Singleton Church of England Primary School
Progression of knowledge
Science – Y3 (Cycle A)

	Year 3 – Unit 1 **Food and Our Bodies**	**Year 3 – Unit 2** **Forces and Magnets**	**Year 3 – Unit 3** **The Nappy Challenge**
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	nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine	force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole	practical work, fair testing, relationships, accurate, thermometer, data logger, stopwatch, timer, estimate, data, diagram, identification key, chart, bar chart, prediction, similarity, difference, evidence, information, findings, criteria, values, properties, characteristics, conclusion, explanation, reason, evaluate, improve
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 and historical knowledge of the period, such as historical narrative, significant events or people, period features, chronology and substantive concepts. In this progression map, you will find a concise summary of the substantive knowledge for each unit.	• Knows that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. • Knows that humans and some other animals have skeletons and muscles for support, protection and movement	• 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.	• Know how to :- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers. Gather, record, classify and present data in a variety of ways to help in answering questions.
MAKING CONNECTIONS **Key knowledge**	**Year 2** • Knows about the basic needs of animals, including humans, for survival (water, food and air). • Knows the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	**Year 2** • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	**Year 2** • Knows and can compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.

	• Knows and can describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. **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. • Construct and interpret a variety of food chains, identifying producers, predators and prey.	**Year 5** • 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.	• Knows how to find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. **Year 4** • Can compare and group materials together, according to whether they are solids, liquids or gases. • Observe that some materials change state
Working Scientifically		• Set up simple practical enquiries, comparative and fair tests. / Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers. / Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. / Use straightforward scientific evidence to answer questions or to support their findings.	• Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers. Gather, record, classify and present data in a variety of ways to help in answering questions • Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers. • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions