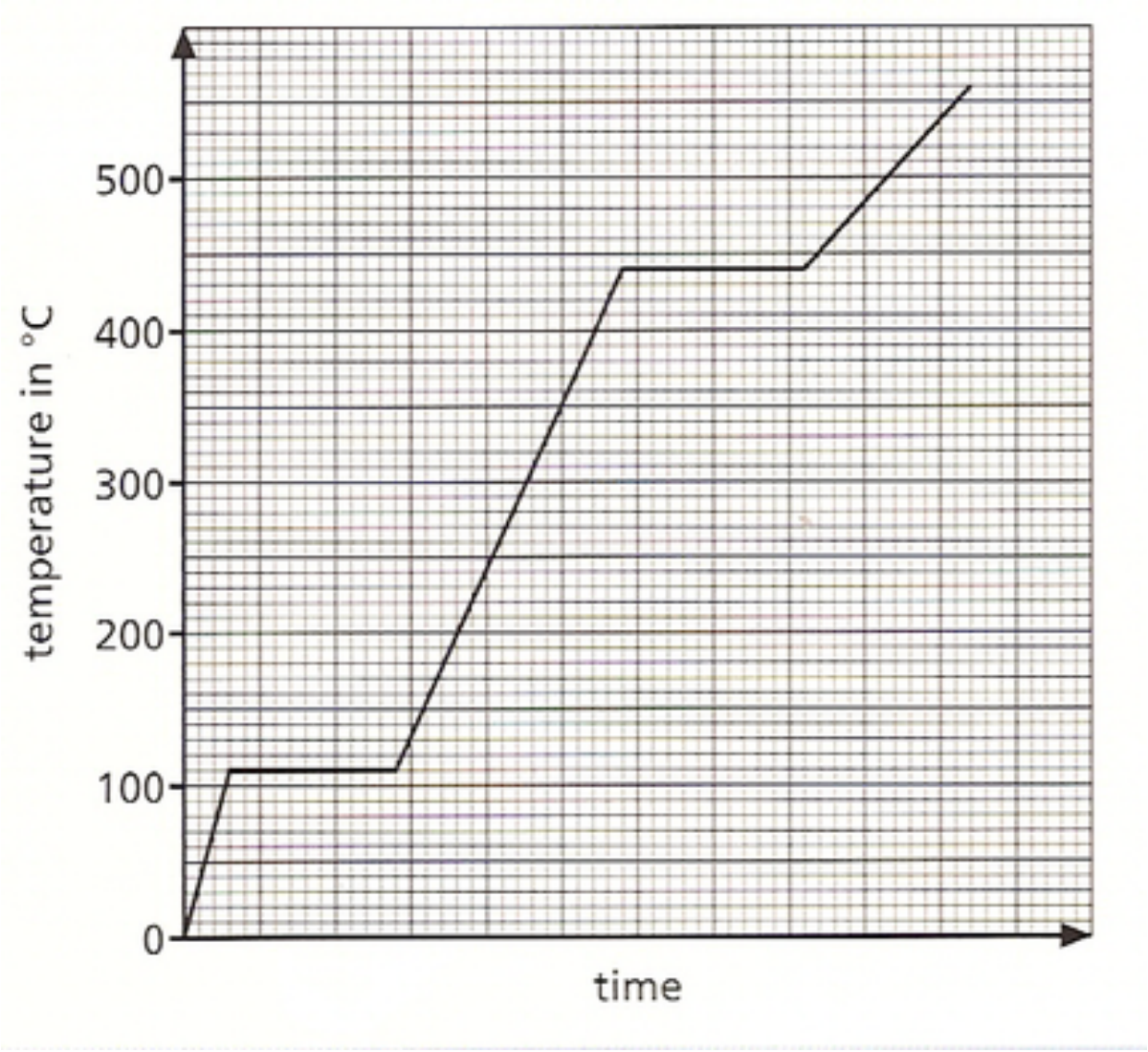
Heating materials



The graph above shows 1kg of a material being heated up.

Label the following: ***liquid heating up, gas heating up, solid heating up, solid melting, liquid boiling, boiling point, melting point***

The power of the heater is 1000W, which means that it transfers 1000 joules of energy per second to the material.

Why is the temperature increasing from 0 to 6 minutes? (explain in terms of particles)

Why does the temperature remain constant from 6 to 28mins? (explain in terms of particles)

Why is the temperature increasing from 28 to 58 mins? (explain in terms of particles)

Why does the temperature remain constant from 58 to 82 mins? (explain in terms of particles)

Why does the temperature increase above 82 mins? (explain in terms of particles)

The specific heat capacity of a material is the energy required to increase 1kg of the material by 1°C. Calculate the specific heat capacity of the material when it is i) a solid, ii) a liquid.

The specific latent heat of fusion is the energy needed to change 1kg of a material from a solid to a liquid. Calculate the specific latent heat of fusion for the material.

The specific latent heat of vaporisation is the energy needed to change 1kg of a material from a liquid to a gas. Calculate the specific latent heat of vaporisation for the material.