

STATES OF MATTER (teacher's notes)



LIQUIDS

About liquids:

- Liquid molecules are not so tightly packed together as in solids, but they are close together (they stick to one another), the forces between liquid molecules are weaker than the forces between solid molecules. Liquid molecules move around and change places, the molecules in a liquid can move about more than in a solid and less than in a gas.
- A river is a good example of water changing its shape to fit the space available.

Thermometers:

- Galileo invented the thermometer.
- The normal body temperature of a person is 37° C and we have a temperature if the body heat goes up past 37° C.
- From the Catalyst Science Discovery Centre (Widnes, England) explaining the photograph below: “The thermometer is made of samples of liquid crystals which are sensitive to different temperatures. Liquid crystals are widely used in thermometers for fish tanks, freezers and for taking the temperature of babies.”

	
	See the imprint of a hand after it had been in contact with the surface of the thermometer.

Activity 1: Observe, touch... different liquids and then complete the table below. Use a tick (✓) or a cross (×).

Provide them with different containers (wide and flat, narrow and tall...) to help them to realize that liquids take the shape of any container, but the volume of liquid or the space they need is the same.

Activity 4: Let's dilate a liquid, let's make a thermometer.

C) The water moves up the straw when we heat it and the water moves down the straw when we cool it.

D) Because the liquid and the air inside the bottle expand when we increase the temperature and they contract when we decrease the temperature.

Activity 5: After observing, touching, imagining, drawing, measuring... the whole class is ready to define what a liquid is.

- Liquids need a container to keep their shape because they flow, because of this you can't hold a liquid.