

Race to Freezing Point

This is an experiment with hot and cold water. If you could pick a winner between hot and cold water, which one would it be? Let's put them in a race and see who wins. Let's see which one will freeze first.

Guess first - which one do you think it will be and why?

Ok, now let's test out your theory.



Materials:

Measuring jug

Cold water – ½ metric cup or 125ml

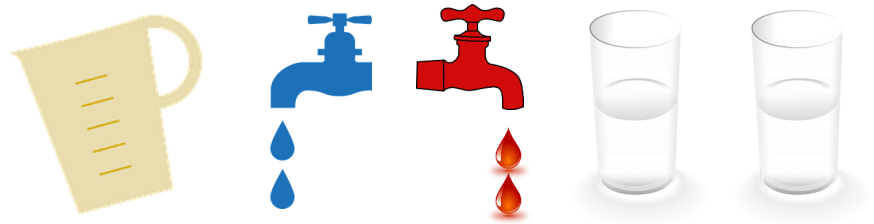
Hot water – ½ metric cup or 125ml

2 plastic cups and a spoon

A texta/paper strip and sticky tape

Clock

A freezer



Method:

1 – Grab your texta and write C on the cold cup and H on the hot cup. If you cannot write directly on the cup you are using, put a thin strip of paper around the cup and sticky tape it to the cup to write on.

2 – Measure out your cold water and place it in a cup. Now do the same for the hot water.

**** Please be careful when handling hot water****

3 – Grab your spoon and stir each one 3 times.

4 – Grab each cup and place them next to each other in the freezer.

5 – Observe the clock: note the time the cups go in the freezer. Check on your cups every 5-6 minutes.

Observations:

What is happening to each cup? Is there a difference between the hot and cold water?

Questions:

How do I know when my water is frozen? Look for ice crystals, the water will no longer be a liquid but will be a solid mass and the cup will be less flexible (if plastic cup is used) where the ice has formed.

The outcome:

Did the water behave the way you expected it to?

Research "Does Hot Water Really Freeze Faster Than Cold Water?" online.

When hot water is placed in a container without a lid and begins to cool, the overall mass of the water decreases. This is because some of the water evaporates. With less water to freeze, the process can take less time.