Singleton Church of England Primary School
Progression of knowledge
Science – Y4 (Cycle B)

	Year 4 – Unit 1 **What's That Sound?**	**Year 4 – Unit 2** **Power It Up**	**Year 4 – Unit 3** **Living Things**
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	sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, quiet, loud, insulation	electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol	classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate
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 how to identify how sounds are made, associating some of them with something vibrating. • Knows that vibrations from sounds travel through a medium to the ear. • Find patterns between the pitch of a sound and features of the object that produced it. • Find patterns between the volume of a sound and the strength of the vibrations that produced it. • Knows that sounds get fainter as the distance from the sound source increases	• Identify common appliances that run on electricity. • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. • Knows 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. • Knows that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • Knows some common conductors and insulators, and associate metals with being good conductors.	• Knows that living things can be grouped in a variety of ways. • Knows how to use classification keys to help group, identify and name a variety of living things in their local and wider environment. • Knows that environments can change and that this can sometimes pose dangers to living things.
MAKING CONNECTIONS **Key knowledge**	**Year 2** • Using our ears to hear different sounds. • Knowing our five senses.	**Year 6** • Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. • Use recognised symbols when representing a simple circuit in a diagram	**Year 3** • Knows the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. **Year 5** • Knows the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • Knows the life process of reproduction in some plants and animals.
Working Scientifically	• Set up simple practical enquiries, comparative and fair tests. / Use straightforward scientific evidence to answer questions or to support their findings. • 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	• Use straightforward scientific evidence to answer questions or to support their findings.	• Ask relevant questions and use different types of scientific inquiries to answer them. • Use straight forward scientific evidence to answer questions or to support their findings. • Gather, record, classify and present data in a variety of ways to help in answering questions.

	• including thermometers and data loggers. • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.		• Record finding using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables