



Ferndale Primary and Nursery School

Year 6 Science

Working Scientifically

Planning: <ul style="list-style-type: none"> • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary 	Observing/obtaining evidence: <ul style="list-style-type: none"> • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate 	Recording: <ul style="list-style-type: none"> • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs 	Concluding: <ul style="list-style-type: none"> • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. 	Evaluating: <ul style="list-style-type: none"> • Using test results to make predictions to set up further comparative and fair tests. • Identifying scientific evidence that has been used to support or refute ideas or arguments
Language Enrichment	First Hand Experiences	Purpose / Life Skills	Previous Knowledge	
Discussion of planning and fair test Use of Explorify website to initiate discussion and different concepts Concept cartoons Plan, variables, measurements, accuracy, precision, repeat findings, scientific diagrams, labels, classification keys, tables, scatter graphs, bar graphs,	Heart beat and pulse investigation Heart dissection Water filtration during survival day Moth investigations	Maths skills Scientists/careers link How to clean water Maths skills	(Y5) Planning: <ul style="list-style-type: none"> • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Observing/obtaining evidence: <ul style="list-style-type: none"> • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate Recording: <ul style="list-style-type: none"> • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Concluding:	



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line graphs, predictions, further comparative, fair test, report, present conclusions, causal relationships, explanations, degree of trust, oral and written display and presentation, support or refute ideas or arguments, identify, classify and describe patterns, systematic, quantitative, measurements, enquiry, comparative testing, identifying, classifying, grouping, observing over time, pattern seeking, research using secondary sources

- Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- Evaluating:
- Using test results to make predictions to set up further comparative and fair tests.
 - Identifying scientific evidence that has been used to support or refute ideas or arguments



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Biology

Animals including Humans:

- 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

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

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

Language Enrichment

First Hand Experiences

Purpose / Life Skills

Previous Knowledge

Animals including Humans

Key vocabulary:

Discussion of subject material

Use of Explorify website to initiate discussion and different concepts

Concept cartoons

Heart beat and pulse investigation

Heart dissection

Scientists/careers link

Understand how to be healthy

Animals including Humans:

- Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene (Yr2)
- Identify that animals, including humans, need the right types of amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat (Yr3)
- Describe the simple functions of the basic parts of the digestive system in humans (Yr4)
- Identify the different types of teeth in humans and their simple functions (Yr4)



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non-flowering, mosses, ferns, conifers

Evolution and inheritance

Key vocabulary:

Discussion of subject material

Use of Explorify website to initiate discussion and different concepts

Concept cartoons

Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils, evolve, evolution

- Describe the life processes of reproduction in some plants and animals (Yr5)



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Physics

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.

Electricity

- 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.

Language Enrichment	First Hand Experiences	Purpose / Life Skills	Previous Knowledge
<p><u>Light Key vocabulary:</u></p> <p>Discussion of subject material</p> <p>Use of Explorify website to initiate discussion and different concepts</p> <p>Concept cartoons</p> <p>Yr3: Light, light source, Sun, sunlight, dangerous</p> <p>New vocab: Light, straight lines, light rays</p>	<p>3D Hologram</p> <p>Drawing around shadows</p> <p>Light exploration in class using torches</p> <p>Eyes</p> <p>Bristlebot creation</p> <p>Creating circuits</p>	<p>Scientists/careers link</p> <p>Understanding light and refraction</p> <p>Create and design a purposeful circuit</p>	<p><u>Light:</u></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 (Yr3) • Notice that light is reflected from surfaces (Yr3) • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes (Yr3) • Recognise that shadows are formed when the light from a light source is blocked by an opaque object (Yr3) • Find patterns in the way that the size of shadows change (Yr3) • 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 (Yr5)



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Electricity Key vocabulary:

Discussion of subject material

Use of Explorify website to initiate discussion and different concepts

Concept cartoons

Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage

Electricity:

- Identify common appliances that run on electricity (Yr4)
- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers (Yr4)
- 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 (Yr4)
- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit (Yr4)
- Recognise some common conductors and insulators and associate metals with being good conductors (Yr4)