SRS –Curriculum Overview – Science

	Term 1 Key knowledge/skills	Term 2 Key knowledge/skills	Term 3 Key knowledge/skills	Resources & Information for parents/students
Y1	Seasonal Changes – Weather changes and Seasons Everyday materials – explore the characteristics in a variety of everyday materials, including wood, plastic, glass, metal, water, and rocks	**Gravity & Motion** Through scientific investigations and discussion, the children will be exploring the following key questions: Who is Galileo Galilei and how did he experiment with gravity? Who was Isaac Newton and what was his 3rd law of motion all about? **Plants** Through scientific investigations and discussion, the children will explore plants and observe any changes in growth as well as learning how plants grow by planting our own sunflower plant. They will also learn about the variety of trees in our local environment, identifying similarities and differences	**Medieval Experiments** The children will learn about some of the daily tasks various workers would complete in a castle including preserving of various food items, performing music that has a variety of sound types and designing clothing fit for royalty. The children will conduct various experiments to test how this was done and observe the changes. **Animals incl. Humans** Through scientific investigations and discussion, the children will be exploring the following key questions: What makes an animal a reptile, amphibian, mammal or bird? Why are fish so well adapted to life in water? Finally, the chn will explore the similarities and differences between carnivores, herbivores and omnivores.	BBC Bitesize Year 1 Science - BBC Bitesize

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Y2	**Suitability of Materials** The knowledge of materials will further be developed through an investigation into houses and the materials needed. The challenge of building (through DT) a model house from any time period will be tested by re-creating a natural disaster.	**Animals including Humans** Through scientific investigations and discussion, the children will be exploring the following key questions: What changes occur when growth takes place? How do we meet the needs of animals/humans? **Animals including Humans** Building on from their learning in spring 1, the children will learn about habitats in the UK and around the world, including micro-habitats. They will then use this knowledge to explore why a camel is suited to life in a desert. Lastly, they will develop an understanding of how a	**Plants** Building on from the learning in Y1, the children will explore the necessary conditions certain plants need to grow healthily. The cacao tree will be studied in detail, investigate its lifecycle and experimenting by planting seeds & bulbs in an investigation that considers fair testing.	BBC Bitesize Year 2 Science - BBC Bitesize
Y3	**Rocks** Children will discover different types of rocks and be able to recognise the uses of different rocks through the prehistoric timeline. Children will be able to describe how fossils are formed and what living things were fossilised. **Plants** This term we will explore different parts of flowering plants and explain their jobs, we will also investigate what plants need to grow well. Also, the children will investigate how water is transported through a plant. Fertilisation and pollination will also be a key component of this unit.	**Animals including Humans** Through scientific investigations and discussion, the children will be exploring the following key questions: How are human skeletons designed to act like armour for different organ?	**Forces** Children will be exploring forces, its principles and how it affects our daily life. They will also investigate magnetism. Throughout this unit of work, they children will explore inventors and inventions and the impact they have in the world we live in today. **Light** – Purpose, Light is reflected from Surfaces – It forms shadows – Protection from light Rocks – different types of rocks, their appearance and their simple physical properties	BBC Bitesize Year 3 Science - BBC Bitesize

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Y4	**States of matter** Through scientific investigations and discussion, the children will be exploring the following key questions: How can materials be classified under the term's solids, liquids and gases? **Digestive System** Through scientific investigations and discussion, the children will be exploring the following key questions: What are the functions of the basic parts of the digestive system in humans? What are the different types of teeth in humans and their simple functions? What are the roles of producers, predators and prey in a food chain?	**All Living Things** Through scientific investigations and discussion, the children will be exploring the following key questions: What are vertebrates and invertebrates? What are habitats and how do they vary? **Sound** Through scientific investigations and discussion, the children will be exploring the following key questions: How is sound created and heard? Can sound travel? How might can sound be manipulated to human advantage?	**Electricity** Through our understand of common household appliances we will discover the essential part electricity plays in our daily lives. We will learn about circuits and switches as well as conductors and insulators.	BBC Bitesize Year 4 Science - BBC Bitesize

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Y5	**Living things and their habitats** The main focus for this topic of work is lifecycles, initially we will learn the life process of reproduction in some plants and animals by exploring how some plants reproduce. The focus then turns to the lifecycle of mammals, amphibians, birds and insects. **Forces** In this unit the children will learn about the different types of forces and the use of mechanisms such as levers, gears and pulleys. The children will identify forces and find out about Isaac Newton and his discoveries about gravity.	**Earth and Space** Children will learn about the way that ideas about the solar system have developed, understanding how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists such as Ptolemy, Alhazen and Copernicus. Children will work scientifically by: comparing the time of day at different places on the Earth through internet links and direct communication; creating simple models of the solar system; constructing simple shadow clocks and sundials, calibrated to show midday and the start and end of the school day; finding out why some people think that structures such as Stonehenge might have been used as astronomical clocks.	**Properties & Changes of Materials** In this unit the children will learn about different materials, their uses and their properties, as well as dissolving, separating mixtures and irreversible changes. They will explore the properties of materials to find the most suitable material for different purposes. **Animals including Humans** [Humans Timeline] – children will describe the changes as humans develop to old age by drawing a timeline to indicate stages in the growth and development of humans, [Growth of babies] – children will describe the development of babies in their first year. [Puberty] – children will learn and compare the comparing the changes that take place to boys and girls during puberty. Children will be able to describe and explain the main changes that occur during puberty. [Changes in old age] – children will learn and understand the changes that take place in old age. [Gestation Periods] – children will report findings from enquiries, including oral and written explanations of results in the context of the gestation period for animals. [Life Expectancy] – children will compare gestation periods and life expectancies of animals. They will learn how to record	BBC Bitesize Year 5 Science - BBC Bitesize

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			data and results of increasing complexity using bar and line graphs, and models	
Y6	**Light** Children will draw on prior knowledge of light taught in year 3 and will further develop their understanding of how we see. Children complete a series of investigations to explore and develop their understanding of scientific investigations. Children will explore how light travels, how light is reflected, how light can be refracted and what a spectrum is. **Electricity** Electricity's role in WWII will be explored through investigative circuit building. Children will work collaboratively to create circuits, increase and decrease the voltage of a circuit to change the brightness of a lightbulb.	**Evolution and Inheritance** Through science lessons the children will explore the habitats within the polar regions and how animals can adapt to live in these conditions. Charles Darwin's 'survival of the fittest' will be unpicked.	**Animals Including Humans** In this topic children will focus on understanding the human body and ways to maintain health as well as the importance of maintaining a healthy lifestyle. They will link this to famous South American athletes/sporting figures. Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood. Children will also have the opportunity to complete a heart dissection. Describe the ways in which nutrients and water are transported within animals, including humans. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	BBC Bitesize Year 6 Science - BBC Bitesize
Y7	Enquiry processes, organisms (cells, the body), matter (properties, changes of state, separating mixtures), forces, electricity	Variation, food chains, reactions (acids and alkalis, neutralisation, metals), waves	Light, the eye, reproduction, Earth, solar system, Scientific project and presentation	BBC Bitesize - https://www.bbc.co.uk/bitesize/subjects/zng4d2p
Y8	Enquiry processes, organisms (effects of drugs, alcohol and tobacco on health, nutrition and digestion), matter (atoms, electrons and compounds, the periodic table), forces, pressure, moments	Genes (evolution and extinction, DNA, genetic modification), reactions (combustion, decomposition), energy calculations, waves and the electromagnetic spectrum, ecosystems (respiration)	Ecosystems (photosynthesis), earth (climate change and recycling), Scientific project and presentation	BBC Bitesize - https://www.bbc.co.uk/bitesize/subjects/zng4d2p

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Y9	Cells structures, atomic structure, periodic table, structure and bonding, conservation and dissipation of energy, Go further project - allergies	Energy sources and transfer by heating, electricity in the home and circuits, organisation including the digestive system, Go further project- hydrophilic vs hydrophobic	Blood vessels and the heart, Preventing & treating disease, chemical changes, acids and bases, neutralisation, Go further project - bridges	BBC Bitesize - https://www.bbc.co.uk/bitesize/examspecs/z8r997h
Y10	P6 – Molecules and Matter C4 – Chemical Calculations B7 – Non communicable diseases P7 - Radioactivity B8 – Photosynthesis C5 – Chemical Changes C6 – Electrolysis P8 – Forces in Balance	B9 – Respiration C7 – Energy Changes P9 – Motion B10 – The Human Nervous System B11 – Hormonal Control C8 – Rates & Equilibrium	C9 – Crude Oil & Fuels P10 – Forces & Motion B12 – Reproduction C10 – Chemical Analysis B13 – Variation & Evolution P11 – Waves	BBC Bitesize - https://www.bbc.co.uk/bitesize/examspecs/z8r997h
Y11	C10 – Chemical Analysis B13 – Variation & Evolution B14 – Genetics & Evolution C11 – The Earth's Atmosphere P11 – Waves B15 – Adaptations, Interdependence & Competition B16 – Organising an Ecosystem B17 – Biodiversity & Ecosystems	Mock Exams Feedback P12 – Electromagnetic Waves P13 – Electromagnetism C12 – The Earth's Resources Revision	Revision	BBC Bitesize - https://www.bbc.co.uk/bitesize/examspecs/z8r997h
Y12				
Y13				