

The Science Lab

DOES THE TEMPERATURE OF MILK MATTER?

You will need:



60 ml milk (fresh)



3 ml curd



3 beakers/bowls

What to do:

1. Label the beakers 1, 2 & 3 respectively.
2. Pour 20 ml of:
 - a. Refrigerated milk in beaker 1.
 - b. Boiling-hot milk in beaker 2
 - c. Milk that is warm enough to touch in beaker 3.
3. Add 1 ml each of curd to the three beakers.
4. Mix the contents of each beaker well with separate spoons.
5. Leave the 3 beakers at room temperature.
6. Test the contents of the beakers (for smell/runniness/smudge & pH) after 10 minutes, 4 hours, and 6 hours respectively.

1



Warm milk + curd
37 - 40°C

2



Hot milk + curd
> 45°C

3



Cold milk + curd
4-10°C

4



Milk only

Observe:

Are the contents of the beakers different in any way? Record your observations in the table.

Beaker	Time	Did you get curd? (Y/N)	Other observations
1.	After 10 min		
	After 4 h		
	After 6 h		
	After 12 h		

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2.	After 10 min		
	After 4 h		
	After 6 h		
	After 12 h		
3.	After 10 min		
	After 4 h		
	After 6 h		
	After 12 h		

Discuss:

1. Is the initial temperature of milk important in curd formation? In what way?

2. Is the beaker with cold milk any different from the one with boiling hot milk after 6 h? How, and why?

3. Do you think you'd get different results if you increased the volume of starter curd you added to the beakers with milk in Step 3? Why? Can you think of an experiment to test your prediction?

4. Do you think you'd get different results if you incubated the milk in Step 5 at warmer ($\sim 37^{\circ}\text{C}$) or cooler ($\sim 4\text{--}12^{\circ}\text{C}$) conditions? Why? Can you think of an experiment to test your prediction?

