

Name _____



Curds & Whey

*Little Miss Muffet, sat on a tuffet,
Eating her curds and whey;
Along came a spider, who sat down beside her
And frightened Miss Muffet away.*



Most of us have known this nursery rhyme since we were very young. But how many of us have ever seen curds and whey? Let's investigate the chemistry of curds and whey and find out what they really are.

Goggles on during this investigation!
You will be using heat and vinegar.



Problem: To investigate the chemical reaction that occurs in the making of curds and whey.

Materials:

Vinegar	Hot plate	Beakers (2)
Skim milk	Eye dropper	Spoon
Cheesecloth	Wax paper	

Procedure:

1. Your teacher will give you a beaker of skim milk that has been heated to about 50°C. Observe the milk and record your observations.
2. Add a few squirts of vinegar.
3. Stir gently. Observe and record.
4. Use the cheesecloth to strain the mixture into another beaker.
5. Gently squeeze out the remaining liquid.
6. Put the solid on the wax paper.

Observations:

What Happened?

A chemical reaction occurred. You separated the skim milk into compounds called proteins.

The vinegar (an acid) reacted with certain proteins in the milk to turn them solid (curds), leaving most of the water behind (whey).

The result was a mixture that was easy to separate.

The solid part, (the curds) are mostly a protein called casein. If the casein is left to dry, it will form a hard plastic-like substance.

Casein was used to make buttons before WWII.

The curds can also be combined with baking soda to make glue.

Expansion: This investigation was **descriptive**. If we were to design a true experimental investigation on the same topic, what is a possible independent variable? What dependent variable would be measured in your experiment?

**Independent variable
(I could change)**

**Dependent variable
(I could measure)**
