Singleton Church of England Primary School
Progression of knowledge
Science – Y5 (Cycle A)

	Year 5 – Unit 1 **Let's Get Moving**	**Year 5 – Unit 2** **Growing Up and Growing Old**	**Year 5 – Unit 3** **Amazing Changes**
SUBSTANTIVE CONCEPTS Substantive concepts are concepts that children will come across repeatedly throughout their education in Science	Plants Living Things and Their Habitats Animals Including Humans Evolution and Inheritance Seasonal Changes Materials Rocks Light Forces Sound Electricity Earth and Space	Plants Living Things and Their Habitats Animals Including Humans Evolution and Inheritance Seasonal Changes Materials Rocks Light Forces Sound Electricity Earth and Space	Plants Living Things and Their Habitats Animals Including Humans Evolution and Inheritance Seasonal Changes Materials Rocks Light Forces Sound Electricity Earth and Space
KEY VOCABULARY	force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears	puberty, the vocabulary to describe sexual characteristics in line with the school's RSE policy	thermal insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material
SUBSTANTIVE KNOWLEDGE Substantive knowledge refers to the residual knowledge that children should take away from the unit after it has been taught. It consists of the core facts in terms of Scientific knowledge. In this progression map, you will find a concise summary of the substantive knowledge for each unit.	• Knows that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Knows the effects of air resistance, water resistance and friction, that act between moving surfaces. • Knows that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	• Describe the changes as humans develop to old age.	• Know that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. • Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Know that scientific evidence that has been used to support or refute ideas or arguments
MAKING CONNECTIONS **Key knowledge**	**Year 3** • Compare how things move on different surfaces. • Knows that some forces need contact between two objects, but magnetic forces can act at a distance. • Observe how magnets attract or repel each other and attract some materials and not others. • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. • Knows that magnets have two poles. • Predict whether two magnets will attract or repel each other, depending on which poles are facing.	**Year 4** • Knows the simple functions of the basic parts of the digestive system in humans. • Knows the different types of teeth in humans and their simple functions. **Year 6** • Knows the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. • Knows the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	**Year 4** • Can compare and group materials together, according to whether they are solids, liquids or gases. • Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C). • Knows the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. • Knows some common conductors and insulators, and associate metals with being good conductors.

		• Knows the ways in which nutrients and water are transported within animals, including humans.	
Working Scientifically	• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Use test results to make predictions to set up further comparative and fair tests. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. / Use test results to make predictions to set up further comparative and fair tests. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.		• Identify scientific evidence that has been used to support or refute ideas or arguments