

SC3a Structure of an atom

Word	Pronunciation	Meaning
atom		Atoms are small particles from which all substances are made. They are the smallest neutral part of an element that can take part in chemical reactions.
electron		Tiny particle with a negative charge that is found in shells around the nucleus of an atom.
electron shell		Area around a nucleus that can be occupied by electrons, usually drawn as a circle (in 'target diagrams'). Also called an electron energy level or an 'orbit'.
element		A simple substance made up of only one type of atom.
neutron		Electrically neutral subatomic particle found in the nucleus of most atoms.
nucleus		The positively charged centre of an atom.
proton		A positively charge subatomic particle in the nucleus of all atoms.
relative charge		The electric charge of a subatomic particle compared to the charge on a proton.
relative mass		The mass of a subatomic particle compared to the mass of a proton.
subatomic particles		The smaller particles that make up atoms – protons, neutrons and electrons.

SC3b Atomic number and mass number

Word	Pronunciation	Meaning
atomic number		The number of protons in the nucleus of an atom (symbol Z). Also known as the proton number.
mass number		The total number of protons and neutrons in the nucleus of an atom (symbol A). Also known as the nucleon number.
periodic table		Chart in which the elements are arranged in order of increasing atomic number.

SC3c Isotopes

Word	Pronunciation	Meaning
A_r		Symbol for relative atomic mass (RAM).
isotopes		Atoms of an element with the same number of protons (atomic number) but different mass numbers due to different numbers of neutrons.
mean		An average calculated by adding up the values of a set of measurements and dividing by the number of measurements in the set.
nuclear fission		The reaction in which the nucleus of a large atom, such as uranium, splits into two smaller nuclei.

relative atomic mass (RAM)		The mean mass of an atom relative to the mass of an atom of carbon-12, which is assigned a mass of 12. The RAM of an element is the mean relative mass of the isotopes in the element.
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SC4a Elements and the periodic table

Word	Pronunciation	Meaning
chemical property	<i>kem-ik-al</i>	How a substance reacts with other substances.
periodic table		An ordered list of all known elements.
physical property	<i>fi-zi-kal</i>	A description of how a material behaves and responds to forces and energy. Hardness is a physical property.
prediction	<i>pred-ik-shun</i>	What you think will happen in an experiment and why you think this.
relative atomic mass, A_r		The mean mass of an atom relative to the mass of one-twelfth of an atom of carbon-12, which is assigned a mass of 12. The A_r of an element is the mean relative mass of the isotopes in the element.

SC4b Atomic number and the periodic table

Word	Pronunciation	Meaning
atomic number		The number of protons in the nucleus of an atom (symbol Z). Also known as the proton number.
group		A vertical column of elements in the periodic table. Elements in the same group generally have similar properties.
inert		Does not react.
period		A horizontal row in the periodic table.
relative atomic mass		The mean mass of an atom compared to $1/12^{\text{th}}$ the mass of an atom of carbon-12. (One atom of carbon-12 has been assigned a mass of 12.)
X-ray		Electromagnetic radiation that has a shorter wavelength than UV but longer than gamma rays.

SC4c Electronic configurations and the periodic table

Word	Pronunciation	Meaning
electron		Tiny particle with a negative charge that is found in shells around the nucleus of an atom.
electron shell		Areas around a nucleus that can be occupied by electrons, usually drawn as circles. Also called an electron energy level.
electronic configuration		The arrangement of electrons in shells around the nucleus of an atom.