Shoreham Village School

National Curriculum – Science

EYFS

Science at Foundation Stage is introduced indirectly through activities that encourage your child to explore, problem solve, observe, predict, think, make decisions and talk about the world around them. It's called 'knowledge and understanding of the world'.

Early Years science also helps children with skills in other Foundation Stage areas of the national curriculum, such as physical development and creative development.

Children explore creatures, people, plants and objects in their natural environments. They observe and manipulate objects and materials to identify differences and similarities. For example, they may look at an egg whisk, sand, paper and water to learn about things that are natural and manmade and their different functions. Children also learn to use their senses, feeling dough or listening to sounds in the environment, such as sirens or farm animals.

Your child will be encouraged to ask questions about why things happen and how things work. They might do activities such as increasing the incline of a slope to observe how fast a vehicle travels, or opening a mechanical toy to see how it works. Your child will also be asked questions about what they think will happen to help them communicate, plan, investigate, record and evaluate findings.

Awareness of space may be taught by encouraging children to make big and small movements to music and to think about how much space they need. They will also learn to recognise changes that happen to the body when they are active.

Children will also learn about the importance of keeping healthy and the things that contribute to this by, for example, cooking or identifying fruit and vegetables.

Children explore and respond to a variety of sensory experiences through music and art. Children might collect materials, such as rough sandpaper, soft fabric and shiny bottle tops to build a sensory wall. They explore colour, texture, shape, form and space by mixing colours, painting, modelling and dancing.

They also learn about sounds - how they can be changed and how to imitate sounds they hear.

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.

Lower Key stage 2

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.

Upper Key Stage 2

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 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.

Science for KS1 and KS2 at Shoreham Village School is based around the Kent Scheme of Work for Primary Science

Substantive knowledge – the knowledge produced by science Disciplinary knowledge – the knowledge underpinning pupils' understanding of working scientifically

SCIENCE OVERVIEW – ROTATION A:

	TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
RECEPTION	All about me: My body is made of a skeleton keeps me upright; muscles help me move. Skeleton is made of different bones	SEASONS AUTUMN plants CLOTHING WEATHER TOYS / ELECTRICITY MATERIALS	WINTER SEASONS - CLOTHES CHANGES OF STATE WEATHER	Mini-beast. Natural World/observations plants & animals	Growing plants Natural world/Life cycles/changing states of matter	Natural world/ seasons/contrasting environments
PALMER: YEAR 1/ YEAR 2	Yr 1/2 H	Plants – Yr 1- naming trees in	the school grounds and observ Yr 1 Animals, in	ing how they change; $Yr 2 - 1$	growing flowers from seeds as	nd bulbs
	Everyday Materials (Yr 1) PLUS: two weeks on seasonal changes / plants	Animals, including Humans – Parts of the Human body (Yr 1) PLUS: one week on seasonal changes / plants	Everyday Materials (Yr 1) PLUS: two weeks on seasonal change / plants	Animals, including humans – Animals (Yr 1) PLUS: one week on seasonal change / plants	Everyday Materials (Yr 1) PLUS: two weeks on seasonal change / plants	Plants (Yr 1) Seasonal Change (Yr 1)
MOORE: YEAR 3 / YEAR 4			Yr 3 Plants (Gathering Yr 4 Living Thing	evidence of life cycles) s and their habitats		
	Plants (Yr 3) PLUS: two weeks on living things	Forces and Magnets (Yr 3) PLUS: one week on plants and living things	Animals including Humans (Teeth and Digestion) (Yr 3) PLUS: one week on plants and one week on living things	Rocks and Soils (Yr 3) PLUS: one week on plants and one week on living things	Basic First Aid PLUS: one week on plants and one week on living things.	Living Things and their habitats (Yr 4) PLUS: one week on plants
CAMERON YEAR 5/ YEAR 6	Animals including humans (Year 6) Nutrition / Diet / exercise / lifestyle	Forces friction, air resistance, gravity.	Properties and changes of materials (part two)	Animals including humans - Circulatory System	Earth and Space	Evolution/Inheritance Animals including humans (Year 5 – reproduction)

SCIENCE OVERVIEW – ROTATION B:

	TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
RECEPTION	All about me: My body is made of a skeleton keeps me upright; muscles help me move. Skeleton is made of different bones	SEASONS AUTUMN plants CLOTHING WEATHER TOYS / ELECTRICITY MATERIALS	WINTER SEASONS - CLOTHES CHANGES OF STATE WEATHER	Mini-beast. Natural World/observations plants & animals	Growing plants Natural world/Life cycles/changing states of matter	Natural world/ seasons/contrasting environments
PALMER:			Yr 2 Living Things	s and their Habitats		
YEAR 1/ YEAR 2	Yr 1/2 –	Plants – Yr 1 – naming and	identifying flowers/plants	in ornamental beds; Yr 2 -	growing vegetables, fruit a	and salad.
	Plants (planning and	Uses of Everyday	Animals, including	Uses of Everyday	Animals including	Living things and their
	bulbs outside)	(Yr 2)	and keeping healthy)	(Yr 2)	(Yr 2)	(Yr 2)
MOODE	(Yr 2) include additional statement from Yr 1 Plants. PLUS: two weeks on Living Things and their habitats (Yr 2)	PLUS: one week on Living Things and their habitats (Yr 2)	(Yr 2) PLUS: two weeks on Living Things and their habitats (Yr 2)	PLUS: one week on Living Things and their habitats (Yr 2)	PLUS: two weeks on Living Things and their habitats (Yr 2)	Plants (harvesting and cooking) include additional statement from Yr 1 Plants (Yr 2)
MOORE: YEAR 3 / YEAR 4	Sound	Light	Animals including Humans – (Skeletons and Movement	Electricity	Animals and Humans – (Health and Nutrition)	States of Matter
CAMERON YEAR 5/ YEAR 6		Yr 6 Livin	g Things and their Habitats	- classification of plants a	ind animals	
	Properties and changes of materials (Year 5) Plus: time to carry out surveys for living things and their habitats.	Living things and their habitats (year 6) Classification of plants and animals	Electricity – creating gadgets Plus: time to carry out surveys for living things and their habitats.	Light Plus: time to carry out surveys for living things and their habitats.	Forces – Pulleys, Levers, Gears and Simple Machines Plus: time to carry out surveys for living things and their habitats and planting plants for bees and butterflies.	Living things and their habitats (Year 5) Life cycles Plus: time to carry out surveys for living things and their habitats.

KEY QUESTIONS TO START EACH SCIENCE TOPIC WITH ROTATION A

Year 1/2	<u>TERM 1:</u>						
	PLANTS (Yr 1) - Why do some trees lose their leaves in Autumn?						
	ANIMALS INCLUDING HUMANS (Yr 1) – Do all animals eat meat?						
	SEASONAL CHANGE (Yr 1) - How can you tell when it is summer in the UK?						
	EVERYDAY MATERIALS (Yr 1) – Is glass the best material for a football?						
	<u>TERM 2:</u>						
	(Continue with plants; animals including humans and seasonal change from above)						
	ANIMALS INCLUDING HUMANS – PARTS OF THE HUMAN BODY (Yr 1) – What can our bodies do?						
	<u>TERM 3:</u>						
	(Continue with plants; animals including humans and seasonal change from above)						
	EVERYDAY MATERIALS (Yr 1) – Is glass the best material for a football?						
	<u>TERM 4:</u>						
	(Continue with plants; animals including humans and seasonal change from above)						
	ANIMALS INCLUDING HUMANS – ANIMALS (Yr 1) – Do all animals eat meat?						
	<u>Term 5:</u>						
	(Continue with plants; animals including humans and seasonal change from above)						
	EVERYDAY MATERIALS (Yr 1) – Is glass the best material for a football?						
	<u>TERM 6:</u>						
	PLANTS (Yr 1) – Why do some trees lose their leaves in Autumn?						
	SEASONAL CHANGE (Yr 1) - How can you tell when it is summer in the UK?						
Yr 3/4	<u>TERM 1:</u>						
	LIVING THINGS AND THEIR HABITATS (Yr 4) – Why are some parts of the UK seeing more urban foxes?						
	PLANTS (Yr 3) – Can plants survive without soil?						
	<u>TERM 2:</u>						
	(continue with living things and their habitats and plants from above)						
	FORCES AND MAGNETS (Yr 3) – Are all metals attracted to magnets?						
	<u>TERM 3:</u>						
	(continue with living things and their habitats and plants from above)						
	ANIMALS INCLUDING HUMANS – TEETH AND DIGESTION (Yr 4) – Are tusks teeth?						
	<u>TERM 4:</u>						
	(continue with living things and their habitats and plants from above)						
	ROCKS AND SOIL (Yr 3) – How can scientists sort rocks?						
	<u>TERM 5:</u>						
	(continue with living things and their habitats and plants from above)						

	BASIC FIRST AID – Would you know what to do if?
	<u>TERM 6:</u>
	LIVING THINGS AND THEIR HABITATS (Yr 4) – Why are some parts of the UK seeing more urban foxes?
	PLANTS (Yr 3) - Can plants survive without soil?
Yr 5/6	<u>TERM 1:</u>
	ANIMALS INCLUDING HUMANS – NUTRITION, DIET, EXERCISE (Yr 6) – If I do 60 minutes of exercise everyday can I eat what I want?
	<u>TERM 2:</u>
	FORCES – FRICTION, AIR RESISTANCE, GRAVITY (Yr 5) – Will a large stone or a large ball of paper hit the ground first?
	TERM 3:
	PROPERTIES AND CHANGES OF MATERIALS (Yr 5) – What happens to sugar when it is added to hot water?
	<u>TERM 2:</u>
	<u>TERM 4:</u>
	ANIMALS INCLUDING HUMANS – CIRCULATORY SYSTEM (Yr 6) – Is the blood in your veins blue?
	<u>TERM 5:</u>
	EARTH AND SPACE (Yr 5) – Why do we have night and day?
	<u>TERM 6:</u>
	ANIMALS INCLUDING HUMANS – REPRODUCTION (Yr 5) – Why do people have children?
	EVOLUTION AND INHERITANCE (Yr 6) -

KEY QUESTIONS TO START EACH SCIENCE TOPIC WITH ROTATION B

KOTATION B	
Yr 1/2	<u>TERM 1:</u>
	LIVING THINGS AND THEIR HABITATS (Yr 2) – How do polar bears survive arctic conditions?
	PLANTS (Yr 1/2) – What do plants need to grow and stay healthy?
	PLANTS – PLANNING AND GROWING SEEDS AND BULBS OUTSIDE (Yr 2) - What do plants need to grow and stay healthy?
	<u>TERM 2:</u>
	(continue living things and their habitats; plants from above)
	USES OF EVERYDAY MATERIALS (Yr 2) – Can you squash bend and twist a solid object?
	<u>TERM 3:</u>
	(continue living things and their habitats; plants from above)
	ANIMALS INCLUDING HUMANS - BASIC NEEDS AND KEEPING HEALTHY (Yr 2) – Which foods make a healthy diet?
	<u>TERM 4:</u>
	(continue living things and their habitats; plants from above)
	USES OF EVERYDAY MATERIALS (Yr 2) - Can you squash bend and twist a solid object?

	<u>TERM 5:</u>
	(continue living things and their habitats; plants from above)
	ANIMALS INCLUDING HUMANS (OFFSPRING) (Yr 2) – Do all animals look like smaller versions of their parents?
	<u>TERM 6:</u>
	LIVING THINGS AND THEIR HABITATS (Yr 2) - How do polar bears survive arctic conditions?
	PLANTS – HARVESTING AND COOKING (Yr 2) – What do plants need to grow and stay healthy?
Yr 3/4	<u>TERM 1:</u>
	SOUND (Yr 4) – How do we hear?
	<u>TERM 2:</u>
	LIGHT (Yr 3) – Do all surfaces reflect light?
	<u>TERM 3:</u>
	ANIMALS INCLUDING HUMANS – SKELETONS AND MOVEMENT (Yr 3) – Do all animals have skeletons?
	<u>TERM 4:</u>
	ELECTRICITY (Yr 4) – Why won't the TV turn on?
	<u>TERM 5:</u>
	ANIMALS INCLUDING HUMANS – HEALTH AND NUTRITION (Yr 3) – How can we eat a balanced diet?
	<u>TERM 6:</u>
	STATES OF MATTER (Yr 4) – Where does the water in puddles go?
Yr 5/6	<u>TERM 1:</u>
	LIVING THINGS AND THEIR HABITATS – CLASSIFICATION OF PLANTS AND ANIMALS (Yr 6) – What are micro-organisms?
	PROPERTIES AND CHANGES OF MATERIALS – PART 2 (Yr 5) – Will lots of thin layers keep you warmer than one thick layer of clothing?
	<u>TERM 2:</u>
	LIVING THINGS AND THEIR HABITATS – CLASSIFICATION OF PLANTS AND ANIMALS (Yr 6) – What are micro-organisms?
	<u>TERM 3:</u>
	(continue with living things and their habitats from above)
	ELECTRICITY – CREATING GADGETS (Yr) – Will the buzzer make a sound?
	<u>TERM 4:</u>
	(continue with living things and their habitats from above)
	LIGHT (Yr 6) – Is it only shiny surfaces that reflect light?
	<u>TERM 5:</u>
	(continue with living things and their habitats from above)
	FORCES – PULLEYS, LEVERS AND SIMPLE MACHINES (Yr 5) – What are mechanisms?
	<u>TERM 6:</u>
	(continue with living things and their habitats from above)
	LIVING THINGS AND THEIR HABITATS – LIFE CYCLES (Yr 5) – What is an egg?

Progression throughout the school

BIOLOGY			CHEMISTRY	PHYSICS				
PLANTS	LIVING THINGS AND THEIR HABITATS (INCLUDING CLASSIFI- CATION)	ANIMALS INCLUDING HUMANS	EVOLUTION	MATERIALS	LIGHT / SEASONS / EARTH IN SPACE	SOUND	FORCES	ELECTRICITY
Scientists: KS1: Angie Burnett KS1: Joseph Banks (1743 – 1820) KS1: Barbara McClintock (1902 – 1992) LKS2: Jan Ingenhousz (1730-1799)	Scientists: KS1: Steve Backshall (1973 -) LKS2: Carl Linnaeus (1707-1778) UKS2: Jane Goodall (Wildlife Researcher & Conservationist who studied chimpanzees) UKS2: Beatrix Potter (Mycologist, study of fungi, and Scientific Illustrator)	Scientists: KS1: Florence Nightingale KS1: David Attenborough (1926) KS1: Amy Vedder (1951 -) KS1: Miller Hutchinson (invented first hearing aid) LKS2: William Beaumont (1785-1853) LKS2: Robert Wood Johnson (Inventor of first, First Aid Kit) LKS2: Marie Curie (1867-1934) LKS2: Adelle Davis (Biochemist & Nutritionist who linked health and diet UKS2: Professor Robert Winston (1940 -)	Scientists: UKS2: Charles Darwin (1809 – 1882)	Scientists: KS1: Leo Hendrik Baekeland (1863 - 1944) KS1: Martin Brock – Nanotechnology engineer and Xelflex inventor. KS1: Chester Greenwood (1858-1937) Inventor of Earmuffs KS1: John Boyd Dunlop (1840 – 1921) KS1: Charles Goodyear (1800 – 1860) KS1: Charles Macintosh (176 – 1843) LKS2: Florence Bascom (Geologist who studied the origin and formation of mountains) LKS2: Jamie Garcia https://bpes.bp.com /super-scientists-	Scientists: LKS2: Percy Shaw (inventor of the cats eye) UKS2: Jean-Bernard- Leon Foucault (1819- 1868)	Scientists: LKS2: James Edward Maceo West (b.1931)	Scientists: LKS2: William Gilbert (1544 – 1603) UKS2: Christopher Cockerell (1910- 1999)	Scientists: LKS2: Thomas Edison UKS2: Alessandro Volta (1745-1827)

				jamie-garcia- primary				
EY	Children should know about similarities and differences in relation to places, objects, materials and living things. 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	There is an enormous range of living things. Organisms are classified into groups at different levels based on similarities in observable characteristics. Differences between organisms are used to identify and name them as individual species. To know there are plants, animals and humans.	To know there are plants, animals and humans.	CHANGING MATERIALS: Materials can be changed – ice to water; water to ice; melting chocolate; making biscuits / cakes; MIXING AND SEPARATING MATERIALS: Materials can be mixed together	 Developing an understanding of change. Observe and explain why certain things may occur (e.g leaves falling off trees, weather changes). Look closely at similarities, differences, patterns and change. Comments and questions about the place they live or the natural world. 	To know there are different types of sounds – high, low, loud, soft.	To be able to push and pull objects. Investigating magnets.	To know something s need batteries to work and some things need to be plugged in.
YR 1	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. To be able to classify trees as deciduous and evergreen. To be able to identify and describe the basic structure of a variety of common plants including roots, stem/trunk, leaves and flowers.	Plants are grouped into common wild and garden plants, deciduous and evergreen trees. Animals are grouped into fish, amphibians, reptiles, birds, mammals Plants and animals can be grouped using observable features.	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,	DESCRIBING AND USING MATERIALS: There are different materials and they are used to make different objects Y1 Everyday materials Different materials, have different properties Y1 Everyday materials Materials can be sorted into groups according	 Name the seasons and know about the type of weather in each season May have some knowledge of were light comes from. Will most likely have seen their shadows and may know they appear when it is sunny. To be able to name the four seasons and know when they occur in the year. To be able to observe changes across the four 	We hear with our ears. (Y1 Animals, including humans)		

ĺ				reptiles, birds and	to their	seasons.			
				mammals,	observable	To be able to			
				including pets)	properties	observe and			
				Identify, name,	Y1 Everyday	describe the			
				draw and label	materials	weather			
				the basic parts of		associated with			
				the human body	To know how to	each season.			
				and say which	distinguish	To be able to			
				part of the body is	between an	describe how			
				associated with	object and the	the day length			
				each sense.	material from	varies with each			
				To know that	which it is made.	season.			
				animals, including	Identify and name				
				humans, have	a variety of	Temperature and			
				different body	evervdav	day length changes			
				parts and these	materials,	over the year – this			
				, have special	including wood,	pattern is referred			
				functions to help	plastic, glass,	to as the seasons			
				them survive	metal, water, and	(Y1 Seasonal			
				(including	rock	, change)			
				senses).	To be able to	5,			
				To know that	describe the	• Some			
				different animals	simple physical	understanding of a			
				need different	properties of a	reflection.			
				types of food.	variety of	May understand			
					everyday	they need light to			
					materials.	he able to see			
					Compare and	things			
					group together a	trings.			
					variety of				
					everyday	-We see with our			
					materials based				
					on their simple	(V1 Animals			
					nhysical	(11 Animus, including humans)			
					properties	including numuns)			
					properties.				
ł	YR 2	To observe and	To be able to explore	To know that				Pushing and /or	
ļ	111.2	know how seeds	and compare the	animals, including	USING			pulling can	
		and bulbs grow into	differences between	humans, have	MATERIALS:			make things	
		mature plants	things that are living.	offspring which	Different			start moving	
		To find out and	dead, and things	grow into adults.	materials are			stop, go faster	
		describe how plants	that have never been	To know and	suitable for			or slower	
		need water, light	alive.	describe the basic	different uses				
1			-			1	1		

	and suitable	To know that most	needs of animals,	(properties that		or change their	
	temperature to	living things live in	including humans,	can be observed)		shape	
	grow and stay	habitats to which	for survival	Y2 Uses of		Y2 Uses of	
	healthy	they are suited.	(water, food and	everyday		everyday	
		To be able to describe	air).	materials		materials	
		how different	Know and				
		habitats	describe the	CHANGING			
		provide for the basic	importance for	MATERIALS:			
		needs of different	humans of	Some solid			
		kinds of animals and	exercise, eating	materials can be			
		plants, and how they	the right amounts	changed by a			
		depend on each	of different types	contact force			
		other.	of food, and	acting on them			
		To be able to identify	hygiene.	V2 Uses of			
		a variety of plants and		everyday			
		animals in their		materials			
		habitats including		materials			
		microhabitats		Find out how the			
		To be able to describe		shapes of solid			
		how animals get their		shapes of solid			
		food from plants and		from some			
		other animals using a		motorials can be			
		simple food chain		changed by			
		To be able to identify		changed by			
		and name different		bonding twicting			
		sources of food		ond stratabing			
		sources of food.		Identify and			
				identity and			
				compare and			
				know the uses of			
				a variety of			
				everyday			
				materials,			
				including wood,			
				metal, plastic,			
				glass, brick/rock,			
				and			
				paper/cardboard			
YR 3	Identify, know and		To identify and	DESCRIBING AND	-There is a variety	To be able to	
	describe the		know that	USING	of sources of light,	compare	
	functions of		animals, including	MATERIALS:	including the Sun.	how things	
	different parts of		humans, need the	Different	-Recognise that	move on	
	flowering plants:		right types and	materials,	they need light in	different	
			amount of	including rocks,	order to see things	surfaces.	

	roots, stem/truck,	nutrition, and	have different	and that dark is	- To be able to
	leaves and flowers.	that they cannot	properties Y3	absence of light.	notice that
	To be able to	make their own	Rocks	- Notice that light is	some forces
	identify and	food; they get		reflected from	need contact
	describe the	nutrition from	MIXING AND	surfaces.	between 2
	function of the	what they eat.	SEPARATING	- Recognise that	objects, but
	stem.	Identify and know	MATERIALS:	light from the sun	magnetic forces
	To be able to	that humans and	Mixtures occur	can be dangerous	can act at a
	identify and	some animals	when materials	and that there are	distance.
	describe the	have skeletons	are mixed	ways to protect the	- To be able to
	function of the	and muscles for	together but	eyes.	observe how
	leaves.	support,	don't react to	- Recognise that	magnets attract
	Explore and know	protection and	each other.	shadows are	or repel each
	the requirements of	movement.	Soils are a	formed when light	other and
	plants for life and		mixture of rocks	from a light source	attract some
	growth (air, light,		and organic	is blocked by a solid	materials and
	water, nutrients		matter.	object.	not others.
	from soil, and room		(Y3 Rocks)	- Find patterns in	- To be able to
	to grow) and how		Fossils are formed	the way that the	compare a
	they vary from		when trapped	size of shadows	variety of
	plant to plant		within rock.	change.	everyday
	Investigate and		(Y3 Rocks)	- Light travels from	materials on the
	understand the way			a light source in a	basis of
	in which water is		Compare and	straight line.	whether they
	transported within		group together	-When light hits a	are attracted to
	plants		different kinds of	material, some of it	a magnet.
	Explore the part		rocks on the	is reflected off the	- To be able to
	that flowers play in		basis of their	material.	group together
	the life cycle of		appearance and	- Some materials let	a variety of
	flowering plants,		simple physical	light pass through	everyday
	including		properties.	them.	materials on the
	pollination, seed		Describe in simple	-Some materials	basis of
	formation and seed		terms how fossils	block the light and a	whether they
	dispersal.		are formed when	shadow is formed.	are attracted to
			things that have	-Some materials	a magnet.
			lived are trapped	reflect light better	- To be able to
			within rock.	than others.	identify some
			Recognise that	- The size of	magnetic
			soil are made	shadows change	materials.
			from rocks	according to the	- To be able to
			and organic	size and shape of	describe
			matter.	objects and	magnets as
					having 2 poles.

			distance from the	- To be able to	
			light source.	predict whether	
			- Sunlight can be	2 magnets will	
			dangerous.	attract or repel	
			- The Sun appears	each other,	
			to move across the	depending on	
			sky.	which poles are	
			- Shadows and	facing.	
			reflections are	-Pushing and	
			different.	/or pulling can	
				make things	
				start moving,	
				stop, go faster	
				or slower	
				and magnets or	
				change their	
				shape.	
				- Some forces	
				need contact	
				between two	
				objects (contact	
				forces).	
				- When one	
				object moves	
				over another	
				one there will	
				be a force	
				between them	
				that opposes	
				motion. This is	
				called friction.	
				- Some forces	
				act between	
				objects	
				although they	
				are not in	
				contact (non-	
				contact forces).	
				 Magnets can 	
				act at a	
				distance.	
				- Some	
				materials are	

					magnetic, some are not. - Magnets exert attractive and repulsive forces on each other.	
YR 4	To know that living things can be grouped in a variety of ways. To be able to use classification keys to help group, identify and name a variety of living things in their local and wider environment. To be able to recognise that environments can change. To be aware that changes can sometimes pose dangers to living things.	Describe the simple functions of the basic parts of the digestive system in humans. To know that food is broken down further in the stomach and intestine and absorbed into the blood stream with water. Identify the different types of teeth in humans and their simple functions. To know that animals and humans have teeth to help them eat. Construct and interpret a variety of food chains, identifying producers, predators and prey.	DESCRIBING AND USING MATERIALS: To know materials can be solids, liquids or gases. Compare and group materials together, according to whether they are solids, liquids or gases. Y4 States of Matter CHANGING MATERIALS: Some materials change state when heated or cooled. Heating causes melting and evaporation. Removing heat causes condensing and solidifying (freezing). Observe that some materials change state when they are heated or cooled, and measure the	 Sounds can be different. Sounds are made when something vibrates. Sound travels through a medium (solid, liquid or gas). Sound travels in all directions from a source. Sound travels in all directions from a source. Sounds get fainter the further they are from the source. The nature of sounds depends on how the vibrations are produced. The volume of a sound can be changed. The pitch of a sound can be changed. Some materials reflect sound; some absorb sound and act as sound insulators. 		To be able to identify common appliances that run on electricity. - To be able to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. - To be able to 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. - To be able to recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.

r					1	
			temperature at	- To be able to		- To be able to
			which this	identify how		recognise some
			happens in	sounds are		common
			degrees Celsius	made,		conductors.
			(°C), building on	associating		- To be able to
			their teaching in	some of them		recognise some
			mathematics.	with something		common
			Y4 States of	vibrating.		insulators.
			Matter	- To be able to		- To be able to
				recognise that		associate
			Identify the part	vibrations from		metals with being
			nlaved by	sounds travel		good conductors.
				through a		- Everyday
			evaporation and	medium to the		appliances
			condensation in	ear.		connected to
			the water cycle	- To be able to		mains electricity
			and associate	find patterns		must be used
			the rate of	between the		safely. Some
			evaporation	pitch of a sound		devices use
			with	and features of		batteries which
			temperature	the object that		can be handled
			VA States of	produced it.		carefully.
			Matter	- To be able to		- Electrical
			Watter	find patterns		appliances need a
				between the		source of
			SEPARATING	volume of a		electricity to
			MATERIALS	sound and the		work.
			Mixtures occur	strength of the		- A complete
			when materials	vibrations that		circuit is needed
			are mixed	produced it.		for an electric
			together but	- To be able to		current to flow.
			don't react to	recognise that		- A circuit is made
			each other.	sounds get		up of different
				fainter as the		components.
				distance from		- A switch opens
				the sound		and closes a
				source		circuit.
				increases.		- Some materials
						are better
						conductors than
						others.
						-

YR 5	To be able to describ	To describe the	DESCRIBING AND	-The Sun appears to	-To be able to	
	the differences in the	changes as	USING	move across the	explain that	
	life cycles of a	humans	MATERIALS:	sky.	unsupported	
	mammal, an	develop to old	Different	-The Earth, Sun and	objects fall	
	amphibian, an insect	age	properties make	Moon are	towards the	
	and a bird.		materials suitable	approximately	Earth because	
	To be able to describ		for different uses	spherical.	of the force of	
	the life process of		(properties that	- The Earth is one of	gravity acting	
	reproduction in some		can be measured)	eight planets that	between the	
	plants and animals.		Y5 Properties and	orbit the Sun.	Earth and the	
			changes of	- The Earth orbits	falling object.	
			materials	the Sun once every	- To be able to	
			Sorted into	year.	identify the	
			groups according	- The Earth rotates	effects of air	
			to properties	on its own axis once	resistance,	
			including	every 24 hours.	water	
			hardness,	- The Moon orbits	resistance and	
			solubility,	the Earth and looks	friction, that act	
			transparency,	different at	between	
			conductivity	different times of	moving	
			(electrical and	the month.	surfaces.	
			thermal) and	- The seasons	- To be able to	
			response to	change as the	recognise	
			magnets Y5	Earth's position	that some	
			Properties and	changes relative to	mechanisms	
			changes of	the Sun.	including levers,	
			materials	- It is due to the	pulleys and	
				rotation of the	gears allow a	
			CHANGING	earth that we	smaller force to	
			MATERIALS:	experience day and	have a greater	
			Some materials	night.	effect.	
			will dissolve in a			
			liquid.			
			(Y5 Properties and			
			changes of			
			materials)			
			Changes including			
			baking, burning			
			and the reaction			
			of certain			
			chemicals result			
			in new materials.			

(YS Properties and changes of materials) Dissolving, mixing and changes of state are reversible (YS Properties and changes of materials) Changes that result in new materials usually reversible. (YS Properties and changes of materials) MIKING AND SEPARATING MATERIALS: MIKING AND SEPARATING MATERIALS: MIKING SAND SEPARATING MATERIALS: MIKING SAND SEPARATING SEPARATING MATERIALS:
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compare and group together everyday materials on the basis of their
group together everyday materials on the basis of their
everyday materials on the basis of their
basis of their
basis of their
properties,
including their
hardness,
solubility,
transparency,
conductivity
(electrical and

				thermal), and				
				rosponso to				
				response to				
				magnets				
				Know that some				
				materials will				
				discolvo in liquid				
				to Form a				
				solution, and				
				describe now to				
				recover a				
				substance from a				
				substance nom a				
				solution				
				Lico knowlodge ef				1
				Use knowledge of				1
				solids, liquids and				
				gases to decide				
				gases to accide				
				how mixtures				
				might be				
				constant				
				separateu,				
				including through				
				filtering, sieving				
				and				
				anu				
				evaporating				
				Cive reasons				
				Give reasons,				
				based on				
				evidence from				
				comparative and				
				fair tests, for the				
				narticular uses of				
				everyday				1
				materials,				
				including metals				
								1
				wood and plastic				
				Demonstrate that				
				dissolving, mixing				
				and changes of				
				state are				
				state are				
				reversible				
				changes				
1		1	1	1	1	1		1

				Explain that some			
				changes result in			
				the formation of			
				now materials			
				and that this kind			
				of change is not			
				of change is not			
				usually reversible,			
				including changes			
				associated with			
				burning and the			
				action of acid on			
				bicarbonate of			
				soda.			
YR 6	To be able to describe	Identify and name	To be able to		 Recognise that 		-There are
	how living things are	the main parts of	recognise that		light appears to		recognised
	classified into broad	the human	living things have		travel in straight		symbols for
	groups according to	circulatory	changed over		lines.		circuits and their
	common observable	system, and	time.		 Use the idea that 		components.
	characteristics.	describe the	To be able to		light travels in		- An increase in
	To be able to describe	functions of the	recognise		straight lines to		voltage will cause
	how living things are	heart, blood	that fossils		explain that objects		an increase in
	classified into broad	vessels	provide		are seen because		current.
	groups based on	and blood.	information about		they give out or		- Some
	similarities and	To know that	living		reflect light into the		components can
	differences, including	oxygen is taken	things that		eve.		resist the current
	micro-organisms,	into the blood in	inhabited the		• Explain that we		more than others.
	plants and animals.	the lungs; the	Earth millions of		see things because		- When a battery
	To be able to give	blood is pumped	years ago.		light travels from		or cell is
	reasons for classifying	by the heart to	To be able to		light sources to our		connected in a
	plants and animals	take oxygen and	recognise		eves or from light		circuit, it provides
	based on specific	nutrients to the	that living things		sources to objects		a push (voltage)
	characteristics.	muscles	produce		and then to our		that causes
		Pocognico tho	offspring of the				electrons
		impact of dist	same kind.		• Use the idea that		(current) flow in a
		avereice druge	but normally		light travels in		circuit.
		exercise, urugs	offspring vary and		straight lines to		- For a fixed
		and mestyle on	are not identical		straight lines to		voltage an
		the way their	to their parents		cholows have the		increase in
		To be any that	To be able to		sinduows indve the		resistance will
		TO KNOW That	identify how		same snape as the		
		some	animals and		objects that cast		in current
		substances and	nlants are		them.		
		lifestyle choices	piants are		•Know how simple		
					optical instruments		associate the

	can have a	adapted to suit	work, e.g.		brightness of a
	negative impact	their	neriscone		lamn with the
	on health	environment in	telescone		number and
	Describe the ways	different ways	hinoculars mirror		voltage of cells
	in which nutrionts	To bo ablo to	magnifying glass		used in the
	and water are	recognise that	ote		circuit
	and water are		ell.		Ta ha ahla ta
	transported	adaptation may	-we see light from a		
	within animals,	lead to evolution.	source reflected off		associate the
	including numans.		an object into our		volume of a
			eyes.		buzzer with the
			- Shadows and		number and
			reflections are		voltage of cells
			different.		used in the
					circuit.
					- To be able to
					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.
					- To be able to
					use recognised
					symbols when
					representing a
					simple circuit in a
					diagram.

Reception Knowledge Overview Caterpillars to be ordered for Term 4.

Throughout Year CHANGES OF STATE COOKINGChildren use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. Children know about similarities and differences in relation to places, objects, materials and living things.Cocking – Using an ingredient list to explore different substances flour, sugar, salt, butter, oil, Changing substances by mixing and stirring and heating.Children follow an ingredients list from a recipe and identify the characteristics of the different materials. Measuring the different quantities using scales/measuring jug/counting.DTThroughout Year FORCESChildren recognise that a range of technology is used in places such as homes and schools. They select and use technology for particularWhat will the magnet stick / attact? Other magnets are spellingChildren investigate different materials the magnet store what and why. Try moving objects with the magnet by going from underneath.Children investigate amagnet away from a magnet.DT	Date	Objectives	Ideas for discussion	Possible Practical Activities	Cross Curricular Ideas
CHANGES OF STATE COOKINGtalk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns.explore different substances flour, sugar, salt, butter, oil,the characteristics of the different materials. Measuring the different quantities using scales/measuring jug/counting.Children know about similarities and differences in relation to places, objects, materials and living things.Moking porridge?Mixing and stirring ingredients, describing the process. Make porridge?Throughout Year FORCESChildren recognise that a range of technology is used in places such as homes and schools. They select and use technology for particularWhat will the magnet stick / attach too? What will it attract?Children investigate different materials the magnets will attach to. Then consider what and why.Throughout Year FORCESChildren recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.What will the magnet stick / attach too? tother magnets with the magnet by going from underneath.Throughout Year FORCESChildren recognise that a range of technology is used in places such as homes and schools. They select and use technology for particularWhat will it attract? tother magnets - repelling Uther magnets - repellingThroughout Year FORCESVocab – Why? Attract, repel , force, push , Try pushing a magnet away from a magnet.Try moving objects with the magnet way from a magnet.	Throughout Year	Children use everyday language to	Cooking – Using an ingredient list to	Children follow an ingredients list from a recipe and identify	DT
COOKINGposition, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. Children know about similarities things.salt, butter, oil, Changing substances by mixing and stirring and heating. Making porridge? Wocab – grams, litres, ml, kg, ingredients, method, mixing, stirring, heating, cooking places, objects, materials and living things.Measuring the different quantities using scales/measuring jug/counting. Mixing and stirring ingredients. Describing the process. Heating and cooking ingredients, describing the process. Make porridge, chocolate crispies, sponge cake, biscuits.Throughout Year FORCESChildren recognise that a range of technology is used in places such as homes and schools. They select and use technology for particularWhat will the magnet stick / attach too? What will t attract? What will it attract? What will it attract, repelling What will it attract, repellingChildren investigate different materials the magnets will attach to. Then consider what and why. Try moving objects with the magnet by going from underneath.	CHANGES OF STATE	talk about size, weight, capacity,	explore different substances flour, sugar,	the characteristics of the different materials.	
to compare quantities and objects and to solve problems. They recognise, create and describe patterns.Changing substances by mixing and stirring and heating.jug/counting.Making porridge?Making porridge?Making porridge?Make porridge, chocolate crispies, sponge cake, biscuits.Children know about similarities and differences in relation to places, objects, materials and living things.Vocab – grams, litres, ml, kg, ingredients, method, mixing, stirring, heating, cookingMake porridge, chocolate crispies, sponge cake, biscuits.Throughout Year FORCESChildren recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.What will the magnet stick / attach too? What will it attract?Children investigate different materials the magnets will attach to. Then consider what and why.Try moving objects with the magnet stop of particular purposes.Otab – Why? Attract, repel , force, push , Try pushing a magnet away from a magnet.Try pushing a magnet away from a magnet.	COOKING	position, distance, time and money	salt, butter, oil,	Measuring the different quantities using scales/measuring	
and to solve problems. They recognise, create and describe patterns. Children know about similarities and differences in relation to places, objects, materials and living things.and heating. Making porridge?Mixing and stirring ingredients. Describing the process. Heating and cooking ingredients, describing the process. Make porridge, chocolate crispies, sponge cake, biscuits.Throughout Year FORCESChildren recognise that a range of technology is used in places such as homes and schools. They select and use technology for particularWhat will the magnet stick / attach too? What will it attract?Children investigate different materials the magnets will attach to. Then consider what and why.Throughout Year FORCESChildren recognise that a range of use technology for particularWhat will the magnet stick / attach too? Uter magnets – repellingChildren investigate different materials the magnet swill attach to. Then consider what and why.Try moving objects with the magnet by going from use technology for particular purposes.Vocab – Why? Attract, repel , force, push , Try pushing a magnet away from a magnet.Try pushing a magnet away from a magnet.		to compare quantities and objects	Changing substances by mixing and stirring	jug/counting.	
recognise, create and describe patterns.Making porridge?Heating and cooking ingredients, describing the process.Children know about similarities and differences in relation to places, objects, materials and living things.Vocab – grams, litres, ml, kg, ingredients, method, mixing, stirring, heating, cookingHeating and cooking ingredients, describing the process.Throughout Year FORCESChildren recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.What will the magnet stick / attact too? What will it attract?Children investigate different materials the magnets will attach to. Then consider what and why.Try moving objects with the magnet by going from underneath.Other magnets – repelling Underneath.Try moving objects with the magnet by going from underneath.		and to solve problems. They	and heating.	Mixing and stirring ingredients. Describing the process.	
patterns. Children know about similarities and differences in relation to places, objects, materials and living things.Vocab – grams, litres, ml, kg, ingredients, method, mixing, stirring, heating, cookingMake porridge, chocolate crispies, sponge cake, biscuits.Throughout Year FORCESChildren recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.What will the magnet stick / attach too? What will it attract?Children investigate different materials the magnets will attach to. Then consider what and why.Try moving objects with the magnet specific magnets – repelling underneath.Try moving objects with the magnet by going from underneath.		recognise, create and describe	Making porridge?	Heating and cooking ingredients, describing the process.	
Children know about similarities and differences in relation to places, objects, materials and living things.Vocab – grams, litres, ml, kg, ingredients, method, mixing, stirring, heating, cookingImage: Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.What will the magnet stick / attach too?Children investigate different materials the magnets will attach to. Then consider what and why.Throughout Year FORCESChildren recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.What will it attract?Children investigate different materials the magnets will attach to. Then consider what and why.Try moving objects with the magnet by going from underneath.Other magnets – repellingTry moving objects with the magnet by going from underneath.Purposes.Vocab – Why? Attract, repel, force, push,Try pushing a magnet away from a magnet.Try pushing a magnet away from a magnet.		patterns.		Make porridge, chocolate crispies, sponge cake, biscuits.	
and differences in relation to places, objects, materials and living things.method, mixing, stirring, heating, cookingMethod, mixing, stirring, heating, cookingThroughout Year FORCESChildren recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.What will the magnet stick / attach too? What will it attract?Children investigate different materials the magnets will attach to. Then consider what and why.Try moving objects with the magnet by going from underneath.Other magnets – repellingTry moving objects with the magnet by going from underneath.Try pushing a magnet away from a magnet.Vocab – Why? Attract, repel, force, push,Try pushing a magnet away from a magnet.		Children know about similarities	Vocab – grams, litres, ml, kg, ingredients,		
places, objects, materials and living things.places, objects, materials and living things.		and differences in relation to	method, mixing, stirring, heating, cooking		
things.things.Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.What will the magnet stick / attach too? What will it attract?Children investigate different materials the magnets will attach to. Then consider what and why.Try moving objects with the magnet by going from underneath.Other magnets – repelling underneath.Try moving objects with the magnet by going from underneath.		places, objects, materials and living			
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FORCEStechnology is used in places such as homes and schools. They select and use technology for particular purposes.What will it attract?attach to. Then consider what and why.Try moving objects with the magnet by going from underneath.Try moving objects with the magnet by going from underneath.	Throughout Year	Children recognise that a range of	What will the magnet stick / attach too?	Children investigate different materials the magnets will	
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use technology for particular underneath. purposes. Vocab – Why? Attract, repel, force, push, Try pushing a magnet away from a magnet.		homes and schools. They select and	Other magnets – repelling	Try moving objects with the magnet by going from	
purposes. Vocab – Why? Attract, repel, force, push, Try pushing a magnet away from a magnet.		use technology for particular		underneath.	
		purposes.	Vocab – Why? Attract, repel , force, push ,	Try pushing a magnet away from a magnet.	
pull, wood, metal, paper, fabric.			pull, wood, metal, paper, fabric.		
September /October They know about similarities and What body parts have we got? What are Nurse/Doctor visit PE	September /October	They know about similarities and	What body parts have we got? What are	Nurse/Doctor visit	PE
OURSELVES differences between themselves they used for? Using a stethoscope to listen for the heartbeat. Maths graphing	OURSELVES	differences between themselves	they used for?	Using a <mark>stethoscope</mark> to listen for the heartbeat.	Maths graphing
and others, and among families, Looking at hair and eye colour, what Counting the breaths taken by an individual, watching the		and others, and among families,	Looking at hair and eye colour, what	Counting the breaths taken by an individual, watching the	
communities and traditions. variety and what in common? chest rise and fall. Nurse/Doctor Visit		communities and traditions.	variety and what in common?	chest rise and fall.	Nurse/Doctor Visit
They make observations of animals Ourselves project? Good for the start of Listening to tummy rumbles!		They make observations of animals	Ourselves project? Good for the start of	Listening to tummy rumbles!	
and plants and explain why some term? Labelling full body diagrams with locations and names of body		and plants and explain why some	term?	Labelling full body diagrams with locations and names of body	
things occur, and talk about parts.		things occur, and talk about		parts.	
changes. Vocab – limbs, arms, legs, hands, feet, Hair and eye colour survey with chart colouring options.		changes.	Vocab – limbs, arms, legs, hands, feet,	Hair and eye colour survey with chart colouring options.	
elbows, ankles, shoulders, etc Exploring the range of movement in different joints. Exploring			elbows, ankles, shoulders, etc	Exploring the range of movement in different joints. Exploring	
Joints, flex, extend, straighten, bend, pulse, whether movement is possible with certain features disabled?			Joints, flex, extend, straighten, bend, pulse,	whether movement is possible with certain features disabled?	
breathing rate, inhale, exhale (Can you get off the floor without using your hands?)			breathing rate, inhale, exhale	(Can you get off the floor without using your hands?)	
September They make observations of animals Looking at fruits and seeds. Comparing the Tasting fruits. Drawing and naming variety of fruit.	September	They make observations of animals	Looking at fruits and seeds. Comparing the	Tasting fruits. Drawing and naming variety of fruit.	
Fruit and seeds and plants and explain why some structure and colour and taste and smell of Slicing soft fruit.	Fruit and seeds	and plants and explain why some	structure and colour and taste and smell of	Slicing soft fruit.	
things occur, and talk about different fruits and their seeds. Making graphs of favourite fruits.		things occur, and talk about	different fruits and their seeds.	Making graphs of favourite fruits.	
changes. Identifying seed within fruits.		changes.		Identifying seed within fruits.	
Children use everyday language to .		Children use everyday language to			
talk about size, describe patterns		talk about size, describe patterns			
Vocab – seed, fruit, flesh, skin, sweet, juicy,			Vocab – seed, fruit, flesh, skin, sweet, juicy,		
slice, cut,			slice, cut,		
September /October Children recognise that a range of Ears for hearing Plaving with instruments in the classroom, experimenting with Relate to classroom	September /October	Children recognise that a range of	Fars for hearing	Playing with instruments in the classroom, experimenting with	Relate to classroom
SOUND and HEARING technology is used in places such as Making high and low sounds. Making loud making different noises.	SOUND and HEARING	technology is used in places such as	Making high and low sounds. Making loud	making different noises.	expectations for noise?
homes and schools. They select and and soft sounds.		homes and schools. They select and	and soft sounds.	Blowing over bottles to make noises.	

	use technology for particular purposes.	Sound insulation. Vocab – sound, noise, note, loud, quiet, soft, gentle, high, low, pitch, block	Exploring different ear muffs to see which best block out sound.	
October SEASONS AUTUMN plants	They make observations of animals and plants and explain why some things occur, and talk about changes. children use everyday language to talk about size, describe patterns	Pumpkin – Halloween. Making pumpkin Soup What are the different parts of a plant called? What variety of plants exist? Investigate different plants in school grounds or in gardeners world. What does a plant need to grow? Can you help a plant to grow? Comparing leaves. Waxy tough leaves better for surviving in cold and wet winter. Softer broad leaves take advantage of all the sun's rays. Leaf collages. Comparing leaves at different times of year. Vocab - Sunlight, water, air, roots, stem, leaves, branches, trunk, Broadleaves vs conifers, Holly and Ivy, Spring, Summer, Autumn, Winter	Label a full size painting/press of a plant. Handle plants pulled out of the ground collecting good describing words for the different parts. Compare different plants in the school grounds, shape and colour of leaves, size of tree/plant, presence of flowers. Scavenger hunts for different characteristics. Leaf pressing and leaf rubbing. Leaf prints. Pressed leaves from different ends of the Autumn term.	Art
November SEASONS COLOUR and LIGHT	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Bonfire Night Colour displays, what things are what colours. Light sources. Sun, candles, bulbs. Mixing paint. Looking through coloured cellophane. Vocab – light, colour, primary colours, secondary colours, reflect	Paint mixing Exploring candles, bulbs and torches. Looking through coloured shpaes/blocks.	Fireworks
November SEASONS CLOTHING WEATHER	Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another.	Clothing – clothes to match weather and environment and jobs. The Environment recognising the change in the seasons. Choosing clothes for different weather conditions.	Talk to teachers about playground duty and what to wear. Recognising the change in weather through the autumn. Dressing toys for different weather days. Thinking about suitable protective clothing to wear for exploring different parts of the local environment.	Percy the Park Keeper

	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Vocab - Water proof, high visibility, insulating/permeable, absorbent, camouflage. Protective kit, steel toe caps, hard hats, bike helmets, warm, cool, ventilation, insulation,		
December TOYS / ELECTRICITY BeeBot	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Danger of electricity. Sorting electric appliances by the room they are used in and by their output, heat, sound, light or movement. Think about battery and mains power, advantages and disadvantages of both. Switches. Christmas lights Vocab – on and off, heat, sound, light, movement,	Investigating battery toys. Finding and using switches.	DT
December SEASONS MATERIALS	Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another.	Wood paper fabric metal. Sorting household objects and toys into their different material groups. Vocab – man made, artificial, natural, hard, soft, transparent, translucent, water proof, absorbent, permeable, impermeable, wood, paper, fabric, metal	Sorting hoops for different toys by material Collages with a variety of different materials. Language for describing and naming different materials.	Christmas Decorations
December TOYS MATERIALS LIGHT	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Comparing dull and shiny objects. Vocab – dark, light, shiny, dull, reflective,	Choosing paper for collages, Exploring mirrors Using a feely bag to explore objects without light.	Art
January WINTER SEASONS - CLOTHES CHANGES OF STATE	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. Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems.	Rain – measuring rainfall, testing waterproof clothes, cloud spotting. (Introduce cumulus, cumulonimbus, nimbus, stratus, cirrus) Rainbows. Snow and Hail Playdoh (Made each half term) Cooking – throughout the year Vocab - waterproof, water resistant, rainbows	Test a variety of waterproof fabrics to see which is best at keeping dry. Creating rainbows with water spray and with prisms. Bubble play? Playing with frozen water. Melting ice.	

February SEASONS WEATHER	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. Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems.	Wind and Clothes continued. Vocab – force, rotation, Beaufort scale, insulation	Testing warmth of clothes in cool wind, comparing school jumper, blazer, waterproof against the wind. Playing with the parachute	Geography
MARCH FARMING – Continuous Provision Ourselves	Children know about similarities and differences in relation to places, objects, materials and living things. 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.	Farm animals. What do they produce? What do they consume? Where do they live? (Cows, Sheep, Pigs, Horses?) How do humans change over time? Measuring children through school. Vocab - Cows, Sheep, Pigs, Horses, farm, stable, stall, barn, pen, grass, straw, 'nuts', baby, child, teenager, adult, elderly, tape measure, metres, centimetres.	Use farm animals to look at growth, from calves, lambs, piglets, foals to cows, sheep, pigs, horses. Measuring children through school to recognise their growth.	Geography
MATERIALS – Continuous provision	Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another.	Sand and mud. Sand and mud kitchen, mixing and sticking. How much water is needed? Clay modelling Vocab – liquid, solid, grains, particles, rocks, sticky, smooth, rough, drying,	Children to investigate building with dry sand and wet sand, dry mud and wet mud. Introducing language for these activities. Exploring how strong mud buildings can be? Can they be washed away? Making models from clay and exploring the effects of extra water and baking.	
May MINIBEAST Caterpillars to be ordered for Term 4.	Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations	What sort of minibeast do you know? How many legs? Minibeasts – life cycles Vocab - mammal, bird, reptile, fish, insect, swim, walk, crawl, fly, climb, glide, carnivores, herbivores, ominvores, jungle, desert, savannah	Counting legs on animals, relating this to how they move, from snail and slug slime up to centipede and millipede crawl. Life-cycles – Butterfly breeding kit.	Geography

	of animals and plants and explain			
	why some things occur, and talk			
	about changes.			
May SPRING Plants	They make observations of animals and plants and explain why some things occur, and talk about changes. Children use everyday language to talk about size, describe patterns	 What are the different parts of a plant called? What variety of plants exist? Investigate different plants in school ground. What does a plant need to grow? Can you help a plant to grow? Comparing leaves at different times of year. Vocab - Sunlight, water, air, roots, stem, leaves, branches, trunk, Broadleaves vs conifers, Holly and Ivy, Spring, Summer, Autumn, Winter 	Label a full size painting/press of a plant. Handle plants pulled out of the ground collecting good describing words for the different parts. Compare different plants in the school grounds, shape and colour of leaves, size of tree/plant, presence of flowers leaf rubbing. Leaf prints. Pressed leaves from different ends of the Autumn term. Planting sunflowers or spring flowers and beans.(end of term).	The Tiny Seed
June Growing	They make observations of animals and plants and explain why some things occur, and talk about changes. Children use everyday language to talk about size, describe patterns	Looking at fruits and seeds. Comparing the structure and colour and taste and smell of different fruits and their seeds. Vocab – seed, fruit, flesh, skin, sweet, juicy, slice, cut,	Tasting fruits and berries. Drawing and naming variety of fruit. Slicing soft fruit. Making graphs of favourite fruits.	Farm Visit – Strawberry Picking (July)
June FORCES	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Pushes and pulls. Playing with push and pull toys. Pushing and pulling a rope and a stick. Floating and sinking Vocab – push, pull, bend, straighten, cause, effect, friction, air resistant, streamlined,	Modelling with Pipe cleaners Playing with stick puppets Reading pop-up books Language for changing clothes. Playing with air resistant toys and the parachute. Playing with wheeled toy vehicles and non-wheeled toy vehicles. Playing with toy boats and cars.	Reading The Enormous Turnip
June SEASONS WEATHER	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. Children use everyday language to talk about size, weight, capacity, position, distance, time and money	Sun –solar powered calculators. Sun protection. Vocab – sun rays, light, heat, insulation, evaporation, drying, crystals,	Spotting solar panels on roofs.	PSHE Sun Safety

	to compare quantities and objects and to solve problems.			
July (but maybe for Mother's Day) MATERIALS – Continuous provision	Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another.	Clay modelling Vocab – sticky, smooth, rough, drying,	Introducing language for these activities. Making models from clay and exploring the effects of extra water and baking.	

KS1 (Years 1/2) Knowledge Overview – Rotation A

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Assessment			
							Focus			
Term 1 Everyday Materials KEY SCIENTIST: Charles Macintosh (176 – 1843)	To be able to distinguish between an object and the material from which it is made. Introduce key scientist	To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.	To describe the simple physical properties of a variety of everyday materials – using observation.	To compare and group together a variety of everyday materials on the basis of whether they are a natural material ie: found outside; or man-made.	To compare and group together a variety of everyday materials on the basis of their physical properties – using senses of touch and sight.	To compare and group together a variety of everyday materials on the basis of their physical properties - Creating a sorting key with 2 branches – Yes / No	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, 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 physical properties.			
Term 1:	Plants: Depending on the	weather and stages of tre	e development – use prin	nary and secondary source	es to investigate and ic	lentify some of the common tree	Photos.			
Plants Seasonal Change	types and properties of th through the year. Plant: daffodils, crocus, all Seasonal Change: What d	types and properties of them: Eg: oak tree – acorn; Horse chestnut tree – conker; Sycamore – sycamore wings etc. Identify 4 different trees to focus on through the year. Plant: daffodils, crocus, alliums								
	Measure and observe wea	ther – temperature, wind	speed and direction, type	es of clouds, rain, pond w	vater temperature, how	much daylight each week?	Record of plants planted			

Term 2 Animals, including Humans (Yr 1) KEY SCIENTIST: Miller Hutchinson (invented first hearing aid) (ORDER stick insect breeding kit for term 4 – see link below)	Review previous learning: What do you know about your body? Introduce key scientist. Hook Activity - The aliens have landed!	To identify, name draw and label the basic parts of the human body. Identifying – What are the names of the different parts of our bodies?	To identify, name draw and label the basic parts of the human body. Identifying – What are the names of the different parts of our bodies?	To know which part of the body is associated with each sense. Recording: Children could draw the human body and label where the senses can be found.	Simple test – What can our different senses do? Carousel of senses activities.	Research – How good are the senses of other animals?	Animals including Humans: Identify, name draw and label the basic parts of the human body etc To know which part of the body is associated with each sense.		
Term 2: Plants Seasonal Change	Plants: Depending on the weather and stages of tree development – use primary and secondary sources to investigate and identify some of the common tree types and properties of them: Eg: oak tree – acorn; Horse chestnut tree – conker; Sycamore – sycamore wings etc. Return to 4 key trees and see the difference from last term. Plant: tulips Seasonal Change: What do we mean by seasons and weather? Establish a timeline. How can we observe and measure the weather – set up a weather station? Measure and observe weather – temperature, wind speed and direction, types of clouds, rain, pond water temperature, how much daylight each week?								
Term 3 Everyday Materials KEY SCIENTIST: Martin Brock – Nanotechnology engineer and Xelflex inventor.	Review learning from term 1 How can different materials be grouped? Indoor and outdoor materials? Review key vocabulary – smooth, rough, transparent, solid, liquid etc. Introduce Key scientist	What happens to materials when they are heated and cooled? – Predicting what will happen when chocolate, wax, butter, sugar cube, ice cube are melted – then observing melting	How can we change food materials in the kitchen? – Making ice- cream. Observations of changes that have taken place.	To ask simple questions and recognise that they can be answered in different ways. Generating questions – Investigating different types of paper. Look at the different types of paper to come up with questions about the properties of paper.	Comparing similar materials – Simple test: How well do different kitchen paper towels absorb water?	<section-header><section-header><section-header><section-header><section-header><list-item><list-item><list-item><section-header></section-header></list-item></list-item></list-item></section-header></section-header></section-header></section-header></section-header>	Scientific Enquiry: To be able to ask simple questions. To be able to identify and classify. To be able to perform simple tests.		
Term 3: Plants Seasonal Change	Plants: Depending on the types and properties of th from last term. Plant: No flowers to plant Seasonal Change: What do Measure and observe wea	weather and stages of tre em: Eg: oak tree – acorn; - too cold o we mean by seasons and other – temperature, wind	e development – use prin Horse chestnut tree – cor d weather? Establish a tir l speed and direction, type	nary and secondary sourd iker; Sycamore - sycamo neline. How can we obse es of clouds, rain, pond w	es to investigate and in re wings etc. Return to rve and measure the w rater temperature, hov	dentify some of the common tree o 4 key trees and see the difference yeather – set up a weather station? y much daylight each week?	Photos. Large floor book – for post-it notes and recording whole class recordings Record of plants planted		

Term 4: Animals – Including humans (Animals) Key Scientist: Amy Vedder (1951 -)	Review previous learning: To record data in a table. Game – Alien table Set up ladybird breeding	To identify and name a variety of common animals that are birds, fish, amphibians, reptiles and mammals. Naming and identifying animals	To describe and compare the structure of a variety of common animals. -Pond dipping	Naming and identifying - Describing the structures of common animals and pets. -Classifying animals	Naming and classifying – Which animals are herbivores, carnivores and omnivores?	Identifying and naming - Describing the structures of pets				
Term4: Plants Seasonal Change	Plants: Depending on the weather and stages of tree development – use primary and secondary sources to investigate and identify some of the common tree P types and properties of them: Eg: oak tree – acorn; Horse chestnut tree – conker; Sycamore – sycamore wings etc. Return to 4 key trees and see the difference P from last term. P Plant: Wildflower seed mixtures; sunflowers, poppies Seasonal Change: What do we mean by seasons and weather? Establish a timeline. How can we observe and measure the weather – set up a weather station? r Measure and observe weather – temperature, wind speed and direction, types of clouds, rain, pond water temperature, how much daylight each week? r									
Term 5: Everyday Materials (Year 1) Key Scientist: Chester Greenwood (1858-1937) (Inventor of Earmuffs)	Review learning from term 1 and 2 How can different materials be grouped? Indoor and outdoor materials? How can materials be changed? Do all materials have the same properties? Review key vocabulary – smooth, rough, transparent, solid, liquid etc. Introduce Key scientist	Record simple data in order to answer a question: Problem-solve/simple test – Which fabric will be best for a jacket for a child? Testing materials to see how waterproof they are.	Problem-solve/simple test – Which fabric will be best for a jacket for a child? Testing materials to see how strong they are. Conclusion of best material.	To record simple data in order to answer a question. Simple test – Which materials make the best crash mat for Humpty Dumpty?	Testing materials for Humpty Dumpty's crash mat.	Assessment: Enquiry Challenge: 1. The Challenge: It is summer time and 1 an often woken by the indigit that comes through my window serving the morning is there something that you could of our that would help no? Kent Scheme – Assessment Yr 1 – Enquiry Challenge Everyday Uses of Materials				
Term 5: Plants Seasonal Change	Plants: Depending on the weather and stages of tree development – use primary and secondary sources to investigate and identify some of the common tree types and properties of them: Eg: oak tree – acorn; Horse chestnut tree – conker; Sycamore – sycamore wings etc. Return to 4 key trees and see the difference from last term. Plants: Nigella seeds; Nasturtiums Seasonal Change: What do we mean by seasons and weather? Establish a timeline. How can we observe and measure the weather – set up a weather station? Massure and observe weather – tomperature wind speed and direction types of cloude, rain, pend water tomperature, how much dovisite each weather?									
Term 6 Plants - Trees Seasonal Change - review	Identify and describe the basic structure of a variety of common flowering plants. including trees.	To identify and describe roots. Observing – How many different roots can be found? Can we	To identify and describe trunks. Observation - How are the trunks of trees	To identify and describe trunks. Measuring – How tall are the trees?	To describe and identify trees by looking observing their leaves.	Reviewing photographs of the plants and trees throughout the year. Look at how bulbs and seeds have grown into flowers.	PLANTS: To identify and describe the basic structure of a variety of common			

KEY SCIENTIST:	As a class gather	describe what they	similar and different	Measuring - How far	Deciduous and	Reconsider which month they	plants including		
Joseph Banks	children' questions	look like close-up?	from each other?	is it around the trunk	evergreen - focus	didn't plant in.	roots, stem/trunk,		
(1743 – 1820)	about what they want to		-Bark rubbings	of the tress?	on evergreen		leaves and flowers.		
	know about plants in the		- Casts of bark		trees - leaf	Look through and add to big	To identify and		
	local habitats.				rubbings	floor books on plants and	names some		
	See if they can name					seasonal change. Review the	plants.		
	any.					differences and changes that			
	Begin to review some of					have taken place.			
	the differences they								
	have spotted through								
	out the year.								
Term 6:	Plants: Depending on the	weather and stages of tre	e development – use prin	nary and secondary source	ces to investigate and id	dentify some of the common tree			
Plants	types and properties of th	em: Eg: oak tree – acorn;	Horse chestnut tree – cor	nker; Sycamore - sycamo	re wings etc. Return to	4 key trees and see the difference			
Seasonal Change	from last term.								
0	Plant: forget me not seeds.								
	Seasonal Change: What do we mean by seasons and weather? Establish a timeline. How can we observe and measure the weather – set up a weather station?								
	Measure and observe wea	ither – temperature, wind	speed and direction, typ	es of clouds, rain, pond w	ater temperature, how	v much daylight each week?			

LKS2 (Years 3/4) Knowledge Overview – Rotation A

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Assessment
							Focus
Term 1	Review previous learning	To be able to	To be able to identify	To be able to identify	To be able to identify	To be able to identify	
Plants (Yr 3)	about plants – what do	investigate the ways in	and describe the	and describe the	and describe the	and describe the	
	you know already?	which water is	function of the stem.	function of the leaves.	function of the	function of the flower.	
Kev Scientist:	To be able to identify and	transported within	Observation - What	Investigation over time	flower.	Observation – Can you	
Jan Ingenhousz	describe the function of	plants.	does the stem do?	 What happens to 	Observation – What	work out by looking at	
(1730-1799)	the roots.	Simple test – What	What does the stem	plants that have no	do the parts in a	the seed how it will be	
(1,00 1,)))	Observation – What do	happens to the leaves	look like? How strong	light? Review plant	flower do?	dispersed?	
	the roots of plants look	of plants when their	are different stems?	investigation set up in	Observation – How	Survey - What type of	
	like close up?	roots are placed in dye?	Observation – Can we	wk 1	can we prove that	seeds and fruits can be	
	Simple test/modelling –		find different ways by	To be able to explore	the flower is linked	found?	
	How does the number of		which plants use their	the requirements of	to the plant making		
	roots affect the amount of		stems to cling to other	plants for life and	more plants?		
	water that is absorbed?		plants?	growth (air, light,			
				water, nutrients from			
				soil).			

	(Set up investigation for		Simple test - How can	Review plant			
	plants in different		we prove that stems	investigation set up in			
	locations relating to light		transport water?	wk 1			
	and Investigation over						
	time – What affect do						
	nutrients have on the						
	naments have on the						
Town 1.	Plants: Observation and me	Lagurament How much ligh	L doos a trop capturo at dif	forant times in the year?	Observation over time	When do plants grow	
1 erm 1;	their flowers? identify the	asurement - How much light	f the year keep a diary an	age for each species of tre	o They can stick specim	ons (after being proceed	
Plants (Yr 3)	for a couple of weeks) in the	plants at particular times o	i the year; keep a diary; a p	age for each species of the	e. They can slick specific	ens (alter being pressed	
	Tor a couple of weeks) in the	Class diary/1100r book. For	each specimen they can sh	low now nowers are arran	ged on the stark, their co	nours, snapes.	
	Investigation over time – Ho	bw do the nowers change of	ver time?				
Living Things	Living I nings and their habi	tats: Recognise that living t	inings can be grouped in a v	ariety of ways			
and Their	Explore and use classificatio	n keys to help group, ident	ity and name a variety of liv	ing things in their local an	a wider environment		
Habitats (Yr 4)	Recognise that environment	ts can change and that this	can sometimes pose dange	rs to living things.			
Term 2	Review any previous	To be able to compare	To be able to compare	To be able to notice	To be able to notice	To be able to predict	
Forces and	knowledge and learning	and group together a	and group together a	that some forces need	that some forces	whether two magnets	
Magnets	about forces.	variety of everyday	variety of everyday	contact between two	need contact	will attract or repel	
E .	Illustrative fair test – How	materials on the basis	materials on the basis	objects, but magnetic	between two	each other, depending	
Key Scientist:	does the type of surface	of whether they are	of whether they are	forces can act at a	objects, but	on which poles are	
William Gilbert	on the table affect the	attracted to a magnet,	attracted to a magnet,	distance.	magnetic forces can	facing.	
(1544 - 1603)	speed of the tub travelling	and identify some	and identify some	Comparative test -	act at a distance.	Exploring – Attracting	
(1011 1000)	on it?	magnetic materials.	magnetic materials.	Which magnet is the	Problem-solving –	and repelling	
		Recognising how	Comparative test –	strongest?	making a compass		
		science affects our lives	Which materials can	U U			
		- What are magnets	magnets attract				
		used for?	through?				
		Classification – Which	Problem-solving – Make				
		materials are attracted	a fridge magnet				
		to magnets?					
Term 2:	Plants: Observation and me	asurement - How much ligh	nt does a tree capture at dif	ferent times in the year?	Observation over time –	When do plants grow	
Plants	their flowers? - identify the	plants at particular times of	f the year: keep a diary: a p	age for each species of tre	e. They can stick specim	ens (after being pressed	
1 minus	for a couple of weeks) in the	class diary/floor book For	each specimen they can sh	low how flowers are arran	ged on the stalk their co	olours shapes	
	Investigation over time – Ho	w do the flowers change of	ver time?				
	Living Things and their habi	tats: Recognise that living t	hings can be grouned in a v	variety of ways			
	Evolore and use classificatio	n keys to bein group ident	ify and name a variety of liv	ving things in their local an	d wider environment		
	Becognise that environment	ts can change and that this	can sometimes nose dange	rs to living things			
Torm 3	Review what they know all	Identify the different	To be able to describe	To be able to describe	To be able to	To be able to construct	
Vr 4 Animala	ready about animals and	types of teeth in	the simple functions of	the simple functions of	describe the simple	and interpret a variety	
114 - Annihais	humans	humans and their	the basic part of the	the basic part of the	functions of the	of food chains	
The set of	Identify the different	simple functions	digestive system in	digestive system in	hasic part of the	identifying producers	
(Teeth and	types of tooth in humans	Simple functions.	humans Simple test	humans	digostivo system in	producers,	
Digestion)	and their simple functions	the functions of the	What happons when	Modelling The	humans	Doon thinking time	
	and their simple functions.	the functions of the	what happens when	stomach	numans.	What are feed shaire?	
1	1	1		SUIIIdUI	1	what are lood-chains?	

			1	1			Т
Key Scientist:	Observing – How many	different types of			Introducing the		
William Beaumont	different types of teeth	teeth?			whole digestive		
(1785-1853)	have we got? What are				system		
, ,	their functions?				Drama/modelling –		
					Acting out the		
					digestive system		
Term 3:	Plants: Observation and me	asurement - How much ligh	t does a tree capture at dif	ferent times in the year?	Observation over time –	When do plants grow	
Plants	their flowers? - identify the	plants at particular times of	f the year; keep a diary; a p	age for each species of tre	e. They can stick specime	ens (after being pressed	
	for a couple of weeks) in the	class diary/floor book. For	each specimen they can sh	ow how flowers are arran	ged on the stalk, their co	lours, shapes.	
	Investigation over time – Ho	w do the flowers change ov	ver time?			•	
	Living Things and their habi	tats: Recognise that living t	hings can be grouped in a v	ariety of ways			
	Explore and use classificatio	n kevs to help group, identi	ifv and name a variety of liv	ing things in their local and	d wider environment		
	Recognise that environments	s can change and that this ca	an sometimes pose dangers	to living things.			
Term 4	To be able to compare and	To be able to compare	To be able to compare	To be able to describe	To be able to	To be able to	Pupils can:
Rocks and Soils	group together different	and group together	and group together	in simple terms how	recognise that soils	recognise that soils are	Compare and group
Rocks and Sons	kinds of rocks on the basis	different kinds of rocks	different kinds of rocks	fossils are formed	are made from rocks	made from rocks and	together different
Kov scientist:	of their appearance	on the basis of their	on the basis of their	when things that have	and organic matter	organic matter	kinds of rocks on the
Florence Bascom	Observation – What do	appearance and simple	appearance and simple	lived are tranned	Observation - What	Comparative test -	hasis of their
(Geologist who studied	the different rocks look	nhysical properties	nbysical properties	within rock	are soils made from?	How much water do	appearance and
the origin and	liko?	Modelling – How were	Comparative test -	Modelling - How are	Classifying – Which	different soils absorb?	simple physical
formation of	Where are the recks in the	rocks formed?	Which rock is the most	fossils made?	tupes of soil do you	Modelling How cap	simple physical
mountains)	world?	Codimontory rocks	which fock is the most	Jossiis made!	types of soll up you	the way the former	properties Describe in simple
	World?		Commenting test			the way the field offect	Describe in simple
	Survey - which are the	modelling.	Comparative test – How		Problem-solving –	uses the field affect	terms now rossils
	rocks near our school?	Metamorphic rocks	hard are different		How can we	how much water is	are formed when
		modelling.	rocks?		separate the	absorbed by the soil?	things that have
		Igneous rocks			different parts that		lived are trapped
		modelling.			make up a soil?		within rock
		Chewitt rock cycle					Recognise that soils
							are made from rocks
							and organic matter.
Term 4:	Plants: Observation and me	asurement - How much ligh	nt does a tree capture at dif	ferent times in the year?(Observation over time –	When do plants grow	
Plants	their flowers? - identify the	plants at particular times of	f the year; keep a diary; a p	age for each species of tre	e. They can stick specime	ens (after being pressed	
	for a couple of weeks) in the	e class diary/floor book. For	each specimen they can sh	ow how flowers are arran	ged on the stalk, their co	lours, shapes.	
	Investigation over time – Ho	w do the flowers change ov	ver time?				
	Living Things and their habi	tats: Recognise that living t	hings can be grouped in a v	ariety of ways			
	Explore and use classificatio	n keys to help group, identi	fy and name a variety of liv	ing things in their local and	d wider environment		
	Recognise that environments	s can change and that this ca	an sometimes pose dangers	to living things.			
Term 5	St John's First Aid:	St John's First Aid:	St John's First Aid:				
Basic First Aid	Emergencies and calling	Basic Life Support	Head injuries	Bites and stings	Asthma	Introduction to	
	for help			Ŭ Ŭ		bleeding – nose bleed	
Kev Scientists:						and cut/graze	

Dahard Marad							1
Robert Wood							
Johnson (Inventor of							
first, First Aid Kit)							
Term 5:	Plants: Observation and me	asurement - How much ligh	nt does a tree capture at dif	ferent times in the year?	Observation over time –	When do plants grow	
Plants	their flowers? - identify the	plants at particular times of	f the year; keep a diary; a p	age for each species of tre	e. They can stick specime	ens (after being pressed	
	for a couple of weeks) in the	class diary/floor book. For	each specimen they can sh	ow how flowers are arran	ged on the stalk, their co	lours, shapes.	
	Investigation over time – Ho	w do the flowers change ov	ver time?				
	Living Things and their habi	tats: Recognise that living t	hings can be grouped in a v	ariety of ways			
	Explore and use classificatio	n keys to help group, identi	fy and name a variety of liv	ing things in their local and	d wider environment		
	Recognise that environment	s can change and that this	can sometimes pose dange	rs to living things.			
Term 6	To be able to recognise	To be able to recognise	To be able to explore	To be able to explore	To be able to	To be able to	Pupils can:
Living Things and	that living things can be	that living things can be	and use classification	and use classification	recognise that	recognise that	Recognise that living
their habitats.	grouped in a variety of	grouped in a variety of	keys to help group,	keys to help group,	environments can	environments can	things can be
	ways.	ways.	identify and name a	identify and name a	change and that this	change and that this	grouped in a variety
Key Scientists	Survey – How many	Identifying – Can you	variety of living things	variety of living things	can sometimes pose	can sometimes pose	of ways
Carl Linnaeus	different animals can we	use the leaves to	in their local and wider	in their local and wider	dangers to living	dangers to living	Explore and use
(1707-1778)	find in the wildlife area?	identify the name of	environment.	environment.	things.	things.	classification keys to
(1/0/ 1//0)	Classifying – How can we	the tree?	Practicing a skill – Using	2. Creating a	Deep thinking time –	Research - Planning an	help group, identify
	classify different animals?	Classifying plants –	a classification key	classification key for	How does a change	even better nature	and name a variety
	Observation enquiry –	Which groups can we	Identifying trees with a	trees.	in the environment	area	of living things in
	How are the animals	place plants into?	classification key		affect the things that		their local and wider
	suited to where they live?		,		live there?		environment
					Research – What		Recognise that
					changes have		environments can
					affected		change and that this
					environments		can sometimes pose
					throughout the		dangers to living
					world?		things.
Term 6:	Plants: Observation and me	asurement - How much ligh	t does a tree capture at dif	ferent times in the year?	Observation over time –	When do plants grow	
Plants	their flowers? - identify the	plants at particular times of	f the year: keep a diary: a n	age for each species of tre	e. They can stick specime	ens (after being pressed	
1 141113	for a couple of weeks) in the	class diary/floor book For	each specimen they can sh	low how flowers are arran	ged on the stalk, their co	lours, shapes,	
	Investigation over time – Ho	w do the flowers change of	ver time?				
		w up the nowers change of					1

UKS2 (Years 5/6) Knowledge Overview – Rotation A

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Assessment Focus
Term 1	Review previous learning	To be able to describe	To be able to recognise	To be able to	To be able to	To be able to	
Animals including	from early years.	the ways in which	the impact of diet,	recognise the impact	recognise the	recognise the impact	
humans (Year 6)	Introduce key scientist.	nutrients and water	exercise, drugs and	of diet, exercise, drugs	impact of diet,	of diet, exercise,	
× /		are transported within		and lifestyle on the	exercise, drugs and	drugs and lifestyle on	

Nutrition / Diet / exercise / lifestyle Key scientist: Santorio Santorio (Doctor who invented an instrument to measure pulse accurately using a pendulum and did the first scientific study of the metabolism)	To be able to identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood. Hook – The Fitness Club!	animals, including humans. Research – Why do we need to drink water?	lifestyle on the way their bodies function. Hook - Creating a wellbeing clinic. Researching drugs.	way their bodies function. Researching exercise.	lifestyle on the way their bodies function. Researching diets	the way their bodies function. PPT / Brochure pulling all information together for Wellbeing Clinic	
Term 2 Forces friction, air resistance, gravity. (Year 5) Key scientist: Sir Isaac Newton (1642 – 1727)	Review learning about forces and friction from previous years. Introduce key scientist. To be able to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Hook – Transport scientists! What do you want to know?	To be able to identify the effects of air resistance that act between moving surfaces. Illustrative fair-test – How does the surface area of a piece of paper affect how quickly it falls? Illustrative fair-test – How does the surface are of the blades affect the time it takes the spinner to fall?	To be able to identify the effects of air resistance that act between moving surfaces. Investigative fair-test– What affects how well a parachute falls?	To be able to identify the effects of friction between moving surfaces. Hook – Where can we find examples of friction? Skill-focussed activity – Using a force meter Illustrative fair-test investigation – Which trainer provides the best grip? Investigative fair-test Investigation – What affects how well the tub travels?	To be able to identify the effects of air resistance that act between moving surfaces. What affects how well an object fired from a trebuchet will travel? What affects how far the rocket will fly when blown away from the straw? What affects how far the rocket will travel?	To be able to identify the effects of water resistance that act between moving surfaces. Comparative test – How does the shape of an object affect how it moves through water? Problem-solving – Can you make the blue tac fall in seconds? Problem-solving 2 – Make a submarine that will transport a person to the bottom of the cylinder in seconds. Pattern-seeking – How does the mass of a boat affect the depth it travels below the water surface?	
Term 3 Properties and changes of materials (Part two - Year 5) Key Scientist: Jamie Garcia	Review learning about materials and states of matter from previous years. Introduce key scientist. To be able to understand that some materials will	To be able to use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through	To be able to use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through	To be able to explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including	To be able to explain that some changes result in the formation of new materials, and that this kind of change is not usually	To be able to explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible,	

https://bpes.bp.com/super- scientists-jamie-garcia- primary	dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Investigative fair-test – What affects how well sugar dissolves? Evaluating an investigation Problem-solve – What are the best conditions for dissolving sugar in the fastest time?	filtering, sieving and evaporating. To be able to demonstrate that dissolving, mixing and changes of state are reversible changes. Simple test – How can we separate mixtures of different solids? Explore – Separating through filtering Fair-test – What is the best material for filtering?	filtering, sieving and evaporating. Simple test – Separating through evaporation Problem-solving – How could you separate water from salt if your only heat source was the Sun?	changes associated with burning and the action of acid on bicarbonate of soda. Simple tests – Which changes cannot be easily reversed? 1. Simple test – What happens when we mix water with plaster of Paris? Can you separate them? 2. Simple test – What happens to egg white when it is heated? 3. Simple test – What happens when we mix bicarbonate of soda with vinegar?	reversible, including changes associated with burning and the action of acid on bicarbonate of soda. Simple test – What happens to a material when it burns? Deep thinking time – Where does the water come from? How was the flame extinguished?	including changes associated with burning and the action of acid on bicarbonate of soda. Investigative fair test – What affects how quickly carbon dioxide is created in the reaction between a vitamin tablet and water?	
Term 4 Animals - Circulatory System Key Scientist: William Harvey (1578 – 1657)	Review learning about the body from previous years. Introduce key scientist. To be able to identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood. Hook – The Fitness Club! Explore - What is the function of the heart?	To be able to identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood. Modelling the heart and circulatory system An analogy Drama – Be the heart Modelling - Make a heart – a model of one of the chambers	To be able to identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood. Comparative test – What happens to the rate at which our hearts beat when we perform different exercises? Hook – Begin with evidence	To be able to identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood. Observation – How many times does your heat beat every minute? Pattern-seeking – Is their a relationship between the type of exercise that you do and the number of heart beats per minute?	To be able to identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood. Researching using secondary sources – What are the functions of blood?	To be able to identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood. Modelling the components of blood - Make your own 'blood' Teacher modeling the function of platelets	
Term 5 Earth and Space Key scientist:	Review knowledge about Earth and Space. What do they know already? Introduce key scientist.	To be able to describe the movement of the Earth, and other planets, relative to the	To be able to describe the Sun, Earth and Moon as approximately spherical bodies.	To be able to describe the movement of the Moon relative to the Earth.	To be able to use the idea of the Earth's rotation to explain day and	To be able to use the idea of the Earth's rotation to explain day and night and the	

Professor Brian Cox (1968 -)	Hook - Information for another planet! What do you want to know? What do you want to know? To be able to describe the movement of the Earth, and other planets, relative to the Sun in the solar system. What is in our solar system? How large are they?	Sun in the solar system. Research - What is it like on the other planets in the solar system?	Deep thinking time - How can we prove the shape of the Earth, Sun and Moon?	Secondary sources - What is the Moon like? Deep thinking time - How does the shape of the Moon appear to change over time? Modelling- How does the shape of the Moon appear to change over time?	night and the apparent movement of the Sun across the sky. Modelling – How do we have day and night on planet Earth?	apparent movement of the Sun across the sky. Problem-solving – How can we use the Sun to tell the time? Pattern-seeking investigation – How does the length of shadows change over day?	
	Drama/modelling - Acting out the order of the planets in our solar system What is at the centre of our solar system? Modelling - Make a model of the solar system Modelling - Make a scaled model of the solar system						
Term 6 Evolution/Inheritance (Year 6) Key scientist: Charles Darwin (1809 – 1882)	Review what they know already about evolution. Link to fossils from LKS2. Introduce key scientist. To be able to recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Deep thinking time – How do we know about living things that have lived in	To be able to recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Key questions: Are all siblings of living things identical? Children' own family tree Creating a family tree for an animal	To be able to identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution. Deep thinking time – How are birds suited to survive in the habitat in which they live? Deep thinking time– How is it that birds have the right features to help them survive	To be able to identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution. Research – How do different animals use camouflage to survive? Model/experiment - The worms have escaped!	To be able to identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution. Deep thinking time – What must all living things be able to do in order to survive? Deep thinking time – Which feature of a	To be able to identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution. Deep thinking time - Which animal would survive? Key question – Which characteristic would help you to survive if you were a stag beetle?	

	Hook – Darwin's thinking		Model/Experiment –		good at surviving	To be able to identify	
	path		What are different		where it lives?	how plants are	
	Observation – What do		types of beaks suited		Research - How are	adapted to suit their	
	you think the fossil is?		for?		animals suited to	environment in	
	Modelling -Create your		Model/Experiment –		where they live?	different ways and	
	own fossil record		Which shape feet are		where they live:	that adaptation may	
	Hook - The Biltdown Man		host for swimming?			load to evolution	
	hoox		best for swittining:			Doon thinking time -	
	lioax					How are plants suited	
						How are plants suited	
						to, and adapted to	
						their environment?	
						Problem-solving –	
						Design a plant to	
						survive the	
						catastrophe	
						Research – How have	
						different plants	
						around the world	
						evolved to survive?	
Term 6	Review previous learning	To be able to describe	To be able to describe	To be able to describe	To be able to	To be able to describe	
Animals including	about animals including	the changes as	the changes as humans	the changes as	describe the	the changes as	
humans (Year 5 –	humans, their off-spring	humans develop from	develop from birth to	humans develop from	changes as humans	humans develop from	
reproduction)	and young.	birth to old age.	old age.	birth to old age.	develop from birth	birth to old age.	
1	Introduce key scientist.	Pattern-seeking – Is	Data analysis – How	Survey – What is the	to old age. Puberty	Research - Becoming	
Kev scientist:	To be able to describe the	their a relationship	does the weight of a	height of children of	 What happens to 	old – What happens	
Professor Robert	changes as humans	between the mass of	baby change?	different ages?	the human body	to adults as they	
Winston (1940 -)	develop from birth to old	adult animal and the	Data analysis – How		during puberty?	become older?	
	age.	length of the gestation	does the length of a				
	Hooking the children	period?	baby change over				
	Raising questions	Research Developing a	time?				
	To be able to describe the	conclusion					
	changes as humans						
	develop from birth to old						
	age.						
	Research – How long are						
	the gestation periods of						
	different animals?						

KS1 (Years 1/2)Knowledge Overview – Rotation B

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Assessment
						Focus

Plants (Yr 2 with review of key prior learning for Yr 1's)What do you know about plants and trees?how bulbs grow into mature plants. Comparative test - What do bulbs need so that can grow healthil?and describe how seeds grow into mature plants. Investigation over time - Do all seeds grow; need input seeds and bulbs - linking they both grow into plants.how bulbs grow into mature plants mature plants. Investigation over time - Do all seeds grow; need input seeds and bulbs - linking they both grow into plants.how bulbs grow into mature plants and Paperwhites (narcissi) indoorsand describe how seeds grow into mature plants. Investigation over time - Do all seeds grow; need is seeds and bulbs - linking they both grow into plants.how bulbs grow into mature plants - roots, stem, leaves, flower etc.out and describe how seeds grow into mature plants and Paperwhites (narcissi) indoorsout and describe how seeds grow into mature plants, linvestigation over time - Do all seeds grow; nad Paperwhites (narcissi) indoorsand describe how seeds need water, light and a suitable temperature to grow and stay healthy.describe how plants need water, light and a suitable temperature to grow; not plants of the same grow; not plants.Observe and describe how seeds seeds grow into mature plantsPlant outside: Strawberry plants.Plant outside: Strawberry plants in allotment. Lettuce seeds.and describe how seeds grow into mature plantsand describe how seeds grow into mature plantsout and describe how plants and describe how seeds seeds grow into grow and stay healthy.describe how seeds <th>Plants</th> <th>Introduce Key scientist:</th> <th>To be able to observe</th> <th>To be able to observe</th> <th>To be able to observe</th> <th>To be able to find</th> <th>To be able to find out and</th> <th>Pupils can:</th>	Plants	Introduce Key scientist:	To be able to observe	To be able to observe	To be able to observe	To be able to find	To be able to find out and	Pupils can:
(Yr 2 with review of key prior learning for Yr 1's)What do you know 	1 miles		how bulbs grow into	and describe how	and describe how	out and describe	describe how plants need	Observe and
Teview of key prior learning for Yr 1's)about plants and trees?Comparative test - What do bulbs need so that can growmature plants. Investigation over time - Do seds need warety of common flowering plants - roots, stem, leaves, flower etc.Comparative test - What do bulbs need so that can growmature plants. Investigation over time - Do all seds grow?water, light and a suitable temperature to grow and stay healthy.temperature to grow and stay healthy.and bulbs grow into mature plants into mature plants into mature plantsKey Scientist: Angie BurnettAngie BurnettPlant inside : Amaryllis and Paperwhites (narcissi) indoorsPlant inside: Fast- growing seeds (e.g. white mustard, rocket, flax, mung beans or radishes.mature plants, nuvestigation over time - Do all seeds inside.Investigation over time - Mol stay healthy.temperature to grow and stay healthy.and bulbs grow into mature plants Find out and describe how plants need subtat temperature to grow and stay healthy.and bulbs grow into mature plantsKey Scientist: Angie BurnettLooking at seeds and bulbs - linking they both grow into plants.Plant outside: Onion bulbs outside.Plant outside: Strawberry plants in allotment. Lettuce seeds.mature plants / need seeds / bulbs planted form previous week.mature plants sublas of the same species, bulbs of the same species.temperature to grow and stay healthy.and bulbs grow into mature plants find out and describe howLook at seeds / bulbs planted form provious week.Plant outside: Strawberry plants in <th>(Vr 2 with</th> <th>What do you know</th> <th>mature plants.</th> <th>seeds grow into</th> <th>seeds grow into</th> <th>how plants need</th> <th>water, light and a suitable</th> <th>describe how seeds</th>	(Vr 2 with	What do you know	mature plants.	seeds grow into	seeds grow into	how plants need	water, light and a suitable	describe how seeds
NoticeUncenting for Yr 1's)What do bulbs need so that can grow healthil?Investigation over 	review of key	about plants and trees?	Comparative test -	mature plants.	mature plants.	water, light and a	temperature to grow and stay	and bulbs grow
provide realising for Yr 1's)Revise and identify the basic structure of a variety of common flowering plants – roots, stem, leaves, flower etc.so that can grow healthily? Plant inside : Amaryllis and Paperwhites (narcissi) indoorstime – Do seeds need ware so that they can grow?time – Do all seeds germinate in the same way? Plant side: Fast- growing seeds and bulbs – linking they both grow into plants.time – Do seeds need ware so that they can grow?time – Do all seeds grow?temperature to grow and stay healthy.Find out and describe how plants need water, light and a suitable temperature to grow into plants.Find out and describe how plants need water, light and a suitable temperature do plants need so that they can grow?Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.How structure of a variety of common flowering they both grow into plants.so that can grow plant outside:time – Do seeds need water so that they can grow?time – Do all seeds grow and stay healthy.temperature to temperature do plants need so that they can grow?Investigation over time – Do plants need water, light and a suitable temperature to grow and stay healthy.Plant outside: Or the same grow into plants.Plant outside: strawberry plants in allotment. Letture seeds.Investigation over temperature do planted form previous week.time – Do all seeds grow and stay healthy.Investigation over temperature to temperature do plants need so that they can grow?Find out and describe how healthy. <th>nrior learning</th> <th> '</th> <th>What do bulbs need</th> <th>Investigation over</th> <th>Investigation over</th> <th>suitable</th> <th>healthy.</th> <th>into mature plants</th>	nrior learning	'	What do bulbs need	Investigation over	Investigation over	suitable	healthy.	into mature plants
Nor TT Sybasic structure of a variety of common flowering plants - roots, stem, leaves, flower etc.healthil? Plant inside : Amaryllis and Paperwhites (narcissi) indoorswater so that they can grow?germinate in the same way? Plant: sunflower seeds and bulbs - linking they both grow into plants.Investigation over time - Do plants need light so that they can grow?describe how plants need water, light and a suitableLooking at seeds and bulbs - linking they both grow into plants.Plant outside: Onion bulbs outside.Plant outside: Onion bulbs outside.Plant outside: flax, mung beans or radishes.Plant outside: flax, mung beans or radishes.Look at seeds / bulbs planted form previous week.Investigation over time - Do plants need light so that they can grow?describe how plants need water, light and a suitableNeed: 4 pot plantsPlant outside: one leaf or just half of it they can grow?Need: 4 pot plants one leaf or just half of it they can grow?Meestigation over temperature do plants need so that they can grow?Need: 4 pot plants of the same species.Photos. Large flor book - for post-it notes and recordings Record of plants planted	for Vr 1's)	Revise and identify the	so that can grow	time – Do seeds need	time – Do all seeds	temperature to		Find out and
Key Scientist: Angie Burnettvariety of common flowering plants – roots, stem, leaves, flower etc.Plant inside : Amaryllis and Paperwhites (narcissi) indoorsgrow?same way? Plant inside : Fast- growing seeds (e.g. white mustard, rocket, flax, mung beans or radishes.healthy.healthy.plants need light so that they can grow?plants need light so that they can grow?plants need water, light and a suitable temperature do plants need so that they can grow?plants need light so that they can grow?plants need water, light and a suitable temperature do plants need so that they can grow?plants need light so that they can grow?plants need light so that they can grow?plants need light so that they can grow?plants need water, light and a suitable temperature do plants need so that they can grow?plants need light so that they can grow?plants need water, light and a suitable temperature do plants need so that they can grow?plants need light so that they can grow?plants need water, light and a suitable temperature to grow and stay healthy.Weild S - linking they both grow into plants.Plant outside: Diabated form planted form planted form errowingPlant outside: Strawberry plants in allotment. Lettuce seeds.Plant outside: Strawberry plants look at seeds / bulbs planted form errowinghealthy.Plants need light so that they Investigation over the plantsplanted form planted form planted form	101 11 1 8)	basic structure of a	healthily?	water so that they can	germinate in the	grow and stay	Investigation over time – Do	describe how
Key Scientist: Angie Burnettflowering plants – roots, stem, leaves, flower etc.and Paperwhites (narcissi) indoorsand Paperwhites (narcissi) indoorsPlant inside: Fast- growing seeds (e.g. white mustard, rocket, flax, mung beans or radishes.Plant: sunflower seeds and boad bean seeds inside.Investigation over time – What type of plants need so that they can grow?light and a suitable temperature do plants need so that they can grow?Plant outside: grow into plants.Plant outside: stem, leaves, flower etc.Plant outside: stem, leaves, flower etc.Need: 4 pot plants of the same species.Photos. Large floor book – for post-it notes and recordings Record of plants planted	Koy Scientist.	variety of common	Plant inside : Amaryllis	grow?	same way?	healthy.	plants need light so that they	plants need water,
Angle Burnettstem, leaves, flower etc. Looking at seeds and bulbs – linking they both grow into plants.(narcissi) indoorsPlant inside: Fast- growing seeds (e.g. white mustard, rocket, flax, mung beans or radishes.seeds and broad bulbs outside.Investigation over time – What type of plants need so that they can grow?Need: 4 pot plants of the same species, but one that could have one leaf or just half of it covered with an opaque bag.temperature to grow and stay healthy.Photos. Large floor book – for post-it notes and allotment. Lettuce seeds.Plant outside: Strawberry plants in allotment. Lettuce seeds.Plant outside: Strawberry plants in allotment. Lettuce seeds.Need: 4 pot plants of the same species.Need: 4 pot plants of the same species, but one that could have one leaf or just half of it covered with an opaque bag.Photos. Large floor book – for post-it notes and recordings Record of plants planted form previous week.	Key Scientist:	flowering plants – roots,	and Paperwhites	0	Plant: sunflower		can grow?	light and a suitable
Looking at seeds and bulbs - linking they both grow into plants.Plant outside: Onion bulbs outside.growing seeds (e.g. white mustard, rocket, flax, mung beans or radishes.bean seeds inside.time - What type of temperature do plants need so that they can grow?species, but one that could have one leaf or just half of it covered with an opaque bag.grow and stay healthy.Photos. Large floor book - for post-it notes and recording whee class recording whee class recording baltsPlant outside: Strawberry plants in allotment. Lettuce seeds.Need: 4 pot plants of the same species.species, but one that could have one leaf or just half of it covered with an opaque bag.Photos. Large floor book - for post-it notes and recording whee class recording balts	Angle Burnett	stem, leaves, flower etc.	(narcissi) indoors	Plant inside: Fast-	seeds and broad	Investigation over	Need: 4 pot plants of the same	temperature to
Looking at seeds and bulbs - linking they both grow into plants.Plant outside: Onion bulbs outside.white mustard, rocket, flax, mung beans or radishes.Look at seeds / bulbs planted form previous week.temperature do plants need so that they can grow?one leaf or just half of it covered with an opaque bag.healthy.Photos. Large floor book - for post-it notes and recordings Male class recordings Record of plantsPhotos. Large floor book - for post-it notes and recordings Record of plantsLook at seeds / bulbs of the same species.one leaf or just half of it covered with an opaque bag.Photos. Large floor book - for post-it notes and recordings Record of plants planted form previous		'		growing seeds (e.g.	bean seeds inside.	time – What type of	species, but one that could have	grow and stay
bulbs - linking they both grow into plants. bulbs outside. flax, mung beans or radishes. Look at seeds / bulbs planted form previous week. plants need so that they can grow? covered with an opaque bag. Photos. Plant outside: Strawberry plants in allotment. Look at seeds / bulbs Need: 4 pot plants of the same species. Need: 4 pot plants of the same species. Photos. Large floor book - for post-it notes and recording whole class recordings Record of plants of the same species. Need: 4 pot plants of the same species. Need: 4 pot plants of the same species. Photos. Large floor book - for post-it notes and recording whole class recordings Record of plants of the same species. Need: 4 pot plants of the same species. Ne		Looking at seeds and	Plant outside: Onion	white mustard, rocket,		temperature do	one leaf or just half of it	healthy.
grow into plants. radishes. planted form they can grow? Large floor book – for previous week. Plant outside: Strawberry plants in Need: 4 pot plants Plant outside: Strawberry plants. Lettuce seeds. Lettuce seeds. Image: seeds / bulbs Plant outside: Plant outside: Plant outside: Look at seeds / bulbs planted form provinue Look at seeds / bulbs Plant outside:		bulbs – linking they both	bulbs outside.	flax, mung beans or	Look at seeds / bulbs	plants need so that	covered with an opaque bag.	
Plant outside: Plant outside: Need: 4 pot plants post-it notes and recording whole class Strawberry plants in allotment. Lettuce seeds. Image: Control of plants Record of plants Look at seeds / bulbs planted form provinus planted form provinus Image: Control of plants planted		grow into plants.		radishes.	planted form	they can grow?		Photos.
Plant outside: Strawberry plants in allotment. Lettuce seeds. Look at seeds / bulbs planted form provious		'			previous week.			Large floor book – for
Strawberry plants in allotment. Lettuce seeds. Look at seeds / bulbs planted form provinus		'		Plant outside:		Need: 4 pot plants		post-it notes and
allotment. Lettuce seeds. Look at seeds / bulbs		'		Strawberry plants in		of the same species.		recording whole class
Lettuce seeds. Look at seeds / bulbs planted planted		'		allotment.				Record of plants
Look at seeds / bulbs		'		Lettuce seeds.				planted
Look at seeds / bulbs								
planted form provious		'		Look at seeds / bulbs				
planted form previous		'		planted form previous				
week.				week.			_	-
Term 1 Deep thinking time – Which habitats do you know of on our amazing planet Earth? What do you want to know about habitats? Photos.	Term 1	Deep thinking time – Whic	ch habitats do you know o	f on our amazing planet E	arth? What do you want	to know about habitats	5?	Photos. Large fleer beek – for
Living things Survey – How many different living things can we find?	Living things	Survey – How many differe	ent living things can we fir	id?				nost-it notes and
and their Identifying – What are different habitats like? Mark out a range of habitats in the school ground that you would like the children to study over the year (these recording whole class	and their	Identifying – What are diff	erent habitats like? Mark	out a range of habitats in	the school ground that y	ou would like the child	ren to study over the year (these	recording whole class
habitats can include micronabitats). Visit each of the nabitats with the children. Investigation over time - Do habitats change during a year?	habitats	can include micronabitats)	. Visit each of the habitat	s with the children. Inves	tigation over time - Do na	abitats change during a	year?	recordings
(Yr 2) Light. Throughout the year record examples of when you have seen plants do something that will improve the amount of light they are able to have: e.g. Record of plants	(Yr 2)	Light. Inroughout the year	r record examples of when	i you nave seen plants do	something that will impr	ove the amount of light	t they are able to have: e.g.	Record of plants
growing leaves (now big, now many?), climbing up wais of other plants, growing at times of the year when other plants are not covering them with their planted		growing leaves (now big, n	low many?), climbing up v	bo sublight	ing at times of the year w	men other plants are n	or covering them with their	planted
Term 2 Review previous Identify and compare Identify and compare Identify and compare Identify and compare the Ilses of everyday		Review previous	Identify and compare	Identify and compare	Identify and compare	Identify and	Identify and compare the	Uses of everyday
Uses of Everyday learning about materials the suitability of a the suitability of a the suitability of a the suitability of a	Term 2	learning about materials	the suitability of a	the suitability of a	the suitability of a	compare the	suitability of a variety of	materials:
Materials from Yr 1 by identifying variety of everyday variety of	Term 2 Uses of Everyday						sances intry of a variety of	Ability to Identify and
what an object is and materials for materials for materials for materials for wariety of everyday particular uses.	Term 2 Uses of Everyday Materials	from Yr 1 by identifying	variety of everyday	variety of everyday	variety of everyday	suitability of a	everyday materials for	Ability to identify and
KEY SCIENTIST: what it is made from. particular uses. Simple particular uses. Survey particular uses. Survey particular uses.	Term 2 Uses of Everyday Materials	from Yr 1 by identifying what an object is and	variety of everyday materials for	variety of everyday materials for	variety of everyday materials for	suitability of a variety of everyday	everyday materials for particular uses.	compare the
Charles Goodyear Different types of test– Which material – what are the uses of Survey – what are the particular uses. best for blocking a hole in a	Term 2 Uses of Everyday Materials KEY SCIENTIST:	from Yr 1 by identifying what an object is and what it is made from.	variety of everyday materials for particular uses. Simple	variety of everyday materials for particular uses. Survey	variety of everyday materials for particular uses.	suitability of a variety of everyday materials for	everyday materials for particular uses. Simple test – Which material is	compare the suitability of a variety
(1800 – 1860) materials and what they is best for the bottom wood? uses of plastic? Simple test – Which bucket? metal plastic glass	Term 2 Uses of Everyday Materials KEY SCIENTIST: Charles Goodvear	from Yr 1 by identifying what an object is and what it is made from. Different types of	variety of everyday materials for particular uses. Simple test– Which material	variety of everyday materials for particular uses. Survey – what are the uses of	variety of everyday materials for particular uses. Survey – what are the	suitability of a variety of everyday materials for particular uses.	everyday materials for particular uses. Simple test – Which material is best for blocking a hole in a	compare the suitability of a variety of everyday materials,
are used for and why. of children's school Simple tests – Simple test – How tights are the brick, rock, paper and	Term 2 Uses of Everyday Materials KEY SCIENTIST: Charles Goodyear (1800 – 1860)	from Yr 1 by identifying what an object is and what it is made from. Different types of materials and what they	variety of everyday materials for particular uses. Simple test– Which material is best for the bottom	variety of everyday materials for particular uses. Survey – what are the uses of wood?	variety of everyday materials for particular uses. Survey – what are the uses of plastic?	suitability of a variety of everyday materials for particular uses. Simple test – Which	everyday materials for particular uses. Simple test – Which material is best for blocking a hole in a bucket?	compare the suitability of a variety of everyday materials, including wood, metal plastic glass
Introduce Key Scientist: shoes? Testing: strength, hardness, flexible are plastics? stretchiest? cardboard for	Term 2 Uses of Everyday Materials KEY SCIENTIST: Charles Goodyear (1800 – 1860)	from Yr 1 by identifying what an object is and what it is made from. Different types of materials and what they are used for and why.	variety of everyday materials for particular uses. Simple test– Which material is best for the bottom of children's school	variety of everyday materials for particular uses. Survey – what are the uses of wood? Simple tests –	variety of everyday materials for particular uses. Survey – what are the uses of plastic? Simple test – How	suitability of a variety of everyday materials for particular uses. Simple test – Which tights are the	everyday materials for particular uses. Simple test – Which material is best for blocking a hole in a bucket?	compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and
Charles Goodyear and bounciness and grip weight, ease of particular uses.	Term 2 Uses of Everyday Materials KEY SCIENTIST: Charles Goodyear (1800 – 1860)	from Yr 1 by identifying what an object is and what it is made from. Different types of materials and what they are used for and why. Introduce Key Scientist:	variety of everyday materials for particular uses. Simple test– Which material is best for the bottom of children's school shoes? Testing:	variety of everyday materials for particular uses. Survey – what are the uses of wood? Simple tests – strength, hardness,	variety of everyday materials for particular uses. Survey – what are the uses of plastic? Simple test – How flexible are plastics?	suitability of a variety of everyday materials for particular uses. Simple test – Which tights are the stretchiest?	everyday materials for particular uses. Simple test – Which material is best for blocking a hole in a bucket?	compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for
rubber. putting in nails.	Term 2 Uses of Everyday Materials KEY SCIENTIST: Charles Goodyear (1800 – 1860)	from Yr 1 by identifying what an object is and what it is made from. Different types of materials and what they are used for and why. Introduce Key Scientist: Charles Goodyear and	variety of everyday materials for particular uses. Simple test– Which material is best for the bottom of children's school shoes? Testing: bounciness and grip	variety of everyday materials for particular uses. Survey – what are the uses of wood? Simple tests – strength, hardness, weight, ease of	variety of everyday materials for particular uses. Survey – what are the uses of plastic? Simple test – How flexible are plastics?	suitability of a variety of everyday materials for particular uses. Simple test – Which tights are the stretchiest?	everyday materials for particular uses. Simple test – Which material is best for blocking a hole in a bucket?	compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.
Term 2 Plants: observe and describe how seeds grow into mature plants - plants sown in the allotment: Look to see if there are any flowering Photos.	Term 2 Uses of Everyday Materials KEY SCIENTIST: Charles Goodyear (1800 – 1860)	from Yr 1 by identifying what an object is and what it is made from. Different types of materials and what they are used for and why. Introduce Key Scientist: Charles Goodyear and rubber.	variety of everyday materials for particular uses. Simple test– Which material is best for the bottom of children's school shoes? Testing: bounciness and grip	variety of everyday materials for particular uses. Survey – what are the uses of wood? Simple tests – strength, hardness, weight, ease of putting in nails.	variety of everyday materials for particular uses. Survey – what are the uses of plastic? Simple test – How flexible are plastics?	suitability of a variety of everyday materials for particular uses. Simple test – Which tights are the stretchiest?	everyday materials for particular uses. Simple test – Which material is best for blocking a hole in a bucket?	compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.
Plants plants out in the school grounds.	Term 2 Uses of Everyday Materials KEY SCIENTIST: Charles Goodyear (1800 – 1860) Term 2	from Yr 1 by identifying what an object is and what it is made from. Different types of materials and what they are used for and why. Introduce Key Scientist: Charles Goodyear and rubber. Plants: observe and do	variety of everyday materials for particular uses. Simple test– Which material is best for the bottom of children's school shoes? Testing: bounciness and grip	variety of everyday materials for particular uses. Survey – what are the uses of wood? Simple tests – strength, hardness, weight, ease of putting in nails.	variety of everyday materials for particular uses. Survey – what are the uses of plastic? Simple test – How flexible are plastics?	suitability of a variety of everyday materials for particular uses. Simple test – Which tights are the stretchiest?	everyday materials for particular uses. Simple test – Which material is best for blocking a hole in a bucket?	compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Photos.

Living Things and their Habitats	Plant: Blueberry bush. Living Things and their Habitats: Investigation over time - Do habitats change during a year? Investigation over time - Does the number of animals found in a habitat change? Light. Throughout the year record examples of when you have seen plants do something that will improve the amount of light they are able to have: e.g. growing leaves (how big, how many?), climbing up walls or other plants, growing at times of the year when other plants are not covering them with their leaves (e.g. bluebells), and growing higher to reach the sunlight.							
Term 3 Animals including humans – basic needs and keeping healthy (Yr 2) Key Scientist: Florence Nightingale	Review previous learning: What do you know about your body? Introduce key scientist. To identify, name draw and label the basic parts of the human body. Identifying – What are the names of the different parts of our bodies?	To be able to find out about and describe the basic needs of animals, including humans, for survival (water, food and air). A healthy lifestyle Animals have basic needs	To know the importance for humans of eating the right amounts of different types of food. Classifying – Which foods make a healthy diet?	To know the importance for humans of exercise. Importance of exercise Explore - What happens when you exercise? Investigate – Which exercise makes you puff the most?	To know the importance to humans of hygiene. Survey – How often do we wash ourselves? Keeping food clean.	Use one lesson this term for work on plants and living things.	Pupils can: 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.	
Term 3 Plants Living Things and their Habitats	Plants: observe and descri grounds. Plant: No planting – too co Living Things and their Ha habitat change? Light. Thr have: e.g. growing leaves (their leaves (e.g. bluebells	be how seeds grow into r bld for outdoor direct plar bitats: Investigation over oughout the year record e how big, how many?), clii), and growing higher to r	nature plants - plants sow nting. time - Do habitats change examples of when you hav mbing up walls or other pl each the sunlight	n in the allotment; Look t during a year? Investiga ve seen plants do someth ants, growing at times of	to see if there are any fl ation over time - Does tl ing that will improve th the year when other pl	owering plants out in the school ne number of animals found in a e amount of light they are able to lants are not covering them with	Photos. Large floor book – for post-it notes and recording whole class recordings Record of plants planted	
Term 4 Uses of Everyday Materials KEY SCIENTIST: Leo Hendrik Baekeland (1863 - 1944) (ORDER stick insect breeding kit for term 5 – see link below)	Review learning from last term about everyday uses of materials. Introduce Key Scientist: Leo Hendrik Baekeland (1863 -1944)	Identify and compare the suitability of a variety of everyday materials for particular uses. Simple test – Which material is best at letting light through?	Identify and compare the suitability of a variety of everyday materials for particular uses. Simple test– On which surface will the car travel the furthest?	Find out how the shapes of solid objects made form some materials can be changed by squashing, bending, twisting and stretching. Exploring – How well can we change the shapes of some solid objects	Identify and compare the suitability of a variety of everyday materials for particular uses. Problem-solving - Applying knowledge to make a product -	<section-header><section-header><section-header><section-header><section-header><list-item><list-item><list-item><list-item><list-item><list-item><section-header><list-item><list-item><section-header></section-header></list-item></list-item></section-header></list-item></list-item></list-item></list-item></list-item></list-item></section-header></section-header></section-header></section-header></section-header>	Uses of everyday materials: Ability to find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Scientific enquiry: to gather and record data to help in answering questions. to ask simple questions and recognise that they	

Term 4: Plants Living Things and their Habitats	Plants: observe and descri grounds. Plant: Potatoes; Beetroot Living Things and their animals found in a habit the amount of light they year when other plants	be how seeds grow into n Habitats: Investigation tat change? Light. Thro y are able to have: e.g. are not covering them	nature plants - plants sow n over time - Do habitat ughout the year record growing leaves (how b with their leaves (e.g.	n in the allotment; Look t ts change during a year examples of when you ig, how many?), climbi bluebells), and growing	to see if there are any first for the see if there are any first for the seen plants do ng up walls or other provide the seen the	owering plants out in the school time - Does the number of something that will improve plants, growing at times of the sunlight	can be answered in different ways. to perform simple tests. Photos. Large floor book – for post-it notes and recording whole class recordings Record of plants planted	
Term 5 Animals, including Humans - offspring (Yr 2) KEY SCIENTIST: David Attenborough (1926 -)	Review previous learning. Introduce Key Scientist To know that animals have offspring that grow into adults. Hook – Creating a wildlife workshop Set up stick insect breeding kit.	To know that animals have offspring that grow into adults. Observing and recording the lifecycle of animals	To know that animals have offspring that grow into adults. Eggs of minibeasts: Egg hunt – Spring to late summer.	To know that human offspring grow into adults. Stages of human development Visiting baby. Investigating children's clothes. Studying photos of humans of different ages	To know that human offspring grow into adults. Measuring body parts of children of different ages. Construct a large bar chart for the wall of person's height against ages. Add in details of the class, teachers, parents and grand parents. Children use this to try and work out at what age people typically stop growing and relate this to when they are able to reproduce and why humans need to be big in order to have babies	Use one lesson this term for work on Plants / Living Things and their habitats.	Pupils can: Notice that animals, including humans, have offspring which grow into adults	
Term 5 Plants Living Things and their Habitats	Plants: observe and describe how seeds grow into mature plants - plants sown in the allotment; Look to see if there are any flowering plants out in the school grounds. Plant: Herbs; Tomato plants Living Things and their Habitats: Investigation over time - Do habitats change during a year? Investigation over time - Does the number of animals found in a habitat change? Light. Throughout the year record examples of when you have seen plants do something that will improve the amount of light they are able to have: e.g. growing leaves (how big, how many?), climbing up walls or other plants, growing at times of the year when other plants are not covering them with their leaves (e.g. bluebells) and growing higher to reach the sunlight							

Term 6	Reviewing learning	To be able to identify	To be able to identify	To be able to			Pupils can:
Living things and	about babitats from	that most living things	that most living things	describe how animals			Explore and
their Habitats	throughout the year	live in habitats to	live in habitats to	obtain their food			compare the
then Habitats	throughout the year –	which they are suited	which they are suited	from plants and			differences
Plants _ Flowers	looking at floor book.	and describe how	and describe how	other animals, using			between things
and looves	Introduce key	different habitats	different habitats	the idea of a simple			that are living,
and leaves	scientist.	provide for the basic	provide for the basic	food chain, and			dead, and things
KEV SCIENTIST.	Observation enquiry –	needs of different	needs of different	identify and name			that have never
Stovo Backshall	Why would an animal	kinds of animals and	kinds of animals and	different sources of			been alive
(1072 -)	live in that habitat?	plants, and how they	plants, and how they	food.			Identify that most
(1575-)		depend on each	depend on each other.	Observation enquiry			living things live in
		other.	Survey - Where is the	- What are animals			habitats to which
		Pattern-seeking	most popular place for	eating?			they are suited and
		enquiry - Which	animals to live?	Food-chain			describe how
		caterpillar will	Deep thinking time –	headbands			different habitats
		survive?	How do we know that	Simple tests – How			provide for the
		Survey – Which	plants are living	does a habitat			basic needs of
		animals are	things?	provide for the needs			different kinds of
		camouflaged to blend		of the plants that live			animals and plants,
		in their habitats?		there?			and how they
							depend on each
							other.
							Identify and name
							a variety of plants
							and animals in their
							habitats, including
							micro-habitats
							Describe how
							animals obtain
							their food from
							plants and other
							animals, using the
							idea of a simple
							food chain, and
							identify and name
							different sources of
T (food.
1 erm 6				Reviewing learning	i o identify and	flowers	Pupils can:
Plants (Yr 1)				about Plants from	Observing How	Deconving How many	identity and name
K				throughout the	Duserving - HOW	different types of flowers can	a variety of
Key scientist:				year – looking at	types of flowers can	be found? Can we use the	including garden
Barbara				floor book.	bo found? Can we	be found? Can we use the	niciuuing garuen
							piants, which piants

McClintock (1902 –			use the flower to	flower to work out the name of	and trees, and
1992)			work out the name	the plant?	those classified as
			of the plant?	-drawing the flowers and	deciduous and
			-drawing the	comparing to the previous week	evergreen
			flowers		

*Stick insect breeding kit website for PALMER CLASS - needs ordering in Term 4 for Term 5!! https://www.insectlore.co.uk/living-twig-stick-insect-kit.html

LKS2 (Years 3/4) Knowledge Overview – Rotation B

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Assessment Focus
Term 1 Sound Key Scientist: James Edward Maceo West (b.1931)	What is sound? -Review what they can remember about materials. -Introduce Key Scientist - Describe what sound waves are • Describe how we see sounds • Explain how we can stop sound	How are different sounds produced? Describe how sounds are produced • Describe ways that different sounds can be made • Make your own instrument	What are frequency and pitch? Describe what the pitch of a sound is • Describe ways to change the pitch of a sound • Give example of objects that produce high and low pitch sounds	What do we mean by amplitude of sound? Describe what we mean by the amplitude of sound • Describe how to change the amplitude of a sound • Give examples of high amplitude and low amplitude sound	How do scientists design objects that use sound? Explain what the science of acoustics involves • Describe how scientists dampen noise that is not wanted • Describe how engineers build venues to improve sound quality	What are some of the uses of sound? Explain how a string telephone works • Describe how loudspeakers and microphones work • Explain how animals use echolocation	
Term 2 Light Key Scientist: Percy Shaw (inventor of the cats eye)	What is light and where does it come from? -Introduce key scientist Describe what light is and where it comes from • Explain what light and dark are • Describe how we can measure levels of light	What is reflection and how can we use it? Describe what reflection is • Describe what happens to the direction of light when it reflects • Give uses of reflection	What are shadows? -Describe what a shadow is. - Recognise that shadows are formed when light from a light source is blocked by a solid object.	What makes shadow lengths different? - Find patterns in the way that the size of shadows change. - The size of shadows change according to the size and shape of objects and distance from the light source.	What makes light from the sun dangerous? -review UV investigation. - Recognise that light from the sun can be dangerous and that there are ways to protect the eyes.	 -What are some uses of light? Explain how a periscope works Describe how lenses can spread out and concentrate light - Where do different colours come from? 	

			- Some materials block the light and a shadow is formed. (set up UV light investigation)	 Shadows and reflections are different. Describe how light is used in shadow puppetry 	- to know that Sunlight can be dangerous.	 Describe how white light can be used to make colours Describe how base colours of light can be made new colours Explain how rainbows are created 	
Term 3 (Yr 3) Animals including Humans – (Skeletons and Movement) Key Scientist: Marie Curie (1867-1934)	Review what they know about the human body parts from year 1 and year 2. Introduce key scientist: What are the major bones in the human body? Can label the human skeleton • Describe the functions of the skeleton • Describe the difference between an endoskeleton and an exoskeleton	Explore - Functions of skeleton Hook – Mystery bones. Make a model- the human skeleton	Research – What is the function of muscles? Simple test - Measuring muscles working in pairs	To know that humans and some animals have skeletons and muscles for support, protection and movement. Research – What is the function of muscles? Simple test - Measuring muscles working in pairs Modelling - Make a model of the muscles in the arm Comparative test - Measure who has the quickest reaction times	To be able to identify the correct type of enquiry to answer a question. Pattern-seeking; Do people with the longest legs jump the furthest? Game – science enquiry run-around	Droblem colving	
Term 4 Electricity Key scientist: Thomas Edison	Hook – Hook – Designing and making a product: a torch for an explorer Classifying – What can electricity do?	Constructing series circuits Problem-solving – Which circuits will work? Can you repair the ones that do not work?	Observation – What can we find inside a torch?	Exploring switches	Classifying - Which materials are conductors/insulators?	Problem-solving - Making a torch	
Term 5 Animals and Humans – (Health and Nutrition) Key scientist: Adelle Davis	Review what they know about animals and living things from Yr 1 & 2. Introduce key scientist To know that animals cannot make their own food.	To know that animals, including humans, need the right amounts and types of food. Research - Why do animals need to eat different foods?	Research other animals - Which foods do animals need in order to survive? Food groups	Food Labels Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Identify that animals, including	Healthy diets for humans - research	Healthy diets for humans - research	

(Biochemist &	How do living things get			humans, need the			
Nutritionist who	their food?			right types and			
linked health and	Deep thinking time - Plant			amount of nutrition,			
diet	child. What do you know			and that they cannot			
	about health and			make their own food;			
	nutrition?			they get nutrition			
				from what they eat. To			
				explore the nutritional			
				values of different			
				foods by gathering			
				information from food			
				labels.			
Term 6	Review what they know	How do particles	What happens	What are changes	How can we measure	Which substances	
States of Matter	about different materials	behave inside of	when you heat or	of state and why do	the melting points and	do not fit into one	
	from yr 1 and 2	solids, liquids and	cool each state of	they take place?	boiling points of a	state of matter?	
Kev scientist:	Introduce key scientist	gases?	matter?	 Describe what 	substance?	Give examples of	
Alfred Barnhard	What are the	Describe what a	Describe what happens	happens to the	 Describe what is 	substances that do not	
Nobel (1833-1896)	properties of solids,	particle is	to particles when a	arrangement	meant by melting	show typical	
, , ,	liquids and gases?	 Describe how 	substance is heated or	of particles when a	point and boiling point	properties of any state	
	 Describe what is meant 	particles are arranged	cooled	substance changes	 Describe how it is 	of matter	
	by the property of a	in solids,	 Predict what happens 	state	possible to measure	 Explain how some 	
	substance	liquids and gases	to a solid, liquid or gas	 Name each of the 	the melting point and	not show typical	
	 Name the properties of 	 Explain how we know 	when it is heated or	changes of state	boiling point of a	properties of one state	
	solids, liquids and	particles in liquids and	cooled	 Give an example of 	substance	of matter	
	gases	gases are moving	 Give the evidence to 	each change in state	 Suggest which state 	 Describe what a 	
	 Explain which state of 		show that each state		of a matter a	non-Newtonian fluid is	
	matter a substance is		expands when heated		substance will be in		
	in based on its properties		and contracts when		given its temperature		
			cooled				

UKS2 (Years 5/6) Knowledge Overview – Rotation B

	Week 1	Week 1 Week 2 Week 3 Week 4 Week 5 Week 6 Assessment Focus									
Term 1 Living Things and their habitats –	Yr 6: Living Things and th - Survey over time - Survey A: Can we - Survey B– Can we	eir habitats: – Which fungi can you ider find examples of plants fro find examples of plants fr	ntify during the year? om the different plant grou om the different plant grou	ps? ıps?							

classifying plants	- Identifying and classifying - Bio-blitz – How many different things live in the school grounds?									
and animals.	Yr 5: Living Things and their habitats									
	Observations over time – When do plants have their flowers?									
	- Observations over time – How does the flower change over time?									
	Observations over time – What happens to the plant after fertilisation has occurred?									
Term 1	Review learning about To be able to compare									
Properties and	materials and states of	and group together and group together and group together compare and group and group together								
changes of materials	matter from previous	everyday materials	everyday materials	everyday materials	together everyday	everyday materials				
(part one – Year 5)	years.	based on evidence	based on evidence	based on evidence	materials based on	based on evidence				
, v ,	Introduce key scientist.	from comparative and	from comparative and	from comparative and	evidence from	from comparative and				
Key scientists:	Hook – The Science	fair tests, including	fair tests, including	fair tests, including	comparative and fair	fair tests, including				
Dmitri Mendeleyev	Laboratory	their conductivity of	their conductivity of	their conductivity of	tests, including their	their conductivity of				
(1834 - 1907)	Game – Mystery	heat.	heat.	heat.	conductivity of heat.	electricity.				
	equipment	To be able to give	Fair –test investigation	Problem-solve – How	Simple test – What	Simple test – Which				
	Deep thinking time	reasons, based on	 Which material is 	do you keep the tea	affect will a coat	materials allow				
		evidence from	best at keeping the tea	the warmest for the	have a person and	electricity to pass				
		comparative and fair	warm?	longest amount of	an ice man?	through them?				
		tests, for the particular	Drama – developing an	time?		Simple test 2 - Which				
		uses of everyday	explanation			metals are the best				
		materials, including				conductors of				
		metals, wood and				electricity?				
		plastic.								
		Comparative test –								
		the most heat?								
		Comparative test -								
		Which material is hest								
		at conducting heat?								
		Deep thinking time –								
		Why are these objects								
		made from particular								
		materials?								
Term 2	Review previous learning	To be able to describe	To be able to describe	To be able to give	To be able to give	Describe how living				
Living things and	about animal groups and	how living things are	how living things are	reasons for classifying	reasons for	things are classified				
their habitats (year 6)	classifying them.	classified into broad	classified into broad	plants and animals	classifying plants	into broad groups				
Classification of	Introduce key scientist.	groups according to	groups according to	based on specific	and animals based	according to common				
plants and animals	To be able to describe	common observable	common observable	characteristics.	on specific	observable	1			
	how living things are	characteristics and	characteristics and	Naming plants	characteristics.	characteristics and	1			
Key Scientist:	classified into broad	based on similarities	based on similarities	Where can we find	Problem-solving –	based on similarities	1			
Beatrix Potter	groups according to	and differences,	and differences,	different plants?	How can attract	and differences,	1			
(Mycologist, study of	common observable	including micro-	including micro-	Classifying – How can	more bees and	including micro-	1			
fungi, and Scientific	characteristics and based	organisms, plants and	organisms, plants and	plants be placed in	butterflies into the	organisms, plants and	1			
Illustrator)	on similarities and	animals.	animals.	different groups?	school grounds?	animals. Identifying				

	differences, including micro-organisms, plants and animals. Hook – Drama: New species of birds are found!	To be able to give reasons for classifying plants and animals based on specific characteristics. Classifying – How can we classify living things? Classifying animals Classifying further Identifying insects: a. Beetles b. Butterflies Birds. Mammals – rabbits and hares Amphibians – frogs and toads.	Survey over time – Which fungi can you indentify during the year?	Survey A– Can we find examples of plants from the different plant groups? Survey B– Can we find examples of plants from the different plant groups?		and classifying - Bio- blitz – How many different things live in the school grounds?		
Term 3 Living Things and their habitats – classifying plants and animals.	Yr 6: Living Things and their habitats: - Survey over time – Which fungi can you identify during the year? - Survey A: Can we find examples of plants from the different plant groups? - Survey B– Can we find examples of plants from the different plant groups? - Identifying and classifying - Bio-blitz – How many different things live in the school grounds? Yr 5: Living Things and their habitats - Start to look for frogspawn Observations over time – When do plants have their flowers? - Observations over time – How does the flower change over time?							
Term 3 Electricity – creating gadgets Key scientist: Alessandro Volta (1745-1827)	Review learning from Year 3/4 about electricity. Introduce key scientist. Problem-solving – An electronic scarecrow! Exploring circuits.	To be able to use recognised symbols when representing a simple circuit in a diagram. Introducing circuit diagrams and symbols	To be able to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Game – Why bother repeating? Illustrative fair-test – How will the number of batteries (amounts of Volts) affect the brightness of the bulb?	To be able to 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. Investigative Fair-test – What affects the brightness of a bulb in a circuit?	To be able to 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. Exploring electrical circuits Saboteurs! Drama/modelling – Being electricity	To be able to 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. To be able to use recognised symbols when representing a simple circuit in a diagram.		

Term 4 Living Things and their habitats – classifying plants and animals.	Yr 6: Living Things and their habitats: Problem-solving - Making an electrical scarecrow Yr 6: Living Things and their habitats: Survey over time – Which fungi can you identify during the year? Survey A: Can we find examples of plants from the different plant groups? Survey B- Can we find examples of plants from the different plant groups? Identifying and classifying - Bio-blitz – How many different things live in the school grounds? Yr 5: Living Things and their habitats - Start to look for frogspawn To be able to explain the life cycle of a bird. Secondary resources research – How do bird eggs change over time? Observations over time – How do bird eggs change									
	Observations over time – W - Observations over time –	Observations over time – When do plants have their flowers? - Observations over time – How does the flower change over time?								
Term 4 Light Key scientist: Jean-Bernard-Leon Foucault (1819-1868)	 - Observations ov Review learning about light and knowledge about light from LKS2. Introduce key scientist. Light – Why learn about it? To understand that light appears to travel in straight lines. Modelling – What evidence would prove that light travels in straight lines? 	er time – What happens to To be able to 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. Modelling – How do we see things?	Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. Modelling – How can we show why shadows have the same shape as the object that casts them? Problem-solving – Where would we need to place the umbrellas so that the people around the pool have the most shade?	To be able to 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. Modelling – How can we show how we see things in a mirror? Fair-test investigation – Which materials is best at reflecting light? Pattern-seeking – How can we increase the number of reflections? Explore – Make a kaleidoscope	To be able to 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. Problem solving – How can the detective see over the wall? (Making a periscope)	To be able to 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. Comparative test – Which window lets through the most amount of light? How much light passes through different objects Problem-solving – Make a stained-glass window				
Term 5 Living Things and their habitats – classifying plants and animals.	 Yr 6: Living Things and their habitats: Survey over time – Which fungi can you identify during the year? Survey A: Can we find examples of plants from the different plant groups? Survey B– Can we find examples of plants from the different plant groups? Identifying and classifying - Bio-blitz – How many different things live in the school grounds? Setting up investigation to encourage more bees and butterflies from planning ideas in term 2 – plant ready flowering plants etc. 									

(ORDER ladybird	Yr 5: Living Things and their habitats – observing changes in frogspawn									
breeding kit for term	- To be able to explain the life cycle of a bird. Secondary resources research – How do bird eggs change over time? Observations over time – How do bird eggs change									
6)	over time?									
	Observations over time – When do plants have their flowers?									
	- Observations over time – How does the flower change over time?									
	 - Observations ov 	er time – What happens to	the plant after fertilisation	n has occurred?						
Term 5	Review learning about To be able to recognise To be able to recognise To be able to To be able to To be able to									
Forces – Pulleys,	forces from EYFS, KS1 and	that some	that some	recognise that some	recognise that some	recognise that some				
Levers. Gears and	LKS2.	mechanisms, including	mechanisms, including	mechanisms,	mechanisms,	mechanisms,				
Simple Machines	Introduce Key scientist.	pulleys, allow a smaller	pulleys, allow a smaller	including gears, allow	including gears,	including levers, allow				
(Year 5)	To be able to explain that	force to have a greater	force to have a greater	a smaller force to	allow a smaller force	a smaller force to				
(unsupported objects fall	effect.	effect.	have a greater effect.	to have a greater	have a greater effect.				
Key scientist:	towards the Earth	Exploring pulleys –	Exploring pulleys –	Explore – How do	effect.	Exploring levers				
Christopher Cockerell	because of the force of	How do pulleys work?	How do pulleys work?	gears work?	Explore – How do	Pattern-seeking –				
(1910-1999)	gravity acting between			Explore – How can	gears work?	How much force is				
(1910-1999)	the Earth and the falling			you change the	Explore – How can	required at when the				
	object.			direction of turn and	you change the	fulcrum is in different				
	Hook – Transport			the speed of the	direction of turn and	place to lift a mass at				
	scientists!			gears?	the speed of the	the other end?				
	gears?									
Term 6	Yr 6: Living Things and th	eir habitats: Draw toget	her all the surveys from	the year and draw con	clusions					
Living Things and	- Final Survey over	time – Which fungi can yo	u identify during the year?							
their habitats –	- Final Survey A: Ca	n we find examples of plar	nts from the different plant	groups?						
classifying plants	- Final Survey B– Ca	an we find examples of pla	nts from the different plan	t groups?						
and animals.	- Identifying and cla	assifying - Bio-blitz – How r	many different things live i	n the school grounds?						
	- Review effect of b	bee and butterfly encourag	ement planning.	Ū						
	Yr 5: Living Things and their	habitiats – observing char	iges in tadpoles to frogs et	с.						
	- To be able to exp	ain the life cycle of a bird.	Secondary resources resea	arch – How do bird eggs cl	nange over time? Observ	vations over time – How do	o bird eggs change			
	over time?	,	,		0		00 0			
	Observations over time – W	/hen do plants have their f	lowers?							
	- Observations over time -	How does the flower chang	ge over time?							
	 - Observations ov 	er time – What happens to	the plant after fertilisation	n has occurred?						
Term 6	Review learning from	To be able to explain	To be able to explain	To be able to describe	From observations	From observations				
Living things and	Year 2 and 4.	the life cycle of a	the life cycle of an	the life process of	over year.	over year.				
their habitats (Year 5)	Introduce key scientist:	mammal.	insect. Life cycle of an	reproduction in some	To be able to	To be able to explain				
Life cycles	To be able to explain the	Life cycle of a mammal	insect	animals.	describe the life	the life cycle of an				
-	differences in the life	Research – Asking	Using secondary	Secondary sources	process of	amphibian.				
Key scientist:	cycles of a mammal, an	questions to an expert	sources research –	research – How do	reproduction in	Life cycle of				
Jane Goodall	amphibian, an insect and	Observations over time	What are the different	animals make babies?	some plants.	amphibians.				
(Wildlife Researcher &	a bird.	 How does the small 	lifecycles of insects?		Reproduction –	To be able to explain				
Conservationist who	Introduction to Life cycles	mammal change over	Observations over time		plants	the life cycle of a bird.	1			
studied chimpanzees)		time?	– What are the			Secondary resources	1			

Survey – At what part of their life cycle are the	Using secondary sources research –	different stages of the life cycle of a ladybird?	Observation – What are the functions of	research – How do bird eggs change over	
animals in the school	How do different		the different parts of	time? Observations	
Research – What can you	they get older?		Secondary sources	bird eggs change over	
find out about the	,		research – How does	time?	
different stages of life			the pollen from one		
cycles of different			flower reach		
dilifidis?			Secondary sources –		
			How do animals		
			pollinate plants?		

*Ladybird breeding kit website for CAMERON CLASS – needs ordering in Term 5 for Term 6!! <u>https://www.greengardener.co.uk/product/ladybird-breeding-kit-for-schools/</u>

Science Vocabulary

Please use the following when talking about science with the children – it will help increase their level of science and general articulacy.

KEY STAGE 1 VOCABULARY

ANIMALS INCLUDING	EVERYDAY MATERIALS	PLANTS	SEASONAL CHANGE	LIVING THINGS AND
HUMANS	AND THEIR USES			THEIR HABITATS
Fish, Reptiles, Mammals, Birds, Amphibians (+ examples of each) Herbivore, Omnivore, Carnivore, Leg, Arm, Elbow, Head, Ear, Nose, Back, Wings, Beak Survival, Water, Air, Food, Adult, Baby, Offspring, Kitten, Calf, Puppy, Exercise, Hygiene	Wood, Plastic, Glass, Paper, Water, Metal, Rock, Hard, Soft, Bendy, Rough, Smooth Hard, Soft, Stretchy, Stiff, Shiny, Dull, Rough, Smooth, Bendy, Waterproof, Absorbent, Opaque, Transparent Brick, Paper, Fabrics, Squashing, Bending,	Deciduous, Evergreen trees, Leaves, Flowers (blossom), Petals, Fruit, Roots, Bulb, Seed, Trunk, Branches, Stem Seeds, Bulbs, Water, Light, Temperature, Growth	Summer, Spring, Autumn, Winter, Sun, Day, Moon, Night, Light, Dark	Living, Dead, Habitat, Energy, Food chain, Predator, Prey, Woodland, Pond, Desert

Twisting, Stretching Elastic, Foil		

LOWER KEY STAGE 2 VOCABULARY

ANIMALS	FORCES	PLANTS	LIGHT	ROCKS	ELECTRICITY	LIVING	CHANGING	SOUND
INCLUDING HUMANS	AND MACNETS					THINGS AND THEID	MATERIALS:	
HUMANS	MAGNETS					HABITATS	MATTER	
Movement	Magnetic	Air	Light	Fossils	Cells	Vertebrates	Solid	Volume
Muscles.	Force.	Light.	Shadows.	Soils.	Wires.	Fish.	Liquid.	Vibration.
Bones,	Contact,	Water,	Mirror,	Sandstone,	Bulbs,	Amphibians,	Gas,	Wave,
Skull,	Attract,	Nutrients,	Reflective,	Granite,	Switches,	Reptiles,	Evaporation,	Pitch,
Nutrition,	Repel,	Soil,	Dark,	Marble,	Buzzers,	Birds,	Condensation,	Tone,
Skeletons,	Friction,	Reproduction,	Reflection	Pumice,	Battery,	Mammals,	Particles,	Speaker
	Poles,	Transportation,		Crystals,	Circuit,	Invertebrates,	Temperature,	
Mouth,	Push,	Dispersal,		Absorbent	Series,	Snails,	Freezing,	
Tongue,	Pull	Pollination,			Conductors,	Slugs,	Heating	
Teeth,		Flower			Insulators	Worms,		
Oesophagus,						Spiders,		
Stomach,						Insects,		
Small						Environment,		
Intestine,						Habitats		
Large								
Intestine,								
Herbivore,								
Carnivore,								
Molar								

UPPER KEY STAGE 2 VOCABULARY

ANIMALS INCLUDING	FORCES	EARTH AND SPACE	PROPERTIES AND CHANGES	LIGHT	ELECTRICITY	LIVING THINGS AND	EVOLUTION AND
HUMANS			OF MATERIALS			THEIR HABITATS	INHERITANCE
Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty Circulatory, Heart, Blood Vessels, Veins, Arteries, Oxygenated, Deoxygenated, Valve, Exercise	Air resistance, Water resistance, Friction, Gravity, Newton, Gears, Pulleys	Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellation	Hardness, Solubility, Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing	Refraction, Reflection, Light, Spectrum, Rainbow, Colour	Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators, Amps, Volts, Cell	Mammal, Reproduction, Insect, Amphibian, Bird, Offspring Classification, Vertebrates, Invertebrates, Micro- organisms, Amphibians, Reptiles, Mammals, Insects	Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics
Valve, Exercise, Respiration							