INTENT-

- To develop knowledge and understanding of key Biology, Chemistry and Physics topics
- Students to apply this knowledge and explain key ideas within Science, applying them to a range of typical and frequent assessment points.
- To develop basic practical skills and data analysis.

The bigger picture:

The year 8 curriculum continues to develop an understanding of key scientific concepts needed throughout the curriculum and creating a building block for later years. The curriculum is also designed to start developing an enquiring mind through key practical's that will allow for skills needed for Required practical's at GCSE to be built on.

Bilton School Planning for Progress over Time
Programme of Study 2023/24

IMPLEMENTATION

	Term 1 Energy Resources, Earth & Atmosphere, Space Project								HOLIDAY: 1 WEEK	Term 2 Space Project, Food & Digestion, Compounds & Mixtures							HOLIDAY: 2 WEEKS	Term 3 Compounds & Mixtures, Photosynthesis & Respiration,				HOLIDAY: 1 WEEK	Term 4 Combustion, Forces					HOLIDAY: 2 WEEKS	Term 5 Forces, Movement, Exercise Investigation							HOLIDAY: 1 WEEK	Term 6 Exercise Investigation, Motion						
KS3	04/09/2023	11/09/2023	18/09/2023	25/09/2023	02/10/2023	09/10/2023	16/10/2023	23/10/2023		06/11/2023	13/11/2023	20/11/2023	27/11/2023	04/12/2023	11/12/2023	18/12/2023		08/01/2024	15/01/2024	22/01/2024	29/01/2024	05/02/2024		19/02/2024	26/02/2024	04/03/2024	11/03/2024	18/03/2024		08/04/2024	15/04/2024	22/04/2024	29/04/2024	06/05/2024	13/05/2024	20/05/2024		03/06/2024	10/06/2024	17/06/2024	24/06/2024	01/07/2024	08/07/2024	15/07/2024
Year 8	TTD x 2, Energy Resources L1, 2	Energy Resources L3,4, 4.5 (Review)	Energy Resources L5, 6, 7RP	Energy Resources 8RP, 9 (Revision), Earth & Atmosphere L1	Earth & Atmosphere L2, 3, 4	Earth & Atmosphere L4.5 (Mid Review), 5, 6	Earth & Atmosphere L7RP, 8RP, 9 (Revision)	**ETT**, Space Project L1, L2		Space Project L3, 4, 5	Space Project L6, 7 (Review), Food & Digestion L1	Food & Digestion L2, 3, 4	Food & Digestions L4.5 (Mid Review), 5, 6	Food & Digestion 7RP, 8RP, 9 (Revision	**ETT**, Compounds & Mixtures L1, 2	Compounds & Mixtures L3, 4, 4.5 (Mid Review)		Compounds & Mixtures L5, 6, 7RP	Compounds & Mixtures L8RP, 9 (Revision), Photo & Resp L1	Photosynthesis & Respiration L2, 3, 4	Photosynthesis & Respiration L4.5 (Mid Review), 5, 6	Photosynthesis & Respiration L7RP, 8RP, 9 (Revision)		Comps & Mix/Bioenergetics Revision, **ETT**, Combustion L1	Combustion L2, 3, 4	Combustion 4.5 (Mid Review), 5, 6	**Science Week Lesson**, Combustion L7RP, 8RP	Combustion 9 (Revision), Forces L1, 2		Forces L3, 4, 4.5 (Mid Review)	Forces L5, 6, 7RP	Forces L8RP, 9 (Revision), **ETT**	Movement L1, 2, 3	Movement L4, 4.5 (Mid Review), 5	Movement L6, 7RP, 8RP	Movement L9 (Revision), Exercise Investigation L1, 2		Exercise Investigation L3, 4, 5	EOY Assessment Revision x 3	**EOY Assessment**, Motion L1, 2	Motion L3, 4, **EOY Assessment Review/FAR**	Motion L4.5 (Mid Review), 5, 6	Motion L7RP, 8RP, 9 (Revision)	Skills Lessons x 3
Progress and assessment	**End of topic test (ETT)** **Follow on questions to test previous knowledge through the Unit.** **FAR completed approximately every 6 lessons.**									**End of topic test (ETT)** **Follow on questions to test previous knowledge through the Unit.** **FAR completed approximately every 6 lessons.**								**End of topic test (ETT)** **Follow on questions to test previous knowledge through the Unit.** **FAR completed approximately every 6 lessons.**					**End of topic test (ETT)** **Follow on questions to test previous knowledge through the Unit.** **FAR completed approximately every 6 lessons.**						**Follow on questions to test previous knowledge through the Unit.** **FAR completed approximately every 6 lessons.**								**End of topic test (ETT)** **Follow on questions to test previous knowledge through the Unit.** **FAR completed approximately every 6 lessons.**						
Required Practical (RP)	**Energy Resources: Skills** Graphs **Earth and Atmosphere: Mass and Gravity** Conclusions									**Food and Digestion: Food Tests** Following a Method **Compounds and Mixtures: Purifying Rock Salt** Writing a Method								**Compounds and Mixtures: Purifying Rock Salt** Writing a Method **Photosynthesis and Respiration: Role of light in photosynthesis.** Graph					**Combustion: Energy in Fuels** Making and recording observations. **Forces: Investigating Moments** Writing a method.						**Movement: Skills** Variables **Exercise Investigation.**								**Motion: Car/Ramp Investigation.** Planning an Investigation.						
Homework *(ensure that this is NOT stand alone, but clearly advances or embeds knowledge and understanding)*	**Educake Homework**									**Educake Homework**								**Educake Homework**						**Educake Homework**						**Educake Homework**								**Educake Homework**						
Key Vocabulary/literacy opportunities	**Energy Resources:** *Energy resource, Food, Fuel, Fossil Fuel, Non-Renewable, Renewable, National Grid, Electricity, Nuclear Power.* **Earth and the Atmosphere:** *Earth, Atmosphere, Carbon Cycle, Respiration, Combustion, Photosynthesis, Climate Change, Recycling, Planet, Moon, Star, Mass, Weight, Gravity.* **Guided Reading Activity:** Evaluation of the advantages and disadvantages of nuclear fuel as a source of energy.									**Food and Digestion:** *Balanced Diet, Nutrients, Malnutrition, Deficiency Diseases, Digestion, Digestive System, Bacteria, Enzymes, Drugs, Alcohol, Smoking, Cancer* **Compounds and Mixtures:** *Atom, Element, Compound, Mixture, Solute, Solvent, Soluble, Insoluble, Solution, Filtration, Separation, Evaporation, Distillation, Chromatography.*								**Compounds and Mixtures:** *Atom, Element, Compound, Mixture, Solute, Solvent, Soluble, Insoluble, Solution, Filtration, Separation, Evaporation, Distillation, Chromatography.* **Photosynthesis and Respiration:** *Respiration, Photosynthesis, Cell, Mitochondria, Chloroplast, Energy, Aerobic Respiration, Anaerobic Respiration, Lactic Acid, Oxygen Debt.* **Combustion:** *Combustion, Fuel, Incomplete Combustion, Complete Combustion, Oxidation, Air Pollution, Global Warming, Greenhouse Effect, Igneous Rock, Metamorphic Rock, Sedimentary Rock.*								**Combustion:** *Combustion, Fuel, Incomplete Combustion, Complete Combustion, Oxidation, Air Pollution, Global Warming, Greenhouse Effect, Igneous Rock, Metamorphic Rock, Sedimentary Rock.* **Forces:** *Force, Newtons, Weight, Mass, Moment, Lever, Balanced Forces, Unbalanced Forces.* **Guided Reading Activity:** Evaluation of the advantages and disadvantages of recycling.								**Movement:** *Skeleton, Bone, Muscle, Antagonistic Pair, Joint.* **Guided Reading Activity:** Evaluation of the importance of keeping bones healthy and how this can be done.								**Motion:** *Speed, Distance-Time Graph, Gradient, Moment, Lever, Stationary, Relative Motion.*						

National Curriculum Links																	
	Energy Resources: • fuels and energy resources. **Earth and its Atmosphere:** • the composition of the Earth • the structure of the Earth • the rock cycle and the formation of igneous, sedimentary and metamorphic rocks • Earth as a source of limited resources and the efficacy of recycling • the carbon cycle • the composition of the atmosphere • the production of carbon dioxide by human activity and the impact on climate.		**Food and Digestion:** • content of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, minerals, dietary fibre and water, and why each is needed • calculations of energy requirements in a healthy daily diet • the consequences of imbalances in the diet, including obesity, starvation and deficiency diseases • the tissues and organs of the human digestive system, including adaptations to function and how the digestive system digests food (enzymes simply as biological catalysts) **Compounds and Mixtures:** differences between atoms, elements and compounds mixtures, including dissolving simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography		**Photosynthesis and Respiration:** • the structure and functions of the gas exchange system in humans, including adaptations to function • the mechanism of breathing to move air in and out of the lungs, using a pressure model to explain the movement of gases, including simple measurements of lung volume • the impact of exercise, asthma and smoking on the human gas exchange system • the role of leaf stomata in gas exchange in plants. • aerobic and anaerobic respiration in living organisms, including the breakdown of organic molecules to enable all the other chemical processes necessary for life • a word summary for aerobic respiration • the process of anaerobic respiration in humans and micro-organisms, including fermentation, and a word summary for anaerobic respiration • the differences between aerobic and anaerobic respiration in terms of the reactants, the products formed and the implications for the organism. • the reactants in, and products of, photosynthesis, and a word summary for photosynthesis • the dependence of almost all life on Earth on the ability of photosynthetic organisms, such as plants and algae, to use sunlight in photosynthesis to build organic molecules that are an essential energy store and to maintain levels of oxygen and carbon dioxide in the atmosphere the adaptations of leaves for photosynthesis. **Combustion:** • combustion, thermal decomposition, oxidation and displacement reactions • the rock cycle and the formation of igneous, sedimentary and metamorphic rocks		**Combustion:** • combustion, thermal decomposition, oxidation and displacement reactions • the rock cycle and the formation of igneous, sedimentary and metamorphic rocks **Forces:** • forces as pushes or pulls, arising from the interaction between two objects • using force arrows in diagrams, adding forces in one dimension, balanced and unbalanced forces • moment as the turning effect of a force • forces: associated with deforming objects; stretching and squashing – springs; with rubbing and friction between surfaces, with pushing things out of the way; resistance to motion of air and water • forces measured in newtons, measurements of stretch or compression as force is changed • force-extension linear relation; Hooke's Law as a special case • work done and energy changes on deformation • non-contact forces: gravity forces acting at a distance on Earth and in space, forces between magnets and forces due to static electricity.		**Movement:** • the structure and functions of the human skeleton, to include support, protection, movement and making blood cells • biomechanics – the interaction between skeleton and muscles, including the measurement of force exerted by different muscles • the function of muscles and examples of antagonistic muscles.		**Motion:** • speed and the quantitative relationship between average speed, distance and time (speed = distance ÷ time) • the representation of a journey on a distance-time graph • relative motion: trains and cars passing one another. • forces being needed to cause objects to stop or start moving, or to change their speed or direction of motion (qualitative only) • change depending on direction of force and its size.

Connected knowledge	**Maths** To interpret and draw bar charts To understand and draw line graphs		**Maths** To interpret and draw bar charts and pictograms				**Maths** To use mental methods to mulitply and divide decimals To use written methods of multiplying decimals To use written methods of dividing decimals To interpreting a calculator display of decimals To find compound measures - speed, pressure and density			
	IMPACT: Students will be able to measure progress using tracking sheets in exercise books. As all assessments will use generic criteria, will be moderated through dept meetings it will be possible to measure progress over time within and across year groups.									