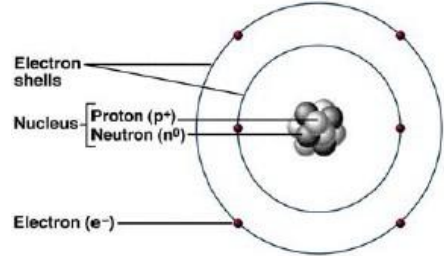


Section A: Key Vocabulary	
Tier 3 vocabulary	Definition
Matter (n)	Anything that has mass.
Particle (n)	Tiny piece of matter such as an atom, ion, or molecule.
Substance (n)	A particular kind of matter. Can be an element or compound.
Model (n)	Description, analogy or equation that helps to explain the physical world.
Electrostatic force (n)	Forces of attraction between oppositely charged particles.
Subatomic particle (n)	Particles from which atoms are made.
Isotope (n)	Atoms of the same element with the same number of protons, but different number of neutrons.
Ion (n)	Charged particles formed when an atom, or group of atoms, loses or gains electrons.
Tier 2 vocabulary	Definition
Reversible (adj)	Capable of being reversed so that the previous state or situation is restored.
Irreversible (adj)	Not able to be undone or altered.
Imply (v)	Indicate the truth or existence of (something).
Relevant (adj)	Appropriate to the current time, period, or circumstances; of contemporary interest.
Replicate (v)	Make an exact copy of; reproduce.
Diagram (v)	Represent (something) in graphic form.
Movement (n)	An act of moving.
Radius (n)	A straight line from the centre to the circumference of a circle or sphere.

Section B: Important Information			
Chemical and physical changes			
	Reversibility	What happens to particles?	Examples
Physical change	Reversible	Changes state or breaks into pieces	Making ice cream, mixing sand with water, dissolving sugar in tea.
Chemical change	Difficult or Impossible to reverse	Particles change to form a new substance	Cooking eggs, steel rusting, burning fuel.
Structure of the atom			
Subatomic particle	Relative mass	Relative charge	
Proton	1	+1	
Neutron	1	0	
Electron	0.0005	-1	
The radius of a nucleus is about 100 000 times less than the radius of an atom.			
The size of an atom is approximately 1x10 ⁻¹⁰ m (0.1nm).			
Calculating subatomic particles			
Number of protons = atomic number			
Number of neutrons = mass number – atomic number			
Number of electrons = number of protons - charge			

Section C: Diagrams				
Structure of the atom				
				
The particle model				
State	Diagram	Arrangement	Relative distances	Movement
Solid		Regular	Very close	Vibrate around fixed positions
Liquid		Random	Close	Move around each other
Gas		Random	Far apart	Move quickly in all directions
The particle model does not take into account: Forces between particles, the size of particles, or the space between particles.				
Chemical symbol				
