

# Audlem St James C of E Primary School

Progression in Science under the 2014 National



## Science Key Stage 1 Progressive statements

Year Group 1	<u>Plants</u> Identify and name a variety of common wild and garden plants, and trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. Become familiar with the structure of plants - leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem etc.	<u>Animals, including humans</u> 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) Identify, name, draw and label basic parts of the human body and say which part of the body is associated with each sense.	<u>Everyday materials</u> Distinguish between an object and the material from which it is made.  Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.  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.	<u>Seasonal changes</u>  Observe changes across the four seasons.  Observe and describe weather associated with the seasons and how day length varies.
Term	1	2	3	1
Year 1	<ul style="list-style-type: none"> <li>I can identify and name a selection of garden and wild plants.</li> <li>I can identify and name a selection of deciduous and evergreen trees.</li> <li>I can identify and name parts of plants and trees, eg leaves, flowers (blossoms), petals, fruit, roots, bulb, seed, trunk, stem, branches,</li> <li>I can sort some plants by those that can be eaten and those that cannot.</li> <li>I can observe and talk about the growth of plants and vegetables and the changes that occur over time.</li> <li>I can investigate, observe and talk about seasonal aspects of plant and tree growth.</li> <li>I can record my findings using pictures, labels and captions.</li> </ul>	<ul style="list-style-type: none"> <li>I can identify, label and classify a variety of common birds and animals.</li> <li>I can name a range of domestic animals.</li> <li>I can name the parts of an animal's body.</li> <li>I can talk about the difference between carnivores, herbivores and omnivores.</li> <li>I can talk about and compare animal habitats.</li> <li>I can explain how to take care of pets and animals and birds in the local environment.</li> <li>I can identify and name the main parts of the human body I can see, and, link them to my senses.</li> <li>I can use my senses to compare different textures, sounds and smells.</li> </ul>	<ul style="list-style-type: none"> <li>I can name some different materials.</li> <li>I can explain what material objects are made of.</li> <li>I can describe materials in terms of their properties eg hard/soft, stretchy/stiff, shiny/dull, rough/smooth, bendy/not bendy, waterproof/not waterproof, absorbent/not absorbent, opaque/transparent etc.</li> <li>I can experiment with different materials to test their suitability for different purposes.</li> </ul>	<ul style="list-style-type: none"> <li>I can name the four seasons</li> <li>I can talk about and compare the seasonal changes that occur over the year, including the length of daylight hours.</li> <li>I can record changes in the weather using tables, charts or diagrams.</li> </ul>

<b>Year Group 2</b>	<p><b>Plants</b> 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 and their environments.</p>	<p><b>Animals including humans</b> Notice that animals, including humans, have offspring which grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.</p>	<p><b>Use of everyday materials</b></p> <p>Identify and compare the suitability of a variety of everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<p><b>Living things and their habitats</b> Explore and compare the differences between things that are living, dead, and that have never been alive.</p> <p>Identify that most 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.</p> <p>Identify and name a variety of animals in their habitats, including microhabitats.</p> <p>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.</p>
<b>Term</b>	3	2	1	3
<b>Year 2</b>	<ul style="list-style-type: none"> <li>I can describe how seeds and bulbs grow into plants.</li> <li>I can describe what plants need to grow and survive and link it to where they are found.</li> <li>I can explain that plants grow and reproduce.</li> <li>I can set up a comparative test to show that plants need light and water to stay healthy</li> </ul>	<ul style="list-style-type: none"> <li>I can explain that animals grow and reproduce in different ways.</li> <li>I can explain why animals have offspring.</li> <li>I can describe what animals need to survive.</li> <li>I can describe the life cycle of some living things</li> <li>I can explain the basic needs of animals, including humans.</li> </ul> <p>I can describe why exercise and a balanced diet are important for humans</p>	<ul style="list-style-type: none"> <li>I can name some different materials and describe their properties, similarities and differences</li> <li>I can explain how materials can be changed by heating, cooling, squashing, bending, twisting and stretching.</li> <li>I can experiment with different materials to test their suitability for different purposes.</li> <li>I can understand that different materials are used for the same thing.</li> <li>I can record my observations of how everyday materials are used in my environment.</li> </ul>	<ul style="list-style-type: none"> <li>I can sort living things into groups and say why I have sorted them in this way.</li> <li>I can sort and classify things according to whether they are living, dead or were never alive.</li> <li>I can identify and describe a range of different habitats.</li> <li>I can describe how a habitat provides for the basic needs of things living there and how the conditions affect the number and type of plants and animals that live there.</li> <li>I can match certain living things to the habitats they are found in.</li> <li>I can describe how plants and animals are suited to their habitat.</li> <li>I can explain how animals get their food and draw a simple food chain.</li> <li>I can understand how to find something out using information books and the internet.</li> </ul>

<b>Year Group 3</b>	<p style="text-align: center;"><b>PLANTS</b></p> <p><b>Children should be taught to:</b></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 style="text-align: center;"><b>ANIMALS, INCLUDING HUMANS</b></p> <p><b>Children should be taught to:</b></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 style="text-align: center;"><b>ROCKS</b></p> <p><b>Children should be taught to:</b></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>➤ describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>➤ recognise that soils are made from rocks and organic matter.</li> </ul>	<p style="text-align: center;"><b>LIGHT</b></p> <p><b>Children should be taught to:</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 style="text-align: center;"><b>FORCES and MAGNETS</b></p> <p><b>Children should be taught to:</b></p> <ul style="list-style-type: none"> <li>➤ compare how things move on different surfaces</li> <li>➤ notice that some forces need contact between two objects, but magnetic forces can act at a distance</li> <li>➤ observe how magnets attract or repel each other and attract some materials and not others</li> <li>➤ 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</li> <li>➤ describe magnets as having two poles</li> <li>➤ predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>
<b>Term</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>3</b>
<b>Year 3</b>	<ul style="list-style-type: none"> <li>• I can identify the structure of a plant</li> <li>• I can explain that the root and stem provide nutrition for a plant.</li> <li>• I can label the parts of a flowering plant</li> <li>• I can observe how water is transported in plants</li> <li>• I can compare and investigate the factors that determine how plants grow.</li> </ul> <p>i can explain how flowering plants reproduce</p>	<ul style="list-style-type: none"> <li>• <b>I can label the main parts of the human skeleton and muscles</b></li> <li>• <b>I can discuss the main functions of the skeleton and muscles</b></li> <li>• <b>I can identify and group animals with and without skeletons and compare their movement</b></li> <li>• <b>I can group animals by their diet</b></li> </ul> <p><b>I can design a healthy meal.</b></p>	<ul style="list-style-type: none"> <li>• I can identify metamorphic, igneous and sedimentary rocks by their properties</li> <li>• I can observe the changes in rocks over time</li> <li>• I can classify rocks according to their unique properties</li> <li>• I can identify the similarities and differences in soils</li> </ul> <p>I can ask questions about how soils and rocks are formed.</p>	<ul style="list-style-type: none"> <li>• <b>I can name sources of light and describe changes in light that result from an action</b></li> <li>• <b>I can explain why it is important to protect the eyes from sunlight</b></li> <li>• <b>I can explain how shadows are formed</b></li> <li>• <b>I can investigate and explore how and why shadows change</b></li> </ul> <p><b>I can observe patterns in shadows when the light sources moves.</b></p>	<ul style="list-style-type: none"> <li>• I know that magnetic forces can act without direct contact unlike most forces</li> <li>• I can observe and group objects according to their movement</li> <li>• I can ask questions</li> <li>• I can explore the different strengths of magnets</li> <li>• I can record my observations</li> <li>• I can look for patterns in the way magnets behave towards one another.</li> </ul>

<b>Year Group 4</b>	<p><b>LIVING THINGS and THEIR HABITATS</b> Children should be taught to:</p> <ul style="list-style-type: none"> <li>➢ recognise that living things can be grouped in a variety of ways</li> <li>➢ explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>➢ recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul>	<p><b>ANIMALS, INCLUDING HUMANS</b> Children should be taught to:</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> <li>➢ construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>	<p><b>STATES OF MATTER</b> Children should be taught to:</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> </ul>	<p><b>SOUND</b> Children should be taught to:</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>ELECTRICITY</b> Children should be taught to:</p> <ul style="list-style-type: none"> <li>➢ identify common appliances that run on electricity</li> <li>➢ construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>➢ 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</li> <li>➢ recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>➢ Recognise some common conductors and insulators, and associate metals with being good conductors.</li> </ul>
<b>Term</b>	2	2	3	1	1
<b>Year 4</b>	<ul style="list-style-type: none"> <li>• I can answer questions about why plants and animals choose to live in their habitat</li> <li>• I can identify the changes in habitats during different times of the year</li> <li>• I can name and group vertebrates and invertebrates</li> <li>• I can create a simple key to help identify plants and animals</li> </ul> <p>I can show an understanding of how humans have impacted</p>	<ul style="list-style-type: none"> <li>• I can label the main body parts associated with the human digestive system</li> <li>• I can explain how the digestive system works</li> <li>• I can name the different teeth in the mouth and show an understanding of why they are different shapes and sizes</li> <li>• I can identify damaged teeth</li> <li>• I can suggest ways to look after teeth</li> </ul>	<ul style="list-style-type: none"> <li>• I can describe in simple terms the different states of matter: solids, liquids and gases</li> <li>• I can group and classify a variety of materials according to their properties</li> <li>• I can observe the effects of temperature on substances such as chocolate.</li> <li>• I can observe and record evaporation</li> </ul>	<ul style="list-style-type: none"> <li>• I can explain how sound is made</li> <li>• I can investigate how pitch and volume can be changed in different ways</li> <li>• I can test ways to insulate sound</li> <li>• I can explain changes linked to sound and explain how humans hear</li> <li>• I can explore how sound can change through different materials</li> </ul>	<ul style="list-style-type: none"> <li>• I can identify everyday appliances that use electricity</li> <li>• I can construct a simple series circuit using bulbs, buzzers and motors</li> <li>• I can build a break in the circuit by making a switch</li> <li>• I can suggest ways to stay safe around electricity</li> <li>• I can observe patterns in a circuit when adding more components</li> </ul>

	negatively/ positively on the environment		rates over a period of time		<ul style="list-style-type: none"> <li>I can investigate electrical conductors and non-conductors to fix a break in a circuit</li> </ul>
<b>Year Group 5</b>	<p><b>LIVING THINGS and THEIR HABITAT</b></p> <p>Children should be taught to:</p> <ul style="list-style-type: none"> <li>describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>describe the life process of reproduction in some plants and animals.</li> </ul>	<p><b>ANIMALS, INCLUDING HUMANS</b></p> <p>Children should be taught to:</p> <ul style="list-style-type: none"> <li>describe the changes as humans develop to old age.</li> </ul>	<p><b>PROPERTIES and CHANGES of MATERIALS</b></p> <p>Children should be taught to:</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>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including</li> </ul>	<p><b>EARTH and SPACE</b></p> <p>Children should be taught to:</p> <ul style="list-style-type: none"> <li>describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li> <li>describe the movement of the Moon relative to the Earth</li> <li>describe the Sun, Earth and Moon as approximately spherical bodies</li> <li>use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</li> </ul>	<p><b>FORCES</b></p> <p>Children should be taught to:</p> <ul style="list-style-type: none"> <li>explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul>

			metals, wood and plastic ➤ 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.		
<b>Term</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Year 5</b>	<ul style="list-style-type: none"> <li>I can describe and explain the main stages in a human, plant and animal cycle</li> <li>I can research different forms of reproduction including sexual and asexual reproduction</li> <li>I can compare life cycles of animals and plants with other plants and animals around the world and suggest reasons for similarities and differences</li> <li>I can observe the changes in animals over a period of time I can compare how different animals reproduce and grow</li> </ul>	<ul style="list-style-type: none"> <li><b>I can name the different stages of growth in humans</b></li> <li><b>I can explain how the human body changes during puberty</b></li> </ul>	<ul style="list-style-type: none"> <li>I can explore and compare a broad range of materials including magnetic and electrical conductors</li> <li>I can observe irreversible changes in materials</li> <li>I recognise that melting and dissolving is not an irreversible change</li> <li>I can explore materials that are difficult to reverse</li> <li>I can carry out tests to answer questions</li> <li>I can demonstrate that dissolving, mixing and changes of state are reversible changes</li> </ul>	<ul style="list-style-type: none"> <li><b>I can use models to explain what happens as a result of the movement of the Earth</b></li> <li><b>I can explain why the sun appears to move during the day and name and label the Sun and all the planets in the solar system</b></li> <li><b>I can explain how the moon orbits the Earth and suggest what might happen if the moon did not orbit the Earth</b></li> <li><b>I can study different time zones around the world using the internet</b></li> <li><b>I can make a solar system</b></li> </ul>	<ul style="list-style-type: none"> <li>I can explore the effects of air resistance</li> <li>I can explore the effects of friction</li> <li>I can explain forces that speed things up or slow things down</li> <li>I can explain how simple levers and pulleys work</li> </ul>
<b>Year Group 6</b>	<p><b>LIVING THINGS and THEIR HABITAT</b></p> <ul style="list-style-type: none"> <li>➤ 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</li> <li>➤ give reasons for classifying plants and animals based on specific characteristics.</li> </ul>	<p><b>ANIMALS, INCLUDING HUMANS</b></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 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</li> </ul>	<p><b>EVOLUTION and INHERITANCE</b></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,</li> </ul>	<p><b>LIGHT</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</li> </ul>	<p><b>ELECTRICITY</b></p> <ul style="list-style-type: none"> <li>➤ associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>➤ compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the</li> </ul>

		within animals, including humans.	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.	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.	on/off position of switches  ➤ use recognised symbols when representing a simple circuit in a diagram.
<b>Term</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>
<b>Year 6</b>	<ul style="list-style-type: none"> <li>I can group living things systematically using a key</li> <li>I can classify and group together common vertebrates and invertebrates'</li> <li>I can explain why living things are grouped and why they are not</li> <li>I can use a classification key to identify plants and animals within our locality</li> <li>I can use a classification key to identify plants and animals in a broader range of habitats</li> </ul>	<ul style="list-style-type: none"> <li><b>I can label the main body parts including: teeth, the digestive system, muscles and skeletal system</b></li> <li><b>I can name and locate the major organs in the body</b></li> <li><b>I can ask questions about how the heart and lungs works</b></li> <li><b>I can explore how the cardiovascular system works</b></li> <li><b>I can suggest ways to keep my body healthy</b></li> </ul> <p><b>I can identify how drugs and exercise impact the way the body functions</b></p>	<ul style="list-style-type: none"> <li>I can describe what a fossil is and how they are formed</li> <li>I can simply explain that characteristics are passed from parents to their offspring</li> <li>I can research the effects of mixed breeding and observe how the offspring can then differ to their parents</li> <li>I can study the research of scientists such as Charles Darwin or Alfred Wallace</li> </ul> <p>I can observe how animals have adapted over time to survive in their environment</p>	<ul style="list-style-type: none"> <li><b>I can name natural and man-made light sources</b></li> <li><b>I can explore the way light behaves including: reflection and shadows</b></li> <li><b>I can explain how shadows are formed</b></li> <li><b>I can investigate shadows based on light sources, objects and distance</b></li> <li><b>I can observe how light travels</b></li> <li><b>I can label the eye</b></li> <li><b>I can explain changes linked to light and how humans see objects</b></li> </ul> <p><b>I can observe certain phenomena such as rainbows or soap bubbles</b></p>	<ul style="list-style-type: none"> <li>I can construct a simple series circuit using a range of components</li> <li>I can identify why a simple series won't work and suggest ways it can be repaired</li> <li>I can use recognised symbols when drawing a circuit</li> <li>I can offer advice about the possible hazards of electricity</li> </ul> <p>I can make changes in a circuit and explain the impact of these changes</p>