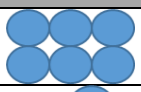
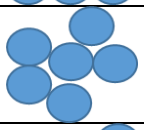
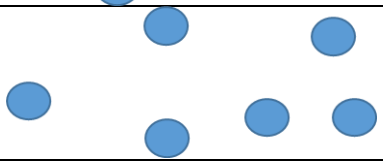
Year 7 Particles fact sheet

Solids, liquids and gases	
1. List the properties of solids	• **Fixed shape** • **Fixed size** • **Cannot be compressed (squashed)**
2. List the properties of liquids	• **Fixed volume** • **Fluid / can move** • **Take the shape of their container** • **Cannot be compressed (squashed)**
3. List the properties of gases	• **Take the shape of their container** • **Fill their container** • **Fluid/ can move** • **Can be compressed**
The particle model	
1. Draw 6 particles in a solid	
2. Draw 6 particles in a liquid	
3. Draw 6 particles in a gas	
4. Describe how the particles in a solid move	Vibrate on the spot
5. Describe how the particles in a liquid move	They can move from place to place
6. Describe how the particles in a gas move	Very fast and randomly
7. Explain why solids and liquids cannot be compressed but gases can	• There are no spaces between the particles in solids and liquids • There are spaces between the particles in gases
Melting and freezing	
1. What is it called when a solid changes into a liquid?	**Melting**
2. What is it called when a liquid changes into a solid?	**Freezing**
3. How do you make a solid melt?	**Heat it**
4. How do you make a liquid turn into a solid?	**Cool it down**
5. What happens to the particles when a solid melts?	• They get more energy • So move more and move further

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6. What happens to the particles when a liquid freezes?	• They have less energy • So move less • And move closer together
Evporating and condensing	
1. What is it called when a liquid changes into a gas?	**Evaporation**
2. What is it called when a gas changes into a liquid?	**Condensation**
3. How do you make a liquid evaporate?	**Heat it**
4. How do you make a gas turn into a liquid?	**Cool it down**
5. What happens to the particles when a liquid evaporates?	• They get more energy • So move more and move futher apart
6. What happens to the particles when a gas condenses?	• They have less energy • So move less nd move closer together
Diffusion	
1. State an example of diffusion	Any smell spreading from 1 place to another, e.g. perfume or food
2. Describe what is happening during diffusion, in terms of particles	• Particles are moving • From a high concentration to a lower concentration
Soluble and insoluble	
1. What do we say has happened to a solid when it breaks up so we can't see it in a liquid?	**It has dissolved**
2. What does soluble mean?	**It will dissolve**
3. What does insoluble mean?	**It won't dissolve**
Solutions	
1. What do we call the liquid a solid dissolves in?	Solvent
2. What do we call the solid that has dissolved?	Solute
3. What do we call the mixture made when a solid has dissolved in a solvent	Solution
4. Name the solute, solvent and solution when salt dissolves in water	• Solute = salt • Solvent = water • Solution = salt water
5. Explain how a solid dissolves	• It breaks into very very small pieces • That go into the small spaces between liquid particles

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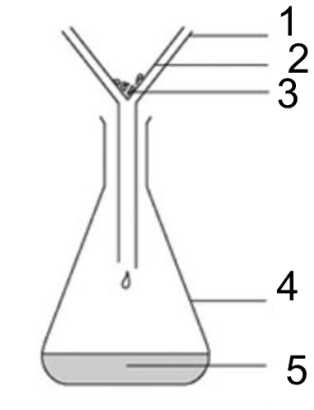
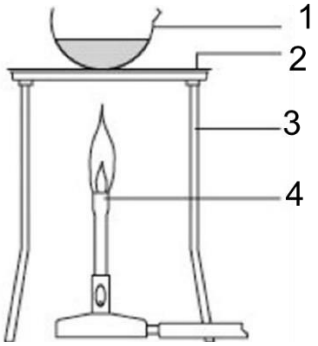
6. How do we describe a solution when no more solid can dissolve in it?	Saturated
Filtering	
1. Name the method of separating we use to separate a solid that hasn't dissolved from a liquid	**Filtering**
2. Label the diagram below  	**1. Funnel** **2. Filter paper** **3. Residue/ solid** **4. Conical flask** **5. Filtrate/ liquid/ water**
3. Explain how filtering separates the mixture	• The liquid particles are small enough to fit through the filter paper • The solid particles are too big to fit throught filter paper
Evaporation	
1. Name the method of separating we use to separate a solid that has dissolved from a liquid	**Evaporation**
2. Label the diagram below  	**1. Evaporating dish** **2. Gauze** **3. Tripod** **4. Bunsen burner**
3. Explain how evaporation separates the mixture	• The liquid particles turn into a gas and leave the mixture • The solid particles do not evaporate so are left in the evaporating dish

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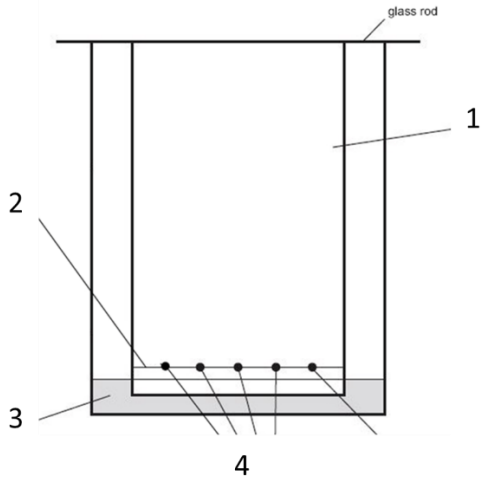
Chromatography	
1. Name the method we use to separate a mixure of coloured inks	**Chromatography**
2. Label the diagram below  	**1. Chromatography paper** **2. Pencil line** **3. Water/ solvent** **4. Ink you are testing**