

3 Fig. 3.1 shows a small block of ice floating in a beaker of warm water.

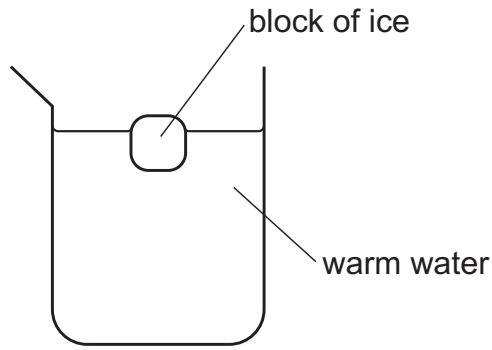


Fig. 3.1

(a) State **one** way in which the motion of the particles in ice differs from the motion of the particles in water.

.....
..... [1]

(b) Energy is transferred from the water to the block of ice.

(i) State the name of the thermal process that transfers energy from the water to the ice.
..... [1]

(ii) Initially, there is 0.34 kg of water in the beaker. The specific heat capacity of water is $4200 \text{ J}/(\text{kg}^\circ\text{C})$.

Calculate the energy transferred from this water as its temperature decreases from 28°C to 10°C .

energy transferred = [2]

(iii) The temperature of the water near the ice decreases first.

Explain how convection causes the temperature of all the water in the beaker to decrease.

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.....
.....
..... [3]

(iv) State what happens to the internal energy of the water as the temperature of the water decreases.

Describe the change in terms of the energy of the particles.

.....
.....
..... [2]