### Cycle A

### Once upon a time and Sparkle and Shine

To explore which materials are magnetic.

To compare, sort and group objects accordance to their material, size, shape or use.

To know that materials have different properties.

Starry Night and Winter Wonderland

To describe a simple change of state.

**Everyday Materials** 

materials based on their properties?

Where do natural materials come from?

What are human-made materials made from?

Can you identify, compare and group manmade and natural

Cycle A

### Let's Explore and Build it up

Cycle B

To sort and group materials according to their size, shape, colour and use. To know that simple equipment is used to measure distance, height, weight and time.

Can you measure using simple equipment?

To name different materials and talk about their properties.

Cycle A

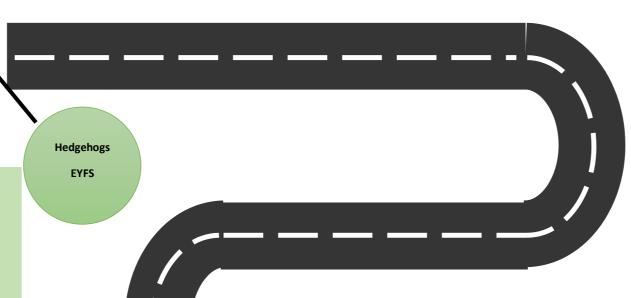
Rocks

States of Matter

# Marvellous Machines and Puppets and Pop Up's

Can you group and sort magnetic and non-magnetic materials? On the Beach and Move it and Moving On

Why do some objects float and some sink? What are they made from?



# Cycle A

Properties and Changes of Materials Describe the properties and uses of a variety of materials. What is a good thermal conductive material? Can you investigate solubility? How can you separate heterogeneous and homogeneous mixtures? Can you describe reversible and irreversible changes?

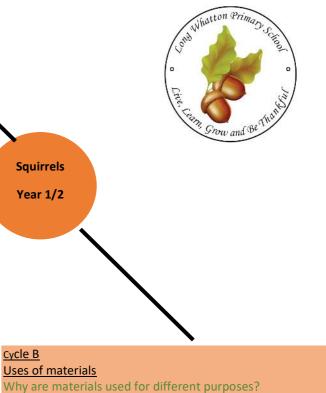
### Describe the properties of a solid, liquid and gas. What is particle theory?

What is the structure of the Earth?

What are the 3 main types of rock?

Robins

Year 3/4



How can materials be shaped and recycled?



#### Cycle A

#### Me and My Community and Exploring autumn

Describe simple changes to the body. What can you see in our natural environment and how can you look after it? What is a habitat? To know that plants and trees are living things. Starry Night and Winter Wonderland To give examples of what living things need to survive and how they should be cared for. Dangerous dinosaurs and Puddles and Rainbows To describe the difference between a carnivore and herbivore. Can you name the four seasons? Sunshine and Flowers and Shadows and Reflections What lives in our local environment/habitat? To begin to name and group plants and trees according to their key features such as leaves, seeds and flowers. To name the main parts of a plant. How do living things change over time? - Growth and decay. To name and describe natural phenomena. Big Wide World and Splash! To know that litter can be harmful.

### Cycle B Let's Explore and Build it up

What is a habitat? Can you describe local habitats? Long Ago and Stories and Rhymes

How have you changed and grown since you were a baby? Can you describe how the weather changes with the seasons?

### Ready, Steady, Grow and Signs of Spring

How can we look after our environment?

What are living things? How can we care for them? What do they need/do to survive?

To name different foods and their sources.

To name and use the five senses to observe.

Can you name the main parts of a plant and tree and describe their features?

To name different types of animals and their young.

To know that living things change over time - growth and decay.

To name and describe natural phenomena.

Animal Safari and Creep, Crawl and Wriggle



# Long Whatton C of E Curriculum Biology Road Map

# Cycle A Human senses Can you name the five senses and their functions? How do our senses keep us safe? Can you label the human body parts and describe their functions? low are humans different from one another and other mammals? Plant Parts o label the different parts of a plant and leaf. What is the importance of plants. Can you describe different types of leaves? Can you identify different types of garden plants and talk about where they may grow? Animal Parts To name, classify, group and sort animals based on their key features. What do all living things have in common? escribe the key features of carnivores, herbivores and omnivores. **Squirrels** Year 1/2 Hedgehogs EYFS Owls Year 5/6 Robins Year 3/4

# Cycle A

Animal Nutrition and the Skeletal System

Describe nutrition as a life process for all living things.

What are the five main food groups of a balanced human diet?

Can you label the main bones in the human skeleton?

Can you describe the function and movement of the three joint types in the human skeleton?

Describe how skeletal muscles work in pairs to create specific movement? What are the advantages and disadvantages of different animal skeleton types?

# Plants, nutrition and reproduction

Can you describe the parts of a plant and their functions? What is the plant life cycle?

What is the process of pollination and how can it occur? What different ways are seeds dispersed?

# Cycle B

Food and the Digestive System

To know what a producer and consumer is. What is an ecosystem and how do they function and balance? To understand and describe food chains and food webs. What is the digestive process and describe the digestive organs? Describe the types and functions of human and animal teeth. Label the structure of a tooth and understand the importance of good oral hygiene.

## Cycle B Circulatory System

What are the three parts of the circulatory system? Label each part of the heart and describe its function. What are the three types of blood vessel? How do sugar, salt and fat effect the heart? Can you understand a nutrition label?

# Evolution and Inheritance

To know that all living things are classified into five kingdoms. What is the difference between a microorganism and a virus? What is a fossil and what can it tell us? What is the theory of evolution? Describe inheritance and variation between living things. What is natural selection, adaption and survival of the fittest?

	<u>Cycle B</u>
	Human survival
	To name the stages of the human life cycle.
	To identify the five main food groups and four types of
	exercise.
	What is a balanced diet?
	What are humans needs and how do they stay healthy and
	hygienic?
	<u>Habitats</u>
	To explain what a habitat contains and provides.
	To identify living and non-living things within a habitat.
	Can you describe different habitats on earth?
	Can you identify plants and animals within habitats and simple
	food chains?
	How do plant and animal adapt within their habitat to survive?
	Plant survival
/	How does germination occur and what happens next?
	What do plants need to survive?
	How do plants grow and survive in extreme habitats?
	Animal survival
	To explain what a micro-habitat is and give examples.
	To know that different animals have different life cycles and
	produce different offspring.
	Can you describe the six invertebrate groups?
	How do humans harm or holp habitats?

How do humans harm or help habitats?

# Cycle A

### Human Reproduction and Ageing

Describe the stages and processes of a variety of

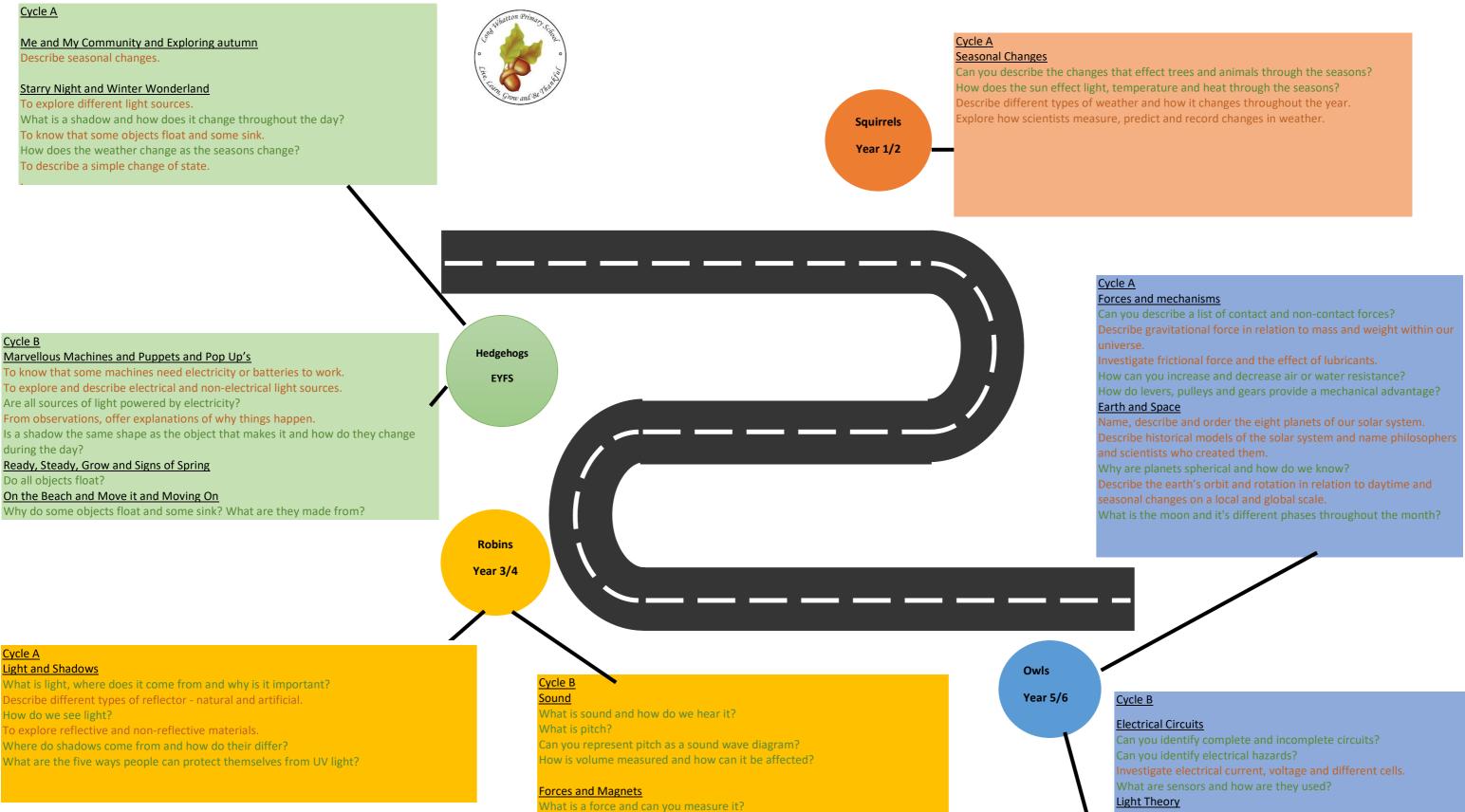
What are the stages of processes of the mammalian

Describe the human gestation time line.

What are the similarities and differences between

What are the effects of human ageing?

# Long Whatton C of E Curriculum Physics Road Map



Describe different types of frictional force.

What are magnets and how do they work?

What is the importance of electrical safety?

What is electricity and where does it come from?

Electrical Circuits and Conductors

nvestigate magnetic fields and their relationship to our planet.

Can you build simple circuits with a variety of components?

What components do we use in a circuit and how do we draw them?

- What is a light source and how does it travel?
- How does the eye see light rays?
- What is the electromagnetic spectrum and what is visible light? How do we perceive colours?
- Investigate reflection in different mirrors and describe the effect it has.
- What is refraction?

			<u>EY</u>	FS - Working Scient	ifically skills match	ed to enquiry skills		
	PLAN		DO		REVIEW			
	To ask scientific questions	To plan an enquiry	To observe closely	To take measurements	To gather/record results	To present results	To interpret results	To co on
Identify and classify	Ask questions tofind out more	Ask Why questions Choose the right resources to carry out their own plan	Use new vocabulary Talk about what theysee using a wide vocabulary			Write short sentenceswith words with known sound letter correspondence		
Comparative/FairTests			Compare quantities using language 'morethan, fewer than'	Develop their small motor skills so that they can use a range of tools competently, safely and confidently	Make comparisons between objects relating to size, length, weight and capacity	Begin to describe a sequence of events, real or fictional usingwords such as first	Articulate their ideas and thoughts in well – formedsentences	
Observation overtime	Talk about what they see using a wide vocabulary					Draw informationfrom a single map		
Pattern seeking								
Research								

To draw conclusions -KS2 only	To make a prediction -KS2 only	To evaluate an enquiry - KS2 only

	Key Stage 1 - Working Scientifically skills matched to enquiry skills											
	PLAN		DO			REVIEW						
	To ask scientific questions	To plan an enquiry	To observe closely	To take measurements	To gather/recordresults	To present results	To interpret results	To draw conclusions -KS2 only	To make a prediction -KS2 only	To evaluate anenquiry - KS2 only		
Identify and classify	Be able to ask a yes / no questions toaid sorting	Identify the headings for thetwo groups e.g. it is it is not	Be able to compareobjects based on obvious observablefeatures e.g. size			Sort objects and livingthings into two groupsusing a basic Venn diagram or table	Talk about a number of objects in each group andwhich has less etc.					
Comparative Tests	Identify the question to investigate from a scenario or choosea question from a range provided	Choose equipment to use and decide what to do or what to observeor measure in order to answerthe question	Make observations linked to answeringthe questions	When appropriate measure using standard units where all the numbers are on a marked scale.	Record data in simple prepared tables pictorially or photos	Present what they have learnt verbally, using pictures or blockdiagrams	Answer their question in simple sentences using theirobservations or measurements.					
Observation over	Ask a question about what might happen in the future based on an observation					Present what they have learnt verbally,using pictures						
Pattern seeking	Ask a question thatis looking for a pattern based on an observation				Record data in simple prepared tables and tally charts	Present what they have learnt verbally						
Research	Ask one or two simple questionslinked to a topic					Present what they have learnt verbally,using pictures	Be able to answer their questions using simple sentences					

LKS2 - Working Scientifically skills matched to enquiry skills											
	PLAN DO					REVIEW					
	To ask scientific questions	To plan an enquiry	To observe closely	To take measurements	To gather/recordresults	To present results	To interpret results	To draw conclusions	To make a prediction	To evaluatean enquiry	
Identify andclassify	Be able to ask a yes / no questionsto aid sorting	Be able to put appropriate headings onto intersecting Venn and Carroll Diagrams	Be able to compare objects based on more sophisticated observable features.			Sort objects and living things into groups using intersecting Venn and Carroll Diagrams	Spot patterns in thedata particularly two criteria with noexamples E.g. There are no living things with no wings and no legs	Draw conclusionswhen appropriate		Suggest improvement e.g. looking ata wider range of objects. Suggest a newquestion which has arisen from the investigation	
ComparativeTests	Ask a range of questions linkedto the topic	Decide what to change and what to measure or observe	AS for KS1	Measure using standard units wherenot all numbers are marked on the scale and take repeat readings where necessary	Prepare own tablesto record data	Present data in barcharts	Refer directly to their evidence whenanswering a question	Where appropriate provide oral or written explanations for their findings.	Use results from an investigation to make a prediction about a further result	Suggest improvements e.g. to method of taking measurements Suggest a new question which has arisen from the investigation	
Observation overtime		Decide what to change and what to measure or observe. Decidehow often to take the measurement	Make a range ofrelevant observations	Measure using standard units wherenot all numbers are marked on the scale. Use data loggers to measure over time		Present data in timecharts					
Pattern seeking		Decide what to measure or observe	AS for KS1	Measure using standard units wherenot all numbers are marked on the scale		Use ICT package topresent data as a scatter gram					
Research		Choose a source from a range provided				Present what theylearnt verbally or using labelled diagrams	Be able to answer their questions using simple scientific language			Suggest limitations e.g. only hadone book.	

	UKS2 - Working Scientifically skills matched to enquiry skills										
	PLAN		DO			REVIEW					
	To ask scientific questions	To plan an enquiry	To observe closely	To take measurements	To gather/recordresults	To present results	To interpret results	To draw conclusions -KS2 only	To make a prediction -KS2 only	To evaluatean enquiry -KS2 only	
Identify andclassify	Be able to ask a range of yes/no questions to air sorting and decidewhich ways of sorting will give useful information	Identify specificclear questions that will sort without ambiguity	Be able to comparenot only based on physical propertiesbut also using knowledge gained from previous enquiry			Create branching tree diagrams and keys to enable othersto name living things and objects	Be able to talk about the features that objects andliving things share and donot share based on information in the key	Be able to usedata to show that living things and materials thatare grouped together havemore things in common that with things in other groups.		Be able to explain using evidence that the branching database or classification key will only work for the living things or materials itwas created for.	
ComparativeTests	Ask a range of questions and identify the typeof enquiry that will help to answer the questions	Recognise and control variables	As for KS1	Measure using standard units usingequipment that has scales involving decimals	Prepare own tables to record data including columns for taking repeat readings.	Choose an appropriate form ofpresentation	Be able to answer their questions describing casualrelationships	Provide oral or written explanationsfor their findings	Use test results to make further predictions for future investigations	Explain their degree of trust in their results. E.g. precision in taking measurements, variables that may not have been controlled and	
Observation overtime					AS for KS1	Choose an appropriate form of presentation	Be able to answer theirquestions describing changes over time			accuracy of results.	
Pattern seeking						As for LKS2	Be able to answer theirquestion identifying patterns				
Research	Ask a range of questions recognising that some can be answered through research and other's can't.	Choose suitable sources				Present what theylearnt in a range ofways	Be able to answer their questions using scientificevidence gained from a range of sources			Be able to talkabout their degree of trust in the sources they used.	