

FPA Overview - SUBJECT: Science - Overview

YEAR	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
	Working Scientifically skills taught through the exploration of the following content:					
1	<p>A Big Adventure Transform an area of our school to tell everyone about our Big Adventure</p> <p>Science NC Coverage:</p> <p>Animals including <u>Humans</u></p> <p><i>Focus on Humans</i></p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p>	<p>Comics Can... Produce a comic book of heroes and villains from different times and places</p> <p>Science NC Coverage:</p> <p>Animals including <u>Humans</u></p> <p><i>Focus on Humans</i></p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p>	<p>Rumble in the Jungle How can we produce a soundtrack for a Jungle tale?</p> <p>Science NC Coverage:</p> <p>Plants</p> <ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees <p>Identify and describe the basic structure of a variety of common flowering plants, including trees.</p> <p>Science NC Coverage:</p> <p>Animals including <u>Humans</u></p> <p><i>Focus on Animals</i></p> <ul style="list-style-type: none"> Identify and name a variety of common animals Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals 	<p>Buckets and Spades Plan and design a gallery that brings the seaside to the city</p> <p>Science NC Coverage:</p> <p>Everyday Materials</p> <ul style="list-style-type: none"> Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties. <p>Science NC Coverage:</p> <p>Seasonal changes</p> <ul style="list-style-type: none"> Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies. 		
		<p>Using parts of the body needed for super hero powers</p> <p>Senses that are used by superheroes</p>	<p>Plants that are in the jungle and how they are structured</p> <p>Identify jungle animals and investigate carnivores etc.</p> <p>Compare and contrast jungle animals</p>		<p>Materials of objects used when we go to the beach</p> <p>Look at properties for beach materials e.g. bucket and spade</p> <p>Compare and contrast beach material properties</p> <p>Which season do we visit the beach and why?</p> <p>Look at the weather during the seasons and why it is best to visit the beach at certain times of the year</p>	

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<p>2</p>	<p>A Big Adventure</p> <p>Transform an area of our school to tell everyone about our Big Adventure</p> <p>NC Coverage:</p> <p>Use of Everyday Materials</p> <ul style="list-style-type: none"> Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 	<p>Dinosaur Stomp</p> <p>How can we bring dinosaurs back to life creatively?</p> <p>NC Coverage:</p> <p>Animals including Humans</p> <ul style="list-style-type: none"> notice that animals including humans, have offspring which grow into adults find out about and describe the basic needs of animals, including humans, for survival (water, food and air) <p>NC Coverage:</p> <p>Living things and their Habitats</p> <ul style="list-style-type: none"> Explore and compare the differences between things that are living, dead, and have never been alive identify habitats to which animals are suited and how different habitats provide for the basic needs, and how they depend on each other Identify and name a variety of animals in their habitats, including micro-habitats Describe how animals obtain their food using the idea of a simple food chain, identify different sources of food. 	<p>The Really Rural Show</p> <p>How can we recreate the countryside in our city environment?</p> <p>NC Coverage:</p> <p>Animals including Humans</p> <ul style="list-style-type: none"> describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. <p>NC Coverage:</p> <p>Plants</p> <ul style="list-style-type: none"> 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 stay healthy. identify and name a variety of plants
	<p>Materials and their properties – Leather and the leather making process</p> <p>How can different materials change shape – links to leather making</p>	<p>Exploring living and dead – links to dinosaurs</p> <p>Investigate habitats that dinosaurs required and what caused them to become extinct</p> <p>Look at what is need for survival for dinosaurs and ultimately why they did not</p>	<p>How hygiene is important on farms – fruit picking, cow milking etc.</p> <p>What food comes from farms and what is important to our diet?</p> <p>How do farmers grow their crops – what is needed for a plant to grow?</p> <p>Structure of seeds/bulbs and plant growth through crops</p>

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3	<p>A Big Adventure</p> <p>Transform an area of our school to tell everyone about our Big Adventure</p> <p>NC Coverage:</p> <p>Animals including Humans</p> <ul style="list-style-type: none"> • 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. <p>Forces and Magnets</p> <ul style="list-style-type: none"> • compare how things move on different surfaces • notice that some forces need contact between two 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 materials by whether they are attracted to a magnet, and identify magnetic materials • describe magnets as having two poles • predict whether two magnets will attract or repel each other, depending on which poles are facing. 	<p>Sparks will Fly</p> <p>Challenge: How can we tell the story of fire creatively?</p> <p>NC Coverage:</p> <p>Light</p> <ul style="list-style-type: none"> • 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 a solid object • find patterns in the way that the size of shadows change. 	<p>Around the World in 80 Beats</p> <p>Challenge: Compose an album of songs of the world</p> <p>NC Coverage:</p> <p>Plants</p> <ul style="list-style-type: none"> • identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers • explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant • investigate the way in which water is transported within plants • explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. <p>NC Coverage:</p> <p>Rocks</p> <ul style="list-style-type: none"> • 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.
	<p>Forces – how barges work/float/propel</p> <p>Forces – Water force and use of locks on canals</p> <p>Magnetic forces – links to equipment on boats and the compass</p>	<p>How do we see fire? How do our eyes work so that we can spot the dangers?</p> <p>Reflection of light – Great Fire of London through the window</p>	

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4	<p>A Big Adventure</p> <p>Transform an area of our school to tell everyone about our Big Adventure</p> <p>NC Coverage:</p> <p>Living things and their Habitats</p> <ul style="list-style-type: none"> recognise that living things can be grouped in a variety of ways explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment recognise that environments can change and that this can sometimes pose dangers to living things. <p>States of Matter</p> <ul style="list-style-type: none"> compare and group materials together, according to whether they are solids, liquids or gases observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 	<p>Toy Makers</p> <p>Challenge: Can we design and make a toy that moves?</p> <p>NC Coverage: Electricity</p> <ul style="list-style-type: none"> 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 identify 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 recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit recognise some common conductors and insulators, and associate metals with being good conductors. 	<p>Castle Attack</p> <p>Challenge: How can we re-enact a castle attack?</p> <p>NC Coverage</p> <p>Animals including Humans</p> <ul style="list-style-type: none"> Construct and interpret a variety of food chains, identifying producers, predators and prey. describe the simple functions of the basic parts of the digestive system in humans identify the different types of teeth in humans and their simple functions <p>NC Coverage: Sound</p> <ul style="list-style-type: none"> 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.
	<p>Mining – Use of solids liquids and gases – look at use of gas in mines</p> <p>Changes through heat within mining – explosives etc.</p>	<p>Investigate how electricity is used within toys today</p> <p>Look at how electrical circuits can be used to make toys move, flash make noises etc.</p> <p>Use of switches and how they can be used on toys to control them</p>	<p>Sound – How would we hear to know that our castle is about to be attacked?</p> <p>How would sound travel through castle walls/moats etc?</p> <p>Investigate how sound changes with distance from the castle</p>

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5	<p>A Big Adventure</p> <p>Transform an area of our school to tell everyone about our Big Adventure</p> <p>NC Coverage:</p> <p>Properties and Changes of Materials</p> <ul style="list-style-type: none"> • compare and group together everyday materials on the basis of their properties • know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • use knowledge of solids, liquids and gases to decide how mixtures might be separated • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials • demonstrate that dissolving, mixing and changes of state are reversible changes • Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible • 	<p>Food vs Man</p> <p>How can we run a healthy, Fairtrade tuck shop?</p> <p>NC Coverage:</p> <p>Living things and their Habitats</p> <ul style="list-style-type: none"> • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • describe the life process of reproduction in some plants and animals. <p>NC Coverage: (Y6)</p> <p>Electricity</p> <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>Space Infinity</p> <p>Challenge: How can we produce a Space game?</p> <p>NC Coverage:</p> <p>Earth and Space</p> <ul style="list-style-type: none"> • describe the movement of the Earth, and other planets, relative to the Sun in the solar system • describe the movement of the Moon relative to the Earth • describe the Sun, Earth and Moon as approximately spherical bodies • use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. <p>Forces</p> <ul style="list-style-type: none"> • explain gravity acting between the Earth and the falling object • identify the effects of air resistance, water resistance and friction, that act between moving surfaces • recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.
	<p>Look at the properties of glass and how it can change from liquid to solid form.</p> <p>Reversible and irreversible change within glass making</p>		<p>Investigation of space for game</p> <p>How do the Earth sun and moon move?</p> <p>What is gravity and how can we include it within our game?</p>

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6

A Big Adventure

Transform an area of our school to tell everyone about our Big Adventure

NC Coverage:

Living things and their Habitats

- describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals
- give reasons for classifying plants and animals based on specific characteristics.

NC Coverage:

Evolution and Inheritance

- 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.

Child's War

Challenge: Recognise heroes of World Wars

NC Coverage:

Animals including Humans

- describe the changes as humans develop to old age.
- identify and name the main parts of the human 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.

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The Final Countdown

Challenge: How can we set up an FPA events company?

NC Coverage:

Light

- 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.

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	<p>How poor lighting effected the sight of those in chain making workshops</p>		
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