Intent

At St. Peter's Primary School, we recognise the importance of Science in every aspect of daily life; we encourage children to be inquisitive throughout their time at our school and beyond. The Science curriculum fosters a natural curiosity of the child, encourages respect for living organisms and the physical environment and provides opportunities for critical evaluation of evidence. We believe that science encompasses the acquisition of knowledge, concept, skills and positive attitudes.

Aims of the Science Curriculum

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.
- develop the essential scientific enquiry skills to deepen their scientific knowledge
- use a range of methods to communicate their scientific information and present it in a systematic, scientific manner, including I.C.T., diagrams, graphs and charts
- develop a respect for the materials and equipment they handle regarding their own, and other children's safety
- develop an enthusiasm and enjoyment of scientific learning and discovery

Our Science curriculum is knowledge and vocabulary rich, ensuring children gain a deep understanding of fundamental scientific knowledge and concepts as well as embedding key science specific vocabulary and terminology (Tier 3 vocabulary). In addition, children are encouraged to develop their scientific curiosity and understanding by working scientifically.

Working Scientifically

At St. Peter's Primary School, children will gradually build on their scientific skills throughout the Key Stages based on National Curriculum expectations.

Key Stage 1:

• 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

Lower Key Stage 2:

• 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:

• 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 a 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

Spaced Retrieval Practice Approach

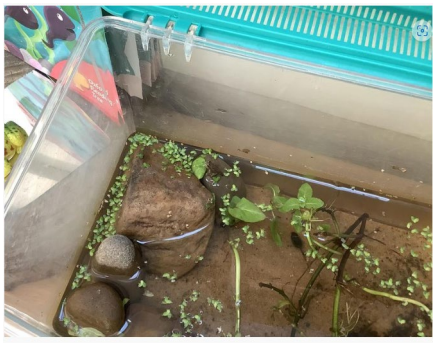
Our science curriculum is delivered through a series of modules which are deliberately spaced throughout the academic year with opportunities to introduce and revisit key concepts. This approach enables staff to deepen pupil understanding and embed learning.

Our curriculum maps clearly show how our CUSP curriculum delivers (introduces and revisits) the National Curriculum expectations for science within and across year groups. All Science modules are identified on year group specific yearly overviews using grey boxes.

Early Years

In Early Years, Science is taught through Knowledge and Understanding of the World. The children learn about the scientific world around them in their play and adult led activities. Our curriculum is designed to enable children to make sense of their physical world and community. Children are encouraged to be scientists by:

- Finding out about and showing curiosity and interest in features of objects, events and living things
- Describing and talking about what they see, including noticing similarities and differences
- Showing curiosity and asking questions about why things happen and how things work
- Showing understanding of cause-effect relations
- Noticing and commenting on patterns
- Showing an awareness of change
- Explaining their own knowledge and understanding, and asking appropriate questions of others
- Investigating objects and materials by using all of their senses as appropriate





Content and sequence - EYFS to Key Stage

St. Peter's C of E Primary School
Science – EYFS – KS1

	ELGs	How this is achieved in EYFS	Key Vocabulary to be developed in EYFS	Science KS1	
				Year 1	Year 2
Specific Area of Learning **Personal, Social & Emotional Development**	**Managing Self** Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices	• Discussions at snack time of the importance of healthy food choices • During lunch time discussions • Using picture books and other resources to explain the importance of the different aspects of a healthy lifestyle • Through stories and circle time discussions • Providing regular reminders about thorough handwashing and toileting • Supporting children in developing good personal hygiene • Putting shoes/coats on independently	• Exercise • Healthy • Wash • Toothbrush • Tooth / Teeth • Body • Head • Bones • Skeleton • Family	**Animals, including humans**	
Specific Area of Learning **Understanding the World**	**The Natural World** Explore the natural world around them, making observations and drawing pictures of **animals** and plants	• Naming body parts and recognising a human skeleton **RSE link** – Correct naming of body parts • Labelling body parts • Understanding the difference between themselves now and as babies • Describing animals during story time and rhymes (e.g. *Incey Wincey Spider, Horsey Horsey*) • Exploring information books about lifecycles • Creating bug hotels • Exploring animals from other countries • Exploring a range of jungle animals. Learn their names and label their body parts • Comparing animals from a jungle to those on a farm • Exploring nocturnal animals – making sense of different environments and habitats • Listening to the children describing and commenting on things they have seen whilst outside, including plants and animals • After close observation, draw pictures of the natural world, including animals and plants • Following the first-hand life-cycle of butterflies and tadpoles in the classroom • Creating acrostic poems about animals	• Animal • Human • Mammals • Birds • Fish • Amphibians • Insects • Lifecycle • Nocturnal		

	ELG 14 **The Natural World** Explore the natural world around them, making observations and drawing pictures of **animals and plants**	• Planting seeds • Creating a timeline of how plants grow • After close observation, draw pictures of the natural world, including animals and plants • Listening to the children describing and commenting on things they have seen whilst outside, including plants and animals	• Lifecycle • Plant • seed • grow • roots • Flower	**Plants**	
	ELG 14 **The Natural World** Understanding some important processes and changes in the natural world around them, including seasons and changing states of matter.	• Taking photos to compare seasons and discuss • Going on walks to observe the local environment and to compare and learn about the seasons • Making comments on the weather • Discuss changes in living things - weather, leaves, seasons • Explore the world around us and see how it changes as we enter Summer. Providing children with opportunities to note and record the weather • Looking for children incorporating their understanding of the seasons and weather in their play • Encouraging interactions with the outdoors to foster curiosity and give children freedom to touch, smell and hear the natural world around them during hands-on experiences	• Seasons • Autumn • Winter • Spring • Summer • Change • Weather	**Seasonal changes**	**Living things and their habitats.**
		• Growing plants from bulbs and seeds. • Changes in state through cooking - Baking bread, cooking porridge etc • Differentiating between land and water • Water tray activities to explore water, ice, and materials that float and sink • Making boats to explore best materials • Exploring what makes the best house for the 3 Little Pigs	• Material • Wood • Plastic • Glass • Float • Sink • Liquid • Solid	• Sink • Liquid • Soft • Hard • Hot • Cold	**Everyday materials**	**Uses of everyday materials**
Scientific Vocabulary – scientist, sort, observation, identify, compare, group, investigate, test, evaluate					

At St. Peter's, science is taught in mixed-age classes and our curriculum is adapted to accommodate this. Our 2-rolling programme (Cycle A and Cycle B) ensures that pupils have met the requirements of the NC at the end of KS1 and KS2.

Content and Sequence: KS1 (Years 1 & 2)

SCIENCE National Curriculum Expectations YEAR 1	Year 1/2 CYCLE B		
	Autumn	Spring	Summer
Plants • 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.	Introduce trees		Introduce parts of a plant
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) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Introduce	Revisit	Revisit
Everyday 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 on the basis of their simple physical propertie		Introduce	
Seasonal changes • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies.	Introduce		Revisit

SCIENCE National Curriculum Expectations YEAR 2	Year 1/2 CYCLE A		
	Autumn	Spring	Summer
Living things and their Habitats • 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	Introduce	Revisit	
Plants • observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy			Introduce
Animals including humans • notice that animals, including humans, have offspring which grow into adults • find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	Introduce		Revisit
Uses 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 • compare how things move on different surfaces • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching		Introduce	

Content and Sequence: LKS2 (Years 3 & 4)

SCIENCE National Curriculum Expectations Year 3	Year 3/4		
	Autumn	Spring	Summer
Plants • identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers • explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant • investigate the way in which water is transported within plants • explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal			Introduce (CYCLE A)
Animals including humans • identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • identify that humans and some other animals have skeletons and muscles for support, protection and movement		Introduce (CYCLE B)	
Rocks • compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • 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	Introduce (CYCLE A)	Revisit	
Light • recognise that they need light in order to see things and that dark is the absence of light • 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 • 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 changes		Introduce (CYCLE B)	
Forces and magnets • 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			Introduce (CYCLE B)

SCIENCE National Curriculum Expectations Year 4	Year 3/4		
	Autumn	Spring	Summer
Living things and their habitats • recognise that living things can be grouped in a variety of ways • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • recognise that environments can change and that this can sometimes pose dangers to living things	Introduce (CYCLE B)		
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 • construct and interpret a variety of food chains, identifying producers, predators and prey		Introduce (CYCLE A)	
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	Introduce (CYCLE B)		
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 • find patterns between the pitch of a sound and features of the object that produced it • find patterns between the volume of a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound source increases	Introduce (CYCLE A)		

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			Introduce (CYCLE B)

Content and Sequence: UKS2 (Years 5 & 6)

SCIENCE National Curriculum Expectations Year 5	Autumn	Spring	Summer
Living things and their habitats • describe 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			Introduce (CYCLE A)
Animals, including humans • describe the changes as humans develop to old age			Introduce (CYCLE B)
Properties and changes of materials • 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 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 • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • 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	Introduce (CYCLE B)		
Earth and space • 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		Introduce (CYCLE A)	
Forces • explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • identify the effects of air resistance, water resistance and friction, that act between moving surfaces • recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect		Introduce (CYCLE B)	

SCIENCE National Curriculum Expectations Year 6	Autumn	Spring	Summer
Living things and their habitats • describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • give reasons for classifying plants and animals based on specific characteristics	Introduce (CYCLE B)		
Animals including humans • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	Introduce (CYCLE A)		
• describe the ways in which nutrients and water are transported within animals, including humans			Introduce - water transportation (CYCLE B)
Evolution and inheritance • recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • 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			Introduce (CYCLE A)
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 • 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	Introduce (CYCLE B)		
Electricity • 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 • use recognised symbols when representing a simple circuit in a diagram			Introduce (CYCLE A)

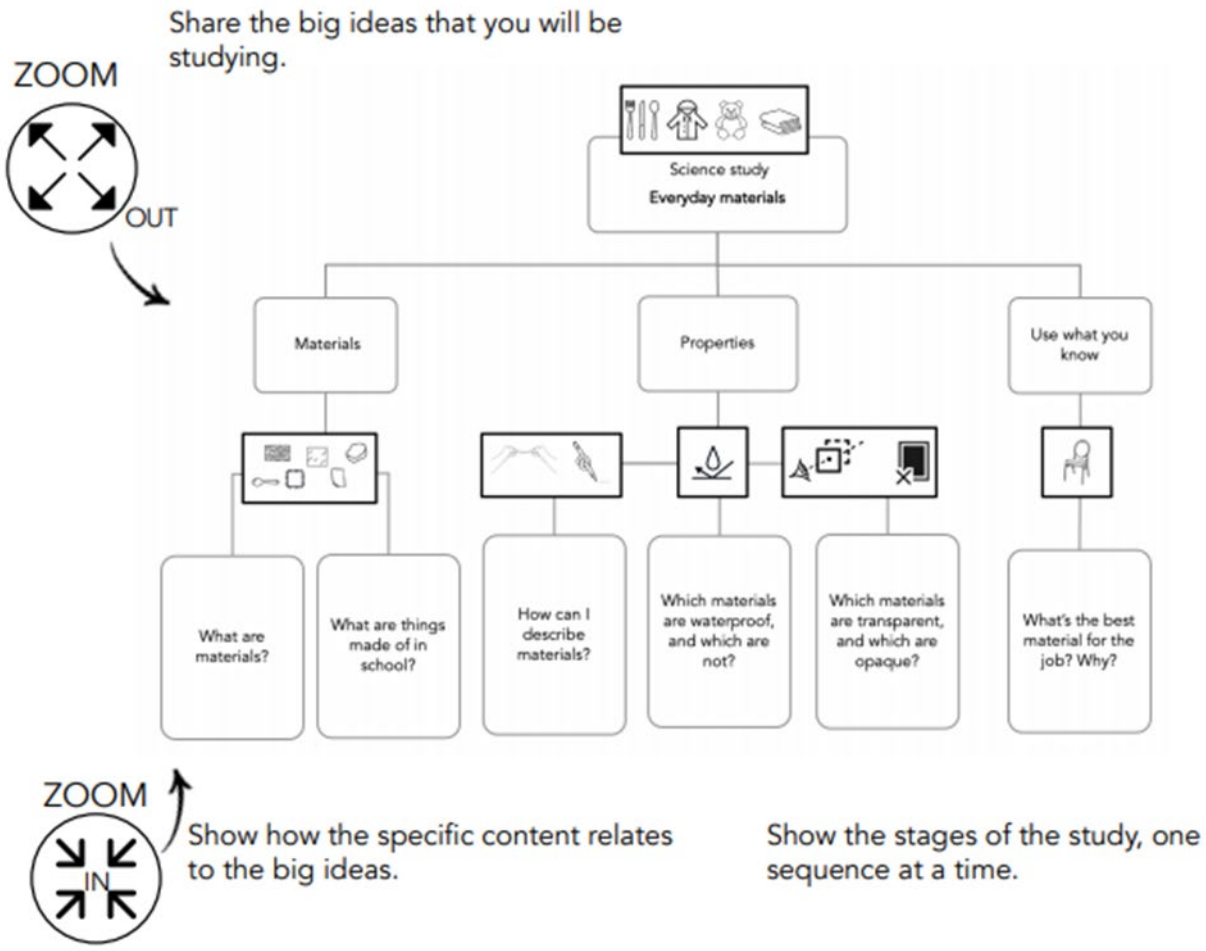
Implementation

Modular Approach – Knowledge

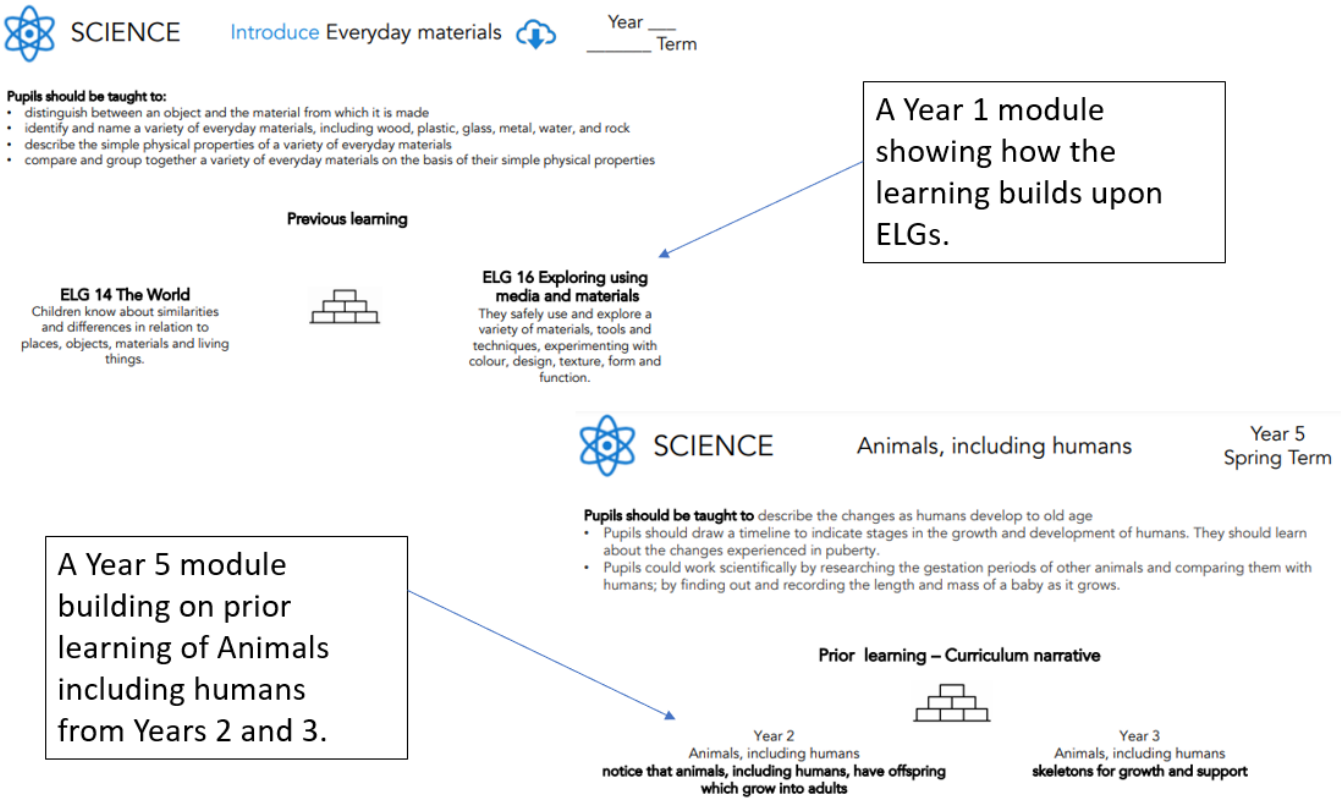
At St. Peter's Primary School, Science is taught in modules that enable pupils to study in depth key scientific understanding, skills and vocabulary. Each module aims to activate and build upon prior learning, to ensure better cognition and retention. Each module is carefully sequenced to enable pupils to purposefully layer learning from previous sessions to facilitate the acquisition and retention of key scientific knowledge. Each module is revisited either later in the year or in the following year as part of a spaced retrieval practice method to ensure pupils retain key knowledge and information.

The Big Ideas

At St. Peter's Primary School, we put an emphasis on sharing the big ideas with the children at the beginning of every module.



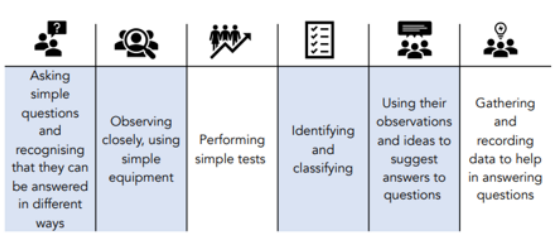
National Curriculum objectives and how these links to prior learning are evident at the beginning of every module.



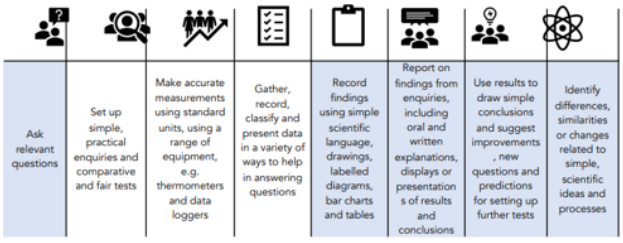
Development of Scientific skills

As well as ensuring pupils are taught key knowledge, each module is designed to offer pupils the opportunity to undertake scientific enquiries and develop their skills as a Scientist in asking questions, planning and carrying out experiments, collecting and analysing information and drawing conclusions. At St. Peter's Primary School, the working scientifically objectives are clearly displayed on each of our science modules for both Key Stage 1 and Key Stage 2. It is clear which of the objectives are being taught throughout a specific module which ensures full coverage and allows for skills to be built upon.

Example of a Year 1 – Animals including humans



Example of a Year 4 – Animals including humans – Teeth, digestion and food chains.

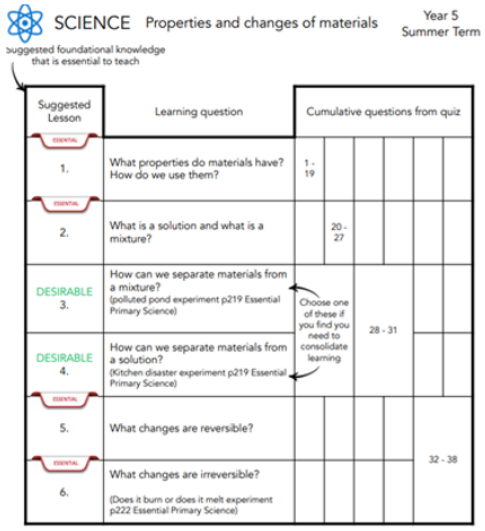


Cumulative Quizzing Model (Supporting Cognitive Load)

Pupils are given opportunities to retrieve their knowledge at regular intervals throughout the unit through a 'teach – test – teach – test' model. The aim of this model is to reinforce and revisit previously taught knowledge and vocabulary. The children are tested using written quizzes.

Cumulative Quizzing Model (Supporting Cognitive Load)

Sample of module sequence and cumulative quizzing overview

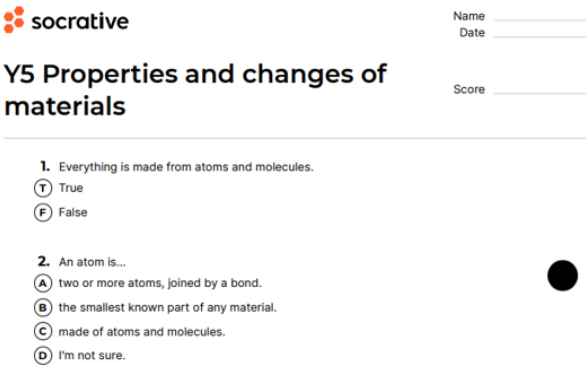


SCIENCE Properties and changes of materials — Year 5 Summer Term

Suggested foundational knowledge that is essential to teach

Suggested Lesson	Learning question	Cumulative questions from quiz					
ESSENTIAL 1.	What properties do materials have? How do we use them?	1 - 19					
ESSENTIAL 2.	What is a solution and what is a mixture?		20 - 27				
DESIRABLE 3.	How can we separate materials from a mixture? (polluted pond experiment p219 Essential Primary Science)	Choose one of these if you find you need to consolidate learning		28 - 31			
DESIRABLE 4.	How can we separate materials from a solution? (Kitchen disaster experiment p219 Essential Primary Science)						
ESSENTIAL 5.	What changes are reversible?					32 - 38	
ESSENTIAL 6.	What changes are irreversible? (Does it burn or does it melt experiment p222 Essential Primary Science)						

Example questions



socrative

Name _____
Date _____

Y5 Properties and changes of materials

Score _____

1. Everything is made from atoms and molecules.
(T) True
(F) False

2. An atom is...
(A) two or more atoms, joined by a bond.
(B) the smallest known part of any material.
(C) made of atoms and molecules.
(D) I'm not sure.

Minimum lesson expectations

All science lessons will incorporate the following elements:

- Explicit teaching of vocabulary
- Revisiting of prior learning
- Use of scientific vocabulary in learning
- Reading
- Working scientifically
- Evidence of learning in pupil's books

<u>Vocabulary</u>

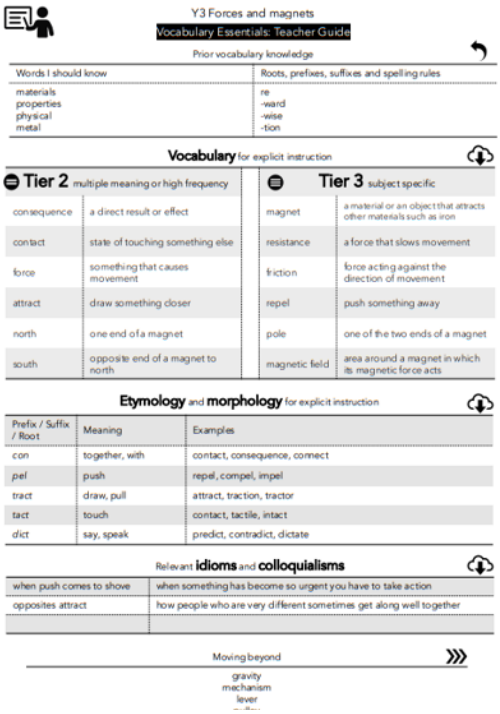
EYFS

At St. Peter's, we want our children to have an expansive vocabulary and through teacher modelling and planning, children are given opportunity to use and apply appropriate vocabulary. Scientific language is taught and built upon with vocabulary being a focus. This is also encouraged through planning trips and having visitors in school.

Vocabulary modules in Years 1 - 6

Vocabulary instruction is at the heart of the curriculum and subject specific words are incorporated in each module.

Vocabulary overview for a Year 3 Forces and Magnets module, including Tier 2 and 3 language as well as prefixes and suffixes.



Y3 Forces and magnets

Vocabulary Essentials: Teacher Guide

Prior vocabulary knowledge

Words I should know	Roots, prefixes, suffixes and spelling rules
materials properties physical metal	re -ward -wise -tion

Vocabulary for explicit instruction

Tier 2 multiple meaning or high frequency		Tier 3 subject specific	
consequence	a direct result or effect	magnet	a material or an object that attracts other materials such as iron
contact	state of touching something else	resistance	a force that slows movement
force	something that causes movement	friction	force acting against the direction of movement
attract	draw something closer	repel	push something away
north	one end of a magnet	pole	one of the two ends of a magnet
south	opposite end of a magnet to north	magnetic field	area around a magnet in which its magnetic force acts

Etymology and **morphology** for explicit instruction

Prefix / Suffix / Root	Meaning	Examples
con	together, with	contact, consequence, connect
pel	push	repel, compel, impel
tract	draw, pull	attract, traction, tractor
tact	touch	contact, tactile, intact
dict	say, speak	predict, contradict, dictate

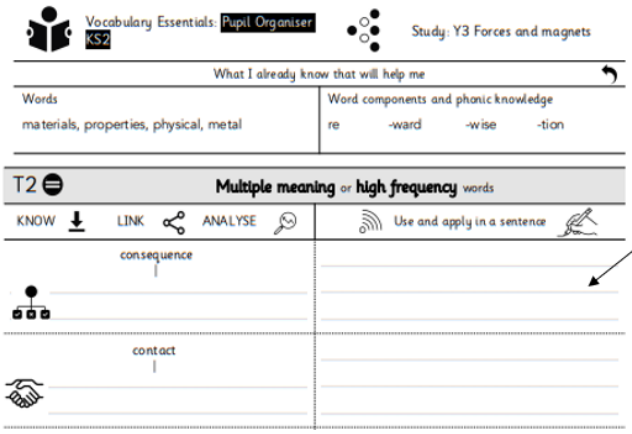
Relevant **idioms** and **colloquialisms**

when push comes to shove	when something has become so urgent you have to take action
opposites attract	how people who are very different sometimes get along well together

Moving beyond

gravity
mechanism
lever

Explicit teaching of vocabulary



Vocabulary Essentials: Pupil Organiser KS2

Study: Y3 Forces and magnets

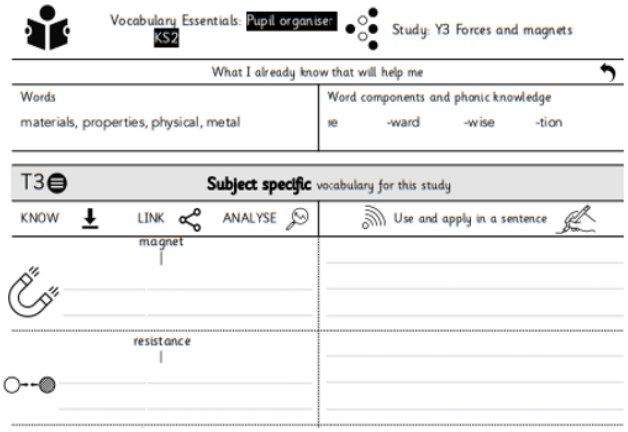
What I already know that will help me

Words	Word components and phonic knowledge
materials, properties, physical, metal	re -ward -wise -tion

T2 **Multiple meaning** or **high frequency** words

KNOW LINK ANALYSE	Use and apply in a sentence
consequence	
contact	

Children use and apply taught vocabulary



Vocabulary Essentials: Pupil organiser KS2

Study: Y3 Forces and magnets

What I already know that will help me

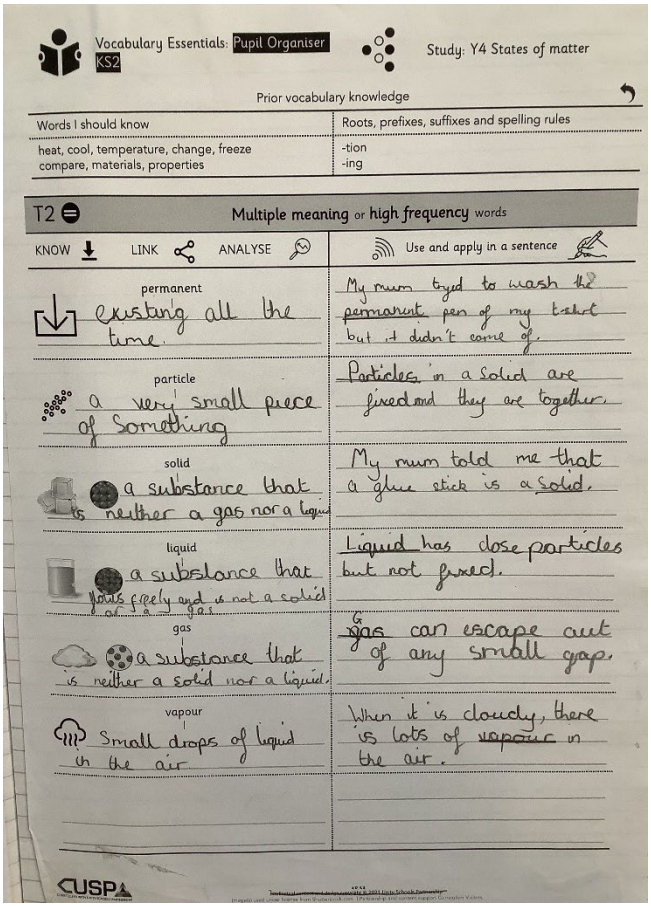
Words	Word components and phonic knowledge
materials, properties, physical, metal	re -ward -wise -tion

T3 **Subject specific** vocabulary for this study

KNOW LINK ANALYSE	Use and apply in a sentence
magnet	
resistance	

Use of dual coding

Use of vocabulary within a Year 4 lesson:



Vocabulary Essentials: Pupil Organiser KS2

Study: Y4 States of matter

Prior vocabulary knowledge

Words I should know	Roots, prefixes, suffixes and spelling rules
heat, cool, temperature, change, freeze compare, materials, properties	-tion -ing

T2 Multiple meaning or high frequency words

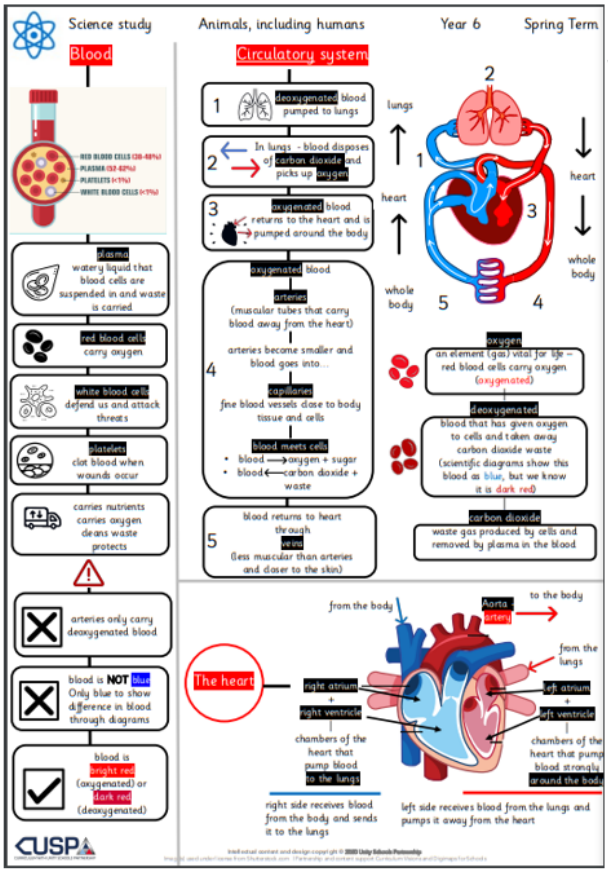
KNOW LINK ANALYSE	Use and apply in a sentence
permanent existing all the time.	My mum tyed to wash the permanent pen of my t-shirt but it didn't come of.
particle a very small piece of something	Particles in a solid are fixed and they are together.
solid a substance that is neither a gas nor a liquid	My mum told me that a glue stick is a solid.
liquid a substance that flows freely and is not a solid or a gas.	Liquid has close particles but not fixed.
gas a substance that is neither a solid nor a liquid.	Gas can escape out of any small gap.
vapour Small drops of liquid in the air	When it is cloudy, there is lots of vapour in the air.

CUSP

<u>Knowledge Organisers and Knowledge Notes</u>

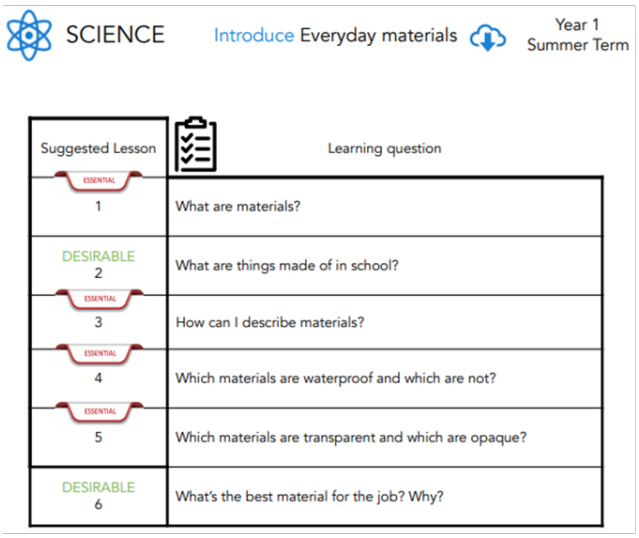
Accompanying each module is a Knowledge Organiser which contains key vocabulary, information and concepts which all pupils are expected to understand and retain. Knowledge notes are the elaboration and detail which help pupils acquire the content of each module. They support vocabulary and concept acquisition through a well-structured sequence that is cumulative. Each Knowledge Note begins with questions that link back to the cumulative quizzing, focussing on key content to be learnt and understood. Knowledge Organisers and Knowledge Notes are dual coded to provide pupils with visual calls to aid understanding and recall. Knowledge Organisers and Knowledge Notes are referenced throughout each module.

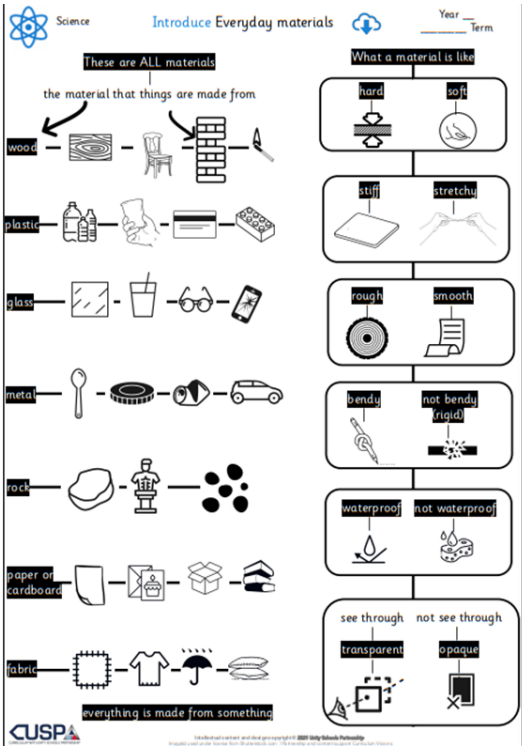
Knowledge organisers and Knowledge Notes

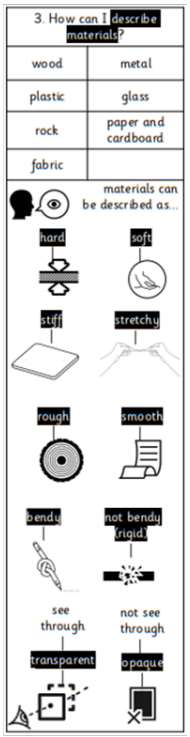


Planning using CUSP materials

Lesson planning is completed with the use of suggested lesson sequence, in conjunction with prior quizzing and content from the Knowledge Organisers.





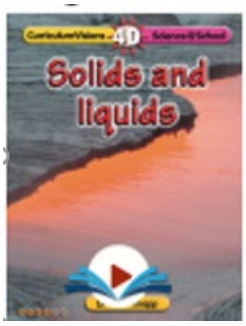


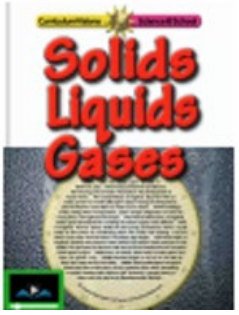
Tailoring for SEND

At St. Peter's, we aim for all science lessons and learning questions to be accessible to all pupils. Pre-teaching of scientific vocabulary provides all children with the opportunity to demonstrate an understanding of subject specific language. The use of dual coded Knowledge Notes and Organisers provide visuals to aid understanding and recall. In addition, knowledge notes are utilised in all lessons to minimise cognitive overload, so children can use and apply their knowledge more easily. Sentence stems can be used where necessary to aid with written evidence.

Reading

Our Science curriculum is supported by a wealth of high-quality texts which support pupil's learning and develop their skills in accessing information from a range of sources. Unity Schools Partnership are working closely with, 'Curriculum Visions,' to ensure that our subject content has materials that can be accessed by pupils both in school and at home.





Oracy

When discussing their findings or presenting information, pupils are encouraged to speak using full sentences and incorporating key scientific vocabulary. This is modelled by teachers e.g. using my turn, your turn.

Writing

Pupils are expected to write across all areas of the curriculum with teachers modelling how to write purposefully in each subject.

Impact

How do we measure the impact of science teaching?

Assessment

Assessment is both formative and at the point of learning as well as summative to feed forward to the next point of contact pupils will have. Feedback pays close attention to the three questions:

1. Does feedback provide CLARIFICATION?
   Are pupils on the right track? If they are not, do they know how to improve?

2. Does feedback provide SOPISTIFICATION?
   Do pupils get the opportunity to elaborate and respond to challenges, regardless of starting points?

3. Does feedback MOTIVATE?
   Do pupils recognise and act upon the feedback through verbal comments and marks that teachers and support staff make? Do they see themselves as part of the learning process, rather than just being done to?

Feedback, quizzes and thinking hard tasks all contribute towards the bigger picture of how well pupils retain and remember the content.

Assessment at St. Peter's takes many forms:

- formative assessment from cumulative quizzing
- summative assessment from cumulative quizzing
- Pupil Book Study (a highly acclaimed and evidence-led evaluation of long-term learning through precise and structured conversations)

Cumulative Quizzing

Pupil end of module results are compared to show how much pupils have gained and retained across the module.

Pupil Book Study

Pupil Book Study aims to help subject leaders and school leaders answer these three questions:

1. **What impact is your CURRICULUM having?**
   What effect is the curriculum architecture having?

2. **Does teaching support LONG-TERM LEARNING?**
   Is the evidence-led practice really being deployed at a classroom level, or is it superficial?

3. **Do tasks enable pupils to THINK HARD and CREATE LONG-TERM MEMORY?**
   How impactful are tasks, and do they help pupils to think hard and generate learning?

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Monitoring and Evaluation

Monitoring takes place regularly through teacher assessment, pupil voice and book scrutiny by the science subject leader. The Subject Leader and class teacher will together monitor the learning and progression made by pupils across the key stage. Governors are involved in monitoring during bi-annual Governor's Monitoring Week through learning walks, discussion with subject lead and work scrutiny.