

UKS2 Science

Autumn: Conflict (1 st half term)		Autumn: Conflict (2 nd half term)		
How is gravity different on the moon?		What shape is the moon?		
Forces		Earth and space		
Children Know :	Scientific enquiry question: What would make the best parachute? Children learn to:	Children Know :	Scientific enquiry question: What shape is the moon? Children learn to :	
<ul style="list-style-type: none"> ● That unsupported objects fall towards Earth because of the force of gravity acting between Earth and the falling object ● The effects of air resistance, water resistance and friction, that act between moving surfaces. ● Some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect. 	Scientific enquiry statement 1. Children plan to make and test 3 parachutes and decide on variables.	<ul style="list-style-type: none"> ● About the movement of the Earth and other planets relative to the sun in the solar system. ● About the movement of the moon relative to the Earth. ● The sun, Earth and moon are similar to a sphere shape. ● Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. 	Scientific enquiry statement 1. Children keep a moon diary over a period of time (at least a couple of weeks) and then discuss their findings.	
	Scientific enquiry statement 2. Children drop parachutes and record measurements.		Scientific enquiry statement 3. Children record data and results on a graph.	Scientific enquiry statement 3. Each night record the shape of the moon they see, what the weather conditions are like and the time of evening.
	Scientific enquiry statement 4. Use results to come to conclusions about what makes the best parachute.			Scientific enquiry statement 4. Use the results to predict the next lunar cycle.
				Scientific enquiry statement 6. Children use scientific evidence to help them understand that the moon does not change shape like their evidence suggests.

Spring: Planet Earth	
How diverse is nature? Living things and their environments/ living things and habitats	
Children Know :	Scientific enquiry question: Can you create a classification key for some pond animals? (Use the pond area) Children learn to:
<ul style="list-style-type: none"> The differences in the life cycles of a mammal, an amphibian, an insect and a bird. How some plants and animals reproduce. That plants, animals and micro-organisms can be broadly grouped by their similarities and differences and observable characteristics. 	Scientific enquiry statement 1. Children to plan how to find out which creatures are in the pond.
	Scientific enquiry statement 3. Use identification charts to identify and record the creatures they find in the pond. They then put them into their own classification key.
	Scientific enquiry statement 5. Think back to the big question about diversity and try to answer it now they have carried out their enquiry.

Summer: Britain (1 st half term)		Summer: Britain (2 nd half term)		
Should we use cars for journeys less than a mile? - impact on fitness Animals including humans		Why won't I stay the same? (RSHE)		
Children Know :	Scientific enquiry question Which type of exercise makes your heart rate beat the fastest? Children learn to:	Children Know : <ul style="list-style-type: none"> children to cover the human reproductive organs – linked to RSHE 		
<ul style="list-style-type: none"> Identify and name the main parts of the circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans. 	Scientific enquiry statement 1. Come up with an investigation to test how hard your heart works when doing different activities.	Year 5 (RSHE curriculum)	Year 6 (RSHE curriculum)	
	Scientific enquiry statement 2. Check your resting heart rate by finding your pulse and counting the beats per minute. Repeat after different exercises are carried out.	Name the main parts of the body including external genitalia (vulva, Vagina, Penis, testicles)	Identify the external genitalia and internal reproductive organs in males and females and begin to discuss puberty and the changes in females (menstruation, menstrual cycle and menstrual wellbeing)	
	Scientific enquiry statement 3. Record results for the different exercises on a graph.	About hygiene routines and changes to the body during puberty (hair, sweat glands, emotional wellbeing)	Discuss how puberty affects males (erections and wet dreams)	
		Know the importance of keeping clean and how to maintain hygiene	About hygiene routines and changes to the body during puberty Including physical and emotional changes	
		Know how to keep safe on line and where to report concerns about your own or someone else's personal safety.	know how the process of puberty relates to human reproduction – know how babies are conceived and are born	

Autumn: Human Kind	
How can we provide everyone with clean water? Properties and changes of materials	
Children Know :	Scientific enquiry question: Where would be the best place to put a solar still in the school grounds? Children learn to:
<ul style="list-style-type: none"> How to group materials based on their properties (hardness, solubility, transparency, conductivity, response to magnets) The reasons why some materials are used for a particular purpose, based on evidence from tests. Some materials dissolve in liquid to form a solution and could recover a substance from a solution. That dissolving, mixing and changes of state are reversible and can demonstrate this. That mixtures can be separated through filtering, sieving and evaporating. Some changes result in the formation of new materials and this kind of change is not usually reversible. Eg burning. 	Scientific enquiry statement 1. Children set up 3 solar stills in different places in the school grounds. Think about the variables.
	Scientific enquiry statement 2. Take regular measurements of the amount of purified water being formed in the solar stills.
	Scientific enquiry statement 3. Record their results using an appropriate graph.
	Scientific enquiry statement 5. Use results to draw conclusions about where to put a solar still.

Spring: Inventions (1 st half term)		Spring: Inventions (2 nd half term)	
Does light only travel in straight lines? Light		How does Electricity travel? Electricity	
Children Know:	Scientific enquiry question: Can you make light bend? Children learn to:	Children know:	Scientific enquiry question: Can you build a useful circuit such as a burglar alarm? Children learn to :
<ul style="list-style-type: none"> 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. 	Scientific enquiry statement 1. Set up an investigation to explore how mirrors allow light to travel round corners (plain, convex, concave)	<ul style="list-style-type: none"> 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. <p>Do not teach about parallel circuits</p>	Scientific enquiry statement 1. Children decide on the circuit they would like to make and make a plan.
	Scientific enquiry statement 3. Attempt to make light move through a simple maze		Scientific enquiry statement 3. They draw their circuit using the correct symbols
	Scientific enquiry statement 5. Explain reasons for the placements of mirrors and use conclusions to help answer the big question, Does light only travel in straight lines?		Scientific enquiry statement 5. Make an advertisement to promote their alarm.

Summer: Civilisations (1 st half term)		Summer: Civilisations (2 nd half term)	
What happened when Charles Darwin visited the Galapagos Islands?		Are all mammals pregnant for the same length of time?	
Evolution and inheritance		Animals including humans	
Children Know :	Scientific enquiry question: Could animals from the Galapagos Islands live anywhere else? Children learn to :	Children know: See Summer (BRITAIN) for RSHE knowledge for year 5 and 6	Scientific enquiry question: How quickly does a human baby develop in the womb compared with different animals? Children learn to :
<ul style="list-style-type: none"> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 	Scientific enquiry statement 1. Plan an enquiry to find out which animals live in the Galapagos Islands and their survival needs. Look at whether these animals live anywhere else. Have they adapted?	<ul style="list-style-type: none"> Describe the changes as humans develop to old age. Y6 children go into more detail about the human reproductive organs – linked to RSHE 	Scientific enquiry statement 1. Plan which animal gestation periods to compare with a human.
	Scientific enquiry statement 5. Make conclusions about how these animals came to be on the Galapagos Islands and how they have adapted to environments.		Scientific enquiry statement 2. Research online and record measurements of a baby and an animal at different stages of development.
	Scientific enquiry statement 6. Back up theories using scientific evidence.		Scientific enquiry statement 5. Present findings by creating a presentation.
			Scientific enquiry statement 6. Use scientific research from the internet to get measurements and timings of different animals and babies.

Scientific enquiry statements

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Use test results to make predictions to set up further comparative and fair tests.
- Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.
- Identify scientific evidence that has been used to support or refute ideas or arguments.