SC3a Structure of an atom

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| 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

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| 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

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| 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. |

SC4a Elements and the periodic table

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| Word | Pronunciation | Meaning |
| **chemical property** | **kem**-ik-al | How a substance reacts with other substances. |
| **periodic table** |  | An ordered list of all known elements. |
| **physical property** | fi-**zi-kal** | A description of how a material behaves and responds to forces and energy. Hardness is a physical property. |
| **prediction** | pred-**ik**-shun | 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

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| 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 1/12th 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

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| 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. |