Enquiry 1 - Cycle 2

Living Things and Their Habitats

5.17

Science Skills	In this enquiry you will be:	
Please refer to the skills document and video for guidance on the science skills of Planning Investigations, Presenting and Analysing Data and Evaluation of Investigations, as well as pupil progression in each skill.	Observing Over Time	X
	Pattern Seeking	X
	Identifying, Classifying and Grouping	X
	Comparative and Fair Testing (Controlled Investigations)	X
	Researching Using Secondary Resources	X

National Curriculum Knowledge	Key Questions
Animal Life Cycles and Reproduction • Describe the life process of reproduction in some plants and animals. • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	1. Can I state that animals can only produce offspring via sexual reproduction? 2. Can I compare the life cycles of a mammal, amphibian, insect and a bird?
Plant Reproduction • Describe the life process of reproduction in some plants and animals.	1) Can I state that plants can reproduce either sexually or asexually? 1. Can I describe some methods for asexual reproduction in plants?

Scientist Study on Malaika Vaz

Previous Knowledge

EYFS

– pupils should be able to identify different parts of the body and understand growth and change.

– pupils may be able to identify the leaf and flower part of a plant.

KS1

Animals Including Humans

– know that animals, including humans, have offspring that grow into adults.

– know the basic stages in the life cycles of animals including humans.

Plants

– identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.

– identify and describe the basic structure of a variety of common flowering plants.

– identify and name the roots, trunk, branches and leaves of a tree

– observe and describe how seeds and bulbs grow into mature plants.

– find out and describe how plants need water, light and a suitable temperature to grow and remain healthy.

LKS2

- explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

Enquiry 2 - Cycle 2

Light

6.1

Science Skills	In this enquiry you will be:	
Please refer to the skills document for guidance on the science skills of Planning Investigations, Presenting and Analysing Data and Evaluation of Investigations, as well as pupil progression in each skill.	Observing Over Time	X
	Pattern Seeking	X
	Identifying, Classifying and Grouping	X
	Comparative and Fair Testing (Controlled Investigations)	X
	Researching Using Secondary Resources	X

National Curriculum Knowledge	Key Questions
• Recognise that light appears to travel in straight lines. • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	1) Can I provide evidence that light travels in straight lines? 2) Can I classify objects as luminous or non-luminous? 3) Can I describe the path light takes so we can see? 4) Can I explain why shadows have the same shape as the objects that cast them?

Scientist Study on CV Raman

Previous Knowledge

EYFS – pupils will learn about change, and they may know that nights are longer in the winter, and days are longer in the summer.

KS1

Seasonal Change

– Observe changes across the four seasons.

– Observe and describe weather associated with the seasons and how day length varies.

Enquiry 3 – Cycle 2

Forces

6.5

Science Skills	In this enquiry you will be:	
Please refer to the skills document and video for guidance on the science skills of Planning Investigations, Presenting and Analysing Data and Evaluation of Investigations, as well as pupil progression in each skill.	Observing Over Time	X
	Pattern Seeking	X
	Identifying, Classifying and Grouping	X
	Comparative and Fair Testing (Controlled Investigations)	X
	Researching Using Secondary Resources	X

National Curriculum Knowledge	Key Questions
Gravity Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.	1) Can I describe gravity as a pull, or attractive force? 2) Can I explain that gravity pulls objects towards the centre of the Earth, and if they are in the air, it would make object fall? 3) Can I calculate weight?
Friction Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.	1) Can I say that friction occurs when two surfaces slide against each other? 2) Can I identify that friction slows objects down? 3) Can I describe the relationship between the amount of friction and the rate of deceleration?
Air Resistance Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.	1) Can I explain that air resistance is a type of friction and what happens to produce air resistance? 2) Can I describe the effects of air resistance? 3) Can I suggest ways of increasing or decreasing air resistance?
Water Resistance Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.	1) Can I say what water resistance is? 2) Can I say what water resistance does to objects travelling through water? 3) Can I make some suggestions of how to reduce water resistance?
Leavers, Pulleys and Gears Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	1) Can I state that machines can make mechanical work easier? 2) Can I explain that the longer the lever, the less effort needed to lift a load? 3) Can I explain that adding pulleys reduces the effort required to lift a load? 4) Can I describe the effect of a larger cog on a smaller cog?

Scientist Study on Isaac Newton

Previous Knowledge

Yr. EYFS and KS1 - No requirements to teach Forces at these stages, although pupils may know that when they rub their hands together, they get warm

Enquiry 4 (continued)– Cycle 2 5.6-5.13
Properties and Changes of Materials
Irreversible and reversible changes

Science Skills	In this enquiry you will be:	
Please refer to the skills document and video for guidance on the science skills of Planning Investigations, Presenting and Analysing Data and Evaluation of Investigations, as well as pupil progression in each skill.	Observing Over Time	
	Pattern Seeking	X
	Identifying, Classifying and Grouping	X
	Comparative and Fair Testing (Controlled Investigations)	X
	Researching Using Secondary Resources	X

National Curriculum Knowledge	Key Questions
Hardness Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.	1. Can I produce my own hardness scale? 2. Can I link the hardness of materials to their use? 3. Can I explain how additives change the properties of the main metal?
Transparency and Magnetism Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.	1. Can I classify materials as transparent, translucent or opaque? 2. Can I classify materials based on whether they are attracted to magnets?
Thermal and Electrical Conductivity Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.	1. Can I define the terms conductor and insulator? 2. Can I state which types of material make the best thermal and electrical conductors/insulators?

Scientist Study on Becky Schroeder

Previous Knowledge

KS1 Everyday Materials

– Identify and name a variety of everyday materials including wood, metal, plastic glass, water and rock.

– Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Rocks

- Recognise that soils are made from rocks and organic matter.

States of Matter

– Compare and group together materials according to whether they are solids, liquids or gases.

– Observe that some materials change state when heated or cooled, and measure or research the temperature at which this happens in degrees Celsius.

Enquiry 5 – Cycle 2

Living Things and their Habitats

Science Skills	In this enquiry you will be:	
Please refer to the skills document and video for guidance on the science skills of Planning Investigations, Presenting and Analysing Data and Evaluation of Investigations, as well as pupil progression in each skill.	Observing Over Time	X
	Pattern Seeking	X
	Identifying, Classifying and Grouping	X
	Comparative and Fair Testing (Controlled Investigations)	X
	Researching Using Secondary Resources	X

National Curriculum Knowledge	Key Questions
Micro Organisms Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.	1) Can I describe the groups of organisms? 2) Can I describe some of the characteristics of microorganisms? 3) Can I state some differences and similarities between microorganisms?
Classification Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.	1) Can I say that organisms are classified into broad groups and that these groups can be broken down further? 2) Can I name some of these groups? 3) Can I classify organisms based on common characteristics?

Scientist Study on Carl Linneus

Previous Knowledge

EYFS and KS1

– No requirement to learn about microorganisms at this stage, but pupils may know about the flu and measles, and that food can go off if kept until past its use by date.

LKS2

– Rocks - Describe in simple terms how fossils are formed when things that have lived are trapped within rock.

– Living Things and their Habitats - Describe the life process of reproduction in some plants and animals.