



<b>Topic:</b> Materials: States of matter	<b>Year 4</b> Age 8-9	<b>Title:</b> Measuring temperature
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<p><b>Working Scientifically</b>  <b>Do:</b> Take accurate measurements using standard units, using a range of equipment including thermometers and data loggers</p> 	<p><b>Concept Context</b>          Understand temperature of materials can be measured in °C</p>
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**Assessment Focus**

- Can children use a thermometer to measure temperature accurately?

**Activity** *Today we are being chemists*  
 Ask children to put one hand in cold and one hand in warm water, then put both in tap water. What do you think the temperature of the water is for this hand, for that hand? How accurate is your hand? Need a thermometer.  
 Demonstrate accurate reading: keeping thermometer in the water, head down to the level, explain how to use the scale, how to estimate numbers between lines and what accuracy to aim for (e.g to nearest 1 or 5 degrees C.)  
 Carousel of measuring temperature - explore different ways to measure temperature e.g. thermometer in water, digital thermometer, forehead thermometer, data logger. Observe children's measurement using thermometers in water. Children could work in pairs and peer assess each other's measurements.  
 NB. Ensure that you do not use boiling, or very hot water (max. 50°C). 

**Adapting the activity**  
**Support:** Ask to measure to the nearest number on the scale.  
**Extension:** Ask to repeat measures and suggest reasons for any similarities or differences.

**Questions to support discussion**

- Where are you holding the thermometer?
- What happens when you put the thermometer in colder/hotter water?
- Which thermometer do you think is the most accurate?
- Has the temperature changed? How? Why?

cold tap water	20°C
Air	21°C
Hot tap water	28°C
Hot coffee	31°C
my fist	29.3°C
cold water	3°C

**Assessment Indicators**  
**Not yet met:** Recognise there are different ways to measure temperature. Takes measurements, but may need support to read scale. May not be consistent in their readings, e.g. need to be reminded to keep thermometer in water.  
**Meeting:** Make reasonably accurate measurements of temperature independently using correct units of measurement.  
**Possible ways of going further:** Can explain advantages and disadvantages of different measuring equipment, e.g. inaccuracy of forehead thermometer. Suggests other factors affecting readings (where held) and ways to improve measurements (repeat readings).

 Pupil box 4 - assess peers. See TAPS pyramid for more examples.