## **Padiham Green Church of England Primary School**

Jesus said, "Come, follow me." (Matthew 4:19)



## Intent

**Science Progression Map** 

In Science, we intend to inspire pupils with a curiosity and fascination about the world around them. We will develop their scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. We will develop their scientific language, alongside their increase their awareness of their environment and sustainability challenges that we may face. Enabling children to talk about their methods and explain their findings and conclusions. The curriculum will motivate them to become effective communicators of scientific ideas, facts and data whilst enhancing their practical skills of scientific enquiry.

Implementat	tion						
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Seasons							
Seasons  Knowledge	Seasons: Autumn Spring Summer Winter	Knows when each of the four seasons occurs  Knows what the features of autumn are and what happens to trees in this season	Knows when each of the four seasons occurs  Knows what the features of autumn are and what happens to trees in this season  Knows that days are longer in summer (sunshine hours) than				
			in winter				

			Observe changes		
			•		
			across the		
			four seasons		
	They talk about the	Demonstrate	Gather and record		
	features of their own	knowledge in	data about weather		
	immediate	different ways e.g.	conditions in		
	environment and	creating seasonal	autumn, drawing on		
	how environments	artwork	observation and using		
	might vary from one		simple equipment		
	another. They make		(such as a container		
	observations of		to measure rainfall)		
	animals and plants				
	and explain why		Use data to create a		
	some things occur,		pictogram and use		
	and talk about		this to describe		
	changes.		changes in day length		
	Ŭ		over the seasons.		
Scientific Skills			Use their evidence to		
			describe some other		
			features of the		
			weather,		
			surroundings,		
			themselves, animals,		
			and plants found in		
			autumn.		
			autumn.		
			Demonstrate their		
			knowledge in		
			different ways e.g.		
			creating seasonal		
			artwork, creating a		
			pictogram (and use		
			this to ask and		

			answer related questions)  Use evidence to describe some other features of their surroundings, themselves, animals, plants that change over the seasons			
Plants						
Knowledge	To know how to care for growing plants.	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.  Identify and describe the basic structure of a variety of common flowering plants, including trees	Observe and describe how seeds and bulbs grow into mature plants.  Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.  Identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2 - Living things and their habitats)	Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)	Recognise that living things can be grouped in a variety of ways. (Y4 - Living things and their habitats)  Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 - Living things and their habitats)  Recognise that environments can change and that this can sometimes pose dangers to living	

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					things. (Y4 - Living	
					things and their	
					habitats)	
					Recognise that living	
					things can be	
					grouped in a variety	
					of ways.	
					Explore and use	
					classification keys to	
					help group, identify	
					and name a variety	
					of living things in	
					their local and wider	
					environment.	
					Recognise that	
					environments can	
					change and that this	
					can sometimes pose	
					dangers to living	
					things.	
	The Natural World	Gather and record	Make close	Observe what	Observe plants and	
	To plant seeds o	data about weather	observations of seeds	happens to plants	animals in	
	observe the growth of	conditions in	and bulbs	over time when	different habitats	
	seeds and talk about	autumn, drawing on		the leaves or roots	throughout the	
	changes.	observation and using	Classify seeds and	are removed.	year and use	
		simple equipment	bulbs		recordings to	
Scientific		(such as a container		Observe the effect of	compare and	
Skills		to measure rainfall)	Research and plan	putting cut white	contrast the living	
			when and how	carnations or celery	things observed.	
		Use their evidence to	to plant a range of	in coloured water.		
		describe some other	seeds and		Explore and use	
		features of the	bulbs	Investigate what	classification	
			1	1		
		weather,		happens to plants	keys to help group,	

themselves, animals,	Look after the plants	are put in different	name a variety of	
and plants found in	as they	conditions e.g. in	living things in	
autumn.	grow – weeding,	darkness, in	their local and wider	
Can sort and group	thinning,	the cold, deprived of	environment.	
parts of	watering etc.	air, different types of		
plants using		soil,	Classify living things	
similarities and	Make close	different fertilisers,	found in	
differences e.g. the	observations and	varying amount of	different habitats	
shape of	measurements of	space.	based on their	
leaves, the colour of	their plants		features.	
the	growing from seeds	Spot flowers, seeds,		
flower/blossom.	and bulbs	berries and fruits	Create a simple	
		outside	identification key	
Can use simple charts	Make comparisons	throughout the year.	based on observable	
and	between		features.	
Venn diagrams etc.	plants as they grow	Observe flowers		
to identify		carefully to identify	Use research to	
and classify plants.	Can spot similarities	the pollen	explore human	
	and		impact on the local	
Use photographs and	difference between	Observe flowers being	environment	
their own	bulbs and	visited by pollinators	e.g. litter, tree	
observations to talk	seeds	e.g.bees and	planting.	
about how		butterflies in the		
plants change over		summer.	Use secondary	
time (e.g.			sources to find out	
seed to sapling to		Observe seeds being	about how	
tree) and		blown from the trees	environments may	
over the year		e.g.sycamore seeds.	naturally change.	
(deciduous and				
fruit bearing trees).		Research different	Use secondary	
		types of seed	sources to find out	
Plant seeds and		dispersal.	about human impact,	
observe how			both positive and	
they grow and		Classify seeds in a	negative, on	
change by		range of ways	environments and	
		including by	write a report	

				l			
		making simple		how they are	on this.		
		observations.		dispersed.			
		Point to and name		Create a new species			
		the parts of		of flowering plant			
		a plant, recognising					
		that they		Can explain			
		are not always the		observations made			
		same e.g.		during			
		leaves and stems		investigations.			
		may not be					
		green, the leaves are		Can look at the			
		different		features of seeds to			
		shapes		decide on			
				their method of			
				dispersal.			
				Can draw and label a			
				diagram of their			
				created			
				flowering plant to			
				show its parts, their			
				role and the method			
				of pollination and			
				seed dispersal.			
Animals inclu	iding humans						
	Similarities and	Identify and name a	Notice that animals,	Identify that animals,	Construct and	Describe the changes	Identify and name the
	differences. Our	variety of common	including humans,	including humans,	interpret a variety of	as humans develop to	main parts of the
	bodies. Senses.	animals including	have offspring which	need the right types	food chains,	old age.	human circulatory
	Body parts and	fish, amphibians,	grow into adults.	and amount of	identifying		system, and describe
	features.	reptiles, birds and	green made annual	nutrition, and that	producers, predators	Describe the	the functions of the
Knowledge		mammals.	Find out about and	they cannot make	and prey. (Y4 -	differences in the life	heart, blood vessels
			describe the basic	their own food; they	Animals, including	cycles of a mammal,	and blood.
		Identify and name a	needs of animals,	get nutrition from	humans)	an amphibian, an	3
		variety of common	including humans,	what they eat.	, , , , , , , , , , , , , , , , , , , ,	insect and a bird.	Recognise the impact
		animals that are					of diet, exercise, drugs
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carnivores, herbivores	for survival (water,	Identify that humans	Describe the simple	(Y5 - Living things	and lifestyle on the
and omnivores.	food and air).	and some other	functions of the basic	and their habitats)	way their bodies
		animals have	parts of the digestive		function.
Describe and	Describe the	skeletons and muscles	system in humans.	Describe the life	
compare the	importance for	for support,	Identify the different	process of	Describe the ways in
structure of a variety	humans of exercise,	protection and	types of teeth in	reproduction in some	which nutrients and
of common animals	eating the right	movement.	humans and their	plants and animals.	water are transported
(fish, amphibians,	amounts of different		simple functions.	(Y5 - Living things	within animals,
reptiles, birds and	types of food, and			and their habitats	including humans.
mammals, including	hygiene.		Construct and		•
pets).			interpret a variety of		Describe how living
•	• Describe how		food chains,		things are classified
Identify, name, draw	animals obtain their		identifying		into broad groups
and label the basic	food from plants and		producers, predators		according to common
parts of the human	other animals, using		and prey.		observable
body and say which	the idea of a simple				characteristics and
part of the body is	food chain, and				based on similarities
associated with each	identify and name				and differences,
sense.	different sources of				including micro-
	food. (Y2 – Living				organisms, plants and
	things and their				animals. (Y6
	habitats				- Living things and
					their habitats)
					Give reasons for
					classifying plants and
					animals based on
					specific characteristics.
					(Y6 – Living things
					and their habitats)

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	They make	Make first hand close	Ask questions	Classify food in a	Construct and	Draw and label	Plan and conduct a
	observations of and	observations of	and use	range of ways	interpret a variety of	appropriate scientific	scientific enquiry
	explain why some	animals from	secondary		food chains,	diagrams	to identify different
	things occur, and	each of the groups	sources to find	Use food labels to	identifying	following use of	food groups.
	talk about changes.	(city farm)	out about the life	explore the	producers, predators	secondary sources	
			cycles of some	nutritional content of	and prey.	and first hand	Use labelled diagrams
		Compare the	animals	a range of		observations relating	to support
		structure of two		food items	Can create food	to the life cycle of a	understanding of how
		animals from the	Observe animals		chains based on	humans.	nutrients and
		same or	growing over a	Use secondary	research.		oxygen are delivered
		different group e.g.	period of time	sources to find		Compare and	around the
		wings, feathers,	e.g. chicks,	out the types of food	Identifies differences,	contrast the life	body.
		vertebrates and	caterpillars, a	that	and similarities of	cycles of different	
		invertebrates.	baby	contain different	different types of	living	Use information to
				nutrients	teeth according to	things and present	identify the main
		Classify animals using	Ask questions of		herbivore, omnivore	findings	components of the
		a range	a parent about	Use food labels to	and carnivore.	Use data to compare	heart.
Scientific		of features e.g. lay	how they look	answer enquiry		and find patterns,	
Skills		eggs/give birth to live	after their baby	questions e.g. How	Can record the teeth	for example to	Predict what will
		young. herbivore,		much fat do different	in their mouth (make	compare the	happen to the heart
		omnivore (these	Investigate the effect	types of pizza	a dental record).	gestation times for	during exercise.
		terms do not have to	of exercise on their	contain? How much		mammals and look	
		be explicitly taught).	bodies	sugar is in soft	recreate the human	for patterns e.g. in	Construct and analyse
				drinks?	stomach and observe	relation to size of	the variables
		Identify animals by	Classify food in a		representation of	animal or length of	that make a fair test.
		matching statements	range of	Plan a daily diet	how food breaks	dependency after	
		to named images.	ways, including using	contain a good	down.	birth	Conduct a fair
			the Eatwell guide	balance of nutrients			investigation on the
		Take measurements	J	and record	Label the different	Look for patterns	effects of exercise on
		of parts of the body	Investigate washing	and present findings	parts of the body	between the size of	the heart.
		and present results	hands, using glitter	,	,	an animal and its	
		in a table to	gel	Explore the nutrients		expected life span)	Use scientific
		interpret.		contained			equipment to track
		Conduct simple sense	Describe, using	in fast food			results and record data
		experiments. Which	diagrams, the				using tables
		part of my					and graphs.
		part or my					and grapis.

	body is good for	life cycle of some	Use secondary		Analyse whole class
	feeling, which	animals,	sources to		data after
	is not? Which	including humans,	research the parts		investigation to
	food/flavours can	and their	and		compare and reflect
	I identify by taste?	growth to adults e.g.	functions of the		on findings and draw
	Which smells	by creating a life	skeleton		conclusions.
	can I match?	cycle book for a			
		younger child	Investigate pattern		Use information
			seeking questions		acquired to write a
		Measure/observe how	such as ; Can people		scientific report on
		animals,including	with longer legs run		how the human
		humans, grow.	faster?;		circulatory system
			Can people with		works.
		Collate what they	bigger hands		
		know about	catch a ball better?		
		looking after a			
		baby/animal by	Compare, contrast		
		creating a	and classify skeletons		
		parenting/pet	of different animals		
		owners' guide			
		Explain how			
		development and			
		health might be			
		affected by			
		differing conditions			
		and needs being			
		met/not met			
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Living things and their habitats

	Habitats Patterns	Identify and name a	Explore and compare	Recognise that living	Describe the life	Describe how living
	and camouflage	variety of common	the differences	things can be	process of	things are classified
		wild and garden	between things that	grouped in a variety	reproduction in some	into broad groups
		plants, including	are living, dead, and	of ways. (Y4 - Living	plants and animals.	according to common
		deciduous and	things that have	things and their	(Y5 - Living things	observable
		evergreen trees. (Y1	never been alive.	habitats)	and their habitats)	characteristics and
		- Plants)				based on similarities
			Identify that most	Explore and use	Describe the	and differences,
		Identify and describe	living things live in	classification keys to	differences in the life	including micro-
		the basic structure of	habitats to which	help group, identify	cycles of a mammal,	organisms, plants and
		a variety of common	they are suited and	and name a variety	an amphibian, an	animals. (Y6 - Living
		flowering plants,	describe how	of living things in	insect and a bird.	things and their
		including trees. (Y1 -	different habitats	their local and wider		habitats)
		Plants)	provide for the basic	environment. (Y4 -	Describe the life	
			needs of different	Living things and	process of	Recognise that living
		Identify and name a	kinds of animals and	their habitats)	reproduction in some	things produce
		variety of common	plants, and how they		plants and animals.	offspring of the same
		animals including	depend on each	Recognise that		kind, but normally
Knowledge		fish, amphibians,	other.	environments can		offspring vary and are
		reptiles, birds and		change and that this		not identical to their
		mammals. (Y1 -	Identify and name a	can sometimes pose		parents. (Y6 -
		Animals including	variety of plants and	dangers to living		Evolution and
		humans)	animals in their	things. (Y4 - Living		inheritance)
			habitats, including	things and their		
			microhabitats.	habitats)		Identify how animals
						and plants are adapted
			Describe how animals	Recognise that living		to suit their
			obtain their food	things can be		environment in
			from plants and	grouped in a variety		different ways and
			other animals, using	of ways.		that adaptation may
			the idea of a simple			lead to evolution. (Y6 –
			food chain, and	Explore and use		Evolution and
			identify and name	classification keys to		inheritance)
			different sources of	help group, identify		
I			food.	and name a variety		
				of living things in		

			Notice that animals,	their local and wider		
			including humans,	environment.		
			have offspring which			
			grow into adults. (Y2	Recognise that		
			- Animals including	environments can		
			humans)	change and that this		
			, , , , , , , , , , , , , , , , , , , ,	can sometimes pose		
				dangers to living		
				things.		
				J.		
	Children know about	Identify and name a	Explore the outside	Observe plants and	Grow and observe	Classify plants and
	similarities and	variety of common	environment	animals in	plants that	animals
	differences in relation	animals that are	regularly to find	different habitats	reproduce asexually	and record conclusions
	to places, objects,	carnivores, herbivores	objects that are	throughout the	e.g.	from the use of
	materials and living	and omnivores. (Y1 -	living,	year and use	strawberries, spider	classification keys.
	things.	Animals including	dead and have never	recordings to	plant, potatoes	
		humans)	lived	compare and	organise mammals	Use information about
	They talk about the			contrast the living	into different groups	the characteristics of
	features of their own	Describe and	Classify objects found	things observed	- sea and land	an unknown animal or
	immediate	compare the	in the local		and marsupials and	plant to assign it to a
	environment and	structure of a variety	Environment	Explore and use	use scientific evidence	group.
Scientific	how environments	of common animals		classification	to	
Skills	might vary from one	(fish, amphibians,	Observe animals and	keys to help group,	refute/support	Use secondary sources
3KIIIS	another.	reptiles, birds and	plants carefully,	identify and	correct/incorrect	to
		mammals, including	drawing and labelling	name a variety of	statements (such as	learn about the formal
	They make	pets). (Y1 – Animals,	diagrams	living things in	'dolphins are fish').	classification system
	observations of	including humans)		their local and wider		devised by Carl
	animals and plants		Create simple food	environment.		Linnaeus and why it
	and explain why	Observe changes	chains for a familiar		Draw and label	is important.
	some things occur,	across the four	local habitat from	Classify living things	appropriate scientific	
	and talk about	seasons. (Y1 -	first hand	found in	diagrams	Research an unfamiliar
	changes.	Seasonal change)	observation	different habitats	following use of	animal or plant using
			and research	based on their	secondary sources	its
				features.	and first hand	characteristics to
						establish

		Create simple food	Create a simple	observations relating	where it belongs in the
		chains from	identification key	to the life cycle of a	classification system.
		information given e.g.	based on observable	range of	
		in picture books	features.	animals.	
		(Gruffalo etc.)			
			Use research to	Compare and	
		Can sort into living,	explore human	contrast the life	
		dead and never lived	impact on the local	cycles of different	
			environment	living	
		Can give key features	e.g. litter, tree	things and present	
		that mean the	planting.	findings	
		animal or plant is		identify which insects	
		suited to its	Use secondary	complete which type	
		microhabitat	sources to find out	of metamorphosis	
			about how	and present findings	
		Using a food chain	environments may	identify the key	
		can explain what	naturally change.	differences between	
		animals eat		some amphibians	
			Use secondary	– for example, toads	
		Can explain in simple	sources to find out	and frogs, and	
		terms why an	about human impact,	present findings in	
		animal or plant is	both positive and	different forms	
		suited to a habitat	negative, on		
			environments and		
			write a report		
			on this.		
Human Life (	Cycle and Evolution				
				Describe the changes	Recognise that living
				as humans develop to	things have changed
				old age.	over time and that
				-	fossils provide
Knowledge				Describe the	information about
				differences in the life	living things that
				cycles of a mammal,	inhabited the Earth
				an amphibian, an	millions of years ago.

			insect and a bird.	Recognise that living
			(Y5 - Living things	things produce
			and their habitats)	offspring of the same
				kind, but normally
			Describe the life	offspring vary and are
			process of	not identical to their
			reproduction in some	parents.
			plants and animals.	
			(Y5 - Living things	Identify how animals
			and their habitats)	and plants are adapted
				to suit their
				environment in
				different ways and
				that adaptation may
				lead to evolution.
				Follow lines of enquiry
				to support
				Explanation of the
				process of
				evolution.
				Demonstrate an
				understanding, with
				specific examples, of
				how an animal
Scientific Skills				or plant has evolved
				over time e.g.
				penguin, peppered
				moth.
				Identify characteristics
				that will make a
				plant or animal suited
				or not suited to
				a particular habitat.
				- Ferrandon Prototoro

Materials (P	hysic linked topics) To know that some	Distinguish between	Identify and compare	Compare and group	Compare and group	Compare and group	Compare the ideas of Charles Darwin and Alfred Wallace on evolution.  Research the work of Mary Anning and understand how this provided evidence of evolution.  Referring to and using examples of fossil evidence that support the theory of evolution.
	things in the world	an object and the	the suitability of a	together different	materials together,	together everyday	
	are man-made and	material from which	variety of everyday	kinds of rocks on the	according to whether	materials on the basis	
	some things are	it is made.	materials, including	basis of their	they are solids,	of their properties,	
	natural	Identify and name a	wood, metal, plastic, glass, brick, rock,	appearance and	liquids or gases.	including their hardness, solubility,	
		variety of everyday	paper and cardboard	simple physical properties.	Observe that some	transparency,	
		materials, including	for particular uses.	proporcios.	materials change	conductivity	
Knowledge		wood, plastic, glass,	p sit stostion visos.	Describe in simple	state when they are	(electrical and	
		metal, water, and	Find out how the	terms how fossils are	heated or cooled, and	thermal), and	
		rock.	shapes of solid objects	formed when things	measure or research	response to magnets.	
			made from some	that have lived are	the temperature at		
		Describe the simple	materials can be	trapped within rock.	which this happens in	Know that some	
		physical properties of	changed by		degrees Celsius (°C).	materials will dissolve	
		1	I and the second				
		a variety of everyday	squashing, bending,	Compare and group		in liquid to form a solution, and describe	

Compare and group	twisting and	everyday materials	Identify the part	how to recover a
together a variety of	stretching.	on the basis of	played by	substance from a
everyday materials		whether they are	evaporation and	solution.
on the basis of their		attracted to a	condensation in the	
simple physical		magnet, and identify	water cycle and	Use knowledge of
properties		some magnetic	associate the rate of	solids, liquids and
		materials. (Y3 -	evaporation with	gases to decide how
		Forces and magnets)	temperature	mixtures might be
				separated, including
		Explore the part that		through filtering,
		flowers play in the		sieving and
		life cycle of flowering		evaporating.
		plants, including		
		pollination, seed		Give reasons, based
		formation and seed		on evidence from
		dispersal. (Y3 -		comparative and fair
		Plants)		tests, for the
				particular uses of
				everyday materials,
				including metals,
				wood and plastic.
				Demonstrate that
				dissolving, mixing
				and changes of state
				are reversible
				changes.
				Explain that some
				changes result in the
				formation of new
				materials, and that
				this kind of change is
				not usually reversible,
				including changes
				associated with

						burning and the	
						action of acid on	
						bicarbonate of soda.	
	To ask questions	Gather and record	Make close	Observe what	Observe plants and	3,350, 50,000 01 30000.	
	about the natural	data about weather	observations of seeds	happens to plants	animals in		
	environment.	conditions in	and bulbs	over time when	different habitats		
	environment.	autumn, drawing on	ana baibs	the leaves or roots	throughout the		
	To sort materials and	observation and using	Classify sands and	are removed.	year and use		
		· ·	Classify seeds and bulbs	are removea.	•		
	objects in to similar	simple equipment	buibs	Observe the effect of	recordings to		
	groups	(such as a container	Description Links		compare and		
	,	to measure rainfall)	Research and plan	putting cut white	contrast the living		
			when and how	carnations or celery	things observed.		
		Use their evidence to	to plant a range of	in coloured water.			
		describe some other	seeds and		Explore and use		
		features of the	bulbs	Investigate what	classification		
		weather,		happens to plants	keys to help group,		
		surroundings,	Look after the plants	when they	identify and		
		themselves, animals,	as they	are put in different	name a variety of		
Scientific		and plants found in	grow – weeding,	conditions e.g. in	living things in		
Skills		autumn.	thinning,	darkness, in	their local and wider		
Sittis			watering etc.	the cold, deprived of	environment.		
		Can sort and group		air, different types of			
		parts of	Make close	soil, different	Classify living things		
		plants using	observations and	fertilisers, varying	found in		
		similarities and	measurements of	amount of space.	different habitats		
		differences e.g. the	their plants		based on their		
		shape of	growing from seeds	Spot flowers, seeds,	features.		
		leaves, the colour of	and bulbs	berries and fruits			
		the		outside	Create a simple		
		flower/blossom.	Make comparisons	throughout the year.	identification key		
			between .		based on observable		
		Can use simple charts	plants as they grow	Observe flowers	features.		
		and Venn diagrams		carefully to identify			
		etc. to identify	Can spot similarities	the pollen	Use research to		
		and classify plants.	and difference	,	explore human		
					,		
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Use photographs and	between bulbs and	Observe flowers being	impact on the local
their own	seeds	visited by pollinators	environment
observations to talk		e.g. bees and	e.g. litter, tree
about how		butterflies in the	planting.
plants change over		summer.	
time (e.g.			Use secondary
seed to sapling to		Observe seeds being	sources to find out
tree) and		blown from the trees	about how
over the year		e.g. sycamore seeds.	environments may
(deciduous and			naturally change.
fruit bearing trees).		Research different	
		types of seed	Use secondary
Plant seeds and		dispersal.	sources to find out
observe how		,	about human impact,
they grow and		Classify seeds in a	both positive and
change by making		range of ways	negative, on
simple observations.		including by	environments and
		how they are	write a report
Point to and name		dispersed.	on this.
the parts of		,	
a plant, recognising		Create a new species	
that they		of flowering plant	
are not always the		·	
same e.g.		Can explain	
leaves and stems		observations made	
may not be		during	
green, the leaves are		investigations.	
different			
shapes		Can look at the	
		features of seeds to	
		decide on	
		their method of	
		dispersal.	
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			Can draw and label a		
			diagram of their		
			created		
			flowering plant to		
			show its parts, their		
			role and the method		
			of pollination and		
			seed dispersal.		
Forces (phus	ic linked topics)				
7 7 7 7 7 7 5 T			Compare how things	Explain that	
			move on different	unsupported objects	
			surfaces.	fall towards the	
			surtaces.	Earth because of the	
			Notice that some	force of gravity	
			forces need contact	acting between the	
			between two objects,	Earth and the falling	
			but magnetic forces	object.	
			can act at a distance.		
				Identify the effects of	
			Observe how magnets	air resistance, water	
			attract or repel each	resistance and	
K lad aa			other and attract	friction, that act	
Knowledge			some materials and	between moving	
			not others.	surfaces.	
			Compare and group	Recognise that some	
			together a variety of	mechanisms,	
			everyday materials	including levers,	
			on the basis of	pulleys and gears,	
			whether they are	allow a smaller force	
			attracted to a	to have a greater	
			magnet, and identify	effect.	
			some magnetic		
			materials.		
			maleriais.		
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			Describe magnets as			
			having two poles.			
			Predict whether two			
			magnets will attract			
			or repel each other,			
			depending on which			
			poles are facing.			
			Record and report	Investigate the pull		
			on findings from	on different		
			investigations,	objects using a		
			involving how things	newton meter		
			move on different	and record forces in		
			surfaces	Newtons		
				(N).		
			Compare and group			
			materials following	Report on conclusions		
			magnetic testing,	relating		
			recording findings	to an object's mass		
			and use the outcome	and its		
			to answer questions	weight in Newtons.		
Scientific Skills			about which	v		
			materials are	Investigate the effect		
			magnetic.	of friction		
			ŭ	in a range of		
			Make and	contexts.		
			Investigate			
			predictions on	Investigate the effects		
			whether two	_		
			-			
			*			
			<b>,</b>			
			-	of water resistance in a range of contexts e.g. dropping shapes through water, pulling shapes		

			e.g. boats along the	
			surface of	
			water.	
			Investigate the effects	
			of air	
			resistance in a range	
			of contexts e.g.	
			parachutes,	
			spinners, sails on	
			boats.	
			Explore how levers,	
			pulleys and	
			gears work.	
			gene vena	
			Research how the	
			work of scientists	
			such as Galileo Galilei	
			and Isaac Newton	
			helped to develop the	
			theory of gravitation.	
ight and sound (physic linked topics)			ericory of gravitations	
ight and sound (physic linked topics)			- "	
	Recognise that they	Identify how sounds	Describe the	Recognise that light
	need light in order to	are made, associating	movement of the	appears to travel in
	see things and that	some of them with	Earth, and other	straight lines.
	dark is the absence of	something vibrating.	planets, relative to	
	light.		the Sun in the solar	Use the idea that light
		Recognise that	system.	travels in straight lines
Knowledge	Notice that light is	vibrations from		to explain that objects
	reflected from	sounds travel through	Describe the	are seen because they
	surfaces.	a medium to the ear.	movement of the	give out or reflect light
			Moon relative to the	into the eye.
	Recognise that light	Find patterns	Earth.	
	Recognise that light from the sun can be	Find patterns between the pitch of	Earth.	Explain that we see

there are ways to of the object that Describe the Sun, travels from protect their eyes produced it. Earth and Moon as sources to object that approximately from light so objects and solved it. Find patterns spherical bodies. objects and solved it. Earth and Moon as sources to object and solved it. Earth and Moon as sources to object and solved it. Earth and Moon as sources to object and solved it. Earth and Moon as sources to object and solved it. Earth and Moon as sources to object and solved it. Earth and Moon as approximately from light so objects and solved it. Earth and Moon as approximately from light so objects and solved it. Earth and Moon as approximately from light so objects and solved it. Earth and Moon as approximately from light solved it. Earth and Moon as approximately from light solved it. Earth and Moon as approximately from light solved it. Earth and Moon as approximately from light solved it. Earth and Moon as approximately from light solved it. Earth and Moon as approximately from light solved it. Earth and Moon as approximately from light solved it.	ir eyes or
Recognise that Find patterns spherical bodies. objects and shadows are formed between the volume eyes.	-
Recognise that Find patterns spherical bodies. objects and shadows are formed between the volume eyes.	ources to
shadows are formed between the volume eyes.	
	then to our
when the light from of a sound and the Use the idea of the	
a light source is strength of the Earth's rotation to Use the idea	that light
blocked by an opaque vibrations that explain day and travels in sti	raight lines
object. produced it. night and the to explain w	hy
apparent movement shadows hav	e the same
Find patterns in the Recognise that of the sun across the shape as the	objects
way that the size of sounds get fainter as sky. that cast the	em.
shadows change. the distance from the	
sound source	
increases.	
Observe and identify Experiment with at Use secondary Plan and co	nduct a
changes to the size   least three different   sources to help create   test to inves	tigate how
and orientation of linstruments to a model e.g. role play light travels	and
shadows, relative to observe and explore or using balls, to explain/pres	ent the
their proximity volume and pitch. show the movement findings.	
to the light source. of the Earth	
Make predictions and around the Sun and Investigate t	he use of
Observe and identify draw conclusions the Moon around mirrors to r	eflect light
the difference in about the pitch and the Earth. and record of	using
Scientific Skills shadows of opaque, volume of sounds. straight line	diagrams
translucent and Use secondary to indicate t	he
transparent Note how vibrations sources to create a direction of	light.
objects/materials make sounds of model to show why	
different volumes day and night Use mirrors.	torches
Observe how shadows   and travel to our   occur   and protrac	tors to
are formed and ears. demonstrate	and
affected by • Make first-hand record how	light is
different Identify and show observations of how reflected in	
circumstances. how sound travels shadows caused by a mirror and	d how we
through particles and the Sun change see ourselves	in a

		To notice that light	into the ear.	through the day	mirror.
		can be reflected off			
		surfaces	Make own	Make a sundial and	Measure and record
		and Replace with	instruments that	report on findings	the angle of incidence
		investigate the	produce a range of	following observation	and angle of reflection
		visibility of	pitches.	of the changing	using a protractor and
		different materials		place of the shadow,	detailed diagram
		(eg shiny; foil,		making	
		mirrors and matt;		conclusions as to	
		sugar paper) in a		what this	
		darker environment		demonstrates and	
		according to which		how the sundial was	
		reflect most light.'		used to indicate the	
				time.	
		Investigate the size of			
		shadows according to		Research time zones	
		times of day and			
		year, by tracing		Consider the views of	
		shadows outside and		scientists in the	
		Comparing		past and how	
		differences.		evidence was used to	
				deduce the shapes	
		Classify materials		and movements of	
		according to opaque,		the Earth, Moon and	
		transparent and		planets before space	
		translucent.		travel.	
		Use oral and written			
		explanations to			
		report on why			
		shadows are formed			
		and how the length			
		and size			
		of a shadow can be			
		changed.			

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			Investigates questions		
			related to an object		
			and the shadow it		
			will cause		
Electricity (	physic linked topics)				
				Identify common	Associate the
				appliances that run	brightness of a lamp or
				on electricity.	the volume of a buzzer
				arr eleger leitig.	with the number and
				Construct a simple	voltage of cells used in
				series electrical	the circuit.
				circuit, identifying	
				and naming its basic	Compare and give
				parts, including cells,	reasons for variations
				wires, bulbs, switches	in how components
				and buzzers.	function, including the
				ara ouzzers.	brightness of bulbs, the
				Identify whether or	loudness of buzzers and
				not a lamp will light	the on/off position of
				in a simple series	switches.
Knowledge				circuit, based on	300100103.
Knowleage				whether or not the	Use recognised symbols
				lamp is part of a	when representing a
				complete loop with a	simple circuit in a
				battery.	diagram.
				baccery.	aragram.
				Recognise that a	
				switch opens and	
				closes a circuit and	
				associate this with	
				whether or not a	
				lamp lights in a	
				simple series circuit.	
				Simple Series circuit.	
				Dana mica carra	
				Recognise some	
				common conductors	

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			and insulators, and	
			associate metals with	
			being good	
			conductors.	
			Construct and	Draw circuit diagrams
			investigate a range	of a range of simple
			of circuits.	series circuits,
			<ul> <li>Investigate which</li> </ul>	using recognised
			materials can	symbols.
			be used instead of	
			wires to make	Communicate
			a circuit .	structures of
				circuits using circuit
			Classify materials	diagrams
			that conduct	with recognised
			electricity and those	symbols
			that don't	
			following	Make electric circuits
			investigation and	and demonstrate,
Scientific Skills			record	following
			findings	investigation, how
			· ·	variation in
			Investigate the effect	the working of
			of a switch	particular components
			and combinations of	can be changed.
			switches in	Ŭ
			simple circuits.	Plan and select
			,	resources for
			Investigate switches	a fair scientific
			and consider	enquiry, deciding
			variations for specific	which variables to
			uses, such	control.
			as a pressure switch	
			for a burglar	Record results from an
			alarm.	
			alar IVI.	

Impact				Apply their knowledge of conductors and insulators to design and make different types of switch		experiment using tables and graphs  Evaluate and explain their investigation, results and conclusions.
In Reception children will be able to identify similarities and differences in relation to places, objects, materials and living things. They are able to discuss the features of their own 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.	In Year 1 children will be able to name, label and sort animals, plants and body parts into groups. They should be able to perform simple tests, gather data and discuss what they find out.	In Year 2 children will be able to experience and observe phenomena, looking more closely at world around them. They should be curious and ask questions about what they notice. They should be developing their scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things and carrying out simple tests.	In Year 3 children will be able to label the parts of a plant and have a secure knowledge of what a plant needs to survive. Undertake observations over a period of time, make predictions, present data and analyse findings. Explain how water transportation occurs. Children should be able to confidently compare and group together different kinds of rocks & fossils based on their appearance and physical features. To sort, name and identify magnetic and nonmagnetic objects. To understand light & shadows, patterns and reflection.	In Year 4 children will be able to explain how sound created by vibrations. Children have an understanding of different materials and their state of matter. Children have a deeper understanding of animals within their habitat and a food chain. Children should be able to scientific vocabulary to plan, carryout their own investigations.	In Year 5 children will use their knowledge of the solar system to explain regularly experienced natural processes such as day and night and gravity. They can explain similarities and differences between the life cycles of plants, animals and humans using appropriate scientific vocabulary.	In Year 6 children will use their scientific skills and vocabulary to plan, carry out and evaluate appropriate investigations to explore the wider world.