Curriculum: Science

Deepcar St. John's C.E. Junior School

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Vision

We at Deepcar St John's want children to foster a desire to actively engage in scientific knowledge, understanding and skills to make links and choices about the world in which they live. We want our children to see the importance that science plays to our understanding of the world and see themselves as scientists. In addition, it is our hope that children are eager to ask and answer scientific questions which allows them to work out how and why things work today, how they worked in the past and how our understanding impacts the future.

In order to achieve our vision, our KS2 science curriculum is planned to ensure children progressively build knowledge and scientific skills. Scientific vocabulary is taught and the children are become develop fluency in using this scientific vocabulary.

During science lessons, children learn through exploration and investigation through the use resources and the outdoor environment. All of which we believe will strengthen and deepen their understanding of the world around us.

Intent

Through our science curriculum, children at Deepcar St John's will explore the world in which we live in. We are passionate about fostering the inquisitive nature of children, and use this as a starting point for developing the acquisition of specific skills and knowledge to help them think scientifically. Our children experience a broad science curriculum, one which extends beyond weekly science lessons into other areas of the curriculum and beyond this into extra curriculum activities, which provide a wealth of opportunities to experience science on a multitude of levels: such as, taking part in science days, homework tasks, attending local nature events and enjoying other visits.

To ensure our curriculum fulfils the KS2 curriculum, the curriculum is planned and sequenced to ensure that new knowledge and skills build on what has previously been taught. Prior learning is regularly revisited in the form of a Memory Maker to help children remember prior learning. Teachers quickly identify misconceptions and gaps in learning so that all children can succeed.

Through practical, hands-on experiences, we aim to engage and excite all children, as we know this is when quality learning takes place. Children will become confident at raising questions and investigating these. They will become competent when planning and carrying out practical investigations. Scientific vocabulary is taught and is built upon and knowledge mats help children to master the vocabulary needed. As a result of this, children will leave Deepcar St John's with excellent scientific knowledge and understanding which is demonstrated in verbal and written explanations, the ability to be able to raise and solve problems, and report scientific findings. Our children will understand the importance of science, today and for the future.

1	Biology
2	Physics
3	Chemistry
4	Scientific Enquiry Skills

Key Core Concetpts	Scientific enquiry	Acquiring knowledge & Making Links	Science in our lives	Discover, answer and generate questions
				

Implementation

- ✓ Units of study that are a requirement of the National Curriculum have been mapped-out for each year group (see Science Curriculum Long Term Plan)
- ✓ Progression for each strand of science: Biology, Chemistry and Physics is identified across KS2 and learning outcomes identified.
- ✓ Progression in working scientifically skills mapped out across KS2: Questioning and testing, observing and taking measurements, gathering and recording, noticing patterns, presenting findings and drawing conclusions, and finally using scientific evidence and secondary sources of information. This ensures that there is a clear progression of skills year-on-year.
- ✓ Medium Term Plans identify a key question for the topic to be investigated, prior knowledge is identified, the end of unit learning outcomes are identified. Each lesson is planned to include a question for investigation for the lesson, the lesson activities, outcomes for memory, and the key vocabulary which will be learnt during the lesson.
- ✓ Every science lesson will draw on four Core Concepts for science: Generating questions, Acquiring and making links, Science in our lives, and Scientific enquiry. The children develop an understanding of how these four concepts run through our science topics.
- ✓ Children complete Memory Makers most lessons to revise key learning from the current topic, the previous topic and last year's learning to help children commit learning to their long-term memory.
- ✓ Children use Knowledge Mats so that they can independently access information and vocabulary to develop their understanding.

Impact

Our children will be confident scientists and be able to clearly and enthusiastically discuss their learning from past and current topics. They will be enquiring learners who ask questions and can make suggestions about where to find the evidence to answer the question.

The expected impact of the History curriculum at Deepcar St John's is that children will:

- ✓ Children will be provided with a range of opportunities, throughout their time at Deepcar St John's to engage with science, such as: celebrating science in Collective Worships, taking part in science based out of school activities, taking science outside of the classroom, providing opportunities for science learning to be carried out at home, ensuing science is taught weekly for a minimum of 1 hour and finally taking part in a whole school science day during Science Week.
- ✓ Children will retain knowledge and it is used as a stepping stone to help them develop their understanding further.
- ✓ Children will be able to ask or be given a question to investigate, and will be able to suggest ways in which these can be investigated and which line of scientific enquiry is best.
- ✓ Children will be able to suggest the most effective way gather scientific data to ensure that it is reliable.
- ✓ Children will be able to draw links and make conclusions from the evidence they have gathered, using this to discuss the impact this may have on decisions they make in the everyday life.

National Curriculum

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.

Aims

The national curriculum 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
- ❖ Scientific knowledge and conceptual understanding
- ❖ The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Insecure, superficial understanding will not allow genuine progression: pupils may struggle at key points of transition (such as between primary and secondary school), build up serious misconceptions, and/or have significant difficulties in understanding higher-order content.
- ❖ Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. The social and economic implications of science are important but, generally, they are taught most appropriately within the wider school curriculum: teachers will wish to use different contexts to maximise their pupils' engagement with and motivation to study science.
- ❖ The nature, processes and methods of science
- ❖ 'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand. The notes and guidance give examples of how 'working scientifically' might be embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry

should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data. 'Working scientifically' will be developed further at key stages 3 and 4, once pupils have built up sufficient understanding of science to engage meaningfully in more sophisticated discussion of experimental design and control.

Spoken language
The national curriculum for science reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. They must be assisted in making their thinking clear, both to themselves and others, and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

School curriculum
The programmes of study for science are set out year-by-year for key stages 1 and 2. Schools are, however, only required to teach the relevant programme of study by the end of the key stage. Within each key stage, schools therefore have the flexibility to introduce content earlier or later than set out in the programme of study. In addition, schools can introduce key stage content during an earlier key stage if appropriate. All schools are also required to set out their school curriculum for science on a year-by-year basis and make this information available online.

Attainment targets
By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Overview of learning

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	Nutrition and the skeleton		Light	Forces and magnets	Plants	Rocks and Soils
Year 4	Sound	States of matter	Electricity	Human Body – Digestive System	Classifying Animals	
Year 5	Earth and Space		Forces – Gravity, air resistance and friction	Materials - their uses and properties	Life-cycles of plants and animals	
Year 6	Living things	Evolution and Inheritance	Human Body – Circulatory System	Human body and the effect of exercise and drugs	Electricity	Light

Substantive Knowledge Progression

1 Biology

Animals including humans

Year 3	Year 4	Year 5	Year 6
• To know that food give us the nutrition we need to stay healthy. • To place food into food groups and have an understanding how these keep our body healthy. • To understand the importance of eating a balanced diet and the correct portions. • To identify the similarities and differences in animal skeletons and explore how they support, protect and provide movement. • To know that muscles connect to bones and move when they contract.	• To know the main parts of the body associated with the digestive system e.g. mouth, tongue, teeth, oesophagus, stomach small and large intestine. • To understand and explain the special function of each part of the digestive system. • To label the teeth in the human mouth (both child and adult) and know their function / adaptation to their function.	• To understand that reproduction happens as a cycle • To know some of the stages of development within humans.	• To identify and name the functions of the key parts of the circulatory system (heart, blood and blood vessels). • To describe how the human circulatory system works. • To describe the ways in which nutrients and water are transported within animals, including humans. • To recognise the impact and effects of diet, exercise, drugs and lifestyle on the way their bodies function.

Living things and their habitats

Year 3	Year 4	Year 5	Year 6
NA	• To group a wide selection of living things including flowering and non-flowering plants as well as animals. • To use and make simple guides and keys to explore and identify local plants and animals. • To group animals: for instance, vertebrates such as fish, amphibians, reptiles, birds and mammals and invertebrates such as snails, slugs, worms, spiders, insects. • To explore the local environment to identify how the habitat changes throughout the year. • To recognise the impact of humans (construction and pollution) on the natural environment.	• To discuss the main stages in the life cycle of: insects, mammals, amphibians, birds and plants. • To explain some of the differences between different lifecycles.	**NA**

Plants

Year 3	Year 4	Year 5	Year 6
• To identify the parts of a plant and know its function. • To observe and make predictions about where water goes in a plant using celery. • To name the main stages in the life cycle of a flowering plant including pollination, seed dispersal, seed formation and seed dispersal. • To talk about the ways in which seeds are dispersed.	**NA**	• To know some animals and insects that facilitate pollination. • To know the stages in the pollination process and name the reproductive organs of a plant. • To understand that plants can reproduce through sexual and asexual reproduction and give some examples.	**NA**

Evolution and Inheritance

Year 3	Year 4	Year 5	Year 6
NA	NA	NA	• To recognise that living things change over time and fossils can help us learn more about how they have changed. • To understand and discuss how living things produce off spring which have similar characteristics to their parents. • To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

2 Chemistry

Materials

Year 3	Year 4	Year 5	Year 6
NA	• To compare, group and group materials based on whether they are a solid, liquid or gas. • To describe the particles arrangement in a solid, liquid and gas. • To observe and comment on changes to water when it is heated (causes melting and evaporation) and cooled (causes condensing and freezing) linking it to temperature. • To identify the stages in the water cycle, then identify when evaporation and condensing occur linking it to temperature.	• To understand and group materials based on their properties. • To explain how the properties of materials influence its use & purpose. • To experience and explain the reversible processes of evaporation, filtering & sieving. • To explore changes which are difficult to reverse: burning, rusting, bicarbonate of soda and vinegar. • To know some soluble materials which dissolve in a liquid to create new substances called a solution and some insoluble materials which create a suspension. • To describe how to recover a substance from a solution.	NA

Rocks

• To examine different rocks and describe, compare and contrast their properties. • To sort rocks according their appearance, texture and rock type. • To understand how different rocks are made including igneous and sedimentary rock. • To recognise that soil is made from organic material. To investigate what fossils are and how they are made.	NA	NA	NA

3 Physics

Light

Year 3	Year 4	Year 5	Year 6

• To understand that in order to be able to see, we need light (natural and manmade) • To know that objects reflect different amounts of light and explore reflective surfaces / materials. • To use my knowledge of light and reflection to know how to keep myself safe. • To create shadows and recognise that shadows are formed when the light from a light source is blocked by a solid object. • To investigate and find patterns in the way shadows change their size.	**NA**	**NA**	• To understand how light travels. • To make connections between light travelling and how we see. • To make connections between how light travels and how shadows are formed.

Electricity

Year 3	Year 4	Year 5	Year 6
NA	• To construct simple series circuits trying different components such as bulbs, buzzers, motors, switches. • To draw the circuit as a pictorial representation (bot necessarily using conventional symbols). • To investigate if materials are conductors or insulators and how this can be tested using a complete circuit.	**NA**	• To understand voltage within a series circuit including lights and buzzers. • To understand how components' functions, vary, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. • To draw a diagram of a simple circuit using recognised symbols.

Forces and Magnets

Year 3	Year 4	Year 5	Year 6
• To explore how objects move when a force (push, pull, twist) is applied. • To investigate and compare how different surfaces affect how an object travels. • To explore identify, group and compare materials which are magnetic and non-magnetic. • To investigate the two poles of a magnet and predict whether they will attract or repel each other depending on which way they are facing. • To investigate how magnetic forces act at a distance	**NA**	• To explore gravity as a force. • To explore falling objects. • To explore the effects of air resistance by observing the rate at which different objects fall, such as parachutes. • To experience forces that make things move, get faster and slow down the object – understand the effect of water resistance on the rate of movement. • To know how to create a streamlined object: air resistance and water resistance. • To understand the effects of levers, pulleys and gears on simple machines.	**NA**

Sound

Year 3	Year 4	Year 5	Year 6

NA	• To explore the different ways of making sound. • To be able to explore the different notes that pitched bands make and discover how to alter the pitch of a sound. • To explore how we can change the pitch of instruments that are played using air. • To measure how the loudness of a sound changes as the distance from the source increases.	**NA**	**NA**

Earth and Space

Year 3	Year 4	Year 5	Year 6
NA	**NA**	• To explain the orbit of the Earth around the sun and other planets relative to the sun. • To understand that the length of a year is shorter the closer they are to the sun. • To understand the rotation of the Earth to create day and night. • To explain the position of the moon and its phases and its appearance in the night sky. • To know that the Earth is split into 24 time zones. • To know that the seasons are created because of the earth's axis.	**NA**

4 Disciplinary Knowledge Progression – Working Scientifically

Questioning and Testing

Year 3	Year 4	Year 5	Year 6

Scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Children are given some of the variables in order to provide support and direction.	**Ask relevant questions and recognise that they can be answered in different ways. Set up simple practical enquiries, comparative and fair tests with more independence when deciding on which variables to change.**	**Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Using test results to make predictions to set up further comparative and fair tests.**	**Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Using test results to make predictions to set up further comparative and fair tests.**
• **Problem solving**- Investigate pattern seeking questions such as; Can people with longer legs run faster? Can people with bigger hands catch a ball better? *Children to come up with ideas for their own enquiry question.* • **Fair test** - Investigate questions related to an object and the shadow it will cause; Do smaller objects create small shadows? *Children to make predictions and record in their data in a chart with accuracy.* • **Fair test** – Investigate the effect of different surfaces on the distance a marble will roll. *Children to record using a ruler accurately and interpret data in a bar chart.* • **Comparative test** - Investigate reflection of light by identifying materials which reflect light the best. *Children to identify what equipment may be needed to carry this out.*	• **Problem solving** - What effect would the introduction of a switch have? *Children to make suggestions as to how to carry out this enquiry and the best way to record the information.* • **Fair test** - Investigate what might affect the rate at which ice melts? Thinking about: -Size of ice -Shape of ice -Temperature *Children to be accurate when taking measurements and recording information in charts. Use the results to formulate a conclusion.* • **Comparative test**- Investigate the effect of drinks on teeth. *Children to generate thoughtful predictions.* **For next year:** Sound/distance experiment measuring using a decibel reader.	• **Problem solving** – How can we separate different materials? E.g sieving, filtering or magnetism. *With increasing independence, make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions.* • **Fair test** – Which shoe sole creates the greatest friction? *Children to decide which variables will need to be controlled.* • **Comparative test** - Investigate which material will keep the drink the hottest for the longest? *Children to make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them.* • **Comparative test** - What affects how quickly a parachute falls? *Select the most appropriate type of scientific enquiry to use to answer scientific questions. From this, plan then generate ideas for further comparative tests.*	• **Fair test** – Set up an investigation into angles of reflecting. Children should recognise and control variables where necessary. • **Comparative test**- How can we collect data on hedgehog activity ensuring the only thing being changed is the location of the tunnels? Make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them. • **Comparative test**-Following initial pulse investigation, adapt the question to investigate how different types of exercise affect our pulse. • **Comparative test** -Plans different types of scientific enquiries to investigate how the thickness/length and type of wire effect a circuit, including recognising and controlling variables where necessary.

Observing and taking Measurements

Year 3	Year 4	Year 5	Year 6

Make systematic and careful observations and where appropriate, take accurate measurements using standard unit, using a range of equipment, including thermometers and data loggers.	**Make systematic and careful observations and where appropriate, take accurate measurements using standard unit, using a range of equipment, including thermometers and data loggers.**	**Take measurements using a range of scientific equipment with increasing precision, taking repeat readings when appropriate.**	**Take measurements using a range of scientific equipment with increasing precision, taking repeat readings when appropriate.**
• Observe flowers, seeds, berries and fruits outside throughout the year. recording where and when they were found on a map? • Observe the effect of putting cut white carnations, celery and cauliflower in coloured water and explain observations. • Observe flowers carefully to identify the pollen. • Observe flowers being visited by pollinators e.g. bees and butterflies in the summer and describe what they do. • Observe seeds being blown from the trees e.g. sycamore seeds and link this to seed dispersal. Record the distances of where they are found **measuring in meter and cm?** • What happens to plants when they are put in different conditions e.g. in darkness, in the cold, deprived of air, different types of soil, different fertilisers, varying amount of space. Describe what can be seen. • Observe and identify the difference in shadows of opaque, translucent and transparent objects/materials. • Observe and record changes to the size and orientation of shadows, relative to their proximity to the light source **measuring in cm using a ruler**. • Record the distance cars travel when rolled on different surfaces **measuring in cm using a meter stick and ruler.**	• Observe and measure how fast ice hands melt when left in different temperatures. Measure the amount of liquid at time intervals using beakers, accurately **recording in ml**. • Observe closely a range of solids and liquids and gasses and explain those observations. • Observe gasses in a range of contexts: raisins in lemonade, weighing a balloon, ping pong ball, squeezing sponge.	• Take accurate measurements of the amount of force needed, in newtons, to move a shoe. • Record the temperature of water over a period of time using digital thermometers. **Record to the nearest 1dp**. • Take repeated readings using a stop watch to record the amount of time it takes, **in seconds and milliseconds** for a parachute to fall. From this calculate and average time. • Use stopwatch with accuracy to record the amount of time it takes for an object to fall through water, **in seconds and milliseconds.**	• Take measurements of footprints, recording in cm and mm, over a period of time. • Takes measurements of pulse rate by counting the number of beats per minute, taking repeat readings when appropriate. • Takes measurements, comparing brightness of bulb or amp meter • Takes measurements of the angle of reflection using a protractor, taking repeat readings when appropriate

Gathering and Recording

Year 3	Year 4	Year 5	Year 6

Gather, record, classify and present data in a variety of ways to help in answering questions. Using drawings, labelled diagrams, keys, child constructed bar charts and Venn Diagrams.	**Gather, record, classify and present data in a variety of ways to help in answering questions. Using drawings, labelled diagrams, keys, child constructed bar charts tables, Venn Diagrams and Carroll Diagrams.**	**Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar, line graphs Carroll Diagrams and Venn Diagrams with bisecting sets.**	**Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.**
• Group foods into their food groups. • Compare, contrast and classify skeletons of different animals. • Group light sources (natural vs man made) using a Venn Diagram. • Group materials according to opaque, transparent and translucent. • Compare and group materials following magnetic testing, recording findings and use the outcome to answer questions about which materials are magnetic. • Group rocks according to their properties using a pre-made identification key. • Label the model of the tricep and bicep muscle • Record data gathered in friction investigation in a bar chart. • Label a diagram of a plant, explaining where the water goes in the plant. • Do you group using Venn Diagrams? This needs to be worked in.	• Observe plants and animals in different habitats- Visit to Yorkshire Wildlife Park. • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. • Classify living things found in different habitats based on their features. • Create a simple identification key based on observable features of different habitats. • Create food chains based on research. • Record the teeth in their mouth using a labelled diagram. • Label the different parts of the digestive system.. **Next year:** Data loggers could be used to gather data on evaporation and then this data used for bar charts.	• Draw labelled diagrams to show how forces act on objects such as: air resistance, water resistance and gravity. • Label the parts of a flower involved in sexual reproduction. • Draw and label a diagram of a pulley, gear and lever. Label the effort and load. • Draw their own table to record data in using labelled headings – Water resistance. • Record data in a line graph to show the rate at which a liquid cooled when wrapped in different materials (thermal insulators). • Use a Carroll Diagram to group materials by multiple properties. • Add given information into a bar chart ensuring they choose the correct labels for each axis and intervals.	• Record results in a table and on a school map, sharing with other groups and comparing with previous years • Record the result of Pulse Rate investigation in classification keys and tables. • Record data of a circuit investigation and results using tables. **Next year:** Scatter graphs incorporated into light.

Noticing Patterns, Presenting Findings, Drawing Conclusions

Year 3	Year 4	Year 5	Year 6

Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Use oral and written explanations to report on why shadows are formed and how the length and size of a shadow can be changed. From this, suggest any improvements that could be made to improve the process. • Record and report on findings from investigations, involving how things move on different surfaces. From this, raise further questions that could be tested. • Written explanations detailing how sedimentary and igneous rocks are formed. • Including oral and written explanations on the stages of fossilisation. • Make predictions for new values when investigating the size of shadows.	**Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.** • Write a report on the on positive and negative effects of humans on the environment. • Explain the processes that take place in the digestive system in the form of a written explanation. • Interpret a variety of food chains, identifying producers, predators and prey and report orally on the findings. • Present learning about the water cycle in a range of ways e.g. diagrams, explanation text, story of a water droplet. • Create a quiz game, which uses an electric circuit and explain orally how the circuit the game works in order to make a circuit. • Ice hands investigation? From the data, draw conclusions and raise further questions or suggest improvements.	**Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.** • Demonstrate and explain the orbit of the planets in the solar system – Present information and relationships by creating a model of the solar system or diagram/poster. • In groups, present an explanation using the data collected to explain the relationship between their material and the rate at which the liquid cooled identifying any anomalies. Give a suggestions as to what changes could be made in future. • Written conclusion which explains the reliability of the data collected when calculating the average time, it takes to for a parachute of different sizes to fall to the ground. • Present findings when enquiring about the life cycle of different animals. These could be I the form of a poster, PPT presentation. Present these to the class.	**Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.** • Reports and presents findings from enquiries, including conclusions, causal relationships and explanations in relation to patterns in hedgehog habitats and population increase / decline over several years. • Reports and presents findings from enquiries, including conclusions, causal relationships (link between variable and brightness of bulb) and explanations of and degree of trust in results, in oral and written forms

Using scientific evidence and secondary sources of information

Year 3	Year 4	Year 5	Year 6
Identifying differences, similarities or changes related to simple scientific ideas and processes. Use research to find out a range of things: • Identify differences and similarities in relation to forces: push, pulls, friction, magnetism. • Identify similarities and differences in skeletons of different animals. • Use secondary sources to research the parts and functions of the skeleton. • Use secondary sources to find out the different types of food groups and what nutrients they contain.	**Identifying differences, similarities or changes related to simple scientific ideas and processes. Use research to find out a range of things:** • Identify similarities and differences in the teeth of herbivores and carnivores. • Use research to explore human impact on the local environment. • Use secondary sources to find out about human impact, both positive and negative,	**Find things out using a wide range of secondary sources of information:** • Research and consider the views of scientists in the past and how evidence was used to deduce the shapes and movements of the Earth, Moon and planets before space travel. Use this research to talk about how scientists' ideas have changed over time. • Use secondary sources to learn about the life cycle of animals and plants. • Use secondary sources to identify plants that reproduced asexually: bulbs, tubers, runners.	**Find things out using a wide range of secondary sources of information:** • Identifies scientific evidence that has been used to support or refute ideas or arguments in relation to hedgehog ecology. Children can talk about how the hedgehog population has changed over time using the data that has been gathered since data first started being gathered. • Identifies scientific evidence from the investigation that has been used to support or refute the theory about how to increase / decrease the strength of current