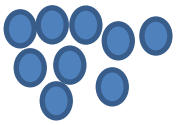
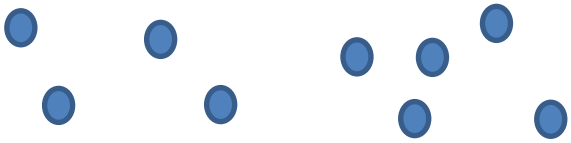
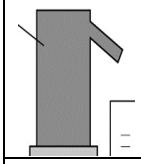
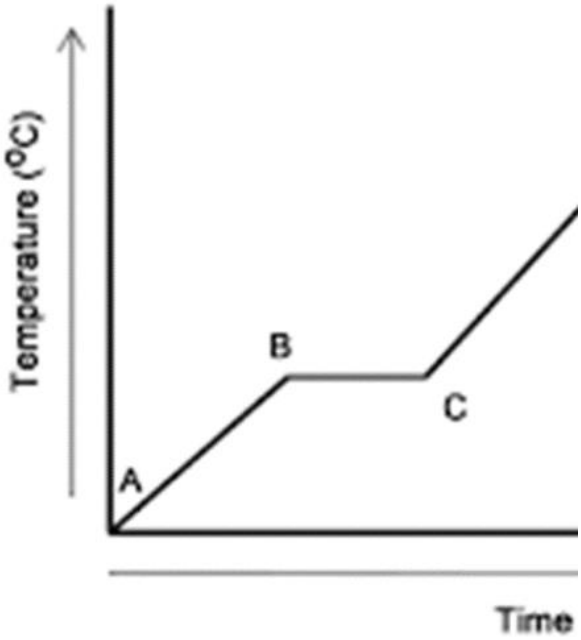
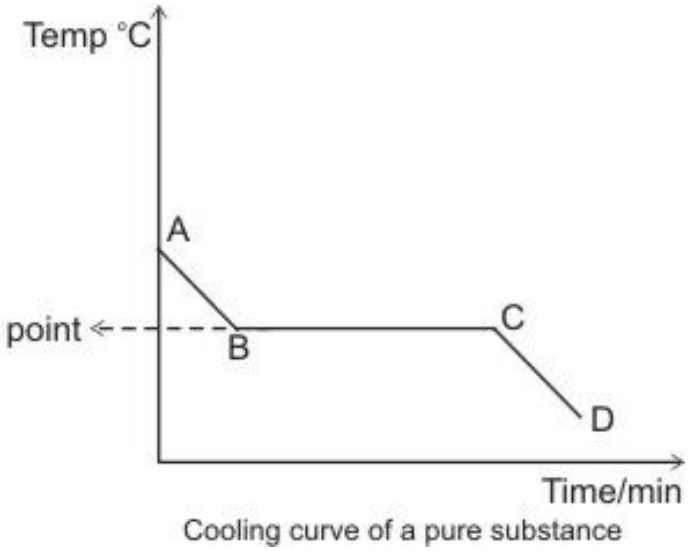
YEAR 9 P1 Topic 1 Particle Model FACT SHEET

States of matter	
1. Name the 3 states of matter	**Solid, liquid, gas**
2. Draw 9 particles in solid	
3. Draw 9 particles in a liquid	
4. Draw 9 particles in gas	
5. Which state of matter is usually the most dense? Why?	• **Solid** • **because particles are closer together** • **so there are more particles in a given space**
6. Which state of matter is usually the least dense? Why?	• Gas • because particles are further apart • so there are less particles in a given space
7. Changing from a solid to a liquid is called…	**melting**
8. Changing from a liquid to a gas is called….	**evaporation**
9. Changing from a gas to a liquid is called…	**condensation**
10. Changing from a liquid to a solid is called….	**freezing**
11. Changing from a solid to a gas is called…	sublimation
12. Are changes of state physical or chemical changes? Why?	• Physical • because the change can be reversed (and no bonds are broken/ made)
13. The mass of a substance before a change of state is ….. as the mass of the substance after the change (e.g. when a solid melts, the mass of the solid is ….. as the mass of the liquid)	the same as
14. If 50g of a liquid is heated, state the mass of gas produced	**50g**

Density	
15. How do you calculate density?	***Density = mass ÷ volume***
16. State the units for density	**kg/m^3**
17. An object has a mass of 12 kg and a volume of 4m^3. Calculate the density of the object	**Density = mass ÷ volume** **12 ÷ 4** **3 kg/m^3**
RPA Density	
18. Name the equipment we use to measure the volume of a liquid	**Measuring cylinder**
19. Name the equipment we use to measure mass of objects	**Balance**
20. What is this called? 	**Displacement can**
21. Describe how to find the density of a regular solid, like a brick	1. Measure the mass on a balance 2. Measure the length, width and height 3. Calculate the volume by: volume = length x width x height 4. Calculate the density by: density = mass ÷ volume
22. Describe how to find the density of an irregular solid, like a stone	1. Measure the mass on a balance 2. Fill a displacement can with water 3. Put the object into the can and collect the water in a measuring cylinder to measure the volume 4. Calculate the density by: density = mass ÷ volume
23. Describe how to find the density of a liquid	1. Put a measuring cylinder on a balance and press zero 2. Pour the liquid into the measuring cylinder and record the volume using the measuring cylinder 3. Record the mass on the balance 4. Calculate the density by: density = mass ÷ volume

Heating and cooling curves	
24. The graph below shows a solid being heated. What is happening between B and C? 	**It is melting**
25. The graph below shows a gas being cooled. What is happening between B and C?  Cooling curve of a pure substance	**It is condensing**
26. On a heating/ cooling graph, what is happening when there is a flat, horizontal line?	**A change of state**
27. On a heating/ cooling graph, what is happening when the line goes up?	Temperature is increasing