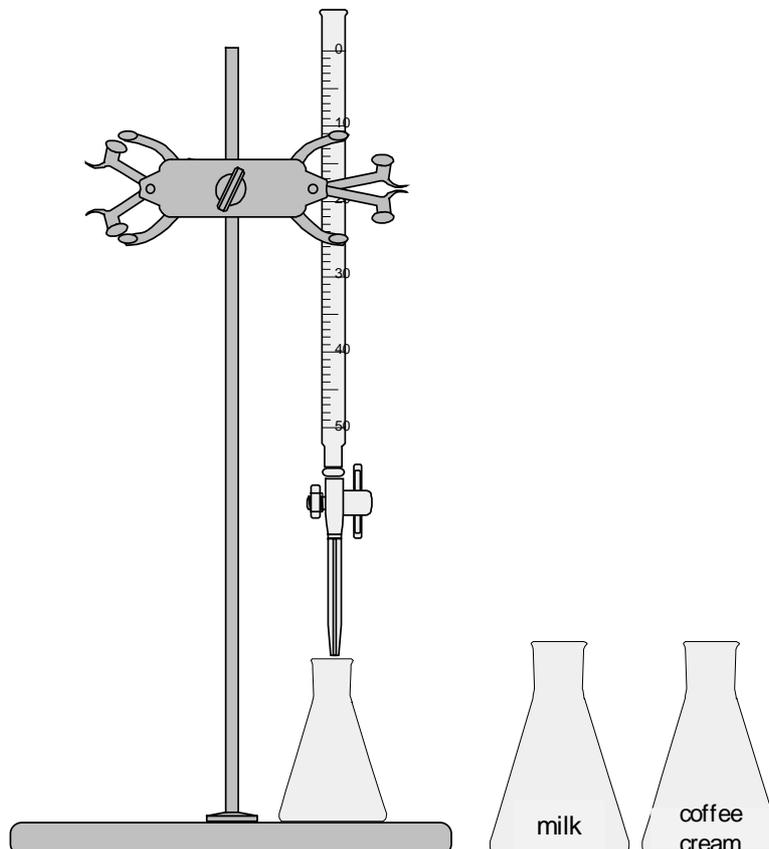
Food products: UHT skimmed milk (0.1% fat), UHT coffee cream (12% fat)

### Introduction

When shopping for groceries, you have certainly noticed that there are different types of milk. In addition to “normal” whole milk, there is low-fat and skimmed milk, but also cream and coffee cream. Have you ever wondered whether there is an easy way to distinguish the different types of milk? Why not try the following racing competition: A low-fat contestant will compete against a high-fat candidate. Skimmed milk (0.1% fat) challenges coffee cream (12% fat).

The race track is not only short, but also very narrow. Milk and coffee cream have to pass through a glass tube. The winner is the type of milk that needs less time to move completely through the glass tube.

### Experiment



For this experiment you should work in teams of at least two pupils!

1. Make sure that the tap at the lower end of the glass tube is closed.
2. Fill the glass tube with skimmed milk. On the tube, you can see a scale of 0 to 50 ml. The milk should be filled until it reaches 2-3 cm above the zero mark.
3. Now one of you should open the tap; the other one has to use the stopwatch to measure the exact (!) time the milk needs to flow from the zero mark to the 50-ml mark. Repeat the measurement 2 more times.
4. Repeat the experiment with coffee cream.

## Observation

	Time required for the 50ml distance in seconds
Skimmed milk	
Skimmed milk	
Skimmed milk	
Coffee cream	
Coffee cream	
Coffee cream	

Who won the race?

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What do you think, why do milk and coffee cream flow at different speeds?

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