

## LAUGHTON ALL SAINTS' SCIENCE OBJECTIVES PROGRESSION

		FS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Chemistry</b>	<b>Key Subject Topics</b>							
	<b>Materials Strand 1</b>	<p>FS.1: Can I describe different materials?</p> <ul style="list-style-type: none"> <li>Observe and describe basic properties of different materials</li> </ul>	<p>1.1: What are things made from?</p> <ul style="list-style-type: none"> <li>Distinguish between an object and the material from which it is made</li> <li>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>Describe the simple physical properties of a variety of everyday materials</li> <li>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul>	<p>2.1: What is the best material to use?</p> <ul style="list-style-type: none"> <li>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>		<p>4.1: Is water always wet?</p> <ul style="list-style-type: none"> <li>compare and group materials together, according to whether they are solids, liquids or gases</li> <li>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)</li> <li>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> <li>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution (<i>this is a Y5 NC objective</i>)</li> </ul>	<p>5.1: Comparing materials: Which should we choose and why?</p> <ul style="list-style-type: none"> <li>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</li> <li>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</li> </ul>	<p>6.1: How can we change materials?</p> <ul style="list-style-type: none"> <li>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.</li> </ul> <p><i>*These are Y5 NC objectives (split to ensure depth of knowledge)</i></p>

Biology	Plants Strand 2	<p>FS.2 How does a sunflower grow?</p> <ul style="list-style-type: none"> <li>• Observes the growth of a flower</li> <li>• Name the basic parts of the plant</li> </ul>	<p>1.2: What grows where we live?</p> <ul style="list-style-type: none"> <li>• Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>• Identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul>	<p>2.2: How do plants grow?</p> <ul style="list-style-type: none"> <li>• Observe and describe how seeds and bulbs grow into mature plants</li> <li>• Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> </ul>	<p>3.2: What functions do the parts of a flower have?</p> <ul style="list-style-type: none"> <li>• Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>• 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</li> <li>• Investigate the way in which water is transported within plants</li> <li>• Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>	<p>5.2: How do plants reproduce?</p> <ul style="list-style-type: none"> <li>• Describe the life process of reproduction in some plants</li> </ul>	

Animals and Living Things  
Strand 3

FS.3: What animals are in our local area?

- Identify and name common farm yard animals
- Explore insects found in the school grounds

1.3: What animals are in our world?

- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- 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 (fish, amphibians, reptiles, birds and mammals, including pets)

2.3: What do living things need to survive?

- Explore and compare the differences between things that are living, dead, and things that have never been alive
- Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- Identify and name a variety of plants and animals in their habitats, including microhabitats
- Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.
- Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)
- Notice that animals, including humans, have offspring which grow into adults

4.3: How can we group together different living things?

- 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.
- Construct and interpret a variety of food chains, identifying producers, predators and prey.

5.3: Do all lifecycles look the same?

- 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 animals.

6.3: How are living things similar and different?

- Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals
- Give reasons for classifying plants and animals based on specific characteristics

	<p style="text-align: center;">Humans Strand 4</p>	<p>FS.4: What are the parts of my body?</p> <ul style="list-style-type: none"> <li>Identify and name basic parts of their body</li> </ul>	<p>1.4: What are bodies and what can they do?</p> <ul style="list-style-type: none"> <li>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> </ul>	<p>2.4: How do we stay healthy?</p> <ul style="list-style-type: none"> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> </ul> <p><i>(This objective is not in NC but bridges Y1 and Y3, and links with PHSE unit)</i></p>	<p>3.4: How does our body keep us moving?</p> <ul style="list-style-type: none"> <li>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</li> <li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>	<p>4.4: What do our bodies do with the food we eat?</p> <ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system in humans</li> <li>Identify the different types of teeth in humans and their simple functions</li> </ul>	<p>5.4: How do we change as we grow?</p> <ul style="list-style-type: none"> <li>Describe the changes as humans develop to old age.</li> </ul>	<p>6.4: How do our choices affect how our body works?</p> <ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul>
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<p style="text-align: center;">Physics</p>	<p style="text-align: center;">Light and Sound Strand 5</p>		<p><b>1.5: What is light?</b></p> <ul style="list-style-type: none"> <li>• Recognise a number of light sources, including the sun.</li> <li>• Recognise that light is essential for seeing and that humans cannot see in the dark</li> <li>• Observe and make comparisons of sources of light and to try to explain what they observed</li> </ul> <p><i>(This unit is not in NC but sets a foundation of knowledge for Y3)</i></p>		<p><b>3.5: What is the dark?</b></p> <ul style="list-style-type: none"> <li>• Recognise that they need light in order to see things and that dark is the absence of light</li> <li>• Notice that light is reflected from surfaces</li> <li>• Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>• Recognise that shadows are formed when the light from a light source is blocked by a solid object</li> <li>• Find patterns in the way that the size of shadows change.</li> </ul>	<p><b>4.5: How do we hear sound?</b></p> <ul style="list-style-type: none"> <li>• Identify how sounds are made, associating some of them with something vibrating</li> <li>• Recognise that vibrations from sounds travel through a medium to the ear</li> <li>• Find patterns between the pitch of a sound and features of the object that produced it</li> <li>• Find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>• Recognise that sounds get fainter as the distance from the sound source increases.</li> </ul>		<p><b>6.5: How do we see?</b></p> <ul style="list-style-type: none"> <li>• Recognise that light appears to travel in straight lines</li> <li>• 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</li> <li>• 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</li> <li>• Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul>

Forces  
Strand 6

FS.6: How can I make things move?

- Recognise that pushing or pulling things can make objects start or stop moving

FS.6: What objects float or sink?

- Recognise that when some objects are put in water they sink and some objects will float.

1.6: Pushing and pulling: What is the difference?

- Recognise that there are many sorts of movement which can be described in many ways
- Observe and describe different ways of moving
- Identify similarities and differences between the movement of different objects
- Make suggestions about how objects can be made to move and to find out whether they were right
- Recognise hazards and risks to themselves from moving objects
- Recognise it is not only ourselves that make things move by pushing

*(This unit is not in NC but sets a foundation of knowledge for Y3)*

3.6: What can magnets do?

- 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 everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- Describe magnets as having two poles
- Predict whether two magnets will attract or repel each other, depending on which poles are facing.

5.6: What is a force?

- Explain that unsupported objects fall towards the Earth because of the force of 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.

Earth and Space  
Strand 7

FS.7 Seasons:  
What is the weather like where we live?

- Observe and describe the weather in our local area

1.7: Seasons: How does our weather change?

- Observe changes across the four seasons
- Observe and describe weather associated with the seasons and how day length varies.

2.7: What is in our solar system?

- Name the planets in our solar system and identify key information about them.
- Explain that the sun is a star and that it enables the earth to be warm and have light.
- Significant Individuals: Neil Armstrong and the first moon landing (KS1 History)

*(This unit is not in NC but sets a foundation of knowledge)*

3.7: How have human's explored space?

- Describe how humans have explored space and the solar system.
- Explore significant individuals linked to space exploration: Mae Jemison

*(This unit is not in NC but builds on prior knowledge and prepares learning for Y5)*

5.7: Sun, Earth and Moon: what is moving?

- 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.

Electricity  
Strand 8

2.8: How does electricity affect our lives?

- Identify common appliances that run on electricity
- Recognise general safety that needs to be used around electrical appliances
- Construct a simple series electrical circuit using a cell, wire and bulb

*\*These are Y4 NC objectives (split to ensure depth of knowledge)*

4.8: Can we control 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

6.8: Can we vary the effects of 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.



Geology	Rocks, Soils and Evolution Strand 9				<p>3.9: Are all rocks the same?</p> <ul style="list-style-type: none"> <li>• Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>• Recognise that soils are made from rocks and organic matter.</li> </ul>	<p>4.9: What do fossils tell us about our world?</p> <ul style="list-style-type: none"> <li>• Describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>• Describe in simple terms the period on Earth when dinosaurs lived</li> </ul> <p><i>*First is a Y3 NC objective (split to ensure depth of knowledge and retrieval). 2<sup>nd</sup> is school decision but builds foundation for upper key stage 2)</i></p>	<p>5.9: What is the rock cycle?</p> <ul style="list-style-type: none"> <li>• Explain how rocks are formed and change over time.</li> <li>• Recognise, compare and group together different rocks based more advanced properties.</li> </ul>	<p>6.9: How do living things change over time and place?</p> <ul style="list-style-type: none"> <li>• Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>• Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>• Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul>
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