

Year 6

Plan Bee

Medium Term Planning and progression

Light - Seeing Light	Animals, including humans - Healthy Bodies	Living things and their habitats - Classifying Organisms	Electricity - Changing Circuits	Evolution and Inheritance	Working Scientifically
<u>NC statements</u> 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. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. To be able to know how simple typical instruments work i.e. telescope, binoculars, mirror, magnifying glass etc.	<u>NC statements</u> 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 water are transported within animals, including humanise four seasons. Describe the ways in which nutrients and water are transported within animals, including humans.	<u>NC statements</u> 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.	<u>NC statements</u> 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.	<u>NC statements</u> 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. Know what evolution and can explain what it is.	I know how to plan different types of scientific enquiry. I know how to control variables in an enquiry. I know how to measure accurately and precisely using a range of equipment. I know how to record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. I know how to use the outcome of test results to make predictions and set up further comparative and fair tests. I know how to report findings from enquiries in a range of ways.

					I know how to explain a conclusion from an enquiry. I know how to relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory. I can read, spell and pronounce scientific vocabulary accurately.
<u>Key Vocabulary</u>					
light, iris, moon, cornea, lens light sources, variety, produce, strongest, weakest investigate, opaque, transparent, translucent, materials, shadows reflects, surfaces, travels.	vitamins, protein, carbohydrate fibre, heart, arteries, veins, biceps, pectoral nutrition, variety, healthy, growth, energy nutrition, variety, healthy, growth, energy	Micro-organisms, plants, animals, subdivide, observation, invertebrates, vertebrates, group, classification, key, environment, habitat, system.	Lamp, brightness, volume, buzzer, loudness, switch, symbol, circuit, circuit diagram, component, motor, series, parallel	inheritance, variation, advantageous, disadvantageous, evolution, fossils, organism, evolution, offspring, adaptation, inhabited.	

Field Road Academy

Topic	Knowledge - Children will learn	Children will be able to...	Prior Knowledge	Key Questions
Seeing light	To know we see things through light entering the eyes. To know electricity and circuits work. To know that light travels from a source. To recognise the main parts of the eye and how they work. To know that mirrors change the direction of a light beam. To know that shiny, smooth surfaces reflect light better than dull surfaces. To describe the difference between a shadow and a reflection.	- Plan and carry out an experiment to investigate how shadows behave. - Describe how light travels. - Explore the differences between shadows and reflections and consolidate knowledge of how we see things. - Investigate reflections with a variety of surfaces. - Discuss how simple typical instruments work i.e. telescope, binoculars, mirror, magnifying glass etc. - 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.	<u>Reception</u> Children can talk about the features in Winter and Spring. <u>Year 1</u> Children can observe changes across the four seasons. Children can observe and describe weather associated with the seasons and how day length varies. <u>Year 3</u> Children can recognise that shadows are formed when the light from a light source is blocked by an opaque object. Children can recognise that they need light in order to see things and that dark is the absence of light. Children can recognise that light from the sun can be dangerous and that there are ways to protect their eyes.	What objects can reflect light? What are shadows and how are they formed? Does light travel in a straight line?
Evolution and Inheritance	To know how animals and plants are adapted to suit their	Understand that a species can change over time due	<u>Reception</u> Children can through discussion talk about how our bodies change as we	In what ways does your appearance vary from that of

	environment. To know that primate species (including humans) have changed over time. To know some ways in which human behaviour has changed the characteristics of other species. To identify positive and negative consequences of this human behaviour.	to mutations: • Understand that a species can change over time due to external factors such as competition from other species, disease or climate change. • Understand the process of evolution and how it has developed over time. • Explain why advantageous characteristics are more likely to be passed from generation to generation. • Discuss how fossils can be used to find out about the past. • Describe what evolution is.	get older <u>Year 1</u> Children can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. <u>Year 3</u> Children can notice that animals, including humans, have offspring which grow into adults. <u>Year 5</u> Children can describe the changes as humans develop to old age. Children can name the main stages in the life cycle of humans. Children can explain some of the physical changes that occur at different stages in the life cycle of humans. Children can describe how the needs of humans change at different points in their life cycle.	your parent(s)? What is inheritance? What does it mean if you inherit something? Who is Charles Darwin?
Healthy Bodies	To know that in order to be healthy we need a balanced diet which includes different food	• Explain why their pulse rate increases when they exercise.	<u>Reception</u> Children can talk about why we need a balanced diet and why exercise is important.	

	groups. To know why their pulse rate increases when they exercise. To know the impact that diet has on the body. To know why exercise is important for a healthy lifestyle. To know ways in which nutrients and water are transported in animals, including humans.	- Describe the impact that diet has on the body. - Describe why exercise is important for a healthy lifestyle. - Explain the harmful effects some drugs can have on the body. - Identify and describe the ways in which nutrients and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.	<u>Year 1</u> Children can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. <u>Year 2</u> Children can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. Children can find out about and describe the basic needs of animals, including humans, for survival (water, food and air). <u>Year 3</u> Children can identify that human's get the nutrition they need from what they eat. Children can identify that a balanced diet is needed in order to stay healthy. <u>Year 5</u> Children can recognise the stages of growth and development in humans.	
Electricity	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of	Recap knowledge of electricity and circuits.		

	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.	• Investigate ways in which the brightness of a bulb or speed of a motor is changed. • Be able to recognise and use conventional symbols for circuits. • To be able to plan, carry out and evaluate an experiment to see how changing the wire in a circuit affects the brightness of a bulb. • To be able to review and assess understanding of circuits.		
Living things and their habitats - Classifying Organisms	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.	- Recap ways of grouping organisms according to their characteristics. - Explore ways of distinguishing between organisms that have similar characteristics. - Classify plants according to their characteristics. - Find out about Carl Linnaeus and his classification system. - Explore what micro-organisms are and how they can be grouped. - Identify and classify organisms in the local area.		

