Coads Green Primary School Knowledge and Skills Organiser
Science

Purpose of Study

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

Children have weekly lessons in science throughout Key Stage 1 and Key Stage 2, using various programmes of study and resources. Lessons are often for one hour and are linked to our current school topics.

Capabilities Curriculum

The Capabilities Curriculum is a creative curriculum which measures social and emotional capabilities which improve children's learning, valuing the development of the whole child and preparing them for the future.

An Daras Trust have chosen to adopt a curriculum framework informed by pupil's social and emotional well-being. The class capability scores are used to inform a teachers approach to the lesson, which will help growth in these valuable characteristics.

These capabilities are evidenced as being necessary for future success, and by measuring them we are placing real value on them.

There are 7 capability strands: Managing feelings, Confidence, Communication, Relationships and Leadership, Planning and Problem-Solving Creativity, Resilience and Determination

Visible Learning (metacognition)

Metacognition describes the processes involved when learners plan, monitor, evaluate and make changes to their own learning – the thinking about their thinking. Pupils are given opportunity to understand their own cognitive abilities, knowledge of tasks and strategies that could be used to support their learning. Pupils are also encouraged to self-reflect. The following questions will be used to deepen pupils understanding of their learning:

Visible Learning	Surface Learning Strategies	Deep Learning Strategies	Transfer Learning Strategies
	Can I plan and organise me learning before I start? *Where am I with my learning?* *How well have I achieved my success criteria?*	*Can I explain my learning to someone else?* *Can I explain the strategies I have used in my learning?*	*Can I organise my knowledge to support new learning?* *Do I look for and recognise similarities and differences in my tasks?*

	What is my next step? *Can I use feedback to help me?*	*Can I ask a range of questions to deepen my understanding?*	*When have I applied my learning to another area?* *Can I apply my learning to another context?*

EYFS

In Early Years, science is taught by the children learning about the world around them through play. Activities in EYFS are both adult led and child initiated. The statements within Development Matters provide a robust introduction to the Science National Curriculum.

Working scientifically	Comments and asks questions about aspects of their familiar world such as the place where they live, the natural world, technology and people and communities. With adult support, use a variety of apparatus to explore, test and learn about similarities and differences in relation to objects, materials and living things. *Gathers and records data by:* *Recording using tallying. *Pictorial recording. *Photographic evidence. *Completing simple pre prepared table/charts. Can talk about some of the things they have observed such as plants, animals, natural and found objects. Talks about why things happen and how things work.
Plants	Developing an understanding of growth, decay and changes over time. Shows care and concern for living things and the environment. They make observations of animals and plants and explain why some things occur, and talk about changes. They talk about the features of their own immediate environments and how might vary from one another.
Animals including humans	Developing an understanding of growth, decay and changes over time. Shows care and concern for living things and the environment. They make observations of animals and plants and explain why some things occur, and talk about changes. Children talk about past and present events in their lives and in the lives of family members.
Human body	Know the importance for good health of physical exercise and a healthy diet.
Space/ seasonal change	Developing an understanding of growth, decay and changes over time.

Metacognition	**Planning**	**Monitoring**	**Evaluation**
	What resources do I need to carry out my task? *Can I describe what I am going to do?* *How can I link my learning with my own experiences to help me?*	*Am I doing well?*	*How did I do?* *Am I able to re-tell stories and link them to other areas of learning?*

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year A 1+2 Knowledge	Seasons Observe changes across the four seasons	Weather Observe and describe weather associated with the seasons and how day length varies	Animals including Humans 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).	Animals including Humans 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. Notice that animals, including humans, have offspring which grow into adults.	Plants – Year 2 Observe and describe how seeds and bulbs grow into mature plants.	Animals including Humans Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.
Skills	Core skill 1- Questioning Ask simple questions about the world around us. Begin to recognise that they can be answered in different ways.			Core skill 2- Setting up and performing different types of enquiry Perform simple tests with support. To begin to discuss my ideas about how to find things out. To begin to say what happened in my investigation.		
	Core skill 3- Observing and measuring/ Using equipment Begin to observe closely using simple equipment. To be able to say what I am looking for and what I am measuring.			Core skill 4- Gathering and recording data Gather and record data with some adult support to help in answering questions. Begin to record simple data.		

	To know how to use simple equipment safely. Use simple measurements and equipment with support. Begin to progress from non-standard units, reading cm, l etc.	Begin to record and communicate findings in a range of ways. Can show my results in a table that my teacher has provided.
	Core skill 5- Using data I can talk about what I see and do.	**Core skill 6- Using secondary sources** To begin to find information to help me form books and computers with support. To begin to ask my peers for help when appropriate.
	Core skill 7- Scientific language Begin to use simple scientific language related to the topic.	**Vocabulary** *Question* *Observe* *Group* *Sort* *Predict* *Table* *Use comparative language with support.*

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year B 1+2 Knowledge	**The Human Body** Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	**The Human Body** Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	**Materials** 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** Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses. *(Investigating materials in order to make our toy cars out of the most suitable material).* Compare how things move on different surfaces. *(Testing our toy cars made in DT).* Find out how the shapes of solid objects made from some materials can be changed by squashing,	**Plants Year 1** Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.	**Plants Year 1** Identify and describe the basic structure of a variety of common flowering plants, including trees.

			materials on the basis of their simple physical properties.	bending, twisting and stretching.		
Skills	**Core skill 1- Questioning** Ask some relevant questions about the world around us. Recognise that they can be answered in different ways.			**Core skill 2- Setting up and performing different types of enquiry** Perform simple tests. To discuss my ideas about how to find things out. To say what happened in my investigation.		
	Core skill 3- Observing and measuring/ Using equipment Observe closely using simple equipment. To be able to say what I am looking for and what I am measuring and why. Use simple measurements and equipment. Begin to progress from non-standard units, reading cm, m, ml, l etc.			**Core skill 4- Gathering and recording data** Gather and record data to help in answering questions. Record simple data. Record and communicate their findings in a range of ways. Can show my results in a table while suggesting what the table should include.		
	Core skill 5- Using data With help, I begin to notice simple patterns and relationships. I can talk about what I found out and how I found it out.			**Core skill 6- Using secondary sources** To find information to help me from books and computers, sometimes with support when needed. To ask my peers for help when appropriate.		
	Core skill 7- Scientific language Use simple scientific language related to the topic and some science words.			**Vocabulary** As previous plus… *Questioning* *Plan* *Record* *Identify* *Block graph* *Data* *Use comparative language – bigger, faster etc...*		
Metacognition	**Planning** *What resources do I need to carry out my task?* *Have I done anything like this before?* *How can I link my learning with my own experiences to help me?*		**Monitoring** *Am I doing well?* *Do I need any different techniques to improve my learning/task?*		**Evaluation** *Am I able to re-tell stories and link them to other areas of learning?* *How did I do in my task?*	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

Year A 3+4 Knowledge	**Rocks** Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties	**Rocks and Fossils** Describe in simple terms how fossils are formed when things that have lived are trapped within rock recognise that soils are made from rocks and organic matter.	**Light** Recognise that they need light in order to see things and that dark is the absence of light Recognise that shadows are formed when the light from a light source is blocked by a solid object find patterns in the way that the size of shadows change notice that light is reflected from surfaces recognise that light from the sun can be dangerous and that there are ways to protect their eyes	**Electricity** 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	**States of Matter** Compare and group materials together, according to whether they are solids, liquids or gases observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	**Sound** Identify how sounds are made, associating some of them with something vibrating recognise that vibrations from sounds travel through a medium to the ear recognise that sounds get fainter as the distance from the sound source increases. find patterns between the volume of a sound and the strength of the vibrations that produced it. find patterns between the pitch of a sound and features of the object that produced it
Skills	Core skill 1- Questioning Ask relevant questions about the world around us and use different types of scientific enquiries to answer them. Begin to raise their own questions about the world around us. Begin to make some decisions about which types of enquiry will be the best way of answering questions.		Core skill 2- Setting up and performing different types of enquiry Set up some simple practical enquiries, comparative and fair tests. Enquiry including: • observation over time • looking for patterns • identifying and classifying • comparative and fair testing • researching using secondary sources			

		Begin to recognise when a simple fair test is necessary and help decide how to set it up. Begin to think of more than one variable factor.
	Core skill 3- Observing and measuring/ Using equipment Begin to make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. Learn to use some new equipment appropriately (eg data loggers). Begin to see a pattern in my results. Begin to choose from a selection of equipment. Begin to observe and measure accurately using standard units including time in minutes and seconds.	Core skill 4- Gathering and recording data Gather, record and begin to classify and present data in a variety of ways to help in answering questions. Begin to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. Begin to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Begin to use notes, simple tables and standard units and help to decide how to record and analyse their data. Begin to record results in tables and bar charts.
	Core skill 5- Using data With help, I am beginning to look for changes, similarities and differences in my data in order to draw simple conclusions and answer questions. With support, I am beginning to identify new questions arising from the data. With support, I can find ways of improving what I have already done. I am beginning to report on my findings in different ways including: • spoken explanations • written explanations • displays or presentations	Core skill 6- Using secondary sources Begin to recognise when and how secondary resources might help to answer questions that cannot be answered through practical investigations.
	Core skill 7- Scientific language Begin to use some scientific language to talk and write down what they have found out. Begin to use scientific language. Begin to use comparative and superlative language.	Vocabulary As previous plus… *Measurements* *Classify* *Diagram* *Key* *Graph*

			Chart *Prediction* *Conclusion* *Explanation* *Observation* *Research* *Fair* *Text*			
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year B 3+4 Knowledge	**Living Things** Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment recognise that living things can be grouped in a variety of ways	**Living Things** Construct and interpret a variety of food chains, identifying producers, predators and prey. recognise that environments can change and that this can sometimes pose dangers to living things.	**Forces** Compare how things move on different surfaces notice that some forces need contact between two objects, but magnetic forces can act at a distance	**Magnets** 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.	**Animals including Humans** Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment recognise that living things can be grouped in a variety of ways construct and interpret a variety of food chains, identifying producers, predators and prey. recognise that environments can change and that this can sometimes pose dangers to living things.	**Animals including Humans** Describe the simple functions of the basic parts of the digestive system in humans identify the different types of teeth in humans and their simple functions

<table>
<tr><td rowspan="3">Skills</td><td>Core skill 1- Questioning
Ask a variety of relevant questions about the world around me and use different types of scientific enquiries to answer them.
Raise their own questions about the world around them.
Make some decisions about which type of enquiry will be the best way of answering questions.</td><td>Core skill 2- Setting up and performing different types of enquiry
Set up simple practical enquiries, comparative and fair tests.
Enquiry including:
• observation over time
• looking for patterns
• identifying and classifying
• comparative and fair testing
• researching using secondary sources

Recognise when a simple fair test is necessary and help to decide how to set it up.
Can think of more than one variable factor.</td></tr>
<tr><td>Core skill 3- Observing and measuring/ Using equipment
Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.
Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them.
Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.
Learn to use new equipment appropriately (eg data loggers).
Can see a pattern in my results.
Can choose from a selection of equipment.
Can observe and measure accurately using standard units including time in minutes and seconds.</td><td>Core skill 4- Gathering and recording data
Gather, record, classify and present data in a variety of ways to help in answering questions.
Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.
Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
Use notes, simple tables and standard units and help to decide how to record and analyse their data.
Can record results in tables and bar charts.</td></tr>
<tr><td>Core skill 5- Using data
I can help to make decisions about how to analyse data.
With help, I can look for changes, patterns, similarities and differences in my data in order to draw simple conclusions and answer questions.
With support, I can identify new questions arising from the data.
With support, I can make predictions for new values within or beyond the data I have collected.
With support, I can find ways of improving what I have already done.
I can report on my findings in different ways including
• spoken explanations
• written explanations</td><td>Core skill 6- Using secondary sources
Recognise when and how secondary resources might help to answer questions that cannot be answered through practical investigations.</td></tr>
</table>

	• displays or presentations					
	Core skill 7- Scientific language Use some scientific language to talk and write down what they have found out. Use relevant scientific language. Use comparative and superlative language			Vocabulary As previous plus… *Thermometer* *Accurate* *Data logger* *Enquiry* *Comparative* *Relevant questions* *Secondary source*		
Metacognition	**Planning** *What resources do I need to carry out my task?* *Where do I start and what strategies will I use?* *What type of resources will I need to complete my learning?* *Have I got everything I need to complete my task?* *How can I break down the task into smaller steps to make my learning more manageable?*		**Monitoring** *Do I need any different techniques to improve my understanding of the process?* *Am I finding this challenging?* *Do I need to re-read information to make it clearer?* *Do I need to change my strategy?*		**Evaluation** *Did I use the right strategy?* *How did the feedback I received help me?* *For future tasks, would I use another strategy?*	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year A 5+6 Knowledge	**Electricity** (YEAR 6 UNIT) associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit	**Electricity** Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches use recognised symbols when representing a simple circuit in a diagram.	**Living Things** Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including plants give reasons for classifying plants	**Living Things/evolution** Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	**The Human Body** Describe the changes as humans develop to old age. identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood recognise the impact of diet, exercise, drugs	**Life Cycles** Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

			and animals based on specific characteristics.		and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported within animals, including humans	explain the differences in the life cycles of a mammal, an amphibian, an insect and a bird describe the life process of reproduction in some plants and animals.
Skills	Core skill 1- Questioning Begin to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Begin to explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically. Begin to select the most appropriate ways to answer science questions using different types of scientific enquiry.			Core skill 2- Setting up and performing different types of enquiry Begin to use test results to make predictions to set up further comparative and fair tests. Begin to recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. Begin to suggest improvements to my method and give reasons. Begin to decide when it is appropriate to do a fair test.		
	Core skill 3- Observing and measuring/ Using equipment Begin to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. Begin to identify patterns that might be found in the natural environment. Begin to make their own decisions about what observations to make, what measurements to use and how long to make them for and whether to repeat them. Choose the most appropriate equipment and explain how to use it accurately. Begin to interpret data and find patterns. Select equipment on my own. Can make a set of observations and say what the interval and range are. Begin to take accurate and precise measurements – N, g, kg, mm, cm, mins, seconds, cm^2V, km/h, m per sec, m/ sec Graphs – pie, line			Core skill 4- Gathering and recording data Begin to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs. Begin to report and present findings from enquiries. Begin to decide how to record data from a choice of familiar approaches. Begin to choose how best to present data.		
	Core skill 5- Using data I can use my results to make predictions. I can discuss and justify my scientific ideas, with some support. I am beginning to explain how one thing causes another.			Core skill 6- Using secondary sources Use a range of secondary sources to research. Begin to separate opinion from fact.		

	I can use spoken and written forms such as displays and other presentations to report my conclusions, with guidance.					
	Core skill 7- Scientific language Am beginning to read, spell and pronounce scientific vocabulary correctly. Am beginning to use relevant scientific language and illustrations to discuss, communicate and justify scientific ideas. Am beginning to confidently use a range of scientific vocabulary. Am beginning to use conventions such as trend, rogue result, support prediction and –er word generalisation. Am beginning to use scientific ideas when describing simple processes.			Vocabulary As previous plus… *Variables* *Cause* *Effect* *Repeat* *Precise* *Systematic* *Scatter graph* *Line graph* *Bar graph* *Pattern* *Relationship* *Evidence*	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year B 5+6 Knowledge	Materials (YEAR 5 UNIT) give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic 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 know that some materials will dissolve in liquid to form a solution, and describe how to	**Properties and change of materials** Identify the effects of air resistance, water resistance and friction, that act between moving surfaces recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	**Space** (YEAR 5 UNIT) describe the movement of the Earth, and other planets, relative to the Sun in the solar system use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	**Space** Describe the movement of the Moon relative to the Earth describe the Sun, Earth and Moon as approximately spherical bodies	**Light** (YEAR 6 UNIT) 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,	**Light** Recognise that light appears to travel in straight lines 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

	recover a substance from a solution use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating demonstrate that dissolving, mixing and changes of state are reversible changes 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.	(PROPERTIES & CHANGES OF MATERIALS) compare and group together everyday materials on the basis of their properties, including their response to magnets				

Skills	Core skill 1- Questioning Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically Recognise scientific ideas change and develop over time. Select the most appropriate ways to answer science questions using different types of scientific enquiry.	Core skill 2- Setting up and performing different types of enquiry Use test results to make predictions to set up further comparative and fair tests. Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. Suggest improvements to my method and give reasons. Decide when it is appropriate to do a fair test.
	Core skill 3- Observing and measuring/ Using equipment Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. Identify patterns that might be found in the natural environment. Make their own decisions about what observations to make, what measurements to use and how long to make them for and whether to repeat them. Choose the most appropriate equipment and explain how to use it accurately. Can interpret data and find patterns. Select equipment on my own.	Core skill 4- Gathering and recording data Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs. Report and present findings from enquiries. Decide how to record data from a choice of familiar approaches. Can choose how best to present data.

	Can make a set of observations and say what the interval and range are. Accurate and precise measurements – N, g, kg, mm, cm, mins, seconds, cm^2V, km/h, m per sec, m/ sec Graphs – pie, line, bar (Year 6)	
	Core skill 5- Using data I can confidently use my results to make predictions. I can identify when further tests might be needed. I can discuss and justify my scientific ideas. I can explain whether or not I trust my results. I can explain how one thing causes another. I can use spoken and written forms such as displays and other presentations to report my conclusions.	Core skill 6- Using secondary sources Talk about how scientific ideas have developed over time. Recognise which secondary sources will be most useful to research my ideas. Begin to separate opinion from fact. Identify scientific evidence that has been used to support ideas or prove them wrong.
	Core skill 7- Scientific language Read, spell and pronounce scientific vocabulary correctly. Use relevant scientific language and illustrations to discuss, communicate and justify scientific ideas. Can confidently use a range of scientific vocabulary. Can use conventions such as trend, rogue result, support prediction and –er word generalisation. Can use scientific ideas when describing simple processes.	Vocabulary As previous plus… *Interpret* *Refute* *Opinion/ fact* *Present (your findings)* *Justify*

Metacognition	**Planning**	**Monitoring**	**Evaluation**
	What resources do I need to carry out my task? *Where do I start and what strategies will I use?* *What type of resources and materials will I need to complete my learning?* *How can I break down the task into smaller steps?*	*Am I finding this challenging?* *Is there anything I need to stop and change to improve the understanding of my learning?* *Do I need to re-read information to make it clearer?* *Do I need to change my strategies?*	*Did I use the right strategy?* *How did the feedback I received help me?* *For future tasks, would I use another strategy?* *Did I pace myself appropriately to get the task done?*

Working Scientifically Working Scientifically plays a key role in the teaching and learning of Science, and so is incorporated into learning throughout the rest of the Science curriculum. These key skills are instrumental in developing our young scientists' understanding and investigative abilities.						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Comments and asks questions about aspects of their familiar world such as the place where they live, the natural world, technology and people and communities. With adult support, use a variety of apparatus to explore, test and learn about similarities and differences in relation to objects, materials and living things. *Gathers and records data by:* *Recording by the use of tallying. *Pictorial recording. *Photographic evidence. *Completing simple pre prepared table/charts.	Ask simple questions and recognise that they can be answered in different ways Use simple equipment to observe closely Perform simple tests Identify and classify Use his/her observations and ideas to suggest answers to questions Gather and record data to help in	Ask simple questions and recognise that they can be answered in different ways Use simple equipment to observe closely including changes over time Perform simple comparative tests Identify, group and classify Use his/her observations and ideas to suggest answers to questions noticing similarities, differences and patterns Gather and record data to help in answering	Ask relevant questions and use different types of scientific enquiries to answer them Set up simple practical enquiries, comparative and fair tests Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Use results to draw simple conclusions, make predictions for	With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done. Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Use test results to make predictions to set up further comparative and fair tests Report and present findings from enquiries, including conclusions, causal relationships and	Plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Use test results to make predictions to set up further comparative and fair tests Report and present 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 Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in

Can talk about some of the things they have observed such as plants, animals, natural and found objects. Talks about why things happen and how things work.	answering questions	questions including from secondary sources of information	new values, suggest improvements and raise further questions Identify differences, similarities or changes related to simple scientific ideas and processes Use straightforward scientific evidence to answer questions or to support his/her findings	results and conclusion With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer question	explanations of and degree of trust in results, in oral and written forms such as displays and other presentations Identify scientific evidence that has been used to support or refute ideas or argument	oral and written forms such as displays and other presentations Describe and evaluate their own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources Group and classify things and recognise patterns