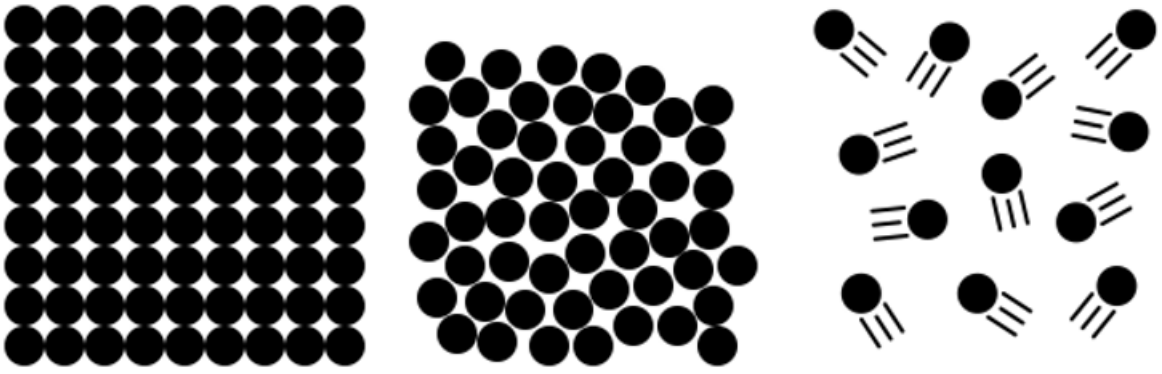
Name _____

Class _____

Aylsham High School Science

Year 7

C2 Particles



7C2.1 Particle arrangement in substances

Concept 2 Brownian Motion , Diffusion and gas pressure

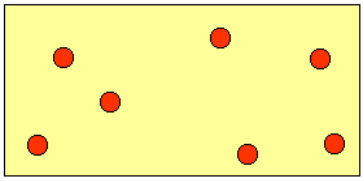
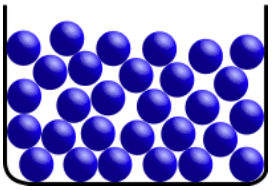
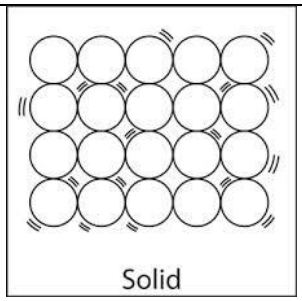
Concept 3 Change of state

Concept 4 Pure Substances and mixtures

Concept 5 Solubility

Core question check

7C2: Particles : Year 7 Core Questions

What is an atom?	The smallest part of an element, atoms are the building blocks of molecules
What is diffusion?	The movement of one substance through another substance.
How are the particles arranged in a gas?	They are very far apart, moving very fast, they have lots of energy and are arranged randomly. 
What is kinetic energy?	The energy of movement.
How are the particles arranged in a liquid?	They are close together and touching, they can move past one another and are arranged in an irregular fashion. 
What is a molecule?	A molecule is a group of atoms that have been chemically joined together.
What is a particle?	A very small part of a substance, it is sometimes used instead of the word molecule.
How are the particles arranged in a solid?	They are close together and touching, they cannot move past one another and are arranged in a regular orderly fashion. 
Describe the Dalton model of the atom	Atoms are the smallest part of an element
What are the three states of matter	Solids, liquids and gases
Use a simple kinetic theory model to explain solids in terms of movement and arrangement of particles	• Particles vibrate • Forces of attraction between particles are strong • Which is why particles do not flow • Solids keep their shape • Solids cannot be compressed
Use a simple kinetic theory model to explain liquids in terms of movement and arrangement of particles	• Particles flow • Particles have moderate forces of attraction • Liquids take shape of container • Liquids flow • Liquids cannot be compressed

Use a simple kinetic theory model to explain gases in terms of movement and arrangement of particles	• Particles move fast • Particles are far apart • Gases expand to fill container • Gases can be compressed
Describe Brownian motion in gases	• The random motion of particles due to the collisions between themselves
Describe diffusion of particles in gases and liquids	Particles diffuse from high concentration to low concentration
Explain why gases and liquids can diffuse	Forces of attraction between particles are weak enough to allow particles to flow
What causes gas pressure?	Gas particles colliding with the walls of a container

7C2.1 Particle arrangement in substances

Key learning points: 1. The Dalton model of the atom

2. Particle diagrams of solids, liquids and gases

Starter task: Zooming in

If you look at some nails with your eyes, this is what you may see.

You could look more closely at one nail with a magnifying glass or a microscope.

Imagine that you could zoom in even more closely.

1. Draw and label a diagram of what you think you would see.

Concept 1: Thinking about Atoms:

Concept 1: Thinking about Atoms:

Key Idea

All material is made of very small particles that we call atoms. The way these atoms are arranged explains the behaviour of different materials. It's hard to think about atoms because they are very small so we have to have a model (a way of thinking).

Recall: Draw and state Daltons model of an atom:

Part 2: Particle models of solids, liquids and gases

Label the solids, liquids and gases in the table .

Particle diagrams

Key Idea Models are used in science to help explain scientific concepts. The particle model is the name for the diagrams used to draw solids, liquids and gases. In the model, the particles are shown as circles or spheres. However, the particles in ice, liquid water and steam look the same because they are all water, but in different states of matter.

Solid Liquid Gas

We can use the diagrams above to help us think about how the atoms are arranged in solids, liquids and gases.

How would you describe the arrangement of particles in a:

Solid: _____

Liquid: _____

Gas: _____

The atoms are not still- they have kinetic energy.

How would you describe the kinetic movement of particles in a:

Solid: _____

_____

Liquid: _____

_____

Gas: _____

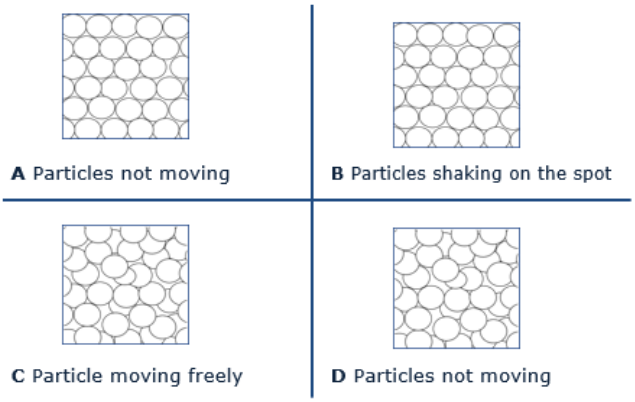
_____

<u>Assessment task</u>: A particle model for the solid and liquid states

Science has the idea that stuff is made from very small particles.

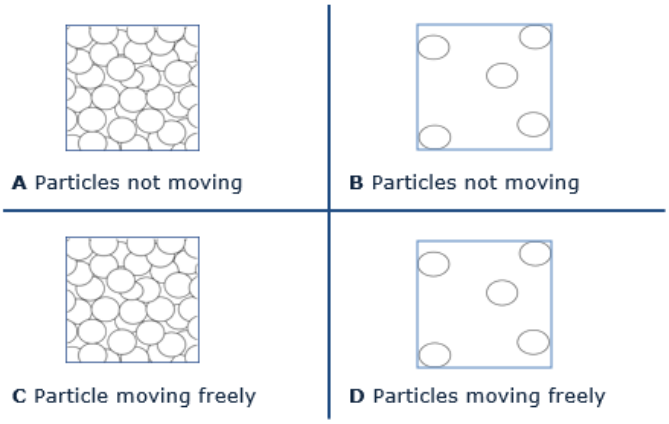
1. Imagine you could see the particles in this block of lead.

Which diagram best matches what you would see?

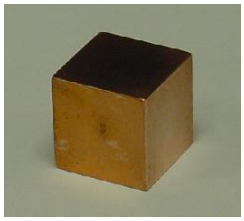


2. Imagine you could see the particles in this beaker of water.

Which diagram best matches what you would see?



3. Here is a block of copper at room temperature.



Which of A, B, C or D best describes it?

A It is made of particles which are hard, like tiny bits of solid.

B There are particles in rows surrounded by solid copper.

C It is made of particles which are not like bits of solid copper.

D It does not have any particles.

4. Here is some water at room temperature.

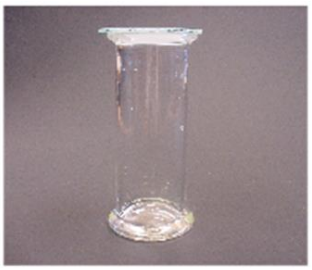
Which of A, B, C or D best describes it?

A It is made of particles which are runny, like drops of liquid.

B There are particles dotted about surrounded by liquid water.

C It is made of particles which are not like bits of liquid.

D It does not have any particles.



5 This gas jar contains carbon dioxide at room temperature. It is in the gas state.

Which of A, B, C or D best describes it?

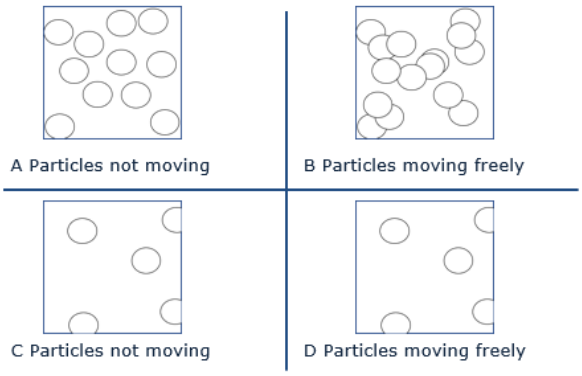
AIt is made of particles which are 'gassy' – like tiny puffs of gas.

B There are particles dotted about in the carbon dioxide.

C It is made of particles which are not like little puffs of carbon dioxide.

D It does not have any particles.

6 Imagine you could see the particles in this sample of carbon dioxide. Which diagram best matches what you would see?



Part 3: Investigating the Properties of solids, liquids and gases:

Substances can exist in three states of matter - solid, liquid and gas. All substances are made from particles, and the forces between the particles are different in solids, liquids and gases. The arrangement, movement and spacing of the particles explain many of the properties of solids, liquids and gases.

Investigation:

Material	Does it have a fixed shape?	Does it have a fixed volume?	Can the material be poured?	Can it be squashed?	Is it a Solid, liquid or gas?

Summary of properties:

Physical State	Can it be compressed	Can it flow?	Fixed shape	Fixed volume
Solid				
Liquid				
Gas				

Wordfill:

Solids, liquids and g_____ are all different states of matter. We can tell the different s_____ of matter apart by looking at how the behave in certain ways – also known as their

p_____.

In science, we say that solids have a fixed v_____ and shape, they do not flow and cannot be s_____ or compressed.

L_____ have a fixed volume and take the shape of their container. They do

f_____ but cannot be compressed.

Gases take the shape and volume of their c_____. Gases are able to flow and can be squashed or c

.

Squashed Container Gases Flow Liquids States Properties Volume Compressed

True or False:

The different state of matter are solids, liquids, gases and slime?

Solids have a fixed volume.

Liquids can be compressed.

Gases take the volume and shape of their container.

Solids can flow.

Liquids can flow

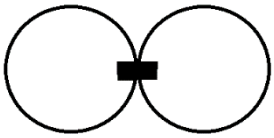
Liquids take the shape of their container.

Gases cannot be compressed.

Key Idea

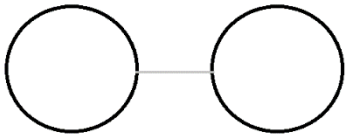
The particle model and properties

Because the particles are arranged differently and have difference forces of attraction between them, the properties of each state are different.



Solids have very strong forces of attraction between the particles

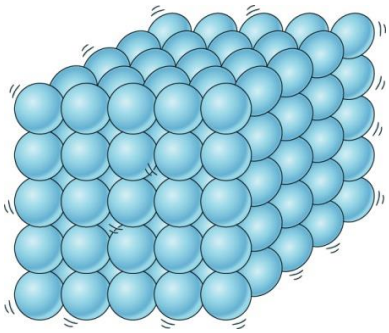
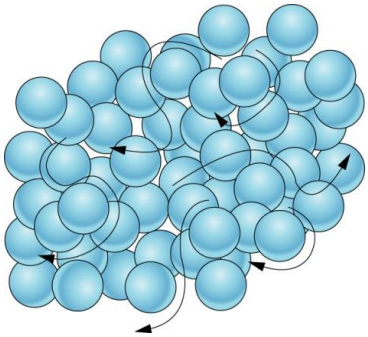
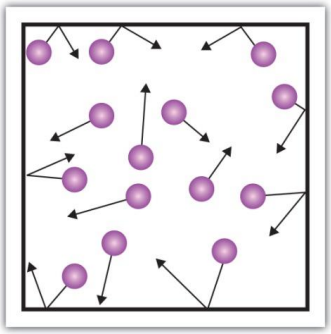
The forces of attraction are SO STRONG that the particles are touching



Gases have weaker forces of attraction between particles

The force is weak enough to allow the particles to move around and from each other

Now let's use our understanding of particles to explain the properties...

State	Properties	Explanation
SOLID 		
LIQUID 		
GAS 		

Part 3: Assessment Task: Particle Explanations:

The list below contains some statements about the particle model for the solid state. All the statements are correct.

A The particles are very closely packed together.

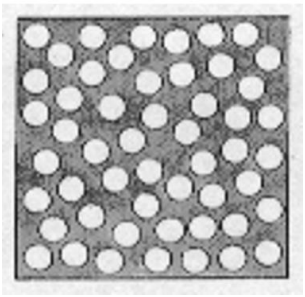
B The particles are tightly bound to their neighbours.

C The particles vibrate in their positions but cannot move around.

D The particles are arranged in a regular pattern.

Which of the statements above help to explain each of the following?

1. Materials in the solid state do not flow or pour.
2. Materials in the solid state cannot be compressed.



Summary Task:

Assessment task: Particle diagram – liquid state

This diagram from a textbook illustrates the particle model for the liquid state.

To answer

State three ways in which you think the diagram is **a good representation** of the liquid state:

1 _____

2 _____

3 _____

State three ways in which you think the diagram is **not an accurate representation** of the liquid state:

1 _____

2 _____

3 _____

Concept 2 Brownian Motion , Diffusion and gas pressure

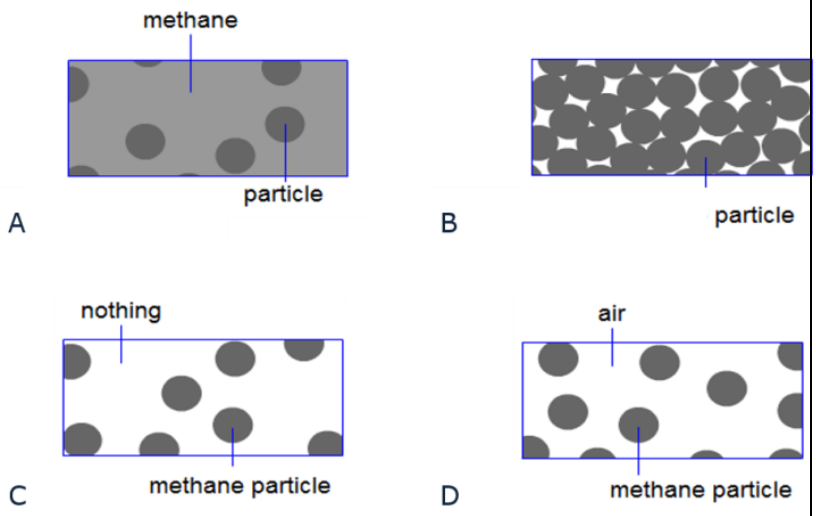
Key Learning Points:

- **Describe Brownian Motion in gases**
- **How Brownian motion results in gas pressure**
- **Describe how diffusion only occurs in liquids and gases where the forces of attraction between particles are weak enough to allow particle to flow, and that it occurs from low concentration to high concentration (in Biology)**
- **Explain gas pressure**

Starter: BEST: Empty space task:

1. Imagine you could see the particles in this jar of methane gas.

Which diagram best matches what you would see?



Concept 2a: Describe Brownian motion in gases

Key Idea

Particles in both liquids and gases (collectively called fluids) move randomly. This is called Brownian motion. They do this because they are bombarded by the other moving particles in the fluid.

Particle explanations – gas state

The box below contains some statements about the particle model for the gas state.

All the statements are correct.

A Most of the particles are far from each other.

B The particles move around rapidly in all directions.

C The particles collide with the walls of the container they are in.

D Most of the particles are too far apart to exert any force on each other.

E If you heat a gas, the average speed of the particles gets bigger.

Which of the statements above help to explain each of the following?

1 Substances in the gas state are fairly easy to compress. .....

2 Substances in the gas state spread out to fill the whole space they are in.

3 Substances in the gas state don't settle to the bottom of a container, but fill the whole space.

4 The gas state is less dense than the solid and liquid states .....

Observing the smoke cell: When you saw the smoke particulates moving around in the smoke cell, you could see the result of **Brownian Motion.**

Brownian Motion is

_____

_____

_____

<u>Concept 2b: Diffusion</u>

PEOE – A cup of tea

Your teacher is going to add a teabag to some water at room temperature.

It will **not** be stirred or heated.

Predict

What will happen to the tea and the water during the rest of the lesson?

Explain

Explain why you think this will happen.

Your teacher will now add the teabag to the water.

Observe

Watch what happens to the tea and the water during the rest of the lesson.

Explain

Was your prediction correct?

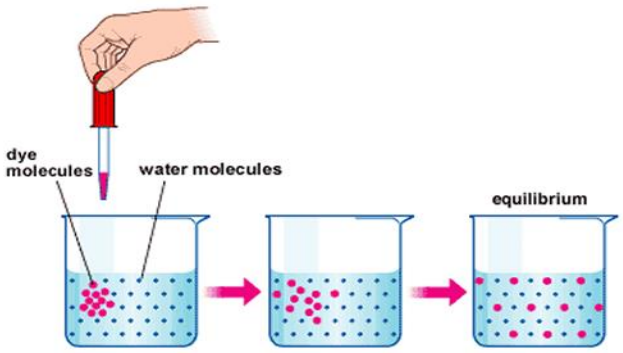
If not, how would you explain what you observed?

Further examples:

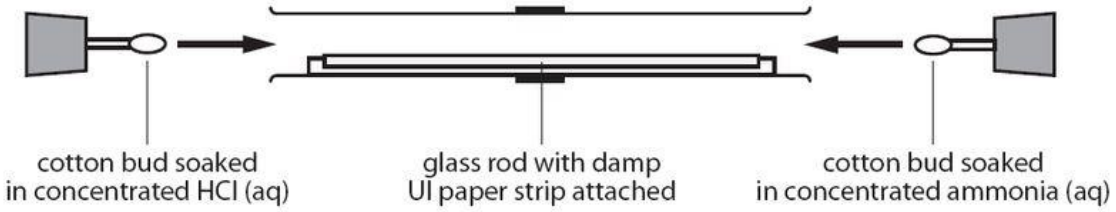
Complete the diagram to show what happened as you watched the demo/video:

Key Idea

Diffusion is the movement of a substance from an area of high concentration to an area of lower concentration. Diffusion occurs in liquids and gases when their particles collide randomly and spread out.



Diffusion is the movement of a substance from an area of high concentration to an area of lower concentration.



a) What happens when ammonia gas meets hydrogen chloride gas?

.....

b) Why does it take a few minutes for the gases to meet and react even though the gas particles are moving at hundreds of miles per hour?

.....

c) Why do the two gases not meet in the middle of the tube?

.....

Diffusion is the _____ of particles from an area of _____ concentration to an area of low concentration.

Particles in a liquid or a gas have a relatively weak force of _____ between them. This means that they can move.

The particles spread out in a random way until they are _____ spread out. The particles continue to move but remain evenly spread out.

Evenly	Movement	high	attraction

Assessment task: Deodorant

The teacher sprays deodorant at the front of the classroom.

At first, only the people at the front of the classroom can smell it.

After a while, people at the front **and** the back of the classroom can smell it.

Part 1 Look at the statements in the table. Some are right and some are wrong. Tick **one** box for each statement.

Statements		I am **sure** this is right	I **think** this is right	I **think** this is wrong	I am **sure** this is wrong
1	The deodorant moves across the classroom because of the wind.				
2	The deodorant reacts with the air, making it smell nice.				
3	The deodorant splits into little bits and mixes with the air.				
4	The deodorant molecules move through the air by diffusion.				
5	The deodorant molecules need to spread out so they have more space.				

Part 2 Look at the statements in the table. Some are right and some are wrong. Tick **one** box for each statement.

Statements		I am **sure** this is right	I **think** this is right	I **think** this is wrong	I am **sure** this is wrong
1	The deodorant molecules move in one direction, from the front of the classroom to the back.				
2	The deodorant molecules collide with each other and molecules in the air.				
3	The deodorant molecules are most concentrated when they first come out of the spray can.				
4	There is net movement of deodorant molecules from an area of low concentration to an area of high concentration.				
5	The deodorant molecules stop moving when they have spread out.				

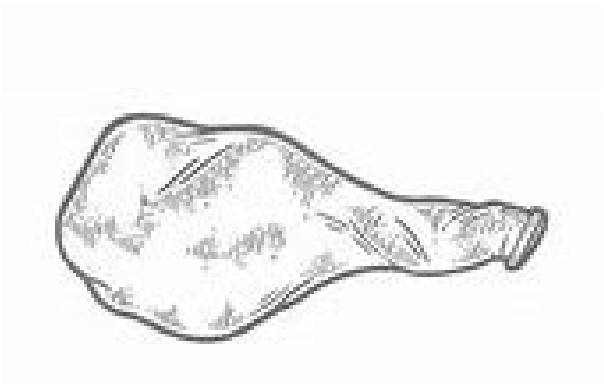
Concept 2c: Gas pressure

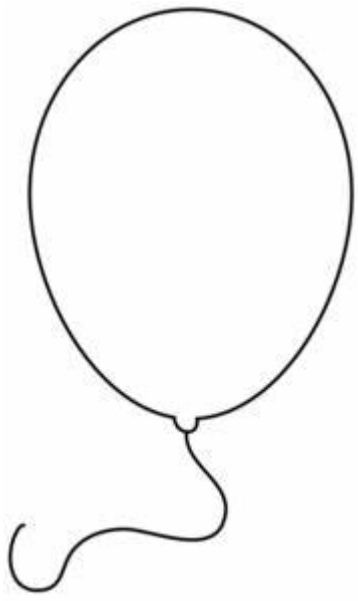
Key Idea

Pressure in gases is caused by particles colliding with the walls of the container.

Add particles to both diagrams and explain why the balloon gets bigger as it is inflated.

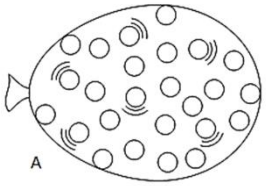
Key words: collide, force, gas pressure, move, particles.

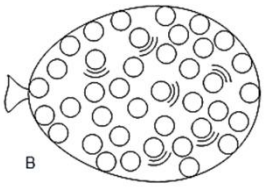




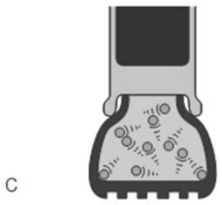
Quiz:

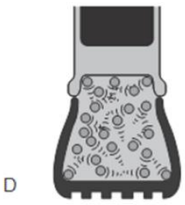
1) Which of these is under greater pressure? **A or B**



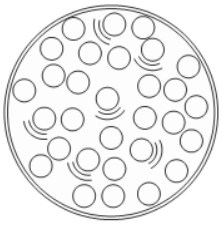


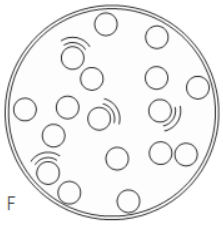
2) Which of these is under greater pressure? **C or D**





3) Which of these is under greater pressure? **E or F**





4) When gas particles bump into something…

A **…they cause pressure** **B** **…they cause density**

5) Pressure is increased…

A **…when less particles hit the side** **B** **…when more particles hit the side**

6) When you blow up a balloon, it gets bigger because…

A **…pressure increases inside** **B** **…pressure decreases insid**

Concept 3 Change of state

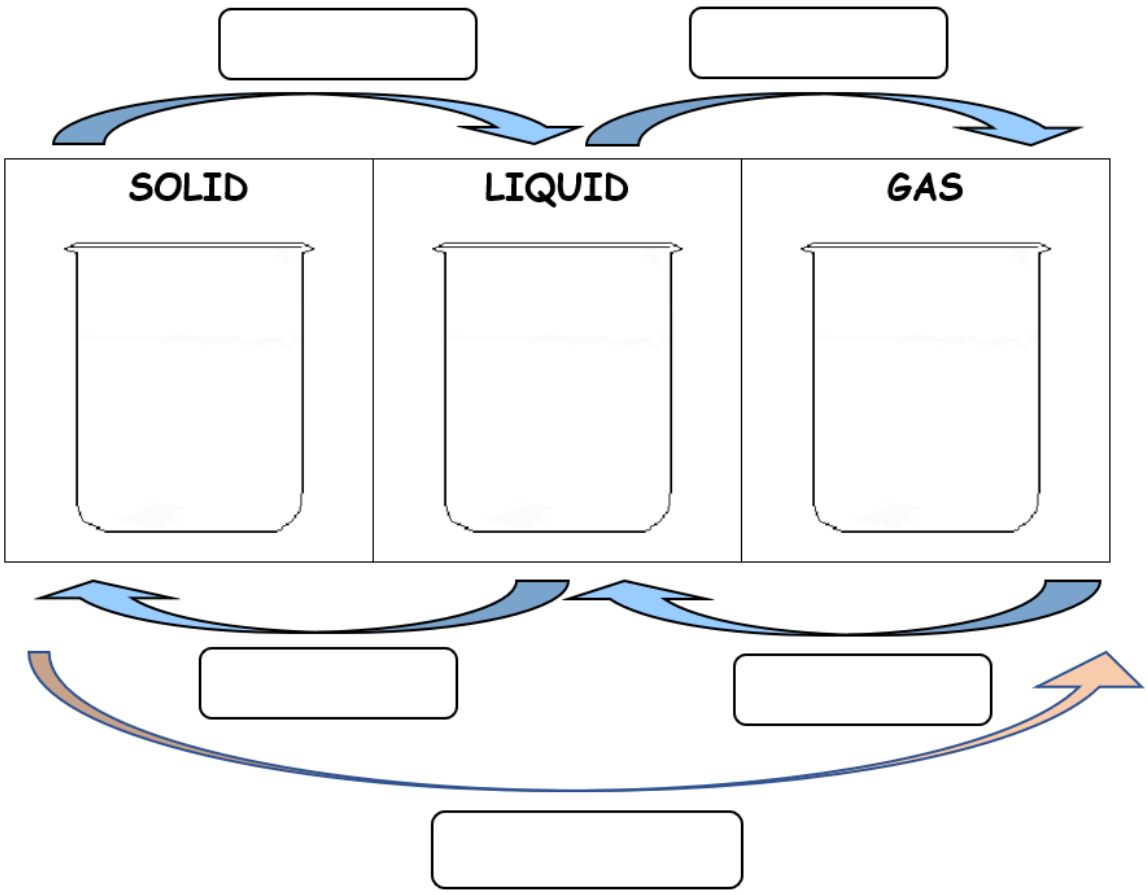
Key learning points:

Explain the changes that occur when water changes state and use the terms melting, boiling/evaporating, condensing and freezing

Key Idea

Solids, liquids and gases change state when they are heated or cooled. Processes such as evaporation and boiling change the state of substances. A particle model can be used to show how solids, liquids and gases change state.

Add particle diagrams for solid, liquids and gases and add the change of state



As a substance is heated:

- Gain k_____ energy
- Breaks f_____ of attraction between particles
- Particles move _____ _____.
- Substance melt and b_____
- New arrangement of particle

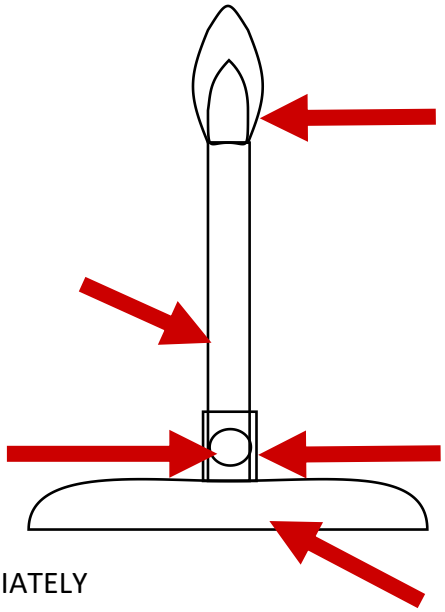
As a substance is cooled:

- Decrease in store of k_____ energy
- Particles move c_____ together
- F_____ of a_____ reform
- Substance c_____ and freezes.
- New a_____ of particles

This is called a _____ of _____.

Using a Bunsen burner:

1. Connect the Bunsen to the gas tap
2. Close the air hole
3. Light a splint (from another Bunsen burner)
4. melt and
5. Hold your splint over the chimney
6. Turn the gas tap on
7. Stub the splint out on the mat



If the Bunsen burner goes out you must turn off the gas IMMEDIATELY

Air hole **base** **collar** **chimney** **flame**

Observing and Mass change during changes of state

Prediction:

What do you think will happen to the mass of an ice cube as it melts? Why?

……

Method:

1. Weigh a 100ml glass beaker on a top pan balance. Record your result in the table below. (A)
2. Add an ice cube to the beaker and reweight it. Record your result below. (B)
3. Calculate the mass of the ice cube. (C)
4. Add some hot water from a kettle to a tub and stand you beaker in water bath to melt the ice cube.
5. Record the temperature of the change of state.
6. Dry the outside of your beaker and reweigh the beaker and water. Record you result. (D)
7. Calculate the mass of water.
8. Place your beaker on a tripod and heat gentle
9. Record the temperature of the change of state

Results:

Change of state	**Temperature °C**	**Observations**
Melting		
Boiling		

	(g)
A: Mass of beaker	
B: Mass of beaker and ice cube:	
C: Mass of ice cube (B-A):	
D: Mass of beaker and water:	
E: Mass of water (D-A):	

Questions:

1) What is it called when a solid changes into a liquid?

……

2) What is it called when a liquid changes into a gas?

……

3) When the water gets hotter, what do you see rising from the bottom of the beaker?

……

4) How can you tell if the water has changed from a liquid into a gas?

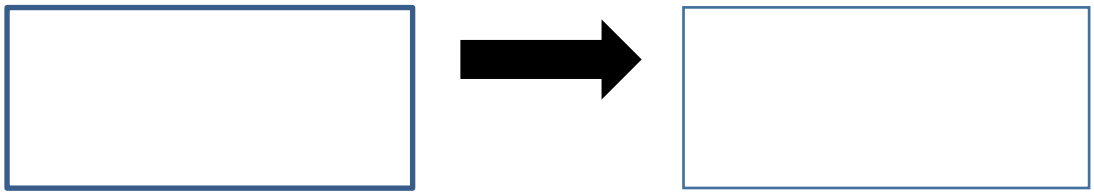
……

5) What conclusions can you make about the mass of a substance as it changes from a solid to a liquid? Quote data from your results in your answer:

……

6) Draw particle diagrams to show the solid water particles and the liquid water particles. (Think about the number of particles in each)

Solid



Liquid

7) Why wasn't there a step to calculate the mass after boiling?

……

Assessment: Bubbles during boiling

The water inside this kettle is boiling. You can see bubbles.

What is inside the bubbles?

A Nothing

B Air particles

C Water particles

D Water particles and air

Explaining bubbles observed during boiling

Sequence the statements below to create an explanation of how bubbles form when water boils in a kettle.

Start with the first statement.

Water in the kettle is in the liquid state.
The water particles are able to move further apart.
The water particles are very close together.
A group of water particles form a pocket of water in the gas state.
This creates a bubble within the water that is still in the liquid state.
When the kettle is switched on, the temperature of the water increases.

Predicting mass after changes of state

Imagine that drop of water has been placed in a sealed plastic bag (with all air excluded). It is then warmed until the water has all changed into the gas state.

Which statement best describes how the mass will change and why?

A The mass will decrease because the water has disappeared.

B The mass will increase because there are now water and air particles in the bag.

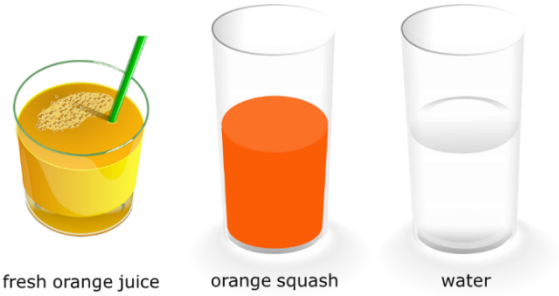
C The mass will stay the same because the number of particles inside the bag stays the same.

Concept 4 Pure Substances and mixtures

Pure or mixture?

Some substances are pure. Other substances are mixtures. What do you think about each of these substances?

For each statement, tick (✓) **one** column to show what you think.



		I am **sure** this is right	I think this is right	I think this is wrong	I am **sure** this is wrong
A	Fresh orange juice is pure.				
B	Orange squash is pure.				
C	Water is pure.				

Key Idea

The word 'pure' is used in chemistry in a different way from its everyday meaning. For example, shops sell cartons labelled as 'pure' orange juice. The label means that the contents are just orange juice, with no other substances added. However, the juice is not pure in the chemical sense, because it contains different substances mixed together. In chemistry:

- a **pure** substance consists only of one element or one compound
- a mixture consists of two or more different substances, not chemically joined together

The substances in a mixture can be elements, or compounds, or both. Being part of a mixture does not change the chemical properties of the substances that are in it.

Definitions:

Pure substance: _____

_____

Mixture: _____

_____

Complete the following sentences using the words in the box below:

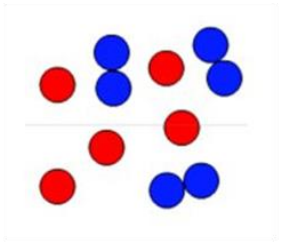
In s_____, a pure substance is one that is made up of only o__ element or c_____. Elements cannot be broken down into smaller parts and compounds are not easily s_____.

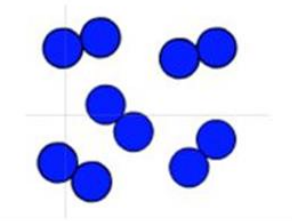
A m_____ is made up of two or more substances that are not j_____ together. A mixture can contain different types of e_____, compounds or a mixture of both. Unlike compounds, mixtures can be e____ separated into its different parts.

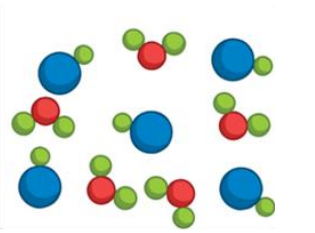
Mixture **Compounds** **One** **Science** **Joined** **Separated** **Elements** **Easily**

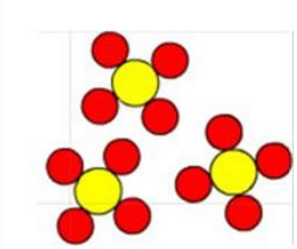
Pure Substances and Mixtures

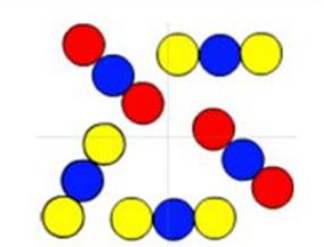
Look at the particle diagrams below. Label each one as either a pure substance or a mixture.

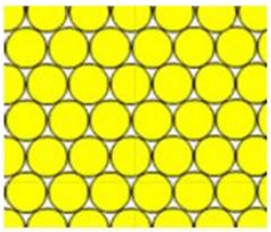




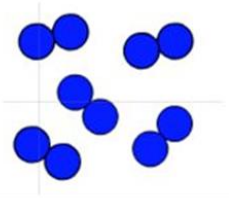




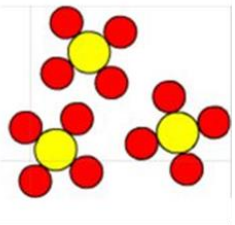




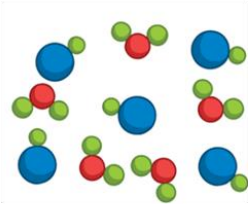
Look at the diagram and answer the questions using full sentences:



Sample A



Sample B



Sample C

1. Which of the three samples is made up of only one type of substance? How can you tell?

2. Which of the three samples is made up of more than one type of substance joined together?

3. Which of the three samples is made up of more than one type of substance that is not joined together?

4. Which of these will be easiest to separate? Why?

Concept 5 Solubility

Key learning points:

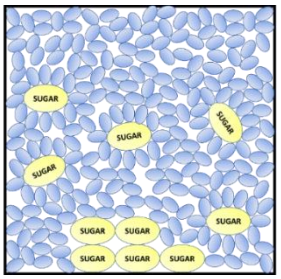
Use keywords to describe solutions and use the particle model to describe dissolving.

Join the boxes with a straight line

Description of substance	State symbol
Solid	(l)
Pure liquid	(aq)
Solid dissolved in water	(s)
Gas	(g)

Key Idea

Sometimes particles more attracted to other types of particles. When solid sugar is added to water, the sugar particles are more attracted to the water particles than to each other. So, we end up with the individual particles of sugar being surrounded by water particles. When this happens, we say that the sugar has dissolved into the water.



1. What is a property of almost all particles that means they stick together if their temperature is low enough?

2. Sugar dissolves in water. What does this tell us about the attraction between two sugar particles compared to the attraction between a sugar particle and a water particle?

3. As scientists we can show that sugar is dissolved in water by putting what state symbol (two letters in brackets) after the word sugar?

4. Complete the table *(answers are either (s), (l), (g) or (aq))*

particles arranged randomly and touching	
particles arranged in a regular order and touching	
the substance is as cold as it can possibly be	
the particles are hot enough to move past each other	
sugar particles surrounded by water particles	
sand at the bottom of a cup of water	
a cup of orange squash	

Soluble substances

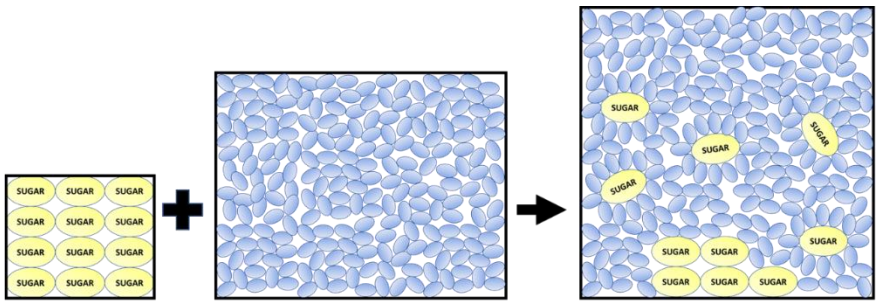
Key Idea There are special names for the substance that dissolves (sugar), the liquid that it dissolves into (water) and what the end result is (the sugary water).

The substance that dissolves is called a _____.

The liquid it dissolves into is called the _____.

The mixture of them together is called a _____.

Key Idea Solutions will always be clear (you can see through them) and often, but not always, colourless (like water)



sugar (s) water (l) sugar (aq)

SOLUTE **SOLVENT** **SOLUTION**

Substances that can dissolve are called _____.

Sugar is mixed with water. It looks like the sugar disappears and a clear, colourless substance is left afterwards.

1. State a word that can be used to describe the sugar:

_____

2. State a word that can be used to describe the water:

_____

3. State a word that can be used to describe what is left at the end:

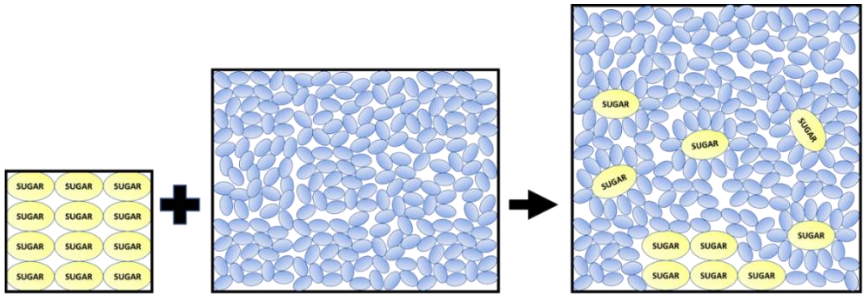
_____

4. So what has happened to the sugar?

_____

Key Idea

The total mass of the mixture made from a substance dissolving in a liquid will be exactly equal to the mass of the solid added to the mass of the liquid



sugar (s) water (l) sugar (aq)

<u>Questions</u>

20 g of sugar is added to 80 g of water to make sugar water. What must the total mass of the sugar-water be?

_____

_____

The scientific name for table salt, the stuff you put on chips, is sodium chloride. Sodium chloride can dissolve in water. Suggest a word equation with state symbols to show sodium chloride dissolving in water?

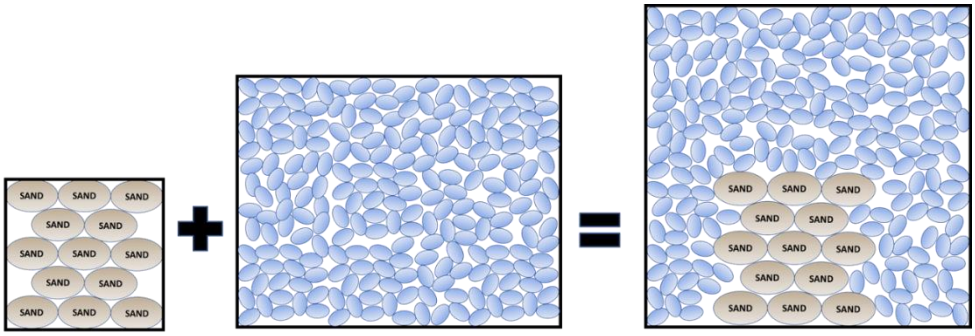
_____

<u>Insoluble substances</u>

Substances that cannot dissolve are called _____ (we put in- at the start of many words to mean the 'not', for example inedible, inoffensive, indigestion)

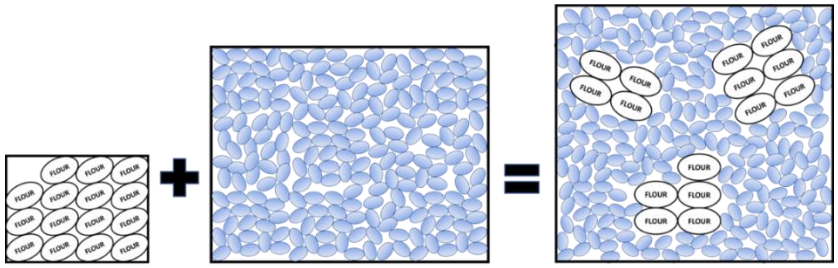
Substances that can dissolve a little bit but not totally are called _____.

Key Idea Whether or not a substance is soluble or insoluble depends on the liquid that it is put in to. Just because something is not soluble in water it does not mean that it won't dissolve if it is mixed with a different solvent.



sand (s) water (l) sand (s) + water (l)

Sometimes when an _____ solid is mixed with a liquid the liquid turns <u>cloudy</u> and the particles of solid are no longer visible. However, in this instance the solid has not _____…… and if we left the mixture for enough time the solid particles would settle to the bottom. We call this type of mixture a _____ because the solid particles are suspended (hanging) in the liquid.



flour (s) water (l) flour (s) + water (l)

SUSPENSION

Flour does not dissolve in water. Suggest a word equation with state symbols to what happens when flour is mixed with water?

_____

_____

Are these sentences true or false?

Solutes get dissolved into solvents	
Solvents are defined as a mixture of two or more substances	
Solvents are liquids which you can dissolve solutes into	
A solution is defined as a mixture of a solute and a solvent	
Mixing water with any solid will produce a solution	
Insoluble substances are ones that can dissolve in water	
Solutions are always colourless	
Solutions are always clear	
You can never get a solute back out of a solution	
A cloudy mixture of an insoluble powder inside a liquid is called a suspension	
Substances are either soluble or insoluble	

Join the boxes with straight lines

Description of substance	Key Word
Mixture of a liquid and a substance dissolved into it	soluble
Substance that has dissolved into a liquid	solvent
Liquid that a substance dissolved into	solution
Can dissolve	insoluble
Cannot dissolve	solute
Can dissolve a little bit	suspension
Cloudy mixture of a liquid and a fine powder that cannot dissolve	Partially soluble

Circle the solvents underline the solutes.

Dave woke up on the day of his big rugby match. He had some porridge soaked in loads of milk for breakfast. Then he made himself a big bottle of drink by mixing fruit squash and water. He arrived at the game and the starting whistle blew. He made the first tackle hard, and landed in a muddy puddle, which was made from soil and water. The game was going really well and they were winning 14-3. He was getting really tired towards the end of his game, sweat trickled down his face. His sweat was watery and salty. They won the game, and hit the showers, where he used loads of shower gel to clean all the mud off himself. The shower tray was full of soapy, muddy water. Once he was clean, he dried off, got changed and then celebrated with his teammates.

Students mixed different substances with water, left them for twenty-four hours and recorded their observations. Here are their results:

Substance	Observation after mixing with water
sugar (powder)	The sugar can't be seen at the end. The liquid is clear.
sand (grains)	The sand sinks to the bottom.
malt vinegar (from a bottle)	The liquid is clear and brown at the end. It has stayed that way even after twenty-four hours.
ethanol (from a bottle)	The liquid at the end looks just like water.
ground coffee (powder)	The liquid turns dark brown and stays that way. There are some solid bits of brown at the bottom.
silver chloride (powder)	The liquid is a cloudy white colour. After twenty-four hours a layer of powder has collected at the bottom and the liquid is less cloudy.
black pepper (powder)	The liquid looks cloudy brown for a few minutes but then all the pepper sinks to the bottom
sodium chloride (grains)	The sodium chloride can't be seen at the end. The liquid is clear and colourless.

1. Identify the soluble substances

2. Identify the insoluble substances

3. Suggest a phrase to describe how easily the ground coffee dissolves

4. Suggest a phrase to describe the mixture formed immediately after the silver chloride was added to the water

5. Suggest word equations, including state symbols, for what happened when the following substances were mixed with water:

a) sugar:

b) sand:

c) ethanol

d) silver chloride

e) sodium chloride

Core question check **Test 1:**

Question 1	
Question 2	
Question 3	
Question 4	
Questions 5	

Test 2:

Question 1	
Question 2	
Question 3	
Question 4	
Question 5	

Test 3:

Question 1	
Question 2	
Question 3	
Question 4	
Questions 5	

Test 4:

Question 1	
Question 2	
Question 3	
Question 4	
Question 5	

Test 5:

Question 1	
Question 2	
Question 3	
Question 4	
Questions 5	

Test 6:

Question 1	
Question 2	
Question 3	
Question 4	
Question 5	