In the Light of Jesus, we Love, Listen and Grow

Key stage 2 Science planning 2022-2023: Year 4

Working Scientifically
National curriculum objectives: During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: ♣ 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.

These are the scientific enquiry skills which run throughout the Year 4 units of work.

Year 4

	Sound	Rocks
Year 4 Lockdown Y1 and Y2	National curriculum objectives: *Pupils should be taught to:* ♣ Identify how sounds are made, associating some of them with something vibrating ♣ Recognise 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 ♣ Recognise that sounds get fainter as the distance from the sound source increases.	National curriculum objectives: *Pupils should be taught to:* ♣ 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
	Key questions: • How are sounds made? • How does sound travel? • How can the volume of a sound be changed? • What happens to a sound as it gets further away? • What is the best material for absorbing sound? • How can the pitch of a sound be altered?	Key questions: • What do we already know about rocks? • What are the different types of rocks and how were these formed? • Which rocks are the hardest? • Which rocks are the most water permeable? • What are fossils and how were they formed? • What can we learn from fossils? • What is soil made of? • Which type of soil would be the best for someone who lives in a very wet area of Britain?

	Light	Forces and Magnets	Animals including humans
Year 4 Lockdown Y1 and Y2	National curriculum objectives: *Pupils should be taught to:* ♣ Recognise that they need light in order to see things and that dark is the absence of light ♣ Notice that light is reflected from surfaces ♣ Recognise that light from the sun can be dangerous and that there are ways to protect their eyes ♣ Recognise that shadows are formed when the light from a light source is blocked by an opaque object ♣Find patterns in the way that the size of shadows change	National curriculum objectives: *Pupils should be taught to:* ♣ Compare how things move on different surfaces ♣ Notice that some forces need contact between 2 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 ♣ Describe magnets as having 2 poles ♣ Predict whether 2 magnets will attract or repel each other, depending on which poles are facing	National curriculum objectives: *Pupils should be taught to:* ♣ Identify 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 ♣ Identify that humans and some other animals have skeletons and muscles for support, protection and movement.
	Key questions: • What do we need in order to see things? • How is light reflected from surfaces? • What are shadows and why are they formed? • How do shadows behave? • How can we protect our eyes?	Key questions: • What is a force? • How do things move on different surfaces? • How do magnetic forces work? • How can we use magnets to sort materials? • Which magnet is the strongest? • What are the magnetic poles?	Key questions: • Which foods do humans need for growth and which do they need for energy? • What is a balanced diet? • Why do humans have skeletons? • How do muscles allow humans to move? • How are animals without internal skeletons protected?