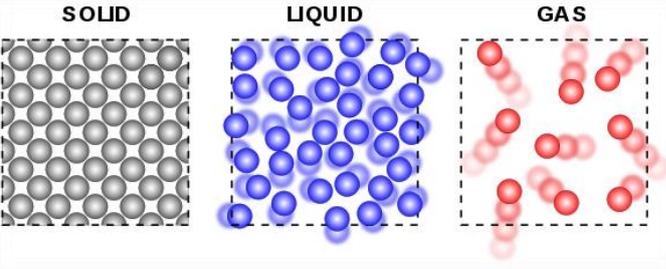
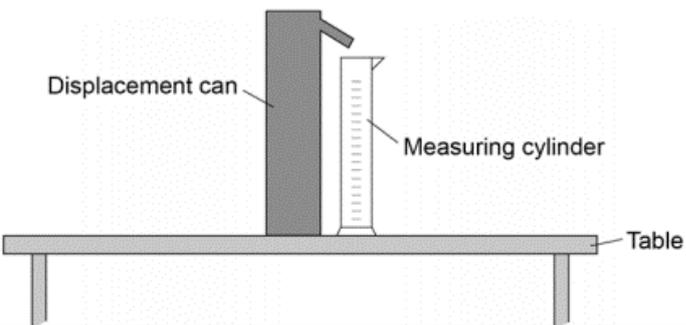
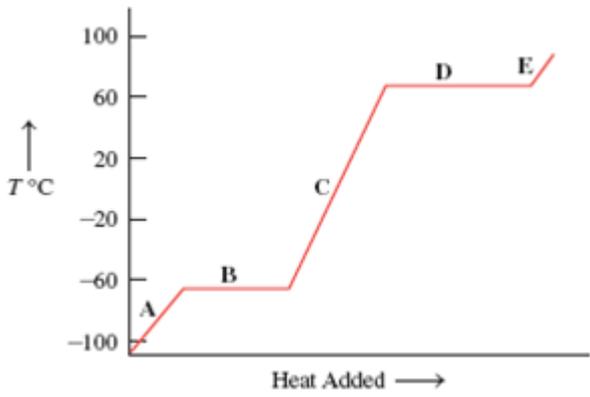


1	What is the definition of density?	The amount of matter in a given volume.
2	What is the word equation for density?	density = $\frac{\text{mass}}{\text{volume}}$
3	What is the symbol equation for density?	$\rho = \frac{m}{V}$
4	What are some common units of density?	kg/m <sup>3</sup> g/cm <sup>3</sup>
5	What is the particle model useful for?	The idea that solids, liquids and gases are all made up of particles in different arrangements is useful to explain the states of matter and the differences in their density: solids are more dense than gases as there are more particles in a given volume than gases have.
6	Draw a particle diagram for solid, liquid and gas.	
7	Describe how to find the volume of a regular solid.	Use a ruler to measure the length, width and height of the object and use them to find the volume. Place the object on a balance to find the mass. Find the density by dividing the mass by the volume.
8	Describe how to find the volume of an irregular solid, including a labelled diagram of the required equipment.	Place the object on a balance to find its mass. Fill a displacement can with water and let it drip until it no longer drips. Place the irregular object into the displacement can with a measuring cylinder under the spout. The volume of water that is displaced out of the can by the object is the same as the volume of the object. find the density by dividing the mass by the volume. 
9	What other equipment could be used to measure length, if required to a more precise value?	A micrometre or a set of Vernier callipers.
10	When is mass conserved?	Always during changes of state; melting, freezing, boiling, evaporating, condensing and subliming.
11	What makes a change of state different to a chemical change?	They are physical changes, so the material will recover its original properties if the change is reversed.
12	What is internal energy?	The total kinetic energy and potential energy stored inside a system by the particles (atoms and molecules) that make up the system.
13	How does heating an object change the internal energy?	It increases the energy of the particles that make up the system to either increase the temperature or cause a change of state.

14	What does the increase in temperature of a system depend on?	The mass of the substance, the type of material and the energy input.
15	What is the word equation that relates the change in thermal energy of a system to the factors that it depends upon?	change in thermal energy = mass × specific heat capacity × temperature change
16	What is the symbol equation that relates the change in thermal energy of a system to the factors that it depends upon?	$\Delta E = m c \Delta \theta$
17	What are the units of specific heat capacity?	J/kg °C
18	What is the specific heat capacity of a substance?	The specific heat capacity of a substance is the amount of energy required to raise the temperature of 1 kg of the substance by 1 °C.
19	What is latent heat?	The energy needed for a substance to change state is called latent heat. When a change of state occurs, the energy supplied changes the energy stored (internal energy) but not the temperature.
20	What is the specific latent heat of a substance?	The specific latent heat of a substance is the amount of energy required to change the state of 1 kg of the substance with no change in temperature.
21	What is the word equation for the energy for a change of state?	energy for a change of state = mass × specific latent heat
22	What is the symbol equation for the energy for a change of state?	$E = m L$
23	What are the units of specific latent heat?	J/kg
24	What is the specific latent heat of fusion?	It relates to the change of state from solid to liquid
25	What is the specific latent heat of vaporisation?	It relates to the change of state from liquid to vapour
26	Label this heating graph: 	A – solid B – melting C – liquid D – vaporisation E - gas
27	What do the molecules of a gas do?	They move with constant random motion. Their kinetic energy is related to the temperature of the gas.
28	A gas can be compressed or expanded by pressure changes. Where is the net force?	The pressure produces a net force at right angles to the wall of the gas container (or any surface).
29	What equation relates the pressure and volume of a gas held at constant temperature?	pressure × volume = constant $p V = \text{constant}$
30	What are the units of pressure?	Pascals, Pa
31	What is work?	The transfer of energy by a force.
32	When work is done on a gas, what happens to the gas?	The internal energy increases and it can also cause an increase in temperature.
137	How much mass a substance contains compared to its volume is...	density
138	State the equation which links density, mass and volume	$\rho = m/v$

139	Name the change of state when a liquid becomes a solid	freezing
140	Name the change of state when a solid becomes a liquid	melting
141	Name the change of state when a liquid becomes a gas	evaporation
142	Name the change of state when a gas becomes a liquid	condensation
143	Name the change of state when a solid becomes a gas (without passing through liquid form)	sublimation
144	Changes of state are caused by the amount of _____ a substance has	energy
145	State changes are examples of _____ change	physical
146	Physical changes are ones which can be _____	reversed
147	A change which creates new products and cannot be reversed is _____ change	chemical
148	The energy stored inside a system by the particles which make it up is known as _____ energy	internal
149	What is internal energy?	The total kinetic energy and potential energy of all the particles in a system
150	Energy stored within moving objects is _____	kinetic
151	Energy stored in particles because of their position is...?	potential energy
152	Particles which are further apart have _____ potential energy	more
153	The energy needed to raise the temperature 1 kg of a material by 1°C is the _____	specific heat capacity
154	The average kinetic energy of particles is known as the _____	temperature
155	The amount of energy required to change the state of one kilogram of a substance with no change in temperature is the ...?	specific latent heat
156	Latent heat of fusion is for changing...?	solid to liquid
157	Latent heat of vaporisation is for changing...?	liquid to vapour (gas)
158	Increasing temperature _____ pressure in a gas if volume is constant	increases
159	The force exerted by gas on a surface as the particles collide with it is known as...?	gas pressure
160	State the units of density	kg/m <sup>3</sup>
161	State the units of volume	m <sup>3</sup>
166	Why doesn't temperature increase during melting?	Energy is being used to weaken forces between particles
167	Why doesn't temperature increase during evaporation	Energy is being used to weaken forces between particles
168	Why does temperature of a substance increase as it is heated?	Particles gain more kinetic energy and temperature is a measure of kinetic energy
169	Particles are arranged regularly in a ....?	solid
170	Particles are arranged randomly, but touching in a ...?	liquid
171	Particles move around randomly in a ....?	gas

137	How much mass a substance contains compared to it's volume is...	density
138	State the equation which links density, mass and volume	$\rho=m/v$
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