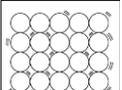
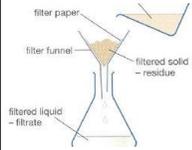
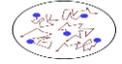
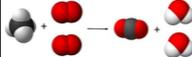
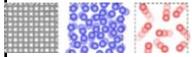
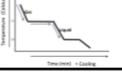
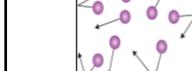
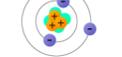
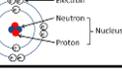
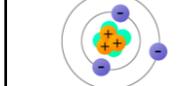
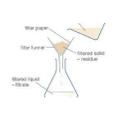




KNOWLEDGE ORGANISER

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Science Year 7 AC1

1	Solids, liquids and gases		Three states of matter. Can be grouped in terms of hardness, solubility, conductivity and response to magnets	12	Solids		Particles are arranged in uniform rows and packed close together. Vibrate about a fixed position. Have the lowest energy. Solids have a fixed shape and hard to compress
2	Separation techniques		Some materials will dissolve in liquid to form a solution. Substances can be separated from a solution by methods such as: evaporation, filtration or distillation.	13	Liquids		Particles are packed close together but arranged in a random order. Particles can move around each other. Liquids are hard to compress but can freely move
14				Gases		Particles are far apart and freely moving. Gas particles have the most energy. Gases are easily compressed and will fill a container.	
3	Uses of solids, liquids and gases		Solids, liquids and gases have stereotypical properties that make them suitable for certain jobs.	15	Brownian Motion		Observed that the pollen grains moved about randomly in different directions. Used as evidence to show water molecules freely move.
4	Chemical reaction		A type of reaction which is not reversible, and a new substance is made	16	Pressure and volume		Boyle's law - If the volume of gas decreases the pressure will increase if the temperature remains constant.
5	States of matter and particle model		Represents molecules or atoms as small, hard spheres. Describes the arrangement of the particles in each state of matter and the kinetic energy of the particles.	17	Density		Density = mass/volume. Particle model states that there is lots of space between gas particles, so they occupy a larger volume than solids. Explains why gasses have lower density
6	Diffusion		Movement of particles from a high to a low concentration. Occurs in liquids and gasses as the particles can freely move.	18	Cooling curves		Graphs that show the melting and boiling point of a substance. A horizontal line of the graph shows a change of state.
7	Gas pressure		Pressure caused by the particles of a gas colliding with the walls of a container	19	Atomic model		A simple Dalton atomic model. Atoms are solid indestructible spheres
8	Change of state		Occurs when a substances gains or loses energy. Common changes of state include melting, freezing, sublimation, condensation, and vaporization.	20	Subatomic particles		Rutherford's gold foil experiment showed the existence of a dense core in an atom, called the nucleus.
9	Atom element compound		Atom – the smallest unit of matter Element – a substance made of one type of atom Compound – two or more different atoms chemically bonded together	21	Symbols and molecular formula		Each element in the periodic table has a symbol. E.g. Sodium – Na. Molecular formula shows the actual number of each atoms for each element in a compound. E.g. H2O has 2 hydrogen atoms and 1 oxygen atom.
10	Physical change		A change which is reversible and does not result in new products being formed	22	Conservation of mass		No atoms are created or destroyed during a chemical reaction. The mass of the reactants is equal to the mass of the products
				23	Separating mixtures		Filtration - Used for separating an insoluble solid from a liquid. E.g sand and water Evaporation - Used for separating a soluble solid from a liquid. E.g. salt and water



VOCABULARY

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Science Year 7 AC1

	Word	Definition	Synonyms	Antonyms	Etymology
24	Particle	A very tiny object such as an atom or molecule, too small to be seen with a microscope.	Atom, Molecule	Big, A lot of	Late Middle English from Latin particula 'little part', diminutive of pars
25	Diffusion	The process by which particles in liquids or gases spread out through random movement from a region where there are many particles to one where there are fewer.	Dispersal, Scattering	Collection, Concentrated	Late Middle English in the sense 'pouring out, effusion'
26	Gas pressure	Caused by collisions of particles with the walls of a container. Density: How much matter there is in a particular volume, or how close the particles are.	Squeeze, Stress	Relax, Ease	Late Middle English from Old French, from Latin pressura, from press- 'pressed'
27	Evaporate	Change from liquid to gas at the surface of a liquid, at any temperature.	Disappear,	Moisten,	From Latin evaporat- 'changed into vapor'
28	Boil	Change from liquid to a gas of all the liquid when the temperature reaches boiling point.	Bubble	Cool, Freeze	From Latin bullire 'to bubble'
29	Condense	Change of state from gas to liquid when the temperature drops to the boiling point.	Compress	Expand	From Old French condenser 'very thick'
30	Melt	Change from solid to liquid when the temperature rises to the melting point.	Soften, Heat	Freeze, Coagulate	Related to Old Norse melta 'to malt, digest'.
31	Freeze	Change from liquid to a solid when the temperature drops to the melting point.	Chill, Congeal	Heat, Liquefy	Old English frēosan (in the phrase hit frēoeth 'it is freezing')
32	Sublimate	Change from a solid directly into a gas.			from Latin sublimis. sub- 'up to' and limen 'threshold'
33	Pure substance	Single type of material with nothing mixed in.	Simple, Plain	Mixture	from Old French, from Latin substantia 'being, essence'
34	Filtration	Separating substances using a filter to produce a filtrate (solution) and residue.	Clean, Refine	Pollute	Late Middle English denoting a piece of felt
35	Density	Mass per unit volume or the degree of compactness of a substance	Heavy, thick	Light, Thin	Early 17th century from French densité
36	Volume	The amount of space that a substance or object occupies, or that is enclosed within a container.	Amount		From Latin volumen, volumin- 'a roll'
37	Elements	What all substances are made up of, and which contain only one type of atom.	Matter	Compound	Latin elementum 'principle, rudiment'.
38	Atom	The smallest particle of an element that can exist.	Particle	Ion, compound	Latin from Greek atomos 'indivisible'
39	Molecules	Two to or more atoms chemically joined together. Most non-metals exist either as small or giant molecules.	Particle, Atom	Ion	Fom modern Latin molecula, diminutive of Latin moles 'mass'
40	Compound	Pure substances made up of two or more elements chemically joined together.	Fusion	Division	Latin componere 'put together'.