

Science Big Ideas learning journey – Years 7 and 8

Y5 <i>The Sun, Earth and planets</i>	Y5 <i>Investigating forces, levers, gears and pulleys</i>	Y5 <i>Testing properties and designing uses for materials</i>	Y6 <i>Reversible changes states and separating mixtures</i>	Y6 <i>Irreversible changes</i>	Y5 <i>Human lifecycle and puberty</i>	Y5 <i>Parts of a plants and how plants reproduce</i>	Y6 <i>Human circulatory system and how to be healthy</i>	Y6 <i>How living things have evolved over time</i> <i>Fossilisation</i>
Y6 <i>Investigating light and shadows</i>	Y6 <i>Making circuits and changing components</i>				Y5 <i>Life cycles of different animals</i>			Y6 <i>How organisms are classified</i>

YEAR 7	PHYSICS	CHEMISTRY	BIOLOGY	YEAR 8
Reproduction Puberty, gametes, organs, fertilisation, conception, menstruation, contraception & plant reproduction	BIG IDEA EARTH IN SPACE Understanding the importance of the earth and the systems of space given to generation and time.	BIG IDEA SUBSTANCES AND PROPERTIES Substances are either made of a single chemical substance or a mixture of substances which each have distinct properties.	BIG IDEA THE CELLULAR BASIS OF LIFE Organisms are made of one or more cells, which need to intake nutrients and excrete waste to carry out life processes.	Organisms and their environments Food webs/chains, ecosystems, decomposers, interdependence, biodiversity
The solar system and beyond Planets, stars, galaxies, gravity & seasons	BIG IDEA ELECTRICITY AND MAGNETISM The electricity world is largely a consequence of electric charge. Understanding electricity and magnetism helps us develop technology in many applications.	BIG IDEA PARTICLES AND STRUCTURE All matter is made up of atoms. The behaviour and structural arrangement of atoms explains the properties of different materials.	BIG IDEA HEALTH AND DISEASE Organisms must stay hydrated, breathe to survive and obtain the level of nutrients needed from interacting with the environment to stay healthy.	Electric circuits Drawing symbols, current, voltage, series, parallel
Elements & compounds Atoms, molecules, symbols, formulae	BIG IDEA MATTER Substances are made of particles. Understanding matter helps us to design our world.	BIG IDEA CHEMICAL REACTIONS During a chemical reaction, atoms are rearranged forming new substances.	BIG IDEA ORGANISMS AND THEIR ENVIRONMENTS All organisms, including humans, depend on resources within the environment in which they live and affect organisms that live there.	Earth Chemistry Air quality, weathering, water cycle and CO ₂ , combustion
Cell structures Cell shapes/sizes Diffusion and the cell membrane	BIG IDEA FORCES AND MOTION Forces make things change. Understanding forces helps us to predict and control physical change.	BIG IDEA EARTH CHEMISTRY Substances can move within and between the atmosphere, hydrosphere, geosphere and biosphere as part of biogeochemical systems.	BIG IDEA HEREDITY AND LIFE CYCLES Genetic information is passed from each generation to the next through reproduction. The environment affects the behaviour, growth and development of organisms.	Sound & Light waves Vibrations, insulation, dissipation, reflection, shadows
Describing forces Balanced / unbalanced Friction, Energy stores / transfers	BIG IDEA SOUND, LIGHT AND WAVES Waves transfer information. Understanding waves helps us to communicate.	BIG IDEA DYNAMIC EARTH The Earth's crust is constantly changing as new rocks are formed and older rocks are eroded.	BIG IDEA VARIATION, ADAPTION AND EVOLUTION Different animals and plants have evolved to survive by natural selection of better adapted individuals. The great diversity of organisms is the result of evolution.	Human Health & lifestyles Diet, obesity, deficiency, starvation & exercise
Substances & Mixtures Separating solutions Particle model Melting/boiling points				Heating & Cooling Temperature, thermal stores, conduction
Cells, tissues, organ systems Supplying cells Digestion, Gas exchange, Skeleton and muscles				Chemical Change Oxidation, thermal decomposition, equations/formulae
Acids and Alkalis Reactions of acids and alkalis & neutralisation				Variation, adaptation & evolution Variation, species, adaptation, evolution, fossil evidence, competition

Conceptual understanding of the Big Ideas in Science continues through Years 9, 10 & 11

