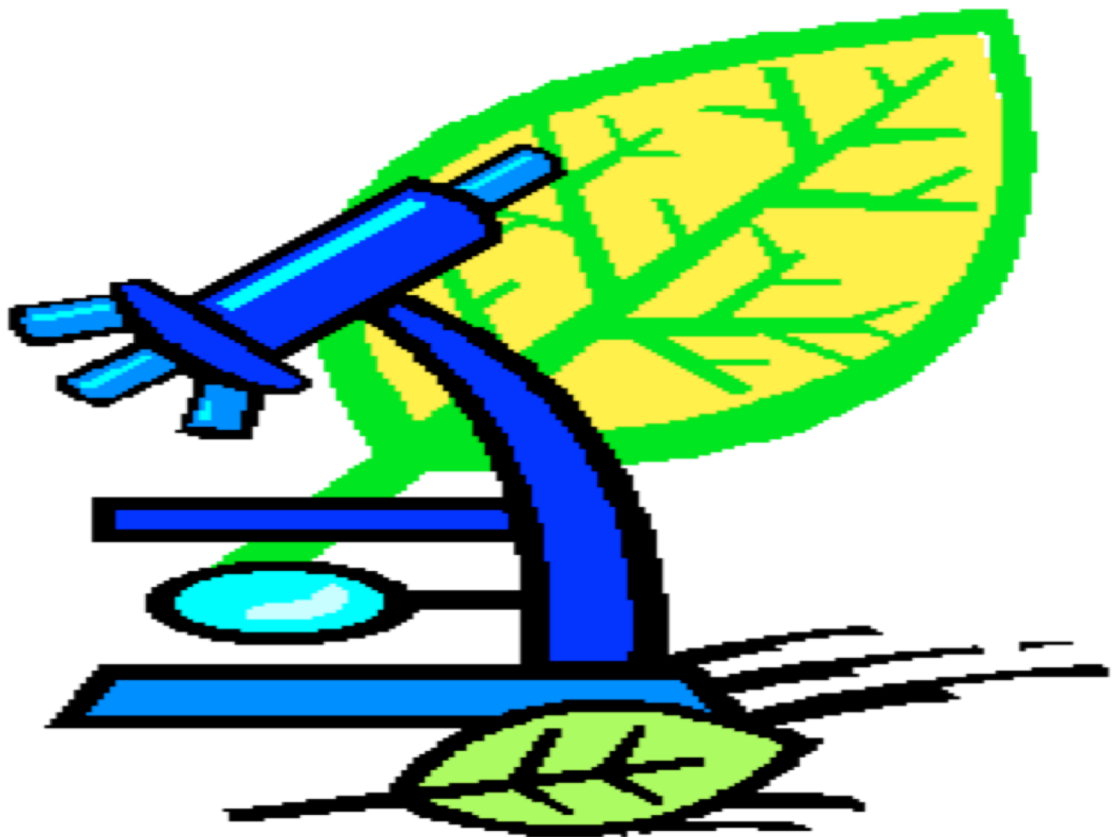


Science Policy 2015



Introduction

What is science?

Science is a particular way of understanding the physical world, which requires precise approaches and ways of thinking.

The purpose of science

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. (National Curriculum 2014)

Coverage of science

Through the teaching of science, children will develop an understanding of the world through the specific disciplines of biology, chemistry and physics. They will become familiar with, and use technical vocabulary accurately and precisely, building up an extended specialist vocabulary. Children will be encouraged to work scientifically within each aspect of science, as opportunities will be embedded within the content being taught. This will give the children the opportunity to answer relevant scientific questions; make observations over time; seek and identify patterns; classify and group living and non-living things and carry out comparative and fair testing. Children will also be given the opportunity to apply their mathematical knowledge to their understanding of science, including collecting, presenting and analyzing data.

Aims

The national curriculum (2014) for science aims to ensure that all pupils:

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics;
- Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them;
- Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

At Bankfields Primary School, we aim to:

- Produce children who are independent investigators, by providing a

balanced and varied programme of scientific skills, knowledge and understanding and attitudes;

- Stimulate and excite pupil's curiosity about changes and events in the world and satisfy this curiosity with knowledge;
- Engage pupils as learners at many levels through linking ideas with practical first hand experiences;
- Help pupils to learn to question and discuss scientific issues that may affect their own lives;
- Help pupils develop, model and evaluate explanations through scientific methods of collecting evidence using criteria and creative thought;
- Show pupils how major scientific ideas contribute to technological changes and how this impacts on improving the quality of our everyday lives;
- Help pupils recognise the cultural significances of science and trace its development, including the scientists who played such a key role in each area of science;
- Teach science through a variety of individual, group and whole class teaching, providing equal opportunities for all children.

Curriculum Provision

In the Early Years Foundation Stage science activities are available daily with additional experiences provided through topic focus. Observation of children's interests and activities informs planning and provision for this area of learning.

Science is a core subject of the National Curriculum and pupils undertake science activities every week at both KS1 and KS2. Science objectives are covered through half termly topics within each class and the science subject leader monitors the completion of objectives and ensures continuity and coverage when variations in mixed aged classes occur.

Teaching and Learning

Early Years and Foundation Stage

Science is included in one of the six areas of learning known as Understanding the World. Scientific learning occurs through:

*access to a range of developmentally appropriate practical activities based on first hand exploratory experiences. For example, a nature walk, magnifiers to explore natural objects, manipulating wet/dry sand etc.

* enthusiastic and meaningful interaction with adults, who provide opportunities to develop communication skills, use correct scientific language and carefully framed open-ended questioning techniques to develop thinking skills.

- * exploration of both indoor and outdoor environments linking all areas of learning
- * recognition and extension of their existing knowledge and understanding gained from their home setting.

Key Stage 1

At KS1 pupils observe, explore and ask questions about plants, living things and their habitats, animals including humans, seasons and materials. They begin to work together to gather and record evidence to help them answer questions and to link this to simple scientific ideas. They begin to evaluate evidence and consider whether tests or comparisons are fair. They use reference materials to find out about more scientific ideas. They share ideas and communicate them using scientific language, drawings, charts and tables with the help of ICT if it is appropriate.

Key Stage 2

At KS2 pupils learn about a wider range of plants, animals including humans, evaluation and inheritance, materials and physical phenomena. They make links between ideas and explain things using simple models and theories. They apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday things and their personal health. They think about the effects of scientific and technological developments on the environment and in other contexts. They carry out more systematic investigations, working on their own and with others and can suggest improvements and use findings to raise further questions. They use a range of reference sources in their work. They talk about their work and its significance, using a wide range of scientific language, conventional diagrams, charts, graphs, classification keys and ICT to communicate their ideas.

Planning

Planning takes into account that the school places a high emphasis on the development of pupil's skills when working scientifically. In the majority of lessons the practical scientific methods, processes and skills are taught alongside the knowledge and understanding of the statutory requirements, ensuring that there is equivalent emphasis of the skills, knowledge and understanding.

Teaching and Learning

For KS1 and 2 overall learning objectives are recorded in teachers planning each week. All lessons have clear learning objectives which are shared and reviewed with pupils effectively. A variety of strategies including questioning, discussion, concept mapping and marking are used to assess progress. The information is used to identify what is taught next.

Activities are challenging, motivating and extend pupil's learning. Lessons make effective links with other curriculum areas, especially Literacy, Numeracy and ICT. We use ICT widely in science. Children are given the opportunity to practise science skills and enhance their learning using carefully chosen software such as Discovery Dog investigation, Virtual experiments, 2simple, Espresso and Science clips and videos and resources such as digital cameras and microscopes. Activities inspire the pupils to experiment and investigate the world around them and to participate in a range of activities. These include: asking questions, locating sources of information, observation, selecting appropriate equipment and using it safely, discussion, planning investigative work, raising ideas and predicting, testing, collecting evidence, measuring and checking results, making comparisons and communicating results and findings.

Bankfields ensures curriculum continuity by following the two year rolling program of science units of work. Staff use the long term plan to inform their medium and short term planning to ensure that all key skills are taught.

Cross Curricular Links

Literacy: in particular at KS1, the pupils are encouraged to use their speaking and listening skills to describe what they see and explain what they are going to do next.

At KS2, the pupils are encouraged to develop their skills of writing to record their planning, what they observe and what they find out. In science, they should be applying their literacy skills at levels similar to those which they are using in their English work.

Numeracy: At both key stages the pupils are expected to use their knowledge and understanding of measurement and data handling at appropriate levels. In science, they should be applying their numeracy skills similar to those which they are using in their maths work. Maths vocabulary will be promoted within the science curriculum.

ICT: At both key stages pupils ICT skills are used to locate and research information (Internet, Espresso, access to iPads); record findings (using text, data and tables); log changes to the environment over time (sensing equipment); gain confidence in the use of calculators, digital cameras and recording using the iPads and green screen as well as the computer.

History: At both key stages, the pupils are expected to learn about the scientists that have had an impact on science throughout history, showing how attitudes to scientific phenomenon have changed how we view the world and recognizing the implications they have on the future.

Assessment

Children in the EYFS are assessed against the Foundation Stage Profile. Early years learning concentrates on 7 areas split between prime and specific areas of learning.

The prime areas of learning are:

- Communication and Language
- Physical Development
- Personal, Social and Emotional Development

The specific areas of learning are:

- Literacy
- Mathematics
- **Understanding the World**
- Expressive Arts and Design

Children in Foundation 1 (Nursery) are assessed on entry to Nursery to gain a baseline and again as they leave.

On entry to Foundation 2 (Reception) a baseline is recorded and then children are assessed against the Early Learning goals at the age of 5 at the end of the Foundation Stage.

Throughout the Foundation Stage evidence of learning and development is collected through observational assessment and monitoring and recorded in an Individuals Learning Journey and work book.

At KS1 and KS2 pupils' knowledge and understanding are assessed before each unit of work by questioning, discussion and observation.

The school recognises the importance of assessment for learning so staff and pupils are aware of next steps and ways of improving. Targets are set with individuals and are shared with parents at Parents Consultation Evenings.

Teachers assess mostly at the end of each unit of work with a strong focus on working scientifically. Judgments are formed through observation of practical work undertaken, verbal responses gained through question and answer sessions and through written responses using test base materials relevant to the topic being taught. Assessment for each attainment area in science should be determined at the end of Key Stage 1 and Key Stage 2.

At the end of each academic year each class teacher uses the progress data accumulated during the year to assign a level (e.g 2-, 2= or 2+) for science to each child in the class. Using this data teachers can complete the science section on the annual report to parents for each member of their class (statements taken from Rising Stars).

It is the responsibility of the subject leader to monitor the progress of science across the school with reference to specific action points outlined in the science action plan. Using data collected a clear picture of attainment can be seen and future actions can be highlighted and addressed.

Inclusion/SEN/G&T

Planning at all levels ensures that account is taken of race, gender and special educational needs, as well as catering for the range of ability within the class. The pupils work individually, in pairs, as part of a small group and as a whole class each term. They use a variety of means for communicating and recording their work. All pupils, including those with special educational needs undertake the full range of activities and identified children are supported within the group. Children that are gifted and talented are identified and highlighted on the G&T register and are given extension work to challenge their thinking and understanding even further.

Roles and Responsibilities

How is Science monitored and evaluated?

The subject leader will coordinate the implementation of the school science action plan and monitor progress against the targets identified in the science action plan. Science books will be monitored and will give evidence of differentiation, coverage and attainment across the key stages. Co-coordinator / team planning sessions and feedback regarding planning, learning and assessment will take place to support development in science throughout the year. Planning will show coverage of topics, cross curricular links and key vocabulary used in topic areas. Evidence of topics will be displayed in classroom environment and observations, photographs, samples of work and experiments and practical application of learning will be used to build an interactive portfolio for science across the school. The annual school science grid will monitor the individual pupil progress throughout the year and inform future action to be included in the Science Action Plan.

Learning resources

Early Years Foundation Stage resources are housed separately in the EY department. KS1 and KS2 resources can be found in the Science cupboards. There is one topic box for each area of the new science curriculum unit as well as various books and miscellaneous items. The subject leader is responsible for the maintenance of the topic boxes and Science cupboards. At the end of each academic year a consumables resource request form is sent to each team to ensure sufficient resources are available for the teaching of each topic in future sessions. Pupils are trained in the safe and considerate use of animals, plants and equipment.

Safeguarding and Health and Safety.

Safe practice must be promoted at all times. Teachers must take into account any health and safety and child protection issues, particular attention must be given avoiding the use of anything which aggravates individual pupil allergies. Risk assessments are carried out to ensure safety issues have been identified and that specific attention is made when activities are unusual and beyond the scope of normal practice.

Support staff

Educational support staff work as directed by the teacher. They are able to refer to a planning sheet for the particular group with whom they are working, seek additional resources and adapt planning as directed by the class teacher. Guidance regarding question types and related vocabulary to be used with children are highlighted on differentiated planning sheets.

Parental and Community Involvement

Parents and Governors

Parents are kept informed of activities and children's progress in science through:

Newsletters and team letters;

Family learning days;

Parent consultation evenings and drop in sessions;

End of year reports.

Governors are kept informed of activities and developments in science through:

An annual subject report;

Governor training;

Meeting with the science coordinator.

Promoting Science

Science weeks - Each year the school holds an interactive Science Week. This offers the opportunity to engage all children in cross curricular approaches to science based activities. Outside agencies and organisations provide links to the greater community and offer a wider experience for children to engage in fun and interesting science themes.

Science clubs - children throughout the school have access to a science club throughout the school year. Each club is level appropriate and focuses on fun, practical experiments that can be completed using everyday resources and equipment.

Family Learning Days - children and their parents have the opportunity to work alongside each other to complete an activity with a science focus and objective.

Scheme of Work

Scheme of Work - Nursery

Autumn Term	Spring Term	Summer Term
<p>Understanding of the world</p> <ul style="list-style-type: none"> • Our senses • What we look like • Building site • Making and tasting bread • Where fruit and vegetables come from 	<p>Understanding of the world</p> <ul style="list-style-type: none"> • Visit by mother and baby • How we grow and change • Looking at baby and now pictures • Similarities and differences • Learning about winter • Looking at the different animals in Polar Bear, Polar Bear story 	<p>Understanding of the world</p> <ul style="list-style-type: none"> • Farm and farm animals
<p>Understanding of the world</p> <ul style="list-style-type: none"> • Building site • Similarities and differences • Autumn Walk • Autumn walk looking for changes 	<p>Understanding of the world</p> <ul style="list-style-type: none"> • What happens in spring bulbs, baby animals • Planting seeds – caring for living things, what plants need • Experimenting with colours and containers in potions lab 	<p>Understanding of the world</p> <ul style="list-style-type: none"> • Life cycle of a butterfly • Summertime • finding out what materials float and sink

Scheme of Work - Reception

Autumn Term	Spring Term	Summer Term
<p>Understanding of the world</p> <ul style="list-style-type: none"> • Our senses • What we look like • Keeping ourselves clean and healthy • Foods that are good for us • Animals in the jungle. • Similarities and differences in people 	<p>Understanding of the world</p> <ul style="list-style-type: none"> • Similarities and differences • Learning about winter 	<p>Understanding of the world</p> <ul style="list-style-type: none"> • Sound – senses • Night and day • Nocturnal animals
<p>Understanding of the world</p> <ul style="list-style-type: none"> • Making bread – changes of state • Autumn walk looking for changes • Building site • Similarities and differences • Space – moon • Light and dark • Autumn walk looking for changes 	<p>Understanding of the world</p> <ul style="list-style-type: none"> • What happens in spring – bulbs, baby animals • Planting seeds – caring for living things, what plants need • Life cycle of a butterfly • Growing for food • Changes (spring) 	<p>Understanding of the world</p> <ul style="list-style-type: none"> • Summertime • Farm Trip – farm animals – baby and mother / food from a farm • Floating and sinking

Science - Scheme of Work Cycle 1

Year 1 and 2

Autumn Term	Spring Term	Summer Term
<p><u>Animals, including Humans</u></p> <ul style="list-style-type: none"> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) Identify and name a variety of common animals that are carnivores, herbivores and omnivores Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals <p><u>Seasons</u></p> <ul style="list-style-type: none"> Observe and describe weather associated with the seasons and how day length varies. Observe changes across the four seasons. 	<p><u>Everyday Materials</u></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, 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. <p><u>Seasons</u></p> <ul style="list-style-type: none"> Observe and describe weather associated with the seasons and how day length varies. Observe changes across the four seasons. 	<p><u>Plants</u></p> <ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. <p><u>Seasons</u></p> <ul style="list-style-type: none"> Observe and describe weather associated with the seasons and how day length varies. Observe changes across the four seasons.
<p>Throughout the year children will be taught to use scientific methods, processes and skills through:</p> <ul style="list-style-type: none"> asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment performing simple tests identifying and classifying using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions 		

Science - Scheme of Work Cycle 2

Year 1 and 2

Autumn Term	Spring Term	Summer Term
<p><u>Animals, Including Humans</u></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) • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 	<p><u>Uses of Everyday Materials</u></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><u>Plants</u></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. <p><u>All living things and their habitats</u></p> <ul style="list-style-type: none"> • 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 micro-habitats • 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>Throughout the year children will be taught to use scientific methods, processes and skills through:</p> <ul style="list-style-type: none"> • Asking simple questions and recognising that they can be answered in different ways • Observing closely, using simple equipment • Performing simple tests • Identifying and classifying • Using their observations and ideas to suggest answers to questions • Gathering and recording data to help in answering questions 		

Science - Scheme of Work Cycle 1

Year 3 and 4

Autumn Term	Spring Term	Summer Term
<p><u>Plants</u></p> <ul style="list-style-type: none"> • Identify and describe the functions of different parts of flowering plants • Explore the requirements of plant for life and growth • Investigate the way in which water is transported within plants • Explore the part that flowers play in the lifecycle of flowering plants <p><u>Rocks</u></p> <ul style="list-style-type: none"> • Compare and group together different kinds of rocks on the appearance and physical properties • Simply describe how fossils are formed. • Recognise that soils are made from rocks and organic matter 	<p><u>Animals, including Humans</u></p> <ul style="list-style-type: none"> • Identify the nutritional needs of humans and other animals • Discuss animals as omnivores, carnivores and herbivores • Identify that humans and some other animals have skeletons and muscles for support, protection and movement. • Identify animals which are vertebrates/invertebrates 	<p><u>Light</u></p> <ul style="list-style-type: none"> • Recognise that light is needed to see things and darkness is the absence of light • Notice that light is reflected from surfaces • Recognise that light from the sun is dangerous and how to protect ourselves • Recognise that shadows are formed when light is blocked out by a solid object • Find patterns and reasons why the size of shadows change
<p>Throughout the year children will be taught to use scientific methods, processes and skills through:</p> <ul style="list-style-type: none"> • Set up simple practical investigations and fair tests • Making observations and taking careful measurements using a range of equipment • Gathering, recording and presenting data to answer questions • Reporting their findings in oral and written explanations • Using results to draw conclusions, make predictions and raise further questions 		

Science - Scheme of Work Cycle 2

Year 3 and 4

Autumn Term	Spring Term	Summer Term
<p><u>Living things and their habitats</u></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><u>Sound</u></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><u>Animals, including humans</u></p> <ul style="list-style-type: none"> 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 Construct and interpret a variety of food chains, identifying producers, predators and prey <p><u>Electricity</u></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 <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p>	<p><u>States of matter</u></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>Throughout the year children will be taught to use scientific methods, processes and skills through:</p> <ul style="list-style-type: none"> Set up simple practical investigations and fair tests Making observations and taking careful measurements using a range of equipment Gathering, recording and presenting data to answer questions Reporting their findings in oral and written explanations Using results to draw conclusions, make predictions and raise further questions 		

Science - Scheme of Work Cycle 1

Year 5 and 6

Autumn Term	Spring Term	Summer Term
<p><u>Light</u></p> <ul style="list-style-type: none"> Understand that light travels in a straight line Explain that objects are seen because they give out light and reflect light into the eye Explain that shadows have the same shape as the object casting the shadow Predict and investigate the size of shadows when the light source changes. <p><u>Electricity</u></p> <ul style="list-style-type: none"> Use recognised symbols when representing a simple circuit Explore and give reasons for the variations in how components function Investigate the brightness of a lamp with the number of cells used in a circuit. 	<p><u>Materials</u></p> <ul style="list-style-type: none"> Group materials by exploring and comparing their properties Explore reversible changes Explore changes that are difficult to reverse Give reasons for the particular uses of everyday materials <p><u>Revision topics</u></p> <ul style="list-style-type: none"> Earth and Space Forces Animals including humans (life cycles, how to stay healthy) 	<p><u>Animals</u></p> <ul style="list-style-type: none"> Describe how animals are classified using observable characteristics and their similarities and differences Give reasons for classifying living things Devise classification systems and keys <p><u>Evolution and Inheritance</u></p> <ul style="list-style-type: none"> Recognise that living things have changed over time Recognise that characteristics are passed from parents to their offspring Explore how animals and plants have adapted to their environment Learn about Charles Darwin
<p>Throughout the year children will be taught to use scientific methods, process and skills through:</p> <ul style="list-style-type: none"> Exploring and raising different kinds of questions Selecting and planning the best or most appropriate way to answer scientific questions Setting up a fair test and identifying which variables need to stay the same and why Making observations and taking careful measurements choosing the most appropriate equipment Recording results and presenting findings in written work Using results to support ideas or to suggest if further tests are needed 		

Science - Scheme of Work Cycle 2

Year 5 and 6

Autumn Term	Spring Term	Summer Term
<p><u>Earth and Space</u></p> <ul style="list-style-type: none"> • Describe the movement of the Earth and other planets, relative to the Sun in the Solar System • Learn that the Sun is a star at the centre of our solar system and that it has eight planets • Describe the movement of the Moon relative to the Earth • Understand that a moon is a celestial body that orbits a planet • 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 • Find out about the way that ideas about the Solar System have developed Consider the work of scientists such as Ptolemy, Alhazen and Copernicus. 	<p><u>Forces</u></p> <ul style="list-style-type: none"> • 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, the act between moving surfaces • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect • Find out how scientists, for example, Galileo Galilei, and Isaac Newton helped to develop the theory of gravitation. <p><u>Revision topics</u></p> <ul style="list-style-type: none"> • Light • Materials • Animals • Electricity • Evolution and Inheritance 	<p><u>Animals including humans</u></p> <ul style="list-style-type: none"> • 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 • Describe the changes as humans develop to old age. <p><u>Living Things and their Habitats</u></p> <ul style="list-style-type: none"> • Describe the differences in the life cycles of an a mammal, an amphibian, an insect and a bird • Describe the life process of reproduction in some plants and animals.
<p>Throughout the year children will be taught to use scientific methods, process and skills through:</p> <ul style="list-style-type: none"> • Exploring and raising different kinds of questions • Selecting and planning the best or most appropriate way to answer scientific questions • Setting up a fair test and identifying which variables need to stay the same and why • Making observations and taking careful measurements choosing the most appropriate equipment • Recording results and presenting findings in written work • Using results to support ideas or to suggest if further tests are needed 		

Assessment

Year One – Science Cycle 1

Names	Comments
Above Average	<p>Can confidently</p> <ul style="list-style-type: none"> • Identify and name a range of plants • Name parts of a range of familiar plants • Compare and contrast a collection of items sorting into categories: living, dead, and things that have never been alive • Identify, name and group a variety of common animals • Identify key features of a range of common animals • Relate each of the human senses to organs • Can identify and name a range of objects and materials • Describe a range of properties of a variety of materials • Classify materials into groups based on physical properties • Can describe seasonal changes • Relate weather patterns and day length to seasons • Can ask simple questions that can be tested and suggest different ways of answering questions • Can examine carefully (e.g. use a hand lens) • Conduct simple tests • Can draw and label diagrams • Can identify and group key outcomes from an enquiry
Average	<p>Is beginning to</p> <ul style="list-style-type: none"> • Identify and name a range of plants • Name parts of a range of familiar plants • Compare and contrast a collection of items sorting into categories: living, dead, and things that have never been alive • Identify, name and group a variety of common animals • Identify key features of a range of common animals • Relate each of the human senses to organs • Can identify and name a range of objects and materials • Describe a range of properties of a variety of materials • Classify materials into groups based on physical properties • Can describe seasonal changes • Relate weather patterns and day length to seasons • Can ask simple questions that can be tested and offer ways of gathering evidence to answer their question • Can examine objects to note key features (observation) • Conduct simple tests • Can identify what might be usefully recorded • Can identify key findings from an enquiry
Below Average	<p>With help can</p> <ul style="list-style-type: none"> • Identify and name a limited range of plants • Identify the basic structure of flowering plants • Sort items into categories: living, dead, and things that have never been alive • Identify and name a limited number of common animals • Recognise the difference between carnivores, herbivores and omnivores • Describe each of the human senses • Can identify and name a limited range of objects and materials • Describe a range of properties of a variety of materials • Classify materials into groups based on physical properties • Can describe seasonal changes • Relate weather patterns and day length to seasons • Can understand that questions can be answered by testing • Can offer ways of gathering evidence to answer a question • Can examine objects when prompted • Can recognise a simple scientific test • Can recognise the purpose of an experiment • Can, with prompting, identify key findings from an enquiry

Year One – Science Cycle 2

Names	Comments
Above Average	<p>Can confidently</p> <ul style="list-style-type: none"> • Identify that a habitat supplies living things with what they need. • Identify a range of living things in their habitats. • Identify a predator–prey relationship. • Find out what plants need to grow and stay healthy. • Identify that seeds and bulbs grow into mature plants. • Recognise that all animals, including humans, have offspring. • Identify the basic needs of animals, including humans, for survival (water, food and air). • Recognise the importance to humans of exercise, diet and hygiene. • Identify that the shape of some objects can be changed. • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • Can ask simple questions that can be tested and suggest different ways of answering questions • Can examine carefully (e.g. use a hand lens) • Conduct simple tests • Can draw and label diagrams • Can identify and group key outcomes from an enquiry
Average	<p>Is beginning to</p> <ul style="list-style-type: none"> • Identify that a habitat supplies living things with what they need. • Identify a range of living things in their habitats. • Identify a predator–prey relationship. • Find out at least one thing that plants need to grow and stay healthy. • Identify that seeds and bulbs grow into mature plants. • Recognise that all animals, including humans, have offspring. • Identify the basic needs of animals, including humans, for survival (water, food and air). • Recognise the importance to humans of exercise, diet and hygiene. • Identify that the shape of some objects can be changed. • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • Can ask simple questions that can be tested and offer ways of gathering evidence to answer their question • Can examine objects to note key features (observation) • Conduct simple tests • Can identify what might be usefully recorded • Can identify key findings from an enquiry
Below Average	<p>With help can</p> <ul style="list-style-type: none"> • Identify that a habitat supplies living things with what they need. • Identify a limited range of living things in their habitats. • Identify a predator–prey relationship. • Find out one thing that plants need to grow and stay healthy. • Identify that seeds and bulbs grow into mature plants. • Recognise that all animals, including humans, have offspring. • Identify the basic needs of animals, including humans, for survival (water, food and air). • Recognise the importance to humans of exercise, diet and hygiene. • Identify that the shape of some objects can be changed. • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • Can understand that questions can be answered by testing • Can offer ways of gathering evidence to answer a question • Can examine objects when prompted • Can recognise a simple scientific test • Can recognise the purpose of an experiment • Can, with prompting, identify key findings from an enquiry

Year Two – Science Cycle 1

Names	Comments
Above Average	<p>Can confidently</p> <ul style="list-style-type: none"> • Identify and notice similarities between various plants and their structure • Research examples to add to the categories; living, dead and things that have never been alive • Identify the common features of the main groups of vertebrates • Suggest whether an unfamiliar animal might be a carnivore, herbivore or omnivore • Suggest how the senses are used in an activities • Identify typical uses of a range of materials and their effectiveness • Recognise changes within seasons as well as between seasons • Make and test predictions relating to changing day length and weather patterns • Can develop relevant, testable questions • Can plan an enquiry, such as a comparative or fair test • Can observe carefully and suggest useful measurements • Can conduct a series of simple tests • Can draw and label diagrams • Can suggest what an enquiry shows
Average	<p>Is beginning to</p> <ul style="list-style-type: none"> • Identify and notice similarities between various plants and their structure • Research examples to add to the categories; living, dead and things that have never been alive • Identify the common features of the main groups of vertebrates • Suggest whether an unfamiliar animal might be a carnivore, herbivore or omnivore • Suggest how the senses are used in an activities • Identify typical uses of a range of materials and their effectiveness • Recognise changes within seasons as well as between seasons • Make and test predictions relating to changing day length and weather patterns • Can ask simple questions that can be tested • Suggest different ways of answering a question • Can examine carefully • Can conduct simple tests • Can draw and label diagrams • Can identify and group key outcomes from enquiry
Below Average	<p>With help can</p> <ul style="list-style-type: none"> • Identify and notice similarities between various plants and their structure • Research examples to add to the categories; living, dead and things that have never been alive • Identify the common features of the main groups of vertebrates • Suggest whether an unfamiliar animal might be a carnivore, herbivore or omnivore • Suggest how the senses are used in an activity such as eating • Identify typical uses of a range of materials and their effectiveness • Recognise changes within seasons • Make and test predictions relating to changing day length and weather patterns • Can ask simple questions that can be tested • Can offer a way of gathering evidence to answer a question • Can examine objects closely • Can conduct simple tests • Can identify what might be usefully recorded • Can identify key findings from an enquiry

Year Two – Science Cycle 2

Names	Comments
Above Average	<p>Can confidently</p> <ul style="list-style-type: none"> • Explain how, for a named animal or plant, it gets what it needs from its habitat and other living things that are there. • Identify a range of living things in habitats of various sizes. • Construct a simple food chain and identify what is eating what. • Explore and identify what plants need to thrive. • Describe stages of development of a full grown plant. • Describe the relationship between adult animals and their offspring. • Identify human's basic needs. • Describe the importance of a healthy diet and exercise. • Describe changes achieved by applying forces in different directions. • Select and justify a material for a particular use. • Can develop relevant, testable questions • Can plan an enquiry, such as a comparative or fair test • Can observe carefully and suggest useful measurements • Can conduct a series of simple tests • Can draw and label diagrams • Can suggest what an enquiry shows
Average	<p>Is beginning to</p> <ul style="list-style-type: none"> • Explain how, for a named animal or plant, it gets what it needs from its habitat and other living things that are there. • Identify a range of living things in habitats of various sizes. • Construct a simple food chain and identify what is eating what. • Explore and identify what plants need to thrive. • Describe stages of development of a full grown plant. • Describe the relationship between adult animals and their offspring. • Identify human's basic needs. • Describe the importance of a healthy diet and exercise. • Describe changes achieved by applying forces in different directions. • Select and justify a material for a particular use. • Can develop relevant, testable questions • Can plan an enquiry, such as a comparative or fair test • Can observe carefully and suggest useful measurements • Can conduct a series of simple tests • Can draw and label diagrams • Can suggest what an enquiry shows
Below Average	<p>With help can</p> <ul style="list-style-type: none"> • Explain how, for a named animal or plant, it gets what it needs from its habitat and other living things that are there. • Identify at least two living things in habitats of various sizes. • Construct a simple food chain and identify what is eating what. • Explore and identify what plants need to thrive. • Describe stages of development of a full grown plant. • Describe the relationship between adult animals and their offspring. • Identify human's basic needs. • Describe the importance of a healthy diet and exercise. • Describe changes achieved by applying forces in different directions. • Select and justify a material for a particular use. • Can develop relevant, testable questions • Can plan an enquiry, such as a comparative or fair test • Can observe carefully and suggest useful measurements • Can conduct a series of simple tests • Can draw and label diagrams • Can suggest what an enquiry shows

Year Three – Science Cycle 1

Names	Comments
Above Average	<p>Can confidently</p> <ul style="list-style-type: none"> • Identify what all plants and animals need to flourish • Describe what each part of a flowering plant does • Explain how pollination, seed formation and seed dispersal play a role in the reproduction of flowering plants • Explain which parts of the skeleton provide support and protection and how they allow for movement • Explain how fossils are formed • Describe how soil is made • Examine and test rocks, grouping them by result • Relate being able to see to the presence of light • Describe how some objects reflect light • Describe how to change the size of a shadow • Pupil can develop relevant, testable questions • Can plan and set up comparative or fair tests using different types of scientific enquiry • Can recognise the importance of using standard units and measure accurately • Can recognise patterns that relate to scientific ideas • Can use evidence to produce a simple conclusion
Average	<p>Is beginning to</p> <ul style="list-style-type: none"> • Identify what all plants and animals need to flourish • Describe what each part of a flowering plant does • Explain how pollination, seed formation and seed dispersal play a role in the reproduction of flowering plants • Explain which parts of the skeleton provide support and protection and how they allow for movement • Explain how fossils are formed • Describe how soil is made • Examine and test rocks, grouping them by result • Relate being able to see to the presence of light • Describe how some objects reflect light • Describe how to change the size of a shadow • Can develop relevant, testable questions • Can plan and set up an enquiry, such as comparative or fair test • Can use standard measurements when taking measurements • Can draw and label diagrams • Can use tables to indicate findings from an enquiry that could be reported • Can use evidence to produce a simple conclusion
Below Average	<p>With help can</p> <ul style="list-style-type: none"> • Identify what all plants and animals need to flourish • Describe what each part of a flowering plant does • Explain how pollination, seed formation and seed dispersal play a role in the reproduction of flowering plants • Explain which parts of the skeleton provide support and protection and how they allow for movement • Explain how fossils are formed • Describe how soil is made • Examine and test rocks, grouping them by result • Relate being able to see to the presence of light • Describe how some objects reflect light • Describe how to change the size of a shadow • Can ask simple questions that can be tested • Can offer a way of gathering evidence to answer a question • Can set up a comparative or fair test • Can use some standard units of measurement • Can draw and label a diagram and use a table • Can suggest findings that could be reported • Can collect data relevant to the answering of questions • Can answer enquiry questions using data and ideas

Year Three – Science Cycle 2

Names	Comments
Above Average	<p>Can confidently</p> <ul style="list-style-type: none"> • Suggest a way of grouping living things, e.g. sort shells by colour. • Use classification keys to group and identify members from a small group of living things. • Describe how environments might change. • Describe the purpose of the digestive system in humans. • Recognise that humans have different types of teeth. • Understand the roles of producers, predators and prey. • Recognise the state of matter of different materials. • Relate the terms 'evaporation' and 'condensation' to water. • Recognise that materials may change state. • Identify how an object may vibrate. • Recognise that the ear detects vibrations. • Suggest why some sounds are louder than others. • Recognise that the pitch of a sound can be varied. • Recognise that the volume of a sound can be varied. • Recognise that some appliances run on electricity. • Construct a simple circuit. • Identify metal as a conductor. • Understand that a complete circuit is needed for a circuit to operate. • Describe the function of a switch. • Pupil can develop relevant, testable questions • Can plan and set up comparative or fair tests using different types of scientific enquiry • Can recognise the importance of using standard units and measure accurately • Can recognise patterns that relate to scientific ideas • Can use evidence to produce a simple conclusion
Average	<p>Is beginning to</p> <ul style="list-style-type: none"> • Suggest a way of grouping living things, e.g. sort shells by colour. • Use classification keys to group and identify members from a small group of living things. • Describe how environments might change. • Describe the purpose of the digestive system in humans. • Recognise that humans have different types of teeth. • Understand the roles of producers, predators and prey. • Recognise the state of matter of different materials. • Relate the terms 'evaporation' and 'condensation' to water. • Recognise that materials may change state. • Identify how an object may vibrate. • Recognise that the ear detects vibrations. • Suggest why some sounds are louder than others. • Recognise that the pitch of a sound can be varied. • Recognise that the volume of a sound can be varied. • Recognise that some appliances run on electricity. • Construct a simple circuit. • Identify metal as a conductor. • Understand that a complete circuit is needed for a circuit to operate. • Describe the function of a switch. • Can develop relevant, testable questions • Can plan and set up an enquiry, such as comparative or fair test • Can use standard measurements when taking measurements • Can draw and label diagrams • Can use tables to indicate findings from an enquiry that could be reported • Can use evidence to produce a simple conclusion
Below Average	<p>With help can</p> <ul style="list-style-type: none"> • Suggest a way of grouping living things, e.g. sort shells by colour. • Use classification keys to group and identify members from a small group of living things. • Describe how environments might change. • Describe the purpose of the digestive system in humans. • Recognise that humans have different types of teeth. • Understand the roles of producers, predators and prey. • Recognise the state of matter of different materials. • Relate the terms 'evaporation' and 'condensation' to water. • Recognise that materials may change state. • Identify how an object may vibrate. • Recognise that the ear detects vibrations. • Suggest why some sounds are louder than others.

	<ul style="list-style-type: none">• Recognise that the pitch of a sound can be varied.• Recognise that the volume of a sound can be varied.• Recognise that some appliances run on electricity.• Construct a simple circuit.• Identify metal as a conductor.• Understand that a complete circuit is needed for a circuit to operate.• Describe the function of a switch.• Can ask simple questions that can be tested• Can offer a way of gathering evidence to answer a question• Can set up a comparative or fair test• Can use some standard units of measurement• Can draw and label a diagram and use a table• Can suggest findings that could be reported• Can collect data relevant to the answering of questions• Can answer enquiry questions using data and ideas
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Year Four – Science Cycle 1

Names	Comments
Above Average	<p>Can confidently</p> <ul style="list-style-type: none"> • Compare requirements of different plants • Suggest why parts may vary in size and shape from one species of flowering plant to another • Suggest why pollination, seed formation and seed dispersal may vary from one type of plant to another • Explain why a varied diet is important • Compare the ways that skeletons of different animals provide support, protection and movement • Explain the importance studying fossils • Identify different uses for rocks based on properties • Know that vision involves light travelling to the eye • Recognise that some surfaces are better at reflecting light than others • Identify how light travels to form a shadow • Relate position of an object and position of a screen to the size of the shadow • Develop a range of relevant testable questions • Answer questions using evidence gathered from different types of enquiry • Can identify and manage variables • Use labeled diagrams to show more complex outcomes • Use a line graph to record basic data • Write a conclusion identifying causal links • Can present and display key findings from enquiries
Average	<p>Is beginning to</p> <ul style="list-style-type: none"> • Compare requirements of different plants • Suggest why parts may vary in size and shape from one species of flowering plant to another • Suggest why pollination, seed formation and seed dispersal may vary from one type of plant to another • Explain why a varied diet is important • Compare the ways that skeletons of different animals provide support, protection and movement • Explain the importance studying fossils • Identify different uses for rocks based on properties • Know that vision involves light travelling to the eye • Recognise that some surfaces are better at reflecting light than others • Identify how light travels to form a shadow • Relate position of an object and position of a screen to the size of the shadow • Develop relevant, testable questions • Plan investigations using different types of scientific enquiry • Set up comparative and fair tests • Can use diagrams to record findings • Use various ways to record, group and display evidence • Can recognise patterns that relate to scientific ideas • Use evidence to produce a simple conclusion
Below Average	<p>With help can</p> <ul style="list-style-type: none"> • Compare requirements of different plants • Suggest why parts may vary in size and shape from one species of flowering plant to another • Suggest why pollination, seed formation and seed dispersal may vary from one type of plant to another • Explain why a varied diet is important • Compare the ways that skeletons of different animals provide support, protection and movement • Explain the importance studying fossils • Identify different uses for rocks based on properties • Know that vision involves light travelling to the eye • Recognise that some surfaces are better at reflecting light than others • Identify how light travels to form a shadow • Relate position of an object and position of a screen to the size of the shadow • Can develop relevant, testable questions • Can plan enquiries, such as a comparative or fair test • Can use standard measurements when taking measurements • Can draw and label diagrams and use tables to record evidence • Can write a conclusion based on evidence

Year Four – Science Cycle 2

Names	Comments
Above Average	<p>Can confidently</p> <ul style="list-style-type: none"> • Suggest different ways of sorting the same group of living things. • Use classification keys to group and identify members from a range of familiar and less familiar living things. • Describe examples of living things threatened by changes to environments. • Identify what each of the principal organs in the digestive system do. • Describe the function of each type of tooth in the human skull. • Use a food chain to represent predator- prey relationships. • Group materials according to their state of matter. • Describe how evaporation and condensation happen in the water cycle, and how temperature affects evaporation. • Identify changes of state and research values of degrees Celsius at which changes happen. • Explain, with reference to vibrations, how an object makes a sound. • Describe the role of a medium in the transmission of sound. • Describe the effect of moving further from the source of a sound. • Explain when referring to an object how the pitch of the sound can be changed. • Explain when referring to an object how the volume of the sound can change. • List examples of appliances that run on electricity. • Construct a simple circuit and name its components. • Sort materials into conductors and insulators, identifying metals as conductors. • Predict whether an arrangement of components will lead to a bulb lighting. • Predict how the operation of a switch will affect bulbs lighting. • Develop a range of relevant testable questions • Answer questions using evidence gathered from different types of enquiry • Can identify and manage variables • Use labeled diagrams to show more complex outcomes • Use a line graph to record basic data • Write a conclusion identifying causal links • Can present and display key findings from enquiries
Average	<p>Is beginning to</p> <ul style="list-style-type: none"> • Suggest different ways of sorting the same group of living things. • Use classification keys to group and identify members from a range of familiar and less familiar living things. • Describe examples of living things threatened by changes to environments. • Identify what each of the principal organs in the digestive system do. • Describe the function of each type of tooth in the human skull. • Use a food chain to represent predator- prey relationships. • Group materials according to their state of matter. • Describe how evaporation and condensation happen in the water cycle, and how temperature affects evaporation. • Identify changes of state and research values of degrees Celsius at which changes happen. • Explain, with reference to vibrations, how an object makes a sound. • Describe the role of a medium in the transmission of sound. • Describe the effect of moving further from the source of a sound. • Explain when referring to an object how the pitch of the sound can be changed. • Explain when referring to an object how the volume of the sound can change. • List examples of appliances that run on electricity. • Construct a simple circuit and name its components. • Sort materials into conductors and insulators, identifying metals as conductors. • Predict whether an arrangement of components will lead to a bulb lighting. • Predict how the operation of a switch will affect bulbs lighting. • Develop relevant, testable questions • Plan investigations using different types of scientific enquiry • Set up comparative and fair tests • Can use diagrams to record findings • Use various ways to record, group and display evidence • Can recognise patterns that relate to scientific ideas • Use evidence to produce a simple conclusion

Below Average

With help can

- Suggest different ways of sorting the same group of living things.
- Use classification keys to group and identify members from a range of familiar and less familiar living things.
- Describe examples of living things threatened by changes to environments.
- Identify what each of the principal organs in the digestive system do.
- Describe the function of each type of tooth in the human skull.
- Use a food chain to represent predator- prey relationships.
- Group materials according to their state of matter.
- Describe how evaporation and condensation happen in the water cycle, and how temperature affects evaporation.
- Identify changes of state and research values of degrees Celsius at which changes happen.
- Explain, with reference to vibrations, how an object makes a sound.
- Describe the role of a medium in the transmission of sound.
- Describe the effect of moving further from the source of a sound.
- Explain when referring to an object how the pitch of the sound can be changed.
- Explain when referring to an object how the volume of the sound can change.
- List examples of appliances that run on electricity.
- Construct a simple circuit and name its components.
- Sort materials into conductors and insulators, identifying metals as conductors.
- Predict whether an arrangement of components will lead to a bulb lighting.
- Predict how the operation of a switch will affect bulbs lighting.
- Can develop relevant, testable questions
- Can plan enquiries, such as a comparative or fair test
- Can use standard measurementns when taking measurements
- Can draw and label diagrams and use tables to record evidence
- Can write a conclusion based on evidence

Year Five– Science Cycle 1	
Names	Comments
<p>Above Average</p> <p>Light Y6 Elec 6 Materials 5 Animals 6 Evolution 6</p>	<p>Can confidently</p> <ul style="list-style-type: none"> • Suggest how materials can be separated/retrieved from reversible changes • Identify the products of irreversible changes • Use evidence to justify the selection of a material for a purpose • Identify the broad groups into which living things are classified • State how plants and animals can be classified using specific characteristics • Recognise that fossils provide information about living things from millions of years ago • Recognise that living things produce offspring of the same kind, but vary • Identify ways in which certain animals and plants are adapted to suit their environment • Recognise that light travels from one point to another, the source to our eyes • Recognise that some objects reflect • Relate the shape of shadows to the shape of the object that makes them • Recognise that effect the number and voltage of cells has on the circuit • Identify the symbols, function and operation of different components • Identify and manage variables • Consider how measurements can be improved • Identify situations where repeat readings will improve quality of evidence • Use various ways to record complex outcomes • Use line graphs to display complex data • Write a conclusion using evidence and identifying causal links • Indicate how trustworthy results are in their conclusions • Suggest further comparative tests to develop the investigation
<p>Average</p>	<p>Is beginning to</p> <ul style="list-style-type: none"> • Suggest how materials can be separated/retrieved from reversible changes • Identify the products of irreversible changes • Use evidence to justify the selection of a material for a purpose • Identify the broad groups into which living things are classified • State how plants and animals can be classified using specific characteristics • Recognise that fossils provide information about living things from millions of years ago • Recognise that living things produce offspring of the same kind, but vary • Identify ways in which certain animals and plants are adapted to suit their environment • Recognise that light travels from one point to another, the source to our eyes • Recognise that some objects reflect • Relate the shape of shadows to the shape of the object that makes them • Recognise that effect the number and voltage of cells has on the circuit • Identify the symbols, function and operation of different components • Identify and manage variables • Consider how measurements can be improved • Identify situations where repeat readings will improve quality of evidence • Use various ways to record complex outcomes • Use line graphs to display complex data • Write a conclusion using evidence and identifying causal links • Indicate how trustworthy results are in their conclusions • Suggest further comparative tests to develop the investigation
<p>Below Average</p>	<p>With help can</p> <ul style="list-style-type: none"> • Suggest how materials can be separated/retrieved from reversible changes • Identify the products of irreversible changes • Use evidence to justify the selection of a material for a purpose • Identify the broad groups into which living things are classified • State how plants and animals can be classified using specific characteristics • Recognise that fossils provide information about living things from millions of years ago • Recognise that living things produce offspring of the same kind, but vary • Identify ways in which certain animals and plants are adapted to suit their environment • Recognise that light travels from one point to another, the source to our eyes • Recognise that some objects reflect • Relate the shape of shadows to the shape of the object that makes them • Recognise that effect the number and voltage of cells has on the circuit • Identify the symbols, function and operation of different components • Identify and manage variables • Consider how measurements can be improved

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| | <ul style="list-style-type: none">• Identify situations where repeat readings will improve quality of evidence• Use various ways to record complex outcomes• Use line graphs to display complex data• Write a conclusion using evidence and identifying causal links• Indicate how trustworthy results are in their conclusions• Suggest further comparative tests to develop the investigation |
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Year Five– Science Cycle 2

Names	Comments
Above Average	<p>Can confidently</p> <ul style="list-style-type: none"> • Identify similarities and differences in two different life cycles, • Describe the changes as humans develop to old age, e.g. trends in changes to size, weight, mobility etc. • Describe in sequence the stages of reproduction in some plants and animals. • Name the main parts of the human circulatory system, e.g. heart, arteries, veins. • Recognise that diet, exercise, drugs and lifestyle impact on the way the body functions. • Describe that nutrients and water are transported within humans. • Explain that gravity causes objects to fall towards Earth. • Describe how motion may be resisted by air resistance, water resistance or friction. • Describe how some devices may turn a smaller force into a larger one. • Draw a diagram or use a model to describe planetary orbits. • Draw a diagram or use a model to describe the Moon's orbit around the Earth. • Describe the Sun, Earth & Moon as spheres. • Use a diagram or model to explain why the Sun seems to travel across the sky, and what causes day and night. • Identify and manage variables • Consider how measurements can be improved • Identify situations where repeat readings will improve quality of evidence • Use various ways to record complex outcomes • Use line graphs to display complex data • Write a conclusion using evidence and identifying causal links • Indicate how trustworthy results are in their conclusions • Suggest further comparative tests to develop the investigation
Average	<p>Is beginning to</p> <ul style="list-style-type: none"> • Identify similarities and differences in two different life cycles, • Describe the changes as humans develop to old age, e.g. trends in changes to size, weight, mobility etc. • Describe in sequence the stages of reproduction in some plants and animals. • Name the main parts of the human circulatory system, e.g. heart, arteries, veins. • Recognise that diet, exercise, drugs and lifestyle impact on the way the body functions. • Describe that nutrients and water are transported within humans. • Explain that gravity causes objects to fall towards Earth. • Describe how motion may be resisted by air resistance, water resistance or friction. • Describe how some devices may turn a smaller force into a larger one. • Draw a diagram or use a model to describe planetary orbits. • Draw a diagram or use a model to describe the Moon's orbit around the Earth. • Describe the Sun, Earth & Moon as spheres. • Use a diagram or model to explain why the Sun seems to travel across the sky, and what causes day and night. • Identify and manage variables • Consider how measurements can be improved • Identify situations where repeat readings will improve quality of evidence • Use various ways to record complex outcomes • Use line graphs to display complex data • Write a conclusion using evidence and identifying causal links • Indicate how trustworthy results are in their conclusions • Suggest further comparative tests to develop the investigation
Below Average	<p>With help can</p> <ul style="list-style-type: none"> • Identify similarities and differences in two different life cycles, • Describe the changes as humans develop to old age, e.g. trends in changes to size, weight, mobility etc. • Describe in sequence the stages of reproduction in some plants and animals. • Name the main parts of the human circulatory system, e.g. heart, arteries, veins. • Recognise that diet, exercise, drugs and lifestyle impact on the way the body functions. • Describe that nutrients and water are transported within humans. • Explain that gravity causes objects to fall towards Earth. • Describe how motion may be resisted by air resistance, water resistance or friction. • Describe how some devices may turn a smaller force into a larger one. • Draw a diagram or use a model to describe planetary orbits. • Draw a diagram or use a model to describe the Moon's orbit around the Earth. • Describe the Sun, Earth & Moon as spheres.

	<ul style="list-style-type: none">• Use a diagram or model to explain why the Sun seems to travel across the sky, and what causes day and night.• Identify and manage variables• Consider how measurements can be improved• Identify situations where repeat readings will improve quality of evidence• Use various ways to record complex outcomes• Use line graphs to display complex data• Write a conclusion using evidence and identifying causal links• Indicate how trustworthy results are in their conclusions• Suggest further comparative tests to develop the investigation
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Year Six – Science Cycle 1	
Names	Comments
Above Average	<p>Can confidently</p> <ul style="list-style-type: none"> • Identify that some soluble materials are more soluble than others • Explain why a particular separation method might be more effective • Classify processes relating to materials as reversible or irreversible • Give examples of when changes being irreversible are a good thing • Use similarities/differences in observable features to group living things • Explain why certain features are useful in classifying living things • Use fossils as evidence that living things have changed over time • Recognise that offspring vary from each other and their parents • Describe examples of a living thing that has adapted to live in a particular habitat and evolved as a result • Draw diagrams using straight lines showing light travelling to the eye • Explain how we can see an object by referring to light travelling into the eye • Draw a diagram showing an object, shadow and light to relate object shape to shadow shape • Explain how number and voltage of cells affects the lamp or the buzzer • Explain the use of switches, how bulbs can be made brighter and buzzers louder • Represent a circuit that has been constructed using symbols. • Identify and manage variables • Consider how measurements can be improved • Identify situations in which taking repeat readings will improve quality of evidence • Evaluate various ways of recording complex data • Indicate why some results may not be trustworthy • Can use evidence to suggest further comparative or fair test that would develop investigation
Average	<p>Is beginning to</p> <ul style="list-style-type: none"> • Identify that some soluble materials are more soluble than others • Explain why a particular separation method might be more effective • Classify processes relating to materials as reversible or irreversible • Give examples of when changes being irreversible are a good thing • Use similarities/differences in observable features to group living things • Explain why certain features are useful in classifying living things • Use fossils as evidence that living things have changed over time • Recognise that offspring vary from each other and their parents • Describe examples of a living thing that has adapted to live in a particular habitat and evolved as a result • Draw diagrams using straight lines showing light travelling to the eye • Explain how we can see an object by referring to light travelling into the eye • Draw a diagram showing an object, shadow and light to relate object shape to shadow shape • Explain how number and voltage of cells affects the lamp or the buzzer • Explain the use of switches, how bulbs can be made brighter and buzzers louder • Represent a circuit that has been constructed using symbols. • Identify and manage variables • Consider how measurements can be improved • Identify situations in which taking repeat readings will improve quality of evidence • Evaluate various ways of recording complex data • Indicate why some results may not be trustworthy • Can use evidence to suggest further comparative or fair test that would develop investigation
Below Average	<p>With help can</p> <ul style="list-style-type: none"> • Identify that some soluble materials are more soluble than others • Explain why a particular separation method might be more effective • Classify processes relating to materials as reversible or irreversible • Give examples of when changes being irreversible are a good thing • Use similarities/differences in observable features to group living things • Explain why certain features are useful in classifying living things • Use fossils as evidence that living things have changed over time • Recognise that offspring vary from each other and their parents • Describe examples of a living thing that has adapted to live in a particular habitat and evolved as a result • Draw diagrams using straight lines showing light travelling to the eye • Explain how we can see an object by referring to light travelling into the eye • Draw a diagram showing an object, shadow and light to relate object shape to shadow shape • Explain how number and voltage of cells affects the lamp or the buzzer • Explain the use of switches, how bulbs can be made brighter and buzzers louder • Represent a circuit that has been constructed using symbols.

	<ul style="list-style-type: none">• Identify and manage variables• Consider how measurements can be improved• Identify situations in which taking repeat readings will improve quality of evidence• Evaluate various ways of recording complex data• Indicate why some results may not be trustworthy• Can use evidence to suggest further comparative or fair test that would develop investigation
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Year Six – Science Cycle 2	
Names	Comments
Above Average	<p>Can confidently</p> <ul style="list-style-type: none"> • Suggest similarities in the life cycles of a number of vertebrates. • Suggest why some of the changes that take place in humans happen. • Compare the process of reproduction in animals and plants. • Describe what heart, blood vessels and blood do. • Suggest how their bodies are affected by substances and actions. • Describe with aid of diagrams the route that water takes within animals. • Recognise that gravity acts between all masses, e.g. the Sun and the Earth. • Identify ways in which forces that oppose motion may be useful (e.g. bicycle handlebar grips) or a nuisance (e.g. bicycle chain). • Explain, with reference to everyday contexts, why a force multiplier might be useful. • Identify that the further out a planet is, the longer its orbit is around the Sun. • Relate the Moon's orbit of the Earth to the Earth's orbit of the Sun. • Recognise that many heavenly bodies are approximately spherical. • Explain the effect of a planet in the solar system rotating at a different rate to Earth. • Identify and manage variables • Consider how measurements can be improved • Identify situations in which taking repeat readings will improve quality of evidence • Evaluate various ways of recording complex data • Indicate why some results may not be trustworthy • Can use evidence to suggest further comparative or fair test that would develop investigation.
Average	<p>Is beginning to</p> <ul style="list-style-type: none"> • Suggest similarities in the life cycles of a number of vertebrates. • Suggest why some of the changes that take place in humans happen. • Compare the process of reproduction in animals and plants. • Describe what heart, blood vessels and blood do. • Suggest how their bodies are affected by substances and actions. • Describe with aid of diagrams the route that water takes within animals. • Recognise that gravity acts between all masses, e.g. the Sun and the Earth. • Identify ways in which forces that oppose motion may be useful (e.g. bicycle handlebar grips) or a nuisance (e.g. bicycle chain). • Explain, with reference to everyday contexts, why a force multiplier might be useful. • Identify that the further out a planet is, the longer its orbit is around the Sun. • Relate the Moon's orbit of the Earth to the Earth's orbit of the Sun. • Recognise that many heavenly bodies are approximately spherical. • Explain the effect of a planet in the solar system rotating at a different rate to Earth. • Identify and manage variables • Consider how measurements can be improved • Identify situations in which taking repeat readings will improve quality of evidence • Evaluate various ways of recording complex data • Indicate why some results may not be trustworthy • Can use evidence to suggest further comparative or fair test that would develop investigation.
Below Average	<p>With help can</p> <ul style="list-style-type: none"> • Suggest similarities in the life cycles of a number of vertebrates. • Suggest why some of the changes that take place in humans happen. • Compare the process of reproduction in animals and plants. • Describe what heart, blood vessels and blood do. • Suggest how their bodies are affected by substances and actions. • Describe with aid of diagrams the route that water takes within animals. • Recognise that gravity acts between all masses, e.g. the Sun and the Earth. • Identify ways in which forces that oppose motion may be useful (e.g. bicycle handlebar grips) or a nuisance (e.g. bicycle chain). • Explain, with reference to everyday contexts, why a force multiplier might be useful. • Identify that the further out a planet is, the longer its orbit is around the Sun. • Relate the Moon's orbit of the Earth to the Earth's orbit of the Sun. • Recognise that many heavenly bodies are approximately spherical. • Explain the effect of a planet in the solar system rotating at a different rate to Earth. • Identify and manage variables • Consider how measurements can be improved

	<ul style="list-style-type: none">• Identify situations in which taking repeat readings will improve quality of evidence• Evaluate various ways of recording complex data• Indicate why some results may not be trustworthy• Can use evidence to suggest further comparative or fair test that would develop investigation.
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