Stone Hill School				
Upper School Curriculum Plan 2020/21				
Science/Year 9				
Intent: Pupils will have a range of scientific experiences to enable them to raise their own questions about the world around them. They will start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. They will begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. They will help to make decisions about what observations to make, and will learn how to use new equipment appropriately. They will collect data from their own observations and measurements, recording and analysing this data. With help, pupils will look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. With support, they will identify new questions arising from the data. They should also recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. Pupils will use relevant scientific vocabulary correctly to discuss their ideas and communicate their findings. Practical scientific methods, processes and skills will be taught and learned through the teaching of the curriculum content.				
Term	**Week/s**	**Topic/Theme** ***Key vocabulary including Tier 3 subject specific words***	**Learning Outcomes** **Knowledge and Skills** **To know, to use, to apply…**	**Links to:** **Literacy, Numeracy, SMSC,** **Gatsby Benchmarks**
Autumn	**1-8**	**Light** *Light, Shadows, Mirror, Reflective, Dark, Reflection*	• recognise that they need light in order to see things • recognise that dark is the absence of light • notice that light is reflected from surfaces • recognise that light from the sun can be dangerous • recognise that there are ways to protect their eyes from the sun • recognise that shadows are formed when the light from a light source is blocked by a solid object • find patterns in the way that the size of shadows change	**Literacy:** Ask questions Answer questions Write for a purpose **Numeracy:** Making connections and comparisons **SMSC:** Enjoy learning about the world around them, Investigate moral and ethical issues
	9-15	**Rocks** *Fossils, Soils, Sandstone, Granite, Marble, Pumice, Crystals, Absorbent*	• compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • describe, in simple terms, how fossils are formed when things that have lived are trapped within rock • recognise that soils are made from rocks and organic matter.	**Literacy:** Talk or write about text/pictures Develop vocabulary Write with support Write independently Plan, draft, edit Write for a purpose **Numeracy:** **counting, measuring** **SMSC:** Use imagination, cooperate with others Links to Geography and rocks and soils in the local environment

Spring	**1-6**	**Plants**
		Air, Light, Water, Nutrients, Soil, Reproduction, Transportation, Dispersal, Pollination, Flower
			• identify the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
			• describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
			• explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow)
			• explore how the requirements for life of plants vary from plant to plant
			• investigate the way in which water is transported within plants
			• explore the part that flowers play in the life cycle of flowering plants, including:
			  ○ pollination,
			  ○ seed formation and seed dispersal.
				Literacy:
				Talk or write about text/pictures
				Ask questions
				Answer questions
				Use new vocabulary
				Write for a purpose
				Present work
				Numeracy:
				Measure length/capacity/mass/time/temp
				Record length/capacity/mass/time/temp
				Sequence events
				SMSC:
				Enjoy learning about the world around them

	6-12	**Animals Including Humans** *Movement, Muscles, Bones, Skull, Nutrition, Skeletons,*	• identify that animals, including humans, need the right types and amount of nutrition • identify that animals, including humans, cannot make their own food; they get nutrition from what they eat • identify that humans and some other animals have skeletons for support, protection and movement. • identify that humans and some other animals have muscles for support, protection and movement.	**Literacy:** Talk or write about text/pictures Ask questions Answer questions Use new vocabulary Present work **Numeracy:** Read a digital clock Sequence events **SMSC:** Enjoy learning about others, Enjoy learning about themselves
Summer	**1-5**	**Electricity** *Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators**,** Amps, Volts, Cell*	• identify common appliances that run on electricity • construct a simple series electrical circuit • identifying and naming basic parts of a simple series electrical circuit, including cells, wires, bulbs, switches and buzzers	**Literacy:** Talk or write about text/pictures Develop vocabulary **Numeracy:** Sequence events Making connections and comparisons

			• identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • recognise that a switch opens and closes a circuit • apply knowledge of switch and circuit to whether or not a lamp lights in a simple series circuit • recognise some common conductors and insulators • associate metals with being good conductors.	**SMSC:** Enjoy learning about the world around them
	6-12	**States of Matter** *Solid, Liquid, Gas, Evaporation, Condensation, Particles, Temperature, Freezing, Heating*	• compare materials according to whether they are solids, liquids or gases • group materials together, according to whether they are solids, liquids or gases • observe that some materials change state when they are heated or cooled • measure or research the temperature at which change of state happens in degrees Celsius (°C) • identify the part played by evaporation in the water cycle • identify the part played by condensation in the water cycle • associate the rate of evaporation in the water cycle with temperature.	**Literacy:** Role-play Compare Take part in discussion Present information and opinions **Numeracy:** Estimate length/capacity/mass/time/temp Measure length/capacity/mass/time/temp Record length/capacity/mass/time/temp **SMSC:** Enjoy learning about and reflecting on the world around them
Whole Year		**Working Scientifically**	• asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings.	
Intended impact: Pupils have a solid foundation and understanding of areas of learning and this will scaffold their learning in Years 10 and 11. They are asking questions and making decisions about the world around them. They are beginning to identify naturally occurring patterns and relationships and can use relevant scientific equipment. Pupils are collecting data based on their own observations and measurements and drawing conclusions from this data. Using the correct scientific language is preparing them for following the ASDAN Science course in KS4.				