



COWBIT ST. MARY'S (ENDOWED) CHURCH OF ENGLAND Primary SCHOOL



Our Vision

We are a small, inclusive Church of England Primary School that welcomes everyone and encourages all voices to be heard. Through challenge and support, we strive towards each person becoming the best person God intended them to be, happily flourishing as human beings. We empower our whole school community to be hopeful about the future and to be drivers of positive change.

INTENT STATEMENT for the Curriculum at Cowbit St Mary's Church of England Primary School

Our intent and ambition for our curriculum is that it is designed to meet, at a minimum, the requirements of the National Curriculum. It will enable learners to progress well in all year groups and attain at least age-related expectations (A.R.E.) by the end of KS2 in all subjects.

We recognise the importance of tailoring our curriculum to the needs of our learners and families in our school community:

- Broaden and enrich pupils' vocabulary in order for them to have strong written and verbal communication skills through enquiry-based approach.
- Provide a range of experiences to give them a wider view of the world around them.
- Allow for them to reflect upon progress and have ownership in their learning
- Provide opportunities for greater involvement with parent/carers and the wider community making them global citizens.

We aim to offer our children a broad and balanced curriculum which ignites curiosity, creativity and a love of learning to last a lifetime. Through our core Christian values: **Forgiveness, Perseverance, Trust, Responsibility, Compassion and Respect**. We aim to develop independent learners who can persevere when faced with challenge. Using the National Curriculum as our starting point, we have adapted Edison Learning's Connected Curriculum to ensure the progression of skills and knowledge provides pupils the need to achieve. We have developed a holistic curriculum with personal and social development at its heart where children's voices are paramount. This progressively builds and deepens knowledge, understanding and skills across the curriculum in which reading, writing and mathematics is embedded.

Children are given opportunities to inquisitively learn collaboratively with their peers during conceptual learning, whereas foundational skills are often taught and embedded through regular, independent practice. Whilst some subjects are taught thematically, encouraging learners to make connections across subjects, some areas of study are more appropriately taught discretely.

Our Christian ethos, planning, organisation of curriculum content, collaboration, distribution of subject leadership enables us to address the unique challenges we as a small school encounter.

From The National Curriculum in England – framework document 2013...

Purpose of study

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.

Key stage 1

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

'Working scientifically' is described separately in the programme of study, but must **always** be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Working Scientifically

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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.

Key stage 2

Lower Key Stage 2 – Years 3 & 4

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

‘Working scientifically’ is described separately at the beginning of the programme of study, but must **always** be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

Working Scientifically

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings.

Upper Key Stage 2 – Years 5&6

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

‘Working and thinking scientifically’ is described separately at the beginning of the programme of study, but must **always** be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read, spell and pronounce scientific vocabulary correctly.

Working Scientifically

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments.

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.

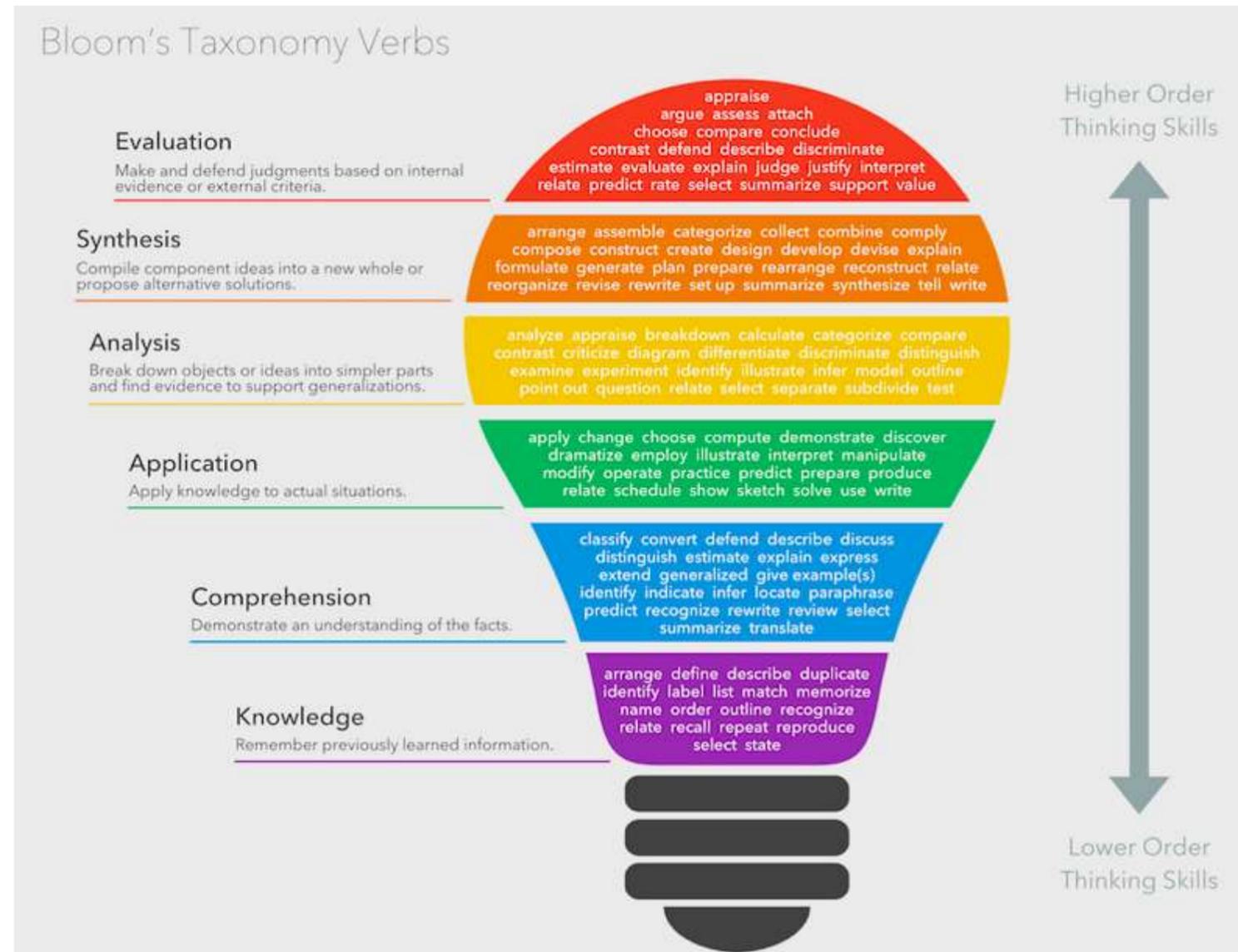
Principles for progression:

1. We will use common techniques across the school.
2. We will practise the same skills at different ages developing them when we revisit them. (Do the children tackle them better each time?)
3. We will revisit key themes, historical eras and key vocabulary. (The Long Term Plan maps out the themes and historical content to be covered in each class.)
4. We aim to improve children’s enquiry skills, concepts and knowledge, so they develop an ever deeper understanding of people and societies as they progress through the year groups: developing them as historians and preparing them for historical study at secondary school.

Key Primary Science Principles for Learning:

1. Question
2. Observe
3. Classify and Find Patterns
4. Control Investigations: comparative and fair testing
5. Research
6. Model
7. Conclude

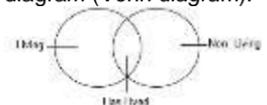
Global Citizens	Ignites Curiosity	Communication and Language	Persevere
<p>Gain an understanding of being a global citizen and have a wider view of the world around them.</p> <p>Why did people live the way they do?</p> <p>How do events impact on how people live and what they do?</p> <p>How does the past impact on life today?</p> <p>(links to DT and Art)</p>	<p>A hook for each topic. I wonder...? I wonder why? I wonder how? I wonder what would happen if? Think of words which connect with the picture / item</p> <p>Pupils ask What? Where? If? How? Why? When?</p> <p>Use of artefacts for wonder and engagement.</p> <p>Use of questions to engage curiosity.</p> <p>Bespoke planning and learning journey relevant to our children. Cross-curricular links where possible for joined-up thinking.</p> <p>Visits off site</p> <p>Visits form experts in to school.</p>	<p>Key vocabulary is identified for each unit of work (oracy).</p> <p>Planning opportunities to explore through discussion and debate.</p> <p>Planning opportunities for varied and purposeful ways of successfully communicating knowledge and understanding – Making oneself understood.</p> <p>(Links with English and Art)</p>	<p>Progression mapping ensures all staff are aware of year group expectations and are able to articulate them to our whole school community.</p> <p>High expectations for all children to apply knowledge, skills and concepts from other subjects within history.</p> <p>Teachers’ plan to overcome negative barriers of attitude, effort and behaviour.</p> <p>For all of our children to be secondary school ready.</p>



F/Y1	N.C Science Pupils should be taught to:		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year B		EYFS	Why do we play with different toys as we grow older?	Hello, I am new here	What can we learn about our world from stories?	Starry night	Why is water so precious?	Where will we go for a great day out?
1.Question		To be able to ask simple questions about immediate environment.	<p>To discuss how they have changed since they were a baby</p> <p>To know about personal hygiene.</p> <p>To know that we wash hands after using the toilet and before we eat.</p> <p>To know about the importance of oral hygiene.</p> <p>To know that eating fruits and vegetables is important for health.</p> <p>To know how to use outdoor play equipment safely.</p> <p>To begin to talk about why things happen using new vocabulary learnt</p> <p>To know that exercise, eating sleeping and hygiene can contribute to good health.</p>	<p>To discuss the changes they observe in their environment – Seasons link.</p> <p>To be able to describe weather and seasons.</p> <p>Be able to describe weather and seasons.</p>	<p>To be able to describe weather and seasons.</p> <p>To select appropriate materials according to their properties.</p> <p>To name and identify a range of different materials and to know how they are used in familiar environments</p>	<p>Be able to talk about features of own immediate environment and how environments may differ.</p> <p>To make observations and express their views about their environment.</p>	<p>To recognize and be able to sort healthy and unhealthy foods.</p> <p>To know the names of common fruits and vegetables.</p>	
2. Observe	<p>Observing closely, using simple equipment</p> <p>Children know about similarities and differences in relation to places, objects, materials and living things.</p> <p>They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.</p> <p>Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe. They manage their own basic hygiene and personal needs successfully, including dressing and going to the toilet independently.</p>	<p>Qualitative</p> <p>To talk about similarities and differences.</p>						
3. Classify and Find Patterns		To talk and Sort Use simple scientific criteria.						
4. Control Investigations: comparative and fair testing	performing simple tests	To be able to Explore objects/ materials/ living things/ resources designed to model scientific processes.						
5. Research	using their observations and ideas to suggest answers to questions	To Listen and respond to stories about scientific processes/ events/ objects.						
6. Model		Concrete context. To be able to create drawings and models of their environment						
7. Conclude		To be able to Explain simple phenomena: How? Why?						

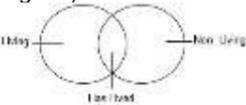
F/Y1	N.C Science Pupils should be taught to:		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year B		Y1 Skill	Toys	Hello, I am new here	What can we learn about our world from stories?	Starry night	Water	Seaside
1. Question	asking simple questions and recognising that they can be answered in different ways	To be able to ask questions and know some can be answered using scientific enquiry.	Why do we play with different toys as we grow older? To know that all humans sleep and eat, when they were babies they could not do this by themselves. To be able to use language such as: baby/toddler/child/teenager/adult To know and name main body parts and their purpose in relation to the senses (<i>link to Art – composite child</i>) To know head/ neck/ arms/ elbows/ legs /knees /face/ ears/ eyes/ hair/ mouth/ teeth). Associate with senses. To investigation – using the senses Taste – apple, banana, orange, etc. (NB hold nose or they can be identified by smell). Smell – as above, also bubble bath, candles, paint. Touch – cuddly toys, sponge, saucepan, flour, sugar. Hearing – tambourine, rice crispies in a bowl/box, drink shaken in a bottle. To be able to record through tally e.g. number of people who guessed correctly, which senses got the most accurate results? Discuss fairness of test. Review investigation. To be able to compare similarities and differences by looking at different eye or hair colour <i>recorded in a pictogram</i> To know you need to take exercise in order to keep healthy important to eat the right types and amounts of food to give us energy and keep us healthy To know and explain what happens when you exercise. To know what to do to keep fit. They could record this in pictures To understand the importance of washing their hands after they go to the toilet and before eating	Bonjour, je suis nouveau ici! To be able to suggest initial answers/hypotheses to be tested. To be able to observe the changes in a variety of fast-growing plants. These could include mustard and cress, broad beans, mung beans, sunflower seeds etc. Pupils record these changes with help and talk about what they observe, and begin to be able to use simple scientific language. To know most plants need water. add food colouring to water with white carnations. The children can then see how the plants takes the water and it changes colour. conduct a test with the pants that they are growing, by not watering some of them to compare how they grow To be able to identify and describe the basic structure of a variety of common flowering plants, including trees To be able to take photos/draw plants and trees, and collect leaves and plants/ flowers if possible. Through discussion know the differences between evergreen and deciduous trees/plants and garden and wild plants. Talk about the names of the trees/plants and their parts (Know: leaves, flowers, petals, fruit, roots, trunk, stem, branches)	I wonder...? Developing an enquiry-based approach... Initial assessment leading to an enquiry approach To be able to think of words which connect with the picture / item. To remind children of language of the properties of materials e.g. man-made and natural; rough and smooth; stiff and bendy To be able to describe simple physical properties of everyday materials. To be able to sort materials them according to these properties. To know how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Look again at the objects and sort again. Record in diagrams or use photographs To be able to compare and group together a variety of everyday materials on the basis of their simple physical properties To be able to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses To be able to sort range of materials into categories of those suitable to make a puppet and those not suitable. To be able to give reasons for their decisions To be able to find out how shapes of solid objects made form some materials can be changed by squashing, bending, twisting and stretching To know materials which can be out into the water tray. To be able to predict which will float and which will sink. To be able to test their predictions. To know the materials/ingredients used to make a gingerbread man. To know what happens when they are mixed together? To be able to describe how the mixture feels when the dough is kneaded To be able to discuss where light comes from. To be able to identify some light sources? To know the time when the sun is not in the sky? To know if it is completely dark at	Cross curricular links to learning: -Seasonal change - Light and light sources - Telescopes - Shooting stars - Star constellations	Why is water so precious? To be able to think of words which connect with the picture / item Pupils ask What? Where? If? How? Why? When? <i>This is a long investigation, which will require daily/regular-shared discussion, writing, drawing and completing diary.</i> Plant seeds against the side of transparent pots (drinking cups). To be able to label carefully and stick a sample seed to the outside of the cup so children can see which seed the plant has grown from. To be able to predict: What do they think the seeds will grow into? What will the plants look like? Will the biggest seed grow into the biggest plant, and generally discuss concepts about growing. To know what the seeds will need to germinate To be able to draw illustrations of what they expect the seeds to grow. To know pond is, and how it differs from a river or sea To be able to research the things they can see, hear, smell and touch in their garden or school garden To be able to record using post-it notes and generate Venn Diagram To know why animals need water? To know what plants humans and animals eat? To know if we didn't have any trees, what impact would that have on humans and animals? Teacher to generate a list of questions in line with children's knowledge and understanding. What would happen if...? To know which animals, live in rivers? <i>Recap the experiences of pond dipping the children had in "Why is water precious?"</i> To know that amphibians are cold blooded animals that live in water and on land, and lay eggs in water. To know that mammals are warm blooded animals that give birth to live young. Most live on land, but some (such as dolphins & whales) live in the sea. Children could repeat the sorting activity described earlier with a focus on river animals	Be able to describe weather and seasons.
2. Observe	observing closely, using simple equipment -observe changes across the four seasons -observe and describe weather associated with the seasons and how day length varies.	To qualitative and Simple Quantitative To be able to observe change over time. To use Senses/ equipment.						
3. Classify and Find Patterns	-identifying and classifying -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. -identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals -identify and name a variety of common animals that are carnivores, herbivores and omnivores -describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) -identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. -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.	To Identify and Classify e.g. familiar plants, animals, materials To be able to compare and contrast						
4. Control Investigations: comparative and fair testing	using their observations and ideas to suggest answers to questions	To be able to carry out simple comparative tests e.g. <i>What is the best material for an umbrella?</i>						

5. Research	gathering and recording data to help in answering questions.	To be able to find information using given sources. e.g. <i>animals</i> .			night? To know what gives us light at night?		To be able to sort picture cards of animals into groups such as live in rivers/don't live in rivers or live on land and in water/only live in water.	
6. Model		To be able to concrete context To be able to draw diagrams e.g. <i>parts of plants/ the body</i>			Seasonal Changes To be able to observe changes across the four seasons			
7. Conclude		To be able to describe what has happened or been observed.			To be able to observe and describe weather associated with the seasons and how day length varies			

Y2/3	N.C Science Pupils should be taught to:		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
YearB		Year 2 Skill	Healthy Eating	Pride in place.	Mrs Armitage	Owl and the Pussycat	Animals	Seaside
1. Question	asking simple questions and recognising that they can be answered in different ways	To ask questions and know some can be answered using scientific enquiry.	Can party food be healthy? To be able to think of words which connect with the picture / item... They should then be encouraged to 'wonder' about the picture / item. For example I wonder why? I wonder how? I wonder what would happen if?	What makes us proud of our place? What do we like about our place?	What is the best way for Mrs Armitage to travel?	Where do bong trees grow? Cross curricular links (Teachers will need to make use of local visits/visitors plus school based resources including parents and staff expertise and specialisms that are relevant to any part of the poem and provide learning opportunities & skill development.)	What makes us like other animals? Is it Living? (Nature Detectives) predict what animals they might see	How did families have fun in the past?
2. Observe	observing closely, using simple equipment -observe how seeds and bulbs grow into mature plants	To measure change over time e.g. plant growth. Select equipment	To be able to sort and classify materials To be able to make a collection of objects (including cooking and eating utensils) made from wood, plastics, textiles, paper, metal, rock, glass, clear plastic, cling film, cellophane etc. To be able to sort them using their own criteria and discuss.	Which plants grow in our locality? To be able to take photographs of the locality pupils can include plants and trees to identify and name common plants To be able to draw and then label the basic parts of plants and trees	To be able to investigate materials To be able to use wheeled toys in the Technology activity, talk about what they are made of. e.g. wood, plastic, metal, card. Also provide a range of materials not usually used to make a wheeled toy vehicle e.g. rock, water, playdough	Where do bong trees grow? Cross curricular links (Teachers will need to make use of local visits/visitors plus school based resources including parents and staff expertise and specialisms that are relevant to any part of the poem and provide learning opportunities & skill development.)	To understand that insects, spiders, fish and birds are all animals too. What kind of clues do they leave behind?	
3. Classify and Find Patterns	identifying and classifying -describe how seeds and bulbs grow into mature plants - describe how plants need water, light and a suitable temperature to grow and stay healthy. -notice that animals, including humans, have offspring which grow into adults -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. identify a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses -explore and compare the differences between things that are living, dead, and things that have never been alive -identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other -identify and name a variety of plants and animals in their habitats, including microhabitats describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	To be able to identify and Classify e.g. living/ dead/ never alive; materials To be able to compare differences	Properties of materials Brainstorm and introduce language of the properties of materials e.g. man-made and natural; rough and smooth; stiff and bendy, and ask the pupils to sort them again according to these properties. To be able to record in diagrams or use photographs and feedback to the class. Phase two Use of materials Brainstorm with the pupils some of the items needed for the party e.g. table cloth, knives & forks, plates, party hats, party decorations, drink holders and some cooking utensils. Take one item at a time and ask the pupils to suggest which materials would be suitable to use for each item in preparation for and at the party and why. To be able to record in diagrams. Planning healthy food for the party we need food to live. To know we need to live (water & air). need to for healthy food and "five a day"	What makes us proud of our place? What do we like about our place? Which plants grow in our locality? To be able to take photographs of the locality pupils can include plants and trees to identify and name common plants To be able to draw and then label the basic parts of plants and trees	To be able to identify and name everyday materials and describe simple physical properties. To be able to compare and group variety of materials on basis of their properties e.g. which materials would make a good wheeled toy. To be able to look at a range of real vehicles – what are they made of? What aren't real cars made of wood? Can they think of anything else that is made of metal? Why are tyres made of rubber? Investigation - To know which material makes the best wheels? To be able to predict which material makes the best tyres. To know how to make prediction To know how to make things fair e.g. making vehicles that are being compared start at the same time Children should predict before investigating. (Link to Maths– data handling). Could also link to finding out more about John Dunlop (tyres) or John McAdam (roads)	An example of using a local bee keeper as a community resource: -A visit from or to a local bee keeper -Looking at honey combs – hexagons, tessellation -Tasting different honey -Bee life cycle -Pollination -Make honey biscuits -Protective clothing etc To know the global importance of bees in pollination	Recording To be able to use model mapping to record what was observed/collected during the trail. To know how humans impact on the environment (Nominate 'litter observers') pupils can record where and what is found (photographs) in each section. This information can be used to produce a bar chart Categorisation To use collected specimens and photographs to observe and categorise findings into a relational diagram (Venn diagram).  To be able to test if specimens are living/non living by asking questions. E.g. Does it breathe? Does it move? Does it grow? Does it eat? Does it excrete (go to the toilet?) To be able to make Observations drawing (link to Art) To be able to make observations before drawing and annotating. Use open and closed questions e.g. How many legs? How does it feel? How old is it? How did it get there? What is it? Animal families (Noah's Ark) Sort humans into groups using different criteria To know how are animals the same? To be able to group animals according to observable features To be able to group them according to observable similarities or differences. E.g. has legs, has no legs, has fur, has no fur, insect, animal, lives in water, lives on land, has four legs or more, has less than four legs etc To know the need for living things to survive i.e. air, food, water, warmth, exercise, shelter and reproduction. If small animals such as worms, snails and butterflies are brought from their natural environment, it is essential that their temporary accommodation matches that of their natural environment. To know the importance of caring for our bodies and keeping healthy	
4. Control Investigations: comparative and fair testing	using their observations and ideas to suggest answers to questions compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses -how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	To be able to carry out simple comparative tests e.g. What if plants do not get light and water?	To know the importance of looking after their own health and well-being. To be able to group foods and drinks into high and low fat sugar/fat and low fat and sugar To be able to discuss the importance of understanding a balanced diet and which kinds of food should be eaten in moderation. (word diet and that it does not mean losing weight!).		To investigate which materials are waterproof (Link to Art) children devise a fair test to find out which materials are waterproof (putting tissue paper, marked with dry markers, at the bottom of the margarine tubs will show any moisture marks clearly). Do some materials hold out water for while before letting it through? Which materials are completely waterproof?			
5. Research	gathering and recording data to help in answering questions. find out how plants need water, light and a suitable temperature to grow and stay healthy. find out about the basic needs of animals, including humans, for survival (water, food and air)	To be able to select information from a range of given sources.	To be able to how the shape of some materials can be changed by some processes e.g. squashing, bending, twisting and stretching. Make food for the party		To know which materials would be suitable for keeping Mrs Armitage dry, and still be comfortable/suitable to use?			

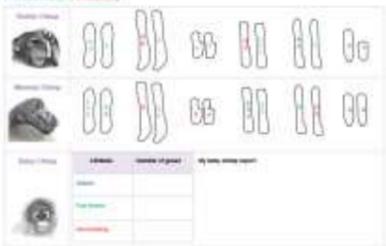
6. Model		To explore and create drawings and physical models e.g. <i>habitats</i> .	To be able to prepare the food for the party based on the choices made in phase three. To be able to talk about the need for five a day and also basic hygiene when preparing food.		<i>Link to able to link finding out more about Charles Macintosh</i>		To know the habitats and Humans To understand a habitat is 'address' a place where an animal lives and its environment.
7. Conclude		To be able to explain why a simple observation occurred. Evaluate the effectiveness of observations.			To be able to investigate with models, establish which travels the furthest To be able to devise a fair test to establish which vehicle travels furthest. (Use the ramp and develop the science investigation this time placing different cars on the same point on the ramp and recording how far they travel.)		To be able to use senses help us find out about the world around us What's in our air? To investigation around the local area to test for pollution and differences in what travels and can be found in our air Life Stories (<i>Literacy Link</i>) To use observations and records kept about the 'class creatures' for inclusion in own information booklets. To know names of adults and baby <i>animals</i> (<i>Literacy Link</i>) To match and name the young and adults. Re-Tell the 'life story' of one of the creatures on the 'Life Stories' sheet (see Appendix). To know the sequence pictures of humans; baby, toddler, child, adolescent, pregnant mum etc.

Y2/3	N.C History Pupils should be taught to:		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
		Year 3 Skill	Can party food be healthy?	Pride in place.	What is the best way for Mrs Armitage to travel?	Where do bong trees grow?	What makes us like other animals?	How did families have fun in the past?
1. Question	asking relevant questions and using different types of scientific enquiries to answer them	To identify scientific questions. ie can be investigated through scientific enquiry.	Can party food be healthy? To be able to think of words which connect with the picture / item... They should then be encouraged to 'wonder' about the picture / item. For example I wonder why? I wonder how? I wonder what would happen if?	What makes us proud of our place? What do we like about our place?	What is the best way for Mrs Armitage to travel?	Where do bong trees grow? Cross curricular links (<i>Teachers will need to make use of local visits/visitors plus school-based resources including parents and staff expertise and specialisms that are relevant to any part of the poem and provide learning opportunities & skill development.</i>)	What makes us like other animals? Is it Living? (Nature Detectives) predict what animals they might see	How did families have fun in the past?
2. Observe	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	To be able to qualitative and Quantitative Systematic/ careful observations. Use bar charts, pictograms, tables.	To be able to sort and classify materials To be able to make a collection of objects (including cooking and eating utensils) made from wood, plastics, textiles, paper, metal, rock, glass, clear plastic, cling film, cellophane etc. To be able to sort them using their own criteria and discuss.	Which plants grow in our locality? To be able to take photographs of the locality pupils can include plants and trees to identify and name common plants	To be able to investigating materials To be able to used wheeled toys in the Technology activity, talk about what they are made of. e.g wood, plastic, metal, card . Also provide a range of materials not usually used to make a wheeled toy vehicle e.g rock, water, playdough	An example of using a local bee keeper as a community resource: -A visit from or to a local bee keeper -Looking at honey combs – hexagons, tessellation -Tasting different honey -Bee life cycle -Pollination -Make honey biscuits	To understand that insects, spiders, fish and birds are all animals too. What kind of clues do they leave behind? Recording To be able to use model mapping to record what was observed/collected during the trail.	
3. Classify and Find Patterns	identifying differences, similarities or changes related to simple scientific ideas and processes	To classify and Find Patterns Classify animals/ materials. Link two variables e.g. the closer the magnet the bigger the force.	Properties of materials Brainstorm and introduce language of the properties of materials e.g. man-made and natural; rough and smooth; stiff and bendy, and ask the pupils to sort them again according to these	To be able to draw and then label the basic parts of plants and trees	To be able to identify and name everyday materials and describe simple physical properties. To be able to compare and group variety of materials on basis of their properties e.g which materials would make a good wheeled toy. To be able to look at a range of real vehicles – what are they made of? What aren't real cars made of		To know how humans impact on the environment (Nominate 'litter observers') pupils can record where and what is found (photographs) in each section. This information <i>can be used to produce a bar chart</i>	
4. Control Investigations: comparative and fair testing	setting up simple practical enquiries, comparative and fair tests	To be able to carry out comparative and fair tests Predict. Fair tests e.g. How does distance affect magnet strength?					Categorisation	

<p>5. Research</p>	<p>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions Electricity Y4</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 •recognise some common conductors and insulators, and associate metals with being good conductors. <p>Forces & Magnets Y3</p> <ul style="list-style-type: none"> •compare how things move on different surfaces •notice that some forces need contact between two objects, but magnetic forces can act at a distance •observe how magnets attract or repel each other and attract some materials and not others •compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials •describe magnets as having two poles •predict whether two magnets will attract or repel each other, depending on which poles are facing. 	<p>To research using given sources. e.g. research different food groups and how they keep us healthy</p>	<p>properties. To be able to record in diagrams or use photographs and feedback to the class.</p> <p>Phase two Use of materials Brainstorm with the pupils some of the items needed for the party e.g. table cloth, knives & forks, plates, party hats, party decorations, drink holders and some cooking utensils. Take one item at a time and ask the pupils to suggest which materials would be suitable to use for each item in preparation for and at the party and why. To be able to record in diagrams.</p> <p>Planning healthy food for the party we need food to live. To know we need to live (water & air). need to for healthy food and "five a day"</p> <p>To know the importance of looking after their own health and well-being. To be able to group foods and drinks into high and low fat sugar/fat and low fat and sugar To be able to discuss the importance of understanding a balanced diet and which kinds of food should be eaten in moderation. (word diet and that it does not mean losing weight!).</p> <p>To be able to how the shape of some materials can be changed by some processes e.g. squashing, bending, twisting and stretching.</p> <p>Make food for the party</p> <p>To be able to prepare the food for the party based on the choices made in phase three. To be able to talk about the need for five a day and also basic hygiene when preparing food.</p>		<p>wood? Can they think of anything else that is made of metal? Why are tyres made of rubber?</p> <p>Investigation - To know which material makes the best wheels? To be able to predict which material makes the best tyres. To know how to make prediction To know how to make things fair e.g making vehicles that are being compared start at the same time Children should predict before investigating. (<i>Link to Maths- data handling</i>). <i>Could also link to finding out more about John Dunlop (tyres) or John McAdam (roads)</i></p> <p>To investigate which materials are waterproof (<i>Link to Art</i>) children devise a fair test to find out which materials are waterproof (putting tissue paper, marked with dry markers, at the bottom of the margarine tubs will show any moisture marks clearly). Do some materials hold out water for while before letting it through? Which materials are completely waterproof?</p> <p>To know which materials would be suitable for keeping Mrs Armitage dry, and still be comfortable/suitable to use?</p> <p><i>Link to able to link finding out more about Charles Macintosh</i></p> <p>To be able to investigate with models, establish which travels the furthest</p> <p>To be able to devise a fair test to establish which vehicle travels furthest. (Use the ramp and develop the science investigation this time placing different cars on the same point on the ramp and recording how far they travel.)</p>	<p>-Protective clothing etc</p> <p>To know the global importance of bees in pollination</p>	<p>To use collected specimens and photographs to observe and categorise findings into a relational diagram (<i>Venn diagram</i>).</p>  <p>To be able to test if specimens are living/non living by asking questions. E.g. Does it breathe? Does it move? Does it grow? Does it eat? Does it excrete (go to the toilet?)</p> <p>To be able to make Observations <i>drawing</i> (<i>link to Art</i>)</p> <p>To be able to make observations before drawing and annotating. Use open and closed questions e.g. How many legs? How does it feel? How old is it? How did it get there? What is it?</p> <p>Animal families (<i>Noah's Ark</i>) Sort humans into groups using different criteria</p> <p>To know how are animals the same?</p> <p>To be able to group animals according to observable features</p> <p>To be able to group them according to observable similarities or differences. E.g. has legs, has no legs, has fur, has no fur, insect, animal, lives in water, lives on land, has four legs or more, has less than four legs etc</p> <p>To know the need for living things to survive i.e. air, food, water, warmth, exercise, shelter and reproduction. If small animals such as worms, snails and butterflies are brought from their natural environment, it is essential that their temporary accommodation matches that of their natural environment.</p> <p>To know the importance of caring for our bodies and keeping healthy</p> <p>To know the habitats and Humans To understand a habitat is 'address' a place where an animal lives and its environment.</p>	
<p>6. Model</p>	<p>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p>	<p>To understand abstract contexts e.g. processes and phenomena such as forces/ light. Use labelled diagrams and drawings and physical models.</p>						

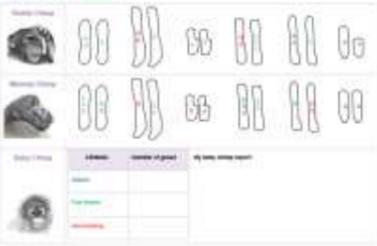
<p>7. Conclude</p>	<p>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p>	<p>To be able to explain an observation or an event in scientific terms. Distinguish between what has been observed and why it happened. Begin to link evidence from secondary sources as well as primary. Suggest improvements.</p>					<p>To be able to use senses help us find out about the world around us</p> <p>What's in our air? To investigation around the local area to test for pollution and differences in what travels and can be found in our air</p> <p>Life Stories (<i>Literacy Link</i>) To use observations and records kept about the 'class creatures' for inclusion in own information booklets.</p> <p>To know names of adults and baby <i>animals</i> (<i>Literacy Link</i>) To match and name the young and adults. Re-Tell the 'life story' of one of the creatures on the 'Life Stories' sheet (see Appendix).</p> <p>To know the sequence pictures of humans; baby, toddler, child, adolescent, pregnant mum etc.</p>
--------------------	--	---	--	--	--	--	--

Y4/5/6	N.C Science Pupils should be taught to:		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
		Year 4 Skill	Out of this world	Has there been a better time to live here?	Creatures (evolve, adapt,inherit etc)	The lady of Shallot	The great UK geographical challenge.	Mini enterprise.
1. Question	asking relevant questions and using different types of scientific enquiries to answer them	To identify scientific questions. ie can be investigated through scientific enquiry	What's Out There? Enough water? (Link to Maths) How much water needs to be carried on the spaceship? To be able to calculate how much water would be needed over five years and how much it would weigh how many litres per day recommended? Need? To understand that it would be impractical to carry that much water. Relate back to work done on the water cycle and changes of state to think about how water could be recycled in the spaceship. To investigate and explore cleaning and recycling water. To understand that the world is like a spaceship with limited resources. To know we only have so much water so we need to take care how we use it. <i>To know not everyone in the world has the same rights to access water. PSHE</i> To be able to Investigate evaporation and condensation.	(Opportunity for discrete science revision. Could be linked to healthy diet and D&T cooking and nutrition. Plants???) To be able to reflect on questions such as: Has there ever been a better time to live here? What makes a good life? What do other people think about whether there has ever been a better time to live here? What is good about living here now? What do I want in my future? <i>Can one person make a difference in the world?</i> Pull out links to Sci understanding from discussion.	Why do some creatures no longer exist? Biography in a Bag To identify Charles Darwin, find out about being a naturalist, learn about Darwin's theory of evolution by natural selection and the impact it had in Victorian England To able to find evidence to prove that offspring vary and adapt – plants To know key Vocabulary starter list: Adaptation Species Inheritance Evolution Natural selection We are naturalists (teaching activity) To know living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago To know living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents To know how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <i>To know timescale we are considering and perhaps discuss and display a timeline that equates the age of the earth with 1 calendar year and realise that man would be plotted at 1 minute to midnight on 31st December.</i> How do naturalists find out about the world? How do they record their findings? (Teaching Activity) To be able to answer questions: How many different plants can they see? How do they know they are different? How will they show which plants they were looking at to other pairs? (have cameras, voice recorders, paper, rulers, tape measures etc available and anything else according to what the pupils think they will need) To be able to choose one plant from the hoop. Using Always, Sometimes, Never pupils look really carefully and complete the following table to become the expert in that plant. To know how seasonal change may impact on what can be seen now and how accurate the table will be if they only look at one plant of that type? To be able to look for the same plant in a different location to test out the Always, Sometimes, Never hypothesis. Then, each pair share their findings and hypothesis using the table, photographs/sketches/sound recordings/ measurements with another pair who looked at a different plant. The next step is to research and try to identify and name the plant using books or the internet. Sometimes when naturalists are out in the field they discover new plants. Naming of plants can only come after correctly identifying the key characteristics. Can pupils come to any conclusions about variation or adaptation as a group of 4 using their combined evidence? <i>Link to Art – Recording evidence - plant sketches</i> Significant Individual - Carl Linnaeus research the work of Carl Linnaeus a Swedish botanist who invented a system of classification offspring vary and adapt – animals To be able to investigating random variation in chimps – The chimp report (teaching activity)	Cross-Curricular unit Drama/Art/music/PSHE/	Revision for climate, habitat,...	Teachers to plan discreet Sci lessons based on Gaps. (separate table)
2. Observe	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - 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)	Qualitative and Quantitative To be able to make accurate measurements. Use time graphs and other graphs.	 To be able to use simple classification keys. To be able to link two variables e.g. <i>the more cells in a circuit, the brighter the bulb.</i> To be able to record what they see by illustrations and/or digital photographs To be able to observe over a period and watch how the containers with oxygenating plants What is concluded by obsv the various containers? Position of the Sun- Activity w/chalk, ruler etc. Compass. To review understanding of light travelling in straight lines, shadows changing shape and size <i>Biography in a bag Copernicus</i> What is the importance/influence of Copernicus findings or theory? Day and Night teaching activity. To know night- time in Australia when it is daytime in the UK To know the time it takes for the globe(Earth) to rotate once on its axis To know the times of sunrise and sunset in winter and summer and <i>present in graphs</i> , discuss why summer is hotter than winter. To know the tilt of the Earth's axis to the seasons Earth's orbit (teaching activity) To know the movement of the Earth around the Sun as it spins. To know the length of Earth's orbit. Moon's orbit To know how the Moon orbits the Earth as the Earth orbits the Sun. To know the length of the orbit and how the "back" of the Moon is never seen.					
3. Classify and Find Patterns	identifying differences, similarities or changes related to simple scientific ideas and processes -identify the different types of teeth in humans and their simple functions -interpret a variety of food chains, identifying producers, predators and prey. -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 - compare and group materials together, according to whether they are solids, liquids or gases - identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. identify how sounds are made, associating some of them with something vibrating - 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							

<p>4. Control Investigations: comparative and fair testing</p>	<p>setting up simple practical enquiries, comparative and fair tests</p>	<p>To be able to comparative and fair tests To be able to predict. Language of independent and control variable.</p>	<p>Is the moon a light source? Explain your answer. To explore light source v reflector <i>Role play movements of Earth and Moon</i> <i>Movements of the Earth and the Moon can be dramatised to consolidate and reinforce the sections above. Whole class together, then consolidate in groups.</i> Moon shapes (teaching activity) To know the phases of the moon, (add expectations for each year group) This is y4 so yr5,6 in appropriate columns.</p>					
<p>5. Research</p>	<p>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions -</p>	<p>To be able to select information to support findings. e.g. <i>research animals</i></p>	<p>Relative sizes and distance of Earth, Moon and Sun (Maths link) teaching activity To know the relative sizes of the Earth, Moon and the Sun and their distances apart</p>		<p>chromosomes and clarify what they mean</p> <p>Natural selection activity (teaching activity) Pipe cleaner =food pupils are prey- habitat change- pipe cleaners up high. Only tallest can get. Knowledge-the results and draw out that in this new habitat, taller animals will be selected for.</p>			
<p>6. Model</p>	<p>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables -construct and interpret a variety of food chains, identifying producers, predators and prey. - construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p>	<p>To understand abstract contexts e.g. processes and phenomena such as sound/ electricity. Create labelled diagrams and drawings and physical models.</p>	<p>To investigate falling objects-(teaching activity) To know that there are there any things which didn't fall when you dropped them? Which way did they fall? Did they all fall the same way? To investigate if people are affected in the same way? To know what force makes things fall and holds them on the ground? To know what would happen to the objects in a classroom in Australia if pupils carried out the same investigation there? To know the Earth has a gravitational field around it</p> <p>Gravity teaching activity</p>		<p>Darwin's finches – variation and selection (teaching activity) each table one type of food (marbles, pipe cleaners, small chunks of fruit, elastic bands etc). To be able to explain that the children are all hungry finches, although they all have a slight variation in their type of beak. range of different shapes 'beaks' (plastic spoon, plastic fork, tweezers, clothes pegs, chop sticks etc). Give the children a certain amount of time to collect as much food as possible with their particular implement.</p> <p>To be able to explain how difficult it was for them to gather their food. To be able to drawing on their understanding of the previous natural selection activity, discuss what would happen to those who were unable to pick up</p>			

<p>7. Conclude</p>	<p>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>-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> <p>-recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>-describe the simple functions of the basic parts of the digestive system in humans</p> <p>-recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>- recognise that vibrations from sounds travel through a medium to the ear</p> <p>- recognise that sounds get fainter as the distance from the sound source increases</p> <p>identify common appliances that run on electricity</p>	<p>To be able to explain an observation or an event in scientific terms.</p> <p>Distinguish between what has been observed and why it happened.</p> <p>Begin to link evidence from secondary sources as well as primary.</p> <p>To be able to make suggestions to improve.</p>	<p>Brainstorm in groups what the children understand by gravity</p> <p>What would happen if there was no gravity on Earth?</p> <p><i>Biography in a bag – Newton</i></p> <p>Know the names of the planets</p> <p>Keeping an astronaut warm (teaching activity)</p> <p>To investigate materials which will keep an astronaut warm on a space walk.</p> <p>To be able to plan a fair test to establish which insulating material will keep water hot. (One container may need to remain without insulation).</p> <p>To be able to predict the results and prepare tables for recording measurements at regular intervals (Use data-logging equipment). When tests are complete, discuss results and compare findings for thermal insulating materials to keep the water warm. Line graphs can be produced to show the rate of samples warming up.</p> <p>To be able to investigate suitable materials for making a parachute – to defy the effects of gravity</p> <p>Pupil Choice: Investigation.</p> <p>To know what material is the most suitable for a parachute.</p> <p>Space rocks (teaching activity)</p> <p>To be able to classify them according to their characteristics, e.g. appearance, texture, permeability, arrangement of particles, range of colours.</p> <p>To be able to record in a database or use a branching database.</p> <p>Revisit Rocks Y3</p> <p>To be able to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Revisit States of Matter Y4</p> <p>To be able to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>Revisit Properties and Changes of Materials Y5</p> <p>To be able to compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</p> <p>To be able to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p>		<p>much food, and which type of beak would be selected for on the different islands.</p> <p>To be able to look at pictures of Darwin's finches and match them to their food source.</p> <p>To be able to explain why their beak shape adaptation would help them access their particular food source.</p> <p>To be able to use their understanding of how environmental changes affect populations, is to tell the story (hypothesise)</p> <p>Cross fertilisation in plants To research about a plant that has been 'created'</p> <p>What do we know about fossils?</p> <p><i>Attenborough and the Giant Egg: To revise work on fossils first visited in Y3 and take understanding further</i></p> <p>To consider how this info confirms, adds to or challenges/conflicts with their most recent learning and understanding of why some creatures no longer exist.</p> <p>This learning builds on and provides an opportunity to revisit:</p> <p>Rocks and soils Y3</p> <p>Pupils should be taught:</p> <p>To describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Living things and their habitats Y4</p> <p>Pupils should be taught:</p> <p>recognise that living things can be grouped in a variety of ways</p> <p>To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>To recognise that environments can change and that this can sometimes pose dangers to living things.</p>			
--------------------	---	---	--	--	---	--	--	--

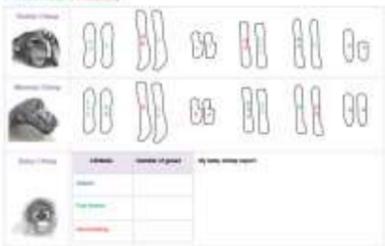
Y4/ 5/6	N.C Science Pupils should be taught to:		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
		Year 5 Skill	Out of this world	Has there been a better time to live here?	Creatures (extinct, adapt, inherit etc)	The lady of Shallot	The great UK geographical challenge.	Mini enterprise.
1. Question	planning different types of scientific enquiries to answer questions	To be able to raise scientific questions and hypothesise	What's Out There? Enough water? (Link to Maths) How much water needs to be carried on the spaceship?	(Opportunity for discrete science revision. Could be linked to healthy diet and D&T cooking and nutrition. Plants???) To be able to reflect on questions such as: Has there ever been a better time to live here? What makes a good life? What do other people think about whether there has ever been a better time to live here? What is good about living here now? What do I want in my future? Can one person make a difference in the world?	Why do some creatures no longer exist? Biography in a Bag To identify Charles Darwin, find out about being a naturalist, learn about Darwin's theory of evolution by natural selection and the impact it had in Victorian England To be able to find evidence to prove that offspring vary and adapt – plants To know key Vocabulary starter list: Adaptation Species Inheritance Evolution Natural selection We are naturalists (teaching activity) To know living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago To know living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents To know how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <i>To know timescale we are considering and perhaps discuss and display a timeline that equates the age of the earth with 1 calendar year and realise that man would be plotted at 1 minute to midnight on 31st December.</i> How do naturalists find out about the world? How do they record their findings? (Teaching Activity) To be able to answer questions: How many different plants can they see? How do they know they are different? How will they show which plants they were looking at to other pairs? (have cameras, voice recorders, paper, rulers, tape measures etc available and anything else according to what the pupils think they will need) To be able to choose one plant from the hoop. Using Always, Sometimes, Never pupils look really carefully and complete the following table to become the expert in that plant. To know how seasonal change may impact on what can be seen now and how accurate the table will be if they only look at one plant of that type? To be able to look for the same plant in a different location to test out the Always, Sometimes, Never hypothesis. Then, each pair share their findings and hypothesis using the table, photographs/sketches/sound recordings/measurements with another pair who looked at a different plant. The next step is to research and try to identify and name the plant using books or the internet. Sometimes when naturalists are out in the field they discover new plants. Naming of plants can only come after correctly identifying the key characteristics. Can pupils come to any conclusions about variation or adaptation as a group of 4 using their combined evidence?	Cross-Curricular unit Drama/Art/music/ PSHE/	Revision for climate, habitat,...	Teachers to plan discreet Sci lessons based on Gaps. (separate table)
2. Observe	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	Qualitative and Quantitative To be able to to make accurate/ precise measurements, Diagrams, tables, bar and line graphs.	To be able to calculate how much water would be needed over five years and how much it would weigh how many litres per day recommended? Need? To understand that it would be impractical to carry that much water. Relate back to work done on the water cycle and changes of state to think about how water could be recycled in the spaceship. To investigate and explore cleaning and recycling water. To understand that the world is like a spaceship with limited resources. To know we only have so much water so we need to take care how we use it. <i>To know not everyone in the world has the same rights to access water.</i> PSHE To be able to Investigate evaporation and condensation.					
3. Classify and Find Patterns	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs and other presentations - compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets - describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird	To be able to classify and Find Patterns To be able to use complex classification keys. To be able to Identify causal relationships.						
4. Control Investigations: comparative and fair testing	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary predictions to set up further comparative and fair tests -use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating - identify the effects of air resistance, water resistance and friction, that act between moving surfaces	To be able to design own comparative and fair tests To identify when and how to use tests. To be able to recognise and control variables. To make predictions based on previous test results.	To be able to record what they see by illustrations and/or digital photographs To be able to observe over a period and watch how the containers with oxygenating plants What is concluded by obsv the various containers? Position of the Sun- Activity w/chalk, ruler etc. Compass. To review understanding of light travelling in straight lines, shadows changing shape and size <i>Biography in a bag Copernicus</i> What is the importance/influence of Copernicus findings or theory?					
5. Research	identifying scientific evidence that has been used to support or refute ideas or arguments. -describe the changes as humans develop to old age. describe the life process of reproduction in some plants and animals. explain that unsupported objects fall towards the Earth because of the force of gravity acting	To explore relevant information by using a wide range of secondary sources. To be able to explore how scientific ideas have developed over time.	Day and Night teaching activity. To know night- time in Australia when it is daytime in the UK To know the time it takes for the globe(Earth) to rotate once on its axis To know the times of sunrise and sunset in winter and summer and <i>present in graphs</i> , discuss why summer is hotter than winter. To know the tilt of the Earth's axis to the seasons					

	<p>between the Earth and the falling object describe the movement of the Earth, and other planets, relative to the Sun in the solar system describe the movement of the Moon relative to the Earth describe the Sun, Earth and Moon as approximately spherical bodies use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p>		<p>Earth's orbit (teaching activity) To know the movement of the Earth around the Sun as it spins. To know the length of Earth's orbit.</p> <p>Moon's orbit To know how the Moon orbits the Earth as the Earth orbits the Sun. To know the length of the orbit and how the "back" of the Moon is never seen.</p> <p>Is the moon a light source? Explain your answer. To explore light source v reflector <i>Role play movements of Earth and Moon</i> <i>Movements of the Earth and the Moon can be dramatised to consolidate and reinforce the sections above. Whole class together, then consolidate in groups.</i></p> <p>Moon shapes (teaching activity) To know the phases of the moon, (add expectations for each year group). This is y4 so yr5.6 in appropriate columns.</p> <p>Relative sizes and distance of Earth, Moon and Sun (Maths link) teaching activity To know the relative sizes of the Earth, Moon and the Sun and their distances apart</p> <p>To investigate falling objects- (teaching activity)</p>		<p><i>Link to Art – Recording evidence - plant sketches</i> Significant Individual - Carl Linnaeus research the work of Carl Linnaeus a Swedish botanist who invented a system of classification</p> <p>offspring vary and adapt – animals To be able to investigating random variation in chimps – The chimp report (teaching activity)</p>  <p>chromosomes and clarify what they mean</p> <p>Natural selection activity (teaching activity) Pipe cleaner =food pupils are prey-habitat change- pipe cleaners up high. Only tallest can get. Knowledge-the results and draw out that in this new habitat, taller animals will be selected for.</p> <p>Darwin's finches – variation and selection (teaching activity) each table one type of food (marbles, pipe cleaners, small chunks of fruit, elastic bands etc). To be able to explain that the children are all hungry finches, although they all have a slight variation in their type of beak. range of different shapes 'beaks' (plastic spoon, plastic fork, tweezers, clothes pegs, chop sticks etc). Give the children a certain amount of time to collect as much food as possible with their particular implement.</p>			
6. Model	<p>using test results to make reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays -demonstrate that dissolving, mixing and changes of state are reversible changes use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p>	<p>Abstract contexts. To be able to evaluate diagrams/ models e.g. states of matter; solar system.</p>	<p>To know that there are there any things which didn't fall when you dropped them? Which way did they fall? Did they all fall the same way? To investigate if people are affected in the same way? To know what force makes things fall and holds them on the ground?</p> <p>To know what would happen to the objects in a classroom in Australia if pupils carried out the same investigation there?</p> <p>To know the Earth has a gravitational field around it</p> <p>Gravity teaching activity Brainstorm in groups what the children understand by gravity What would happen if there was no gravity on Earth?</p> <p><i>Biography in a bag – Newton</i></p> <p>Know the names of the planets</p> <p>Keeping an astronaut warm (teaching activity) To investigate materials which will keep an astronaut warm on a space walk.</p> <p>To be able to plan a fair test to establish which insulating material will</p>		<p>To be able to explain how difficult it was for them to gather their food. To be able to drawing on their understanding of the previous natural selection activity, discuss what would happen to those who were unable to pick up much food, and which type of beak would be selected for on the different islands. To be able to look at pictures of Darwin's finches and match them to their food source. To be able to explain why their beak shape adaptation would help them access their particular food source.</p> <p>To be able to use their understanding of how environmental changes affect populations, is to tell the story (hypothesise)</p> <p>Cross fertilisation in plants To research about a plant that has been 'created' What do we know about fossils? <i>Attenborough and the Giant Egg: To revise work on fossils first visited in Y3 and take understanding further</i> To consider how this info confirms, adds to or challenges/conflicts with their most recent learning and understanding of why some creatures no longer exist.</p> <p>This learning builds on and provides an opportunity to revisit:</p> <p>Rocks and soils Y3</p> <p>Pupils should be taught: To describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Living things and their habitats Y4</p> <p>Pupils should be taught:</p>			
7. Conclude	<p>using test results to make reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays -know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution ---give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic --explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. - recognise that some mechanisms, including levers, pulleys and gears,</p>	<p>To evaluate original hypothesis against observed evidence and reach appropriate conclusions. To be able to identify causal relationships. Begin to identify how reliable the data is.</p>	<p>To know the Earth has a gravitational field around it</p> <p>Gravity teaching activity Brainstorm in groups what the children understand by gravity What would happen if there was no gravity on Earth?</p> <p><i>Biography in a bag – Newton</i></p> <p>Know the names of the planets</p> <p>Keeping an astronaut warm (teaching activity) To investigate materials which will keep an astronaut warm on a space walk.</p> <p>To be able to plan a fair test to establish which insulating material will</p>		<p>To be able to explain how difficult it was for them to gather their food. To be able to drawing on their understanding of the previous natural selection activity, discuss what would happen to those who were unable to pick up much food, and which type of beak would be selected for on the different islands. To be able to look at pictures of Darwin's finches and match them to their food source. To be able to explain why their beak shape adaptation would help them access their particular food source.</p> <p>To be able to use their understanding of how environmental changes affect populations, is to tell the story (hypothesise)</p> <p>Cross fertilisation in plants To research about a plant that has been 'created' What do we know about fossils? <i>Attenborough and the Giant Egg: To revise work on fossils first visited in Y3 and take understanding further</i> To consider how this info confirms, adds to or challenges/conflicts with their most recent learning and understanding of why some creatures no longer exist.</p> <p>This learning builds on and provides an opportunity to revisit:</p> <p>Rocks and soils Y3</p> <p>Pupils should be taught: To describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Living things and their habitats Y4</p> <p>Pupils should be taught:</p>			

	<p>allow a smaller force to have a greater effect.</p>		<p>keep water hot. (One container may need to remain without insulation).</p> <p>To be able to predict the results and prepare tables for recording measurements at regular intervals (Use data-logging equipment). When tests are complete, discuss results and compare findings for thermal insulating materials to keep the water warm. Line graphs can be produced to show the rate of samples warming up.</p> <p>To be able to investigate suitable materials for making a parachute – to defy the effects of gravity</p> <p>Pupil Choice: Investigation.</p> <p>To know what material is the most suitable for a parachute.</p> <p>Space rocks (teaching activity)</p> <p>To be able to classify them according to their characteristics, e.g. appearance, texture, permeability, arrangement of particles, range of colours.</p> <p>To be able to record in a database or use a branching database.</p> <p>Revisit Rocks Y3</p> <p>To be able to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Revisit States of Matter Y4</p> <p>To be able to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>Revisit Properties and Changes of Materials Y5</p> <p>To be able to compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</p> <p>To be able to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p>		<p>recognise that living things can be grouped in a variety of ways</p> <p>To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>To recognise that environments can change and that this can sometimes pose dangers to living things.</p>			
--	--	--	---	--	--	--	--	--

Y4/5/6	N.C Science Pupils should be taught to:		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
		Year6 Skill	Out of this world	Has there been a better time to live here?	Creatures (evolve, adapt, inherit etc)	The lady of Shallot	The great UK geographical challenge.	Mini enterprise.
1. Question	planning different types of scientific enquiries to answer questions	To be able to raise scientific questions and hypothesise	What's Out There? Enough water? (Link to Maths) How much water needs to be carried on the spaceship?	(Opportunity for discrete science revision. Could be linked to healthy diet and D&T cooking and nutrition. Plants???)	Why do some creatures no longer exist? Biography in a Bag To identify Charles Darwin, find out about being a naturalist, learn about Darwin's theory of evolution by natural selection and the impact it had in Victorian England	Cross-Curricular unit Drama/Art/music/ PSHE/	Revision for climate, habitat,...	Teachers to plan discreet Sci lessons based on Gaps. (separate table)
2. Observe	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	Qualitative and Quantitative To take repeat readings when appropriate. Scatter graphs.	To be able to calculate how much water would be needed over five years and how much it would weigh how many litres per day recommended? Need?	To be able to reflect on questions such as: Has there ever been a better time to live here? What makes a good life? What do other people think about whether there has ever been a better time to live here? What is good about living here now? What do I want in my future? <i>Can one person make a difference in the world?</i> Pull out links to Sci understanding from discussion.	To able to find evidence to prove that offspring vary and adapt – plants To know key Vocabulary starter list: Adaptation Species Inheritance Evolution Natural selection We are naturalists (teaching activity) To know living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago To know living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents To know how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <i>To know timescale we are considering and perhaps discuss and display a timeline that equates the age of the earth with 1 calendar year and realise that man would be plotted at 1 minute to midnight on 31st December.</i>		Teachers to plan discreet Sci lessons based on Gaps. (separate table)	
3. Classify and Find Patterns	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs and other presentations - describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals -give reasons for classifying plants and animals based on specific characteristics. recognise that light appears to travel in straight lines - associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches	Classify and Find Patterns To be able to develop classification keys. To identify evidence that supports/ refutes causal relationship.	To understand that it would be impractical to carry that much water. Relate back to work done on the water cycle and changes of state to think about how water could be recycled in the spaceship. To investigate and explore cleaning and recycling water. To understand that the world is like a spaceship with limited resources. To know we only have so much water so we need to take care how we use it. <i>To know not everyone in the world has the same rights to access water. PSHE</i> To be able to Investigate evaporation and condensation.  To be able to record what they see by illustrations and/or digital photographs To be able to observe over a period and watch how the containers with oxygenating plants What is concluded by obsv the various containers?		To know living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents To know how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <i>To know timescale we are considering and perhaps discuss and display a timeline that equates the age of the earth with 1 calendar year and realise that man would be plotted at 1 minute to midnight on 31st December.</i> How do naturalists find out about the world? How do they record their findings? (Teaching Activity) To be able to answer questions: How many different plants can they see? How do they know they are different? How will they show which plants they were looking at to other pairs? (have cameras, voice recorders, paper, rulers, tape measures etc available and anything else according to what the pupils think they will need) To be able to choose one plant from the hoop. Using Always, Sometimes, Never pupils look really carefully and complete the following table to become the expert in that plant. To know how seasonal change may impact on what can be seen now and how accurate the table will be if they only look at one plant of that type?			
4. Control Investigations: comparative and fair testing	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary predictions to set up further comparative and fair tests	To design own comparative and fair tests To be able to identify when and how to use tests. To recognise and control variables. To be able to make predictions based on previous test results.	Position of the Sun- Activity w/chalk, ruler etc. Compass. To review understanding of light travelling in straight lines, shadows changing shape and size <i>Biography in a bag Copernicus</i> What is the importance/influence of Copernicus findings or theory?					

<p>5. Research</p>	<p>identifying scientific evidence that has been used to support or refute ideas or arguments. - identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood describe the ways in which nutrients and water are transported within animals, including humans. - use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>	<p>To explore relevant information by using a wide range of secondary sources. To be able to identify evidence that has been used to support or refute ideas.</p>	<p>Day and Night teaching activity. To know night- time in Australia when it is daytime in the UK To know the time it takes for the globe(Earth) to rotate once on its axis To know the times of sunrise and sunset in winter and summer and <i>present in graphs</i>, discuss why summer is hotter than winter.</p> <p>To know the tilt of the Earth's axis to the seasons</p> <p>Earth's orbit (teaching activity) To know the movement of the Earth around the Sun as it spins. To know the length of Earth's orbit.</p> <p>Moon's orbit To know how the Moon orbits the Earth as the Earth orbits the Sun. To know the length of the orbit and how the "back" of the Moon is never seen.</p> <p>Is the moon a light source? Explain your answer. To explore light source v reflector <i>Role play movements of Earth and Moon</i></p>		<p>To be able to look for the same plant in a different location to test out the Always, Sometimes, Never hypothesis. Then, each pair share their findings and hypothesis using the table, photographs/sketches/sound recordings/ measurements with another pair who looked at a different plant. The next step is to research and try to identify and name the plant using books or the internet. Sometimes when naturalists are out in the field they discover new plants. Naming of plants can only come after correctly identifying the key characteristics. Can pupils come to any conclusions about variation or adaptation as a group of 4 using their combined evidence?</p> <p><i>Link to Art – Recording evidence - plant sketches</i> Significant Individual - Carl Linnaeus research the work of Carl Linnaeus a Swedish botanist who invented a system of classification</p> <p>offspring vary and adapt – animals To be able to investigating random variation in chimps – The chimp report (teaching activity)</p>			
<p>6. Model</p>	<p>using test results to make reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays</p>	<p>Abstract contexts. To be able to create own versions of models. e.g. circulatory system; light.</p>	<p>Is the moon a light source? Explain your answer. To explore light source v reflector <i>Role play movements of Earth and Moon</i></p>					

<p>7. Conclude</p>	<p>using test results to make reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays</p> <p>- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p>	<p>To evaluate original hypothesis against observed evidence and reach appropriate conclusions.</p> <p>To be able to identify causal relationships.</p> <p>To begin to identify how reliable the data is.</p>	<p><i>Movements of the Earth and the Moon can be dramatised to consolidate and reinforce the sections above. Whole class together, then consolidate in groups.</i></p> <p>Moon shapes (teaching activity)</p> <p>To know the phases of the moon, (add expectations for each year group) This is y4 so yr5,6 in appropriate columns.</p> <p>Relative sizes and distance of Earth, Moon and Sun (Maths link) teaching activity</p> <p>To know the relative sizes of the Earth, Moon and the Sun and their distances apart</p> <p>To investigate falling objects-(teaching activity)</p> <p>To know that there are there any things which didn't fall when you dropped them? Which way did they fall? Did they all fall the same way?</p> <p>To investigate if people are affected in the same way?</p> <p>To know what force makes things fall and holds them on the ground?</p> <p>To know what would happen to the objects in a classroom in Australia if pupils carried out the same investigation there?</p> <p>To know the Earth has a gravitational field around it</p> <p>Gravity teaching activity</p> <p>Brainstorm in groups what the children understand by gravity</p> <p>What would happen if there was no gravity on Earth?</p> <p><i>Biography in a bag – Newton</i></p> <p>Know the names of the planets</p> <p>Keeping an astronaut warm (teaching activity)</p> <p>To investigate materials which will keep an astronaut warm on a space walk.</p> <p>To be able to plan a fair test to establish which insulating material will keep water hot. (One container may need to remain without insulation).</p> <p>To be able to predict the results and prepare tables for recording measurements at regular intervals (Use data-logging equipment). When tests are complete, discuss results and compare findings for thermal insulating materials to keep the water warm. Line graphs can be produced to show the rate of samples warming up.</p> <p>To be able to investigate suitable materials for making a parachute – to defy the effects of gravity</p> <p>Pupil Choice: Investigation.</p>		 <p>chromosomes and clarify what they mean</p> <p>Natural selection activity (teaching activity)</p> <p>Pipe cleaner =food pupils are prey-habitat change- pipe cleaners up high. Only tallest can get. Knowledge-the results and draw out that in this new habitat, taller animals will be selected for.</p> <p>Darwin's finches – variation and selection (teaching activity) each table one type of food (marbles, pipe cleaners, small chunks of fruit, elastic bands etc). To be able to explain that the children are all hungry finches, although they all have a slight variation in their type of beak.</p> <p>range of different shapes 'beaks' (plastic spoon, plastic fork, tweezers, clothes pegs, chop sticks etc). Give the children a certain amount of time to collect as much food as possible with their particular implement.</p> <p>To be able to explain how difficult it was for them to gather their food. To be able to drawing on their understanding of the previous natural selection activity, discuss what would happen to those who were unable to pick up much food, and which type of beak would be selected for on the different islands.</p> <p>To be able to look at pictures of Darwin's finches and match them to their food source.</p> <p>To be able to explain why their beak shape adaptation would help them access their particular food source.</p> <p>To be able to use their understanding of how environmental changes affect populations, is to tell the story (hypothesise)</p> <p>Cross fertilisation in plants To research about a plant that has been 'created'</p> <p>What do we know about fossils?</p> <p><i>Attenborough and the Giant Egg: To revise work on fossils first visited in Y3 and take understanding further</i></p> <p>To consider how this info confirms, adds to or challenges/conflicts with their most recent learning and understanding of why some creatures no longer exist.</p> <p>This learning builds on and provides an opportunity to revisit:</p> <p>Rocks and soils Y3</p> <p>Pupils should be taught:</p> <p>To describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Living things and their habitats Y4</p> <p>Pupils should be taught:</p> <p>recognise that living things can be grouped in a variety of ways</p> <p>To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>To recognise that environments can change and that this can sometimes pose dangers to living things.</p>			
--------------------	---	--	--	--	---	--	--	--

			<p>To know what material is the most suitable for a parachute.</p> <p>Space rocks (teaching activity)</p> <p>To be able to classify them according to their characteristics, e.g. appearance, texture, permeability, arrangement of particles, range of colours.</p> <p>To be able to record in a database or use a branching database.</p> <p>Revisit Rocks Y3</p> <p>To be able to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Revisit States of Matter Y4</p> <p>To be able to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>Revisit Properties and Changes of Materials Y5</p> <p>To be able to compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</p> <p>To be able to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p>					
--	--	--	--	--	--	--	--	--