

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. practicals

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 2021/22**

IMPLEMENTATION

	Term 1 Energy Resources, Earth and Atmosphere, Space Project								Term 2 Space Project, Food and Digestion, Compounds and Mixtures.								Term 3 Compounds and Mixtures, Photosynthesis and Respiration, Combustion.								Term 4 Combustion, Forces								Term 5 Movement, Exercise Investigation,								Term 6 Motion							
KS3	2/9/21	6/9/21	13/9/21	20/9/21	27/9/21	4/10/21	11/10/21	18/10/21	1/11/21	8/11/21	15/11/21	22/11/21	29/11/21	6/12/21	13/12/21	4/1/22	10/1/22	17/1/22	24/1/22	31/1/22	7/2/22	14/2/22	28/2/22	7/3/22	14/3/22	21/3/22	28/3/22	4/4/22	25/4/22	2/5/22	9/5/22	16/5/22	23/5/22	6/6/22	13/6/22	20/6/22	27/6/22	4/7/22	11/7/22	18/7/22								
Year 8	(TTD x2) Energy Resources L1, L2, L3 Energy Resources L4, L5, L6 Energy Resources L7RP, L8RP, Revision Review. Earth and Atmosphere L1, L2. Earth and Atmosphere L3, L4, L5. Earth and Atmosphere L6, L7RP, L8RP Earth and Atmosphere Revision, ETT. Space Project 1.								Review. Space Project L2, L3 Space L4, L5, L6. Food and Digestion L1, L2, L3. Food and Digestion L4, L5, L6. Food and Digestion L7RP, L8RP, Revision. ETT. Compounds and Mixtures L1, L2. Test Review. Compounds and Mixtures L3, L4, L5.								Compounds and Mixtures L6, L7RP, L8RP. Revision, Review. Photosynthesis and Respiration L1 Photosynthesis and Respiration L2, L3, L4 Photosynthesis and Respiration L5, L6, L7RP Photosynthesis and Respiration L8RP, Revision, ETT, Test Review. Combustion L1, L2. Combustion L3, L4, L5.								Combustion L6, L7RP, L8RP. Revision, Review. Forces L1. Forces L2, L3, L4. Forces L5, L6, L7RP. Forces L8RP, Revision, ETT. Test Review. Movement L1.								Movement L2, L3, L4 Movement L5, L6, L7RP Movement L8RP, Revision, Review. Exercise Investigation L1, L2, L3. Exercise Investigation L4, L5. Revision								ETT, Test Review, Motion L1. Motion L2, L3, L4. Motion L5, L6, L7RP Motion L8RP, Revision, Review. End of Year Assessment Revision End of Year Assessments Science Skills							
Progress and assessment	End of topic test (ETT) Follow on questions to test previous knowledge through the Unit. 13/9/21 – FAR 1 27/9/21 – FAR 2 18/10/21 – FAR 3								End of topic test (ETT) Follow on questions to test previous knowledge through the Unit. 8/11/21 – FAR 1 22/11/21 – FAR 2 6/11/21 – FAR 3								End of topic test (ETT) Follow on questions to test previous knowledge through the Unit. 10/1/22 - FAR 1 24/1/22 – FAR 2 7/2/22 – FAR 3								End of topic test (ETT) Follow on questions to test previous knowledge through the Unit. 28/2/22 – FAR 1 21/3/22 – FAR 2 4/4/22 – FAR 3								End of topic test (ETT) Follow on questions to test previous knowledge through the Unit. 2/5/22 – FAR 1 16/5/22 – FAR 2								End of Year Assessment (EOY) Follow on questions to test previous knowledge through the Unit. 6/6/2022 – FAR 1 27/6/2022 – FAR 2 11/7/2022 – FAR 3							
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 <i>(ensure that this is NOT stand alone, but clearly advances or embeds knowledge and understanding)</i>	Seneca 6/9/2021 – 3.1.1, 3.1.7, 2.5.6 13/9/2021 – 3.1.10, 3.1.11 20/9/2021 – 3.1.8, 3.1.9 27/9/2021 – 2.5.1, 2.5.8 4/10/2021 – 2.5.2, 2.5.3 11/10/2021 – 2.5.4, 3.2.3 18/10/2021 – 3.6.1								Seneca 1/11/2021 – 3.6.2 8/11/2021 – 3.6.3, 3.6.4 15/11/2021 – 1.4.1, 1.4.2 22/11/2021 – 1.4.4, 1.4.5 29/11/2021 – 1.1.11, 1.4.3 6/12/2021 – 2.1.7, 2.1.8 13/12/2021 – 2.1.10								Seneca 4/1/2022 – 2.1.9 10/1/2022 – 1.1.10, 1.6.3 17/1/2022 – 1.6.5 24/1/2022 – 1.5.1, 1.5.2 31/1/2022 – 1.5.3, 1.5.4 7/2/2022 – 2.4.5 14/2/2022 – 2.5.9, 2.5.10								Seneca 28/2/2022 – 2.7.1, 2.7.2 7/3/2022 – 2.7.3, 3.2.1 14/3/2022 – 3.2.2, 3.2.5, 21/3/2022 – 3.2.10, 3.2.3 28/3/2022 – 3.2.8, 3.2.9 4/4/2022 –								Seneca 25/4/2022 – 1.6.1 2/5/2022 – 1.6.2 9/5/2022 – 1.1.11 16/5/2022 – 1.6.3, 1.6.4 23/5/2022 – 1.6.5, 1.6.6								Seneca 6/6/2022 – 3.2.1 13/6/2022 – 3.2.5, 3.2.7 20/6/2022 – 3.2.8 27/6/2022 – 3.2.9 4/7/2022 - Revision 11/7/2022 - Revision 18/7/2022							
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.								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.								Movement: Skeleton, Bone, Muscle, Antagonistic Pair, Joint.								Motion: Speed, Distance-Time Graph, Gradient, Moment, Lever, Stationary, Relative Motion.							

<p>National Curriculum Links</p>	<p>Energy Resources:</p> <ul style="list-style-type: none"> fuels and energy resources. <p>Earth and its Atmosphere:</p> <ul style="list-style-type: none"> 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. 	<p>Food and Digestion:</p> <ul style="list-style-type: none"> 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) <p>Compounds and Mixtures:</p> <ul style="list-style-type: none"> differences between atoms, elements and compounds mixtures, including dissolving simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography 	<p>Compounds and Mixtures:</p> <ul style="list-style-type: none"> differences between atoms, elements and compounds mixtures, including dissolving simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography <p>Photosynthesis and Respiration:</p> <ul style="list-style-type: none"> 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. <p>Combustion:</p> <ul style="list-style-type: none"> combustion, thermal decomposition, oxidation and displacement reactions the rock cycle and the formation of igneous, sedimentary and metamorphic rocks 	<p>Combustion:</p> <ul style="list-style-type: none"> combustion, thermal decomposition, oxidation and displacement reactions the rock cycle and the formation of igneous, sedimentary and metamorphic rocks <p>Forces:</p> <ul style="list-style-type: none"> 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. 	<p>Movement:</p> <ul style="list-style-type: none"> 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. 	<p>Motion:</p> <ul style="list-style-type: none"> 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.
<p>Connected knowledge</p>	<p>Maths To interpret and draw bar charts To understand and draw line graphs</p>	<p>Maths To interpret and draw bar charts and pictograms</p>		<p>Maths To use mental methods to multiply 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</p>		
<p>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.</p>						