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Science Curriculum

Science Overview

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery		The Natural World				
		Communicating	Knowledge and Understanding			Exploring and Observing
Reception	The Natural World					
	Knowledge and Understanding		Communicating		Exploring and Observing	
Year 1	Everyday Materials		Animals, including humans		Plants	Seasons*
Year 2	Animals, including humans		Uses of Everyday Materials		Plants	Living Things and their Habitats
Lower KS2 A	States of Matter	Sound	Animals, including humans		Living Things and their Habitats	Electricity
Lower KS2 B	Rocks	Animals, including humans	Light		Plants	Forces and Magnets
Upper KS2 A	Earth and Space	Forces	Properties and Changes of Materials		Animals, including humans	Living Things and their Habitats
Upper KS2 B	Light	Electricity	Living Things and their Habitats	Evolution and Inheritance	Animals, including humans	

Key Questions

	Observing over time	Pattern seeking	Research	Identifying, Classifying & Grouping	Comparative tests	Fair Tests
	Nursery					
Communicating		Topic – Festival and Celebration Is the oldest child the tallest in the class?		How can we sort the autumn objects collected on our walk?		
Knowledge and Understanding	Topic – Winter What happens to an ice-lolly left out over time?	Topic – Bedtime Stories – Elves and the Shoemaker Do all shoes leave the same shoe print?		Topic – Winter Which materials will keep us warm?	Topic – Bedtime Stories – Elves and the Shoemaker Which type of shoe will keep my feet dry?	
Exploring and Observing	Topic – Seaside and Holidays How does a seahorse change overtime?		Topic – Animal Kingdom What animals can we find in the jungle/farm/desert?	Topic – Seaside and Holiday How can organise the different sea animals?	Topic – Animal Kingdom Does more water make the grass grow longer?	
	Reception					
Knowledge and Understanding	Topic – All About Me How have I changed overtime?		Topic – Bears Where do bears like to live?	Topic – All About Me How can we organise ourselves?		
Communicating		Topic –Healthy Me Do all apples have the same number of seeds?	Topic – Healthy Me What sort of food is healthy?	Topic –Farm How can we organise the different farm animals?	Topic –Farm Which material will protect the egg the best?	
Exploring and Observing	Topic – Growing What changes occur to my crest each week?	Topic -Pirates Is there a pattern, the bigger the boat the better it floats?			Topic – Growing Do plants grow better in the light or in the dark?	
	Year 1					
Everyday Materials	What happens to shaving foam over time?		Which materials can be recycled?	Making an umbrella – which materials are waterproof??	Which materials are the most absorbent?	
Animals and Humans	How does my height change over the year?	Do you get better at smelling as you get older?		How can we organise all the zoo animals	Is our sense of smell better when we can't see?	
Plants	How does my sunflower change each week?	Is there a pattern in where we find weeds growing in the school grounds?		How can we sort the leaves that we collected on our walk?	Which type of compost grows the tallest sunflower?	
Seasons and Changes	How does the colour of a UV bead change over the day?	Do trees with bigger leaves lose their leaves first in autumn?		How would you group these things based on which season you are most likely to see them in?	which season does it rain the most?	
	Year 2					
Animals and Humans		Can children with longer legs run faster?	How does exercise affect our bodies?	Which offspring belongs to which animal?	Which cleans our hands better, soap or hand gel?	
Everyday Materials		Does the size and type of a paper make a paper aeroplane go farther?	How are plastics made?	How would you sort materials based on their properties?	Which material would be best for wrapping Samuel Pepy's belongings to protect them from the fire?	
Plants	What happens to my bean after I have planted it?	Do bigger seeds grow into bigger plants?	How can we identify the trees that we observed on our tree hunt?		Do cress seeds grow quicker inside or outside?	
Living things and their habitats	What conditions do woodlice prefer to live in?	Which habitat do worms prefer – where can we find the most worms?	How does the habitat of the artic compare to the habitat of the rainforest?	How would you group things to show which are living, dead or have never been alive?		

Cycle 1 Cycle 2

Key Questions

	Observing over time	Pattern seeking	Research	Identifying, Classifying and Grouping	Comparative tests	Fair Tests
	Lower KS2 (A)					
States of matter	How does the level of water in a glass change when left on the windowsill?	Is there a pattern in how long it takes different sized ice lollies to melt?			Do all liquids freeze at the same temperature?	How does the surface area of a container of water affect how long it takes to evaporate?
Sound	When is our classroom the quietest?				Which material is best to use for muffling sound in ear defenders?	How does the volume of a drum change as you move further away from it? How does the length of a guitar string/tuning fork affect the pitch of the sound?
Animals inc. humans	How does an egg shell change when it is left in cola?		How do dentists fix broken teeth?	What are the names for all the organs involved in the digestive system? How can we organiser our teeth into groups?		
Living things and their habitats		Where in our school is the most polluted?	Can we find other animals to add complexity to our classification key?	Can we use the classification keys to identify all the animals that we caught pond dipping?		Does the amount of light affect how many woodlice move around?
Electricity	How long does a battery light a torch for?			How would you group these electrical devices based on where the electricity comes from?	Which material is the best conductor of electricity?	How does the thickness of a conducting material affect how bright the lamp is?
	Lower KS2 (B)					
Rocks	How does tumbling change a rock over time?		Who was Mary Anning and what did she discover?		Which soil absorbs the most water?	How does adding different amounts of sand to soil affect how quickly water drains through it?
Animals including Humans		Do male humans have larger skulls than female humans?		How do skeletons of different animals compare?		How does the angle that your elbow is bent affect the circumference of your upper arm?
Light	When is our classroom the darkest? Is the Sun the same brightness all day?	Are you more likely to have bad eyesight and to wear glasses if you are older?	How does the Sun make light?			How does the distance between the shadow puppet and the screen affect the size of the shadow?
Plants	What happens to celery when it is left in a glass of coloured water?		What are all the different ways that seeds disperse?		Which conditions help seeds germinate faster?	How does the length of the carnation stem affect how long it takes for the food colouring to dye the petals?
Forces and Magnets	If we magnetise a pin, how long does it stay magnetised for?	Does the size and shape of a magnet affect how strong it is?		Which materials are magnetic?	Which magnet is the strongest?	
	Upper KS2 (A)					
Earth and Space	How does shadow length change over the day?	Is there a pattern between the size of a planet and the time it takes to travel around the sun?	What unusual objects did Jocelyn Bell Burnell discover?	Can you observe and identify all the phases in the cycle of the moon?		
Forces		Do all objects fall through water in the same way?	Can you explain the work of Isaac Newton and how is work is still relevant today?	Can you label and name all the forces acting on the objects in each of these situations?	Which shape parachute takes the longest to fall?	How does the surface area of a container affect the time it takes to sink?
Properties & Changes of materials	How does a nail in salt water change over time?	Is the thickest material best at keeping a mug of water the hottest?	How can we separate a mixture? What apparatus would we need?		Which type of sugar dissolves the fastest?	How does the temperature of tea affect how long it takes for a sugar cube to dissolve?
Animals and humans		Are the oldest children in our school the tallest?		Can you identify all the stages in the human life cycle?	Who grows the fastest, girls or boys?	How does age affect a human's reaction time?
Living things and their habitats	How does a bean change as it germinates?		Can you explain the work of David Attenborough?	What are the differences between the life cycle of an insect and a mammal?		How does the level of salt affect how quickly brine shrimp hatch?
	Upper KS2 (B)					
Light		Is there a pattern to how bright it is in school over the day? Is it the same in every classroom?		Can you identify all the colours of light that make white light when mixed together? What colours do you get if you mix different colours of light together?	Which material is most reflective?	How does the angle that a light ray hits a plane mirror affect the angle at which it reflects off the surface?
Electricity	Does the temperature of a light bulb go up the longer it is on?		How has our understanding of electricity changed over time?		Which make of battery lasts the longest? Which type of fruit makes the bestfruity battery?	How does the voltage of the batteries in a circuit affect the brightness of the lamp?
Living things and their habitat			Research some unfamiliar animals and plants and decide where they belong in the classification system.	How would you classify the animals and plants in your immediate environment?	Which is the most common invertebrate on our school playing field?	
Evolution and Inheritance	How have animals and plants have changes/adapted in response to their environments?	Is there a pattern between the size and shape of a bird's beak and the food it will eat?	What happened when Charles Darwin visited the Galapagos islands?	Compare the skeletons of apes, humans and Neanderthals How are certain animals adapted to their environments?		
Animals and Humans	How does my heart rate change over the day?			Which organs of the body make up the circulatory system?	Which types of exercise has the greatest effect on our heart rate?	Can exercising regularly affect your lung capacity?

Nursery

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Overview		**Communicating** The image part with relationship ID rId7 was not found in the file.	**Knowledge and Understanding** The image part with relationship ID rId7 was not found in the file.			**Exploring and Observing** The image part with relationship ID rId7 was not found in the file.
Knowledge						
Suggested Content	*Visit local community and commenting about the place where they live.* (2.1) *Visiting natural environments e.g. woodland area, park, and fields and making comments.* (2.1) *Comparing a familiar and unfamiliar environment.* (2.1) *Collecting natural and found objects to observe and sort.* (2.2) *Growing daffodil. Grass. Cress.* (2.2) *Finding animals in the immediate environment.* (2.2) *Observing how certain object behave.* (2.3)		*Look at how we grow over the year. Measure heights and shoe size.* *Look at seasonal changes. What are the signs of each season?* *What happens to a piece of bread/fruit/ice over time?* *Plant a flower and watch the growth over the coming weeks.*		*How do we look after pets?* (4.1) *What do animals need?* (4.1) *Litter picking – why must we look after our environment?* (4.1) *Vising Henry and Harriet.* (4.1) *Draw observation drawings of plants and animals.* (4.2) *Simple classification – grouping animals by number of legs, wings/no wings, heights etc…*(4.3)	
EYFS Outcomes	2.1 Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. 2.2 Can talk about some of the things they have observed such as plants, animals, natural and found objects. 2.3 Talks about why thigs happen and how things work.		3.1 Developing understanding of growth, decay and changes overtime.		4.1 Shows care and concern for living things and the environment. 4.2 I make observations of animals and plants through pictures, words or photographs. 4.3 I explore and notice patterns in the natural world e.g. all the birds we can see in the sky have wings.	
Scientific Enquiry						
Observing Over Time			Topic – Winter What happens to an ice-lolly left out over time? *(1.1, 1.2, 1.3)*		Topic – Seaside and Holidays How does a seahorse change overtime? *(1.1, 1.5, 1.6, 1.7, 1.9)*	
Pattern Seeking	Topic – Festival and Celebration Are the oldest children in the class the tallest? *(1.3, 1.6,1.7)*		Topic – Bedtime Stories – Elves and the Shoemaker Do all shoes leave the same shoe print? *(1.1, 1.3,)*			
Research					Topic – Animal Kingdom What animals can we find in the jungle/farm/desert? *(21.8, 1.9)*	
Identifying, Classifying & Grouping	How can we sort the autumn objects collected on our walk? *(1.1, 1.5, 1..6, 1.7, 1.8, 1.9)*		Topic – Winter Which materials will keep us warm? *(1.3, 1.4)*		Topic – Seaside and Holiday How can organise the different sea animals? *(1.1, 1.5, 1.6, 1.7, 1.9)*	
Comparative Tests			Topic – Bedtime Stories – Elves and the Shoemaker Which type of shoe will keep my feet dry? *(1.1, 1.3, 1.4)*		Topic – Animal Kingdom Does more water make the grass grow longer? *(1.1, 1.2,1.6, 1.7, 1.8, 1.9)*	
Working Scientifically Outcomes	1.1 I begin to use science words. 1.2 I question why things happen. 1.3 I have my own ideas. 1.4 I test my ideas. 1.5 I notice similarities and differences. 1.6 I can use my senses and look closely. 1.7 I use equipment and tools carefully. 1.8 I can create simple representations of people and objects. 1.9 I can talk about things like plants, animals, natural and found objects.					
Gospel Values	Learned and wise Attentive and discerning		Faith filled and hopeful Grateful and generous		Compassionate and loving Curious and active	

Cycle 1 Cycle 2

Reception

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview	**Knowledge and Understanding** The image part with relationship ID rId7 was not found in the file.		**Communicating** The image part with relationship ID rId7 was not found in the file.		**Exploring and Observing** The image part with relationship ID rId7 was not found in the file.	
Knowledge						
Suggested Content	*Go around the school ground, what do the children notice?* (2.1) *Walk in the local community, noticing certain features/landmarks.* (2.1, 2.2) *Comparing own immediate environment/natural environment to that of another mentioned in a story i.e. Handa's surprise, We're Going on a Bear Hunt.* (2.1, 2.2) *Bring in their favourite toy and compare noticing similarities and differences in materials and objects.* (2.2) *Noticing similarities and differences between themselves and their friends.* (2.3)		*Compare local community to farm environment/woods. (3.1)* *How do different areas of the farm vary from one another? (3.1)* *What happens to an egg left in coke? (3.2)* *Watch changes that take place from egg to chick. (3.2)* *Spring Seasonal walks. (3.2)* *Grown own grass. (3.2)*		*Compare a pirate boat to other boats.* (4.1) *Look at similarities and differences between ocean animals.* (4.1, 4.5) *Explore what will float and sink.* (4.2) *Explore which items can be detected by a metal detector.* (4.2) *Seasonal walks and melting linked to warm weather.* (4.3, 4.5) *How does a goldfish change overtime?* (4.4) *Draw a range of plants in the local environment.* (4.5)	
EYFS Outcomes	2.1 Knows some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.		3.1 Talk about the features of my own immediate environment and how environments might vary from one another.		4.1 Looks closely at similarities and differences between things in the world. 4.2 Explores and notices patterns in the results of experimenting e.g. every time I drop the marbles in the water, they sink. 4.3 Understands some important processes and changes in the natural world around them, including the seasons and changing states of matter.	
	2.2 Knows about similarities and differences in relation to objects and materials.		3.2 Explain why some things occur and talk about changes.		4.4 Looks closely at changes e.g. the way a caterpillar changes into a butterfly or a leaf changes colour.	
	2.3 Knows about similarities and differences in relation to living things.				4.5 Explores the natural world around them, making observations and drawing pictures of animals and plants.	
Scientific Enquiry						
Observing over time	Topic – Marvellous Me/Healthy Living How have I changed overtime? *(1.1, 1.2, 1.5, 1.6, 1.8)*		Topic – Once Upon A Time What changes occur to my grass each week? *(1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.8)*			
Pattern Seeking	Topic – Marvellous Me/Healthy Living Do all apples have the same number of seeds? *(1.3, 1.5)*				Topic -Pirates Is there a pattern, the bigger the boat the better it floats? *(1.1, 1.2, 1.3, 1.4, 1.7)*	
Research					Topic – Pirates What we can we find out about pirates? *(1.1, 1.3, 1.5,)*	
Identifying, Classifying & Grouping	Topic – Marvellous Me/Healthy Living How can we organise ourselves? *(1.1, 1.2, 1.5, 1.6)*		Topic –Farm How can we organise the different farm animals?*(1.3, 1.5, 1.6)*			
Comparative tests			Topic –Farm Which material will protect the egg the best?*(1.3, 1.5, 1.6)*		Topic – Commotion In The Ocean Which net will collect the most fish? *(1..2 1.3, 1.4, 1.5, 1.6, 1.7)*	
Working Scientifically Outcomes	1.1 I begin to use science words. 1.2 I question why things happen. 1.3 I have my own ideas. 1.4 I test my ideas. 1.5 I notice similarities and differences. 1.6 I can use my senses and look closely. 1.7 I use equipment and tools carefully. 1.8 I can create simple representations of people and objects.					
Gospel Values	Learned and wise Attentive and discerning		**Gospel Values**		Learned and wise Attentive and discerning	

Year 1

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Overview	**Everyday Materials** The image part with relationship ID rId7 was not found in the file.		**Animals, including humans** The image part with relationship ID rId7 was not found in the file.		**Plants** The image part with relationship ID rId7 was not found in the file.	**Seasons*** The image part with relationship ID rId7 was not found in the file.
Knowledge						
Suggested Content	*Identify between an object and how it is made (2.1)* *Name a variety of everyday materials including plastic, wood, metal, glass, water and rock (2.1, 2.2)* *Understand which materials can be recycled (2.4)* *Examine absorption when selecting a material for a puppy's bedding (2.1, 2.2, 2.3)* *Consider and experiment with materials for creating an umbrella (2.1, 2.2, 2.3, 2.4)* *Identify and name materials based on their properties (2.2, 2.3)* *Describe how shaving foam changes over time (2.3)* *Find a range of everyday materials and group them based on their properties (2.4)*		*Understand the parts of the body (3.4)* *Associate parts of the body with different senses (3.4)* *Explore the sense of touch using different parts of the body (3.4)* *Make close observations of facial features (3.3 3.4)* *Compare different parts of the body both between people and over time (3.4)* *Name and identify common animals (3.1)* *Describe the structures of different animals (3.3)* *Compare the structures of different animals (3.3)* *Classify animals based on their features (3.2, 3.3)* *Understand the features of fish, mammals, amphibians, reptiles and birds (3.1, 3.3)* *Group animals as fish, mammals, amphibians, reptiles and birds (3.1)* *Identify what different animals eat (3.2)* *Classify animals as carnivores, herbivores and omnivores (3.2)*		*Examine seeds in an apple (4.1)* *Visit and examine a variety of local trees overtime (4.1, 4.2)* *Find weeds and examine their roots (4.1)* *Identify and name plants in the school grounds (4.1)* *Note changes in growth of a sunflower/bean (4.2)* *Experiment with different types of compost (4.2)* *Collect and sort leaves (4.1)*	*Compare leaves on the ground and on the trees (5.1)* *Describe leaves and their structure (5.1)* *Use senses to describe a leaf (5.1)* *Compare leaf loss and tree size (5.1)* *Measure rainfall at different points in the year (5.2)* *Describe weather over a short period of time (5.2)* *Describe weather in different the seasons (5.1, 5.2)* *Observe how day length varies (5.2)* *Understand why animals hibernate (5.1, 5.2)* ****unit runs throughout the year***
NC Outcomes	2.1 Distinguish between an object and the materials from which it is made.		3.1 Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.		4.1 Identify and name a variety of common wild and garden plants, including trees classified as deciduous and evergreen.	5.1 Observe changes across the four seasons.
	2.2 Identify and name a variety of everyday materials, such as wood (including paper), plastic, glass, metal (including foil), water and rock (including brick).		3.2 Identify and name a variety of common animals that are carnivores, herbivores and omnivores.			
	2.3 Describe the simple physical properties of a variety of everyday materials such as: hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent.		3.3Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).		4.2 Identify and describe the basic structure of a variety of common flowering plants including trees such as roots, stem, leaves, flowers, petals, fruit, bulb, seed, and branches.	5.2 Observe and describe weather associated with the seasons and how day length varies.
	2.4 Compare and group together a variety of everyday materials on the basis of their simple physical properties.		3.4 Identify, name, draw and label the basic parts of the human body (head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth and teeth) and say which part of the body is associated with each sense.			
Scientific Enquiry						
Observing Over Time	What happens to shaving foam over time? *(1.1, 1.2, 1.3, 1.5, 1.6)*		How does my height change over the year? *(1.1, 1.2, 1.3, 1.6)*		How does my sunflower/bean change each week? *(1.1, 1.2, 1.4, 1.6)*	How does the colour of a UV bead change over the day? *(1.2, 1.5)*
Pattern Seeking			Do you get better at smelling as you get older? *(1.1, 1.3, 1.6)*		Is there a pattern in where we find weeds growing in the school grounds? *(1.1, 1.5, 1.6)*	Do trees with bigger leaves lose their leaves first in autumn? *(1.5,)*
Research	Which materials can be recycled? *(1.1, 1.6)*					
Identifying, Classifying & Grouping	Making Traction Man's diving suit – which materials are waterproof? *(1.1, 1.3, 1.4, 1.5)*		How can we organise all the zoo animals? *(1.4, 1.5)*		How can we sort the leaves that we collected on our walk? *(1.2, 1.4)*	How would you group these things based on which season you are most likely to see them in? *(1.4)*
Comparative Tests	Which materials are the most absorbent? *(1.1, 1.2, 1.3, 1.4, 1.5)*		Is our sense of smell better when we can't see? *(1.3)*		Which type of compost grows the tallest sunflower? *(1.2, 1.5)*	In which season does it rain the most? *(1.5, 1.6)*
Working Scientifically Outcomes	1.1 Can ask simple questions and recognising that they can be answered in different ways. 1.2 Can observe closely, using simple equipment (hand lenses, magnifying glasses) 1.3 Can perform simple tests (sand timer, non-standard units of measure) 1.4 Can identify and classify phenomena (sorting hoops, draw and label) 1.5 Can use their observations and ideas to suggest answers to questions. 1.6 Can gather and record data to help in answering questions (drawings, tally chart, pictogram)					
Gospel Values	Learned and wise Attentive and discerning		Compassionate and loving		Curious and active Faith filled and hopeful	Grateful and generous

Year 2

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview	**Animals, including humans** The image part with relationship ID rId7 was not found in the file.		**Uses of Everyday Materials** The image part with relationship ID rId7 was not found in the file.		**Plants** The image part with relationship ID rId7 was not found in the file.	**Living Things and their Habitats** The image part with relationship ID rId7 was not found in the file.
Knowledge						
Suggested Content	*Sort and classify different types of food (2.2, 2.3)* *Analyse and describe the healthiness of different meals (2.3)* *Design a meal based on knowledge of healthy eating (2.2, 2.3)* *Choose a physical activity and evaluate the impact on their bodies (2.3)* *Examine if certain foods increase our running pace (2.2, 2.3)* *Understand the importance of hygiene for humans (2.3)*	*Investigate and how germs spread through contact (2.3)* *Write a set of instructions for how to wash your hands (2.3)* *Match animals to their offspring (2.1)* *Sort and group the needs of a human baby (2.1, 2.2, 2.3)* *Observe tadpoles as they grow (2.1)*	*Examine and investigate different materials (3.1)* *Describe the properties of everyday materials (3.1)* *Identify which materials let electricity pass through them (3.1)* *Identify and describe the suitability of everyday materials for particular uses (3.1)* *Explore how paper changes when left in water (3.1)* *Apply knowledge of materials (3.1)*	*Design a box to keep an egg safe (3.1)* *Investigate boxes that keep eggs safe (3.1)* *Explore fabrics for a particular use (3.1)* *Investigate how materials can be shaped (3.2)* *Research how plastics are made (3.2)* *Identify a new use for a material (3.2)*	*Observe how plants grow from a seed/bulb into a plant (4.1)* *Know that plants need water to survive (4.2)* *Know plants need light to survive (4.2)* *Know plants need a suitable temperature to survive (4.2)* *Compare the growth of different sized seeds (4.1, 4.2)*	*Explore and compare the difference between living and dead things (5.1)* *Identify things that have never lived (5.1)* *Take a survey to compare animals in two habitats (5.2, 5.3)* *Research to compare two different habitats (5.2, 5.3)* *Describe the features of a habitat that are suitable for woodlouse growth (5.2, 5.3)* *Create a simple food chain (5.4)*
NC Outcomes	2.1 Understand and notice that animals, including humans, have offspring which grow into adults.		3.1 Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.		4.1 Observe and describe how seeds and bulbs grow into mature plants.	5.1 Explore and compare the differences between things that are living, dead and things that have never been alive.
	2.2 Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).					5.2 Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.
	2.3 Describe the importance for humans to exercise, eating the right amounts of different types of food and hygiene.		3.2 Find out how the shape of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.		4.2 Find out and describe how plants need water, light and suitable temperature to grow and stay healthy.	5.3 Identify and name a variety of plants and animals in their habitats, including micro-habitats.
						5.4 Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.
Scientific Enquiry						
Observing Over Time					What happens to my bean after I have planted it? *(1.3, 1.5, 1.6)*	What conditions do woodlice prefer to live in? *(1.5, 1.6)*
Pattern Seeking	Can children with longer legs run faster? *(1.3, 1.6)*		Does the size and type of a paper make a paper aeroplane go farther? *(1.6)*		Do bigger seeds grow into bigger plants? *(1.5)*	Which habitat do worms prefer – where can we find the most worms? *(1.1, 1.4)*
Research	How does exercise affect our bodies? *(1.1)*		How are plastic made? *(1.1)*		How can we identify the trees that we observed on our tree hunt? *(1.4)*	How does the habitat of the artic compare to the habitat of the rainforest? *(1.5)*
Identifying, Classifying & Grouping	Which offspring belongs to which animal? *(1.4)*		How would you sort materials based on their properties? *(1.4)*			How would you group things to show which are living, dead or have never been alive? *(1.4)*
Comparative Tests	Which cleans our hands better, soap or hand gel *(1.5)*		Which material would be best for wrapping Samuel Pepy's belongings to protect them from the fire? *(1.1, 1.3, 1.6)*		Do cress seeds grow quicker inside or outside? *(1.1, 1.2, 1.3, 1.5, 1.6)*	
Working Scientifically Outcomes	1.1 Can ask simple questions and recognising that they can be answered in different ways. 1.2 Can observe closely, using simple equipment (microscope). 1.3 Can perform simple tests (ruler, stop watch). 1.4 Can identify and classify phenomena (venn diagram) 1.5 Can use their observations and ideas to suggest answers to questions. 1.6 Can gather and recording data to help in answering questions (block graph, bar graph, simple table)					
Gospel Values	Learned and wise Attentive and discerning		Compassionate and loving Faith filled and hopeful		Grateful and generous	Curious and active

Lower KS2 **A**

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Overview	**States of Matter** The image part with relationship ID rId7 was not found in the file.	**Sound** The image part with relationship ID rId7 was not found in the file.	**Animals, including humans** The image part with relationship ID rId7 was not found in the file.		**Living Things and their Habitats** The image part with relationship ID rId7 was not found in the file.	**Electricity** The image part with relationship ID rId7 was not found in the file.
Knowledge						
Suggested Content	*Examine features of the three states of matter (2.1)* *Classify materials and objects by state of matter (2.1)* *Investigate how quickly solids melt (2.2)* *Find out if all liquids freeze at the same temperature (2.2)* *Investigate evaporation pace (2.2, 2.3)* *Understand condensation (2.2, 2.3)* *Examine how water changes state in nature (2.3)*	*Investigate the volume of sound at different points in the day (3.4)* *Explore how sounds are made by vibrations (3.1, 3.2)* *Explore how sounds travel through different objects (3.3)* *Investigate how sounds change with distance from the source (3.5)* *Find patterns between the volume of a sound and the strength of the vibrations it produces (3.4)* *Explore how the pitch of an object can be changed (3.3, 3.4)*	*Identify types of teeth in humans (4.1)* *Describe the functions of different teeth types (4.1)* *Compare teeth between carnivores and herbivores (4.2)* *Examine tooth decay (4.2)* *Describe how teeth should be cared for (4.2)* *Understand the purpose of the digestive system (4.1)* *Describe the functions of the parts of the digestive system (4.1)* *Examine and describe a food chain (4.3)* *Construct a food chain using provided information (4.3)*		*Recognise different ways animals can be grouped (5.1)* *Classify animals using classification keys (5.2)* *Add animals to a classification key (5.2)* *Examine how a light changes the behaviour of woodlice (5.3)* *Undertake investigations to find out where in the school is most polluted (5.3)*	*Identify and group appliances that run on electricity (6.1)* *Construct simple series cells using common electrical parts (6.2)* *Identify whether a lamp will light in a circuit (6.3)* *Investigate whether materials are conductors or insulators of electricity (6.5)* *Examine the thickness of a conductor on the brightness of a bulb (6.2, 6.4, 6.5)* *Investigate battery life (6.2)*
NC Outcomes	2.1 Compare and group materials together, according to whether they are solids, liquids or gases.	3.1 Identify how sounds are made, associating some of them with something vibrating. 3.2 Recognise that vibrations from sounds travel through a medium to the ear.	4.1 Describe the simple functions of the basic parts of the digestive system in humans.		5.1 Recognises that living things can be grouped in a variety of ways.	6.1 Identify common appliances that run on electricity. 6.2 Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
	2.2 Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).	3.3 Find patterns between the pitch of a sound and features of the object that produced it. 3.4 Find patterns between the volume of a sound and the strength of the vibrations that produced it.	4.2 Identify the different types of teeth in humans and their simple functions.		5.2 Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.	6.3 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. 6.4 Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.
	2.3 Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	3.5 Recognise that sounds get fainter as the distance from the sound source increases.	4.3 Construct and interpret a variety of food chains, identifying producers, predators and prey.		5.3 Recognise that environments can change and that this can sometimes pose dangers to living things.	6.5 Recognise some common conductors and insulators, and associate metals with being good conductors.
Scientific Enquiry						
Observing Over Time	How does the level of water in a glass change when left on the windowsill? *(1.3, 1.4, 1.5, 1.6, 1.7)*	When is our classroom the quietest? *(1.4)*	How does an egg shell change when it is left in cola? *(1.2, 1.6)*			How long does a battery light a torch for? *(1.2, 1.7)*
Pattern Seeking	Is there a pattern in how long it takes different sized ice lollies to melt? *(1.1, 1.2)*		Are foods that are high in energy always high in sugar? *(1.4, 1.6)*		Where in our school is the most polluted? *(1.6)*	
Research		Do all animals have the same hearing range? *(1.4)*	How do dentists fix broken teeth? *(1.6)*		Can we find other animals to add complexity to our classification key? *(1.4)*	
Identifying, Classifying & Grouping			What are the names for all the organs involved in the digestive system? *(1.6, 1.8)* How can we organiser our teeth into groups? *(1.6, 1.8)*		Can we use the classification keys to identify all the animals that we caught pond dipping? *(1.4)*	How would you group these electrical devices based on where the electricity comes from? *(1.4)*
Comparative Tests	Do all liquids freeze at the same temperature? *(all)*	Which material is best to use for muffling sound in ear defenders? *(1.1, 1.7, 1.9)*				Which material is the best conductor of electricity? *(1.1, 1.2, 1.5, 1.7, 1.9)*
Fair Tests	How does the surface area of a container of water affect how long it takes to evaporate? *(1.2, 1.3, 1.4, 1.5, 1.7)*	How does the volume of a drum change as you move further away from it? *(1.9)* How does the length of a guitar string/tuning fork affect the pitch of the sound? *(1.9)*			Does the amount of light affect how many woodlice move around? *(1.1, 1.2, 1.5, 1.7, 1.9)*	How does the thickness of a conducting material affect how bright the lamp is? *(1.1, 1.2, 1.5, 1.7, 1.9)*
Working Scientifically Outcomes	1.1 Can ask relevant questions and using different types of scientific enquires to answer them. 1.2 Can set up simple practical enquiries, comparative and fair tests. 1.3 Can make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers, beakers, test tubes and data loggers. 1.4 Can gather, record, classify and present data in a variety of ways to help in answering questions (classification keys, bar charts, venn diagrams, line graphs and time graphs). 1.5 Can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. 1.6 Can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. 1.7 Can use results to draw simple conclusions and make predictions for new values, suggest improvements and raise further questions. 1.8 Can identify differences, similarities or changes related to simple scientific ideas and processes. 1.9 Can use straight forward scientific evidence to answer questions or to support their findings.					
Gospel Values	Curious and active	Attentive and discerning	Compassionate and loving Grateful and generous		Faith filled and hopeful	Learned and wise

Lower KS2 B

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview	**Light** The image part with relationship ID rId7 was not found in the file.	**Animals, including humans** The image part with relationship ID rId7 was not found in the file.	**Rocks** The image part with relationship ID rId7 was not found in the file.		**Plants** The image part with relationship ID rId7 was not found in the file.	**Forces and Magnets** The image part with relationship ID rId7 was not found in the file.
Knowledge						
Suggested Content	*Examine different sources of light (4.* *Examine how light changes in our classroom over time (4.1)* *Understand how light allows us to see different objects (4.2)* *Understand how sight changes as people get older (4.1)* *Experiment with how light travels through different materials (4.4)* *Vary the position, shape and size of a shadow (4.5)* *Understand the dangers of light and how you can protect yourself from them (4.3)* *Examine different types of mirrors (4.2)* *Understand how mirrors can be used in espionage (4.2)1, 4.3)*	*Examine the structure of a skeleton (3.2)* *Describe the functions of a skeleton (3.2)* *Examine how skeletons vary between animals (3.2)* *Describe how muscles and bones work together (3.2)* *Compare strengths of muscles (3.2)* *Investigate voluntary and involuntary muscles (3.2)* *Learn how to care for our bones (3.1, 3.2)* *Look at food packaging, what nutritional value does it state? (3.1)* *Design healthy meals (3.1)*	*Understand what rocks are and how they can be classified (2.1)* *Examine how rocks change (2.1)* *Understand what fossils are and the legacy of Mary Anning (2.2)* *Classify fossils by type (2.2)* *Explain how fossils are formed (2.2)* *Examine different types of soils and understand what it is made up of (2.3)* *Examine absorption of different types of soil (2.3)*		*Understand what a plant needs for growth (5.2)* *Describe the function of roots (5.1, 5.3)* *Describe the function of the stem (5.1, 5.3)* *Describe the function of leaves (5.1)* *Describe the function of flowers (5.1)* *Understand the life cycle of a plant (5.4)* *Compare how plants disperse their seeds/what are all the different ways seeds disperse (5.4)*	*Examine which types of objects are magnetic (6.3, 6.4)* *Undertake experiments to measure the strengths of different magnets (6.1, 6.2)* *Understand how one magnet reacts to another (6.3, 6.5, 6.6)* *Create a temporary magnet (6.2, 6.3)* *Find out how magnets are used in real-life situations (6.4)*
NC Outcomes	2.1 Recognise that they need light in order to see things and that dark is the absence of light.	3.1 Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food, they get nutrition from what they eat.	4.1 Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.		5.1 Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.	6.1 Compare how things move on different surfaces.
	2.2 Notice and understand that light is reflected from surfaces.		4.2 Describe in simple terms how fossils are formed when things that have lived are trapped within rock.		5.2 Explore the requirements of plants for life and growth (air, light, water, nutrients from soil and room to grow) and how they vary from plant to plant.	6.2 Notice and understand that some forces need contact between two objects, but magnetic forces can act at a distance.
	2.3 Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.	3.2 Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	4.3 Recognises that soils are made from rocks and organic matter.		5.3 Investigate the way in which water is transported within plants.	6.3 Observe how magnets attract or repel each other and attract some materials and not others.
					5.4 Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	6.4 Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.
	2.4 Recognise that shadows are formed when the light from a light source is blocked by an opaque object.					6.5 Describe magnets as having two poles.
	2.5 Find patterns in the way that the size of shadows change.					6.6 Predict whether two magnets will attract or repel each other, depending on which poles are facing.
Scientific Enquiry						
Observing Over Time	When is our classroom the darkest? *(1.8)*				What happens to celery when it is left in a glass of coloured water? *(1.6)*	If we magnetise a pin, how long does it stay magnetised for? *(1.2, 1.3)*
Pattern Seeking	Are you more likely to have bad eyesight and to wear glasses if you are older? *(1.1, 1.4, 1.5, 1,7, 1.8,1.9)*	Do male humans have larger skulls than female humans? *(1.3)*			What colour flowers do pollinating insects prefer? *(1.1, 1.2, 1.4, 1.6, 1.7)*	Does the size and shape of a magnet affect how strong it is? *(1.1, 1.9)*
Research		Why do different types of vitamins keep us healthy and which foods can we find them in? *(1.5)*	Who was Mary Anning and what did she discover? *(1.1)*			
Identifying, Classifying & Grouping	How would you organise these light sources into natural and artificial sources? *(1.6)*	How do skeletons of different animals compare? *(1.4, 1.5)*	Can you use the identification key to find out the name of each of the rocks in your collection? *(1.8)*			Which materials are magnetic? *(1.9)*
Comparative tests			Which soil absorbs the most water? *(1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7)*		Which conditions help seeds germinate faster? *(1.2, 1.4)*	Which surface is best to stop you slipping? *(1.2, 1.3, 1.4, 1.5, 1.6, 1.7)*
Fair Tests	How does the distance between the shadow puppet and the screen affect the size of the shadow? *(1.7, 1.9)*		How does adding different amounts of sand to soil affect how quickly water drains through it? *(1.2, 1.4, 1.5, 1.6)*		How does the length of the carnation stem affect how long it takes for the food colouring to dye the petals? *(1.3)*	
Working Scientifically Outcomes	1.1 Can ask relevant questions and using different types of scientific enquiries to answer them. 1.2 Can set up simple practical enquiries, comparative and fair tests. 1.3 Can make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including magnets, measuring tapes, mirrors and torches. 1.4 Can gather, record, classify and present data in a variety of ways to help in answering questions (bar line graph, carroll diagram and tally chart). 1.5 Can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. 1.6 Can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. 1.7 Can use results to draw simple conclusions and make predictions for new values. 1.8 Can identify difference, similarities or changes related to simple scientific ideas and processes (sorting hoops). 1.9 Can use straight forward scientific evidence to answer questions or to support their findings.					
Gospel Values	Attentive and discerning	Compassionate and loving	Curious and active		Faith filled and hopeful Grateful and generous	Learned and wise

Upper KS2 A

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Overview	**Earth and Space** The image part with relationship ID rId7 was not found in the file.	**Forces** The image part with relationship ID rId7 was not found in the file.	**Properties and Changes of Materials** The image part with relationship ID rId7 was not found in the file.		**Animals, including humans** The image part with relationship ID rId7 was not found in the file.	**Living Things and their Habitats** The image part with relationship ID rId7 was not found in the file.
Knowledge						
Suggested Content	*Describe the movements of the planets in the solar system (2.1)* *Compare key features of the planets, stars and moons in the solar system (2.3)* *Describe how our knowledge of the solar system has changed over time (2.1)* *Explain why day and night occur (2.4)* *Investigate how shadows change throughout the day (2.4)* *Identify and order the phases in the cycle of the moon (2.2)*	*Understand what a force is and how it can affect an object (3.1)* *Investigate friction caused by different materials (3.2)* *Investigate whether the mass of an object affects how quickly it falls to the ground (3.1, 3.2)* *Explore the effects of air resistance (3.2)* *Understand the effects of water resistance and up-thrust (3.2)* *Explain how simple levers work (3.3)*	*Consolidate our knowledge of state of matter (4.1)* *Classify materials based on their conductivity (4.4)* *Understand and explain how simple solutions are made (4.2)* *Investigate how the temperature of water affects how much sugar can be dissolved (4.5)* *Investigate which type of sugar dissolves the fastest (4.5)* *Examine how a container of salt changes over time (4.1)* *Utilise evaporation as a method for separation of a solution (4.2, 4.3, 4.5)* *Make informed decisions about how to separate solutions and mixtures (4.2, 4.3, 4.5)* *Examine how a nail in salt water changes over time (4.1)* *Understand that some changed can be reversed whilst others cannot (4.6)*		*Identify all stages in the human life cycle* *Understand changes which happen during adolescence* *Compare growth by both age and gender* *Describe changes that happen as humans develop to old age* *Investigate how age affects a human's reaction time* *Examine gestation in a variety of animals*	*Order the life cycle of a house fly (6.1)* *Seek patterns in life cycles of different animals (6.1)* *Classify and group animals based on their life cycles (6.1)* *Grow plants from parts of a parent plant (6.2)* *Investigate the impact of a habitat on the hatching of brine shrimp (6.2)*
NC Outcomes	2.1 Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. 2.2 Describe the movement of the Moon relative to the Earth. 2.3 Describe the Sun, Earth and Moon as approximately spherical bodies. 2.4 Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	3.1 Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. 3.2 Identify the effects of air resistance, water resistance and friction that act between moving surfaces. 3.3 Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	4.1 Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. 4.2 Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. 4.3 Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating 4.4 Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. 4.5 Demonstrate that dissolving, mixing and changes of state are reversible changes. 4.6 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.		5.1 Describe the changes as humans develop to old age.	6.1 Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. 6.2 Describethelife process of reproduction in some plants and animals.
Scientific Enquiry						
Observing Over Time	How does shadow length change over the day? *(1.1, 1.2, 1.3, 1.5)*		How does a nail in saltwater change over time? *(1.5, 1.6)*			How does a bean change as it germinates? *(1.5)*
Pattern Seeking	Is there a pattern between the size of a planet and the time it takes to travel around the sun? *(1.3, 1.5)*	Do all objects fall through water in the same way? *(1.1)*			Are the oldest children in our school the tallest? *(1.1, 1.2)*	
Research	What unusual objects did Jocelyn Bell Burnell discover? *(1.5)*		How can we separate a mixture? What apparatus would we need? (1.1, 1.5)			Can you explain the work of David Attenborough? *(1.5, 1.6)*
Identifying, Classifying & Grouping	Can you observe and identify all the phases in the cycle of the moon? *(1.3)*	Can you label and name all the forces acting on the objects in each of these situations? *(1.6)*			Can you identify all the stages in the human life cycle? *(1.5)*	What are the differences between the life cycle of an insect and a mammal? *(1.5)*
Comparative Tests		Which shape parachute take the longest to fall? *(1.1, 1.2, 1.3, 1.4, 1.5)*	Which type of sugar dissolves the fastest? *(1.1, 1.2, 1.5)*		Who grows the fastest, girls or boys? *(1.5)*	
Fair Tests		How does the surface area of a container affect the time it takes to sink? *(1.1, 1.2, 1.3, 1.5)*	How does the temperature of tea affect how long it takes for a sugar cube to dissolve? *(1.1, 1.2, 1.5, 1.6)*		How does age affect a human's reaction time? *(1.1, 1.2, 1.3, 1.4)*	How does the level of salt affect how quickly brine shrimp hatch? *(1.4)*
Working Scientifically Outcomes	1.1 Can plan different types of scientific enquiries to answer questions including recognising and controlling variable where necessary. 1.2 Can take measurements, using a range of scientific equipment, with increasing accuracy and precision. 1.3 Can record data and results of increasing complexity using scientific diagrams and labels, tables, bar and line graphs. 1.4 Can use test results to make predictions to set up further comparative and fair tests. 1.5 Can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. 1.6 Can identify scientific evidence that has been used to support or refute ideas or arguments.					
Gospel Values	Attentive and Discerning Faith filled and hopeful	Learned and wise	Curious and Active		Compassionate and loving	Grateful and generous

Upper KS2 **B**

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Overview	**Light** The image part with relationship ID rId7 was not found in the file.	**Electricity** The image part with relationship ID rId7 was not found in the file.	**Living Things and their Habitats** The image part with relationship ID rId7 was not found in the file.	**Evolution and Inheritance** The image part with relationship ID rId7 was not found in the file.	**Animals, including humans** The image part with relationship ID rId7 was not found in the file.	
Knowledge						
Suggested Content	*Examine brightness over the day in different locations (2.2, 2.3)* *Explore the reflectiveness of materials (2.2, 2.3)* *Recognise that light travels in straight lines (2.1)* *Predict light direction using mirrors (2.1)* *Investigate shadow length and understand how shadow size can be altered (2.4)* *Explore the shapes of shadows of different objects (2.4)* *Experiment with light refraction (2.2, 2.3)*	*Investigate the brightness and resistance in bulbs (3.1, 3.2)* *Measure amplitude from different energy sources (3.1)* *Assemble a circuit (3.3)* *Create an electromagnet (3.3)*	*Find out about Carl Linnaues, a pioneer of classification (4.1)* *Describe how living things are classified into broad groups (4.1)* *Collect, record, classify and name some of the botanical beauties found in your local environment (4.2)* *Look at the similarities and differences of plants, animals and micro-organisms (4.1, 4.2)*	*Understand how animals are adapted to their environment (5.2, 5.3)* *Explain the discoveries of Charles Darwin (5.3)* *Describe how variations become adaptations (5.2, 5.3)* *Describe types of fossils (5.1)* *Understand the evidence for evolution (5.1)* *Detail the process of fossilisation (5.1)* *Explain how selective breeding in animals is utilised (5.3)*	*Understand the impact of smoking on the lungs (6.2)* *Describe the circulatory system (6.1)* *Describe how the heart pumps blood around the body (6.1)* *Examine the effects of exercise on the pulse (6.2)* *Explain the impact of a poor diet on the circulatory system (6.1, 6.2)* *Describe the ways in which nutrients and water is transported in the body (6.3)*	
NC Outcomes	2.1 Recognise that light appears to travel in straight lines.	3.1 Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.	4.1 Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.	5.1 Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.	6.1 Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.	
	2.2 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.	3.2 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.		5.2 Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.	6.2 Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	
	2.3 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. 2.4 Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	3.3 Can use recognised symbols when representing a simple circuit in a diagram.	4.2 Give reasons for classifying plants and animals based on specific characteristics.	5.3 Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	6.3 Describe the ways in which nutrients and water are transported within animals, including humans.	
Scientific Enquiry						
Observing Over Time		Does the temperature of a light bulb go up the longer it is on? *(1.1, 1.2, 1.3)*		How have animals and plants have changes/adapted in response to their environments? *(1.5, 1.6)*	How does my heart rate change over the day? *(1.2, 1.3)*	
Pattern Seeking	Is there a pattern to how bright it is in school over the day? Is it the same in every classroom? *(1.4)*		Do all flowers have the same number of petals? *(1.3, 1.5)*	Is there a pattern between the size and shape of a bird's beak and the food it will eat? *(1.5)*		
Research		How has our understanding of electricity changed overtime? *(1.5)*	Research some unfamiliar animals and plants and decide where they belong in the classification system. *(1.1, 1.3, 1.6)*	What happened when Charles Darwin visited the Galapagos islands? *(1.5)*		
Identifying, Classifying & Grouping	Can you identify all the colours of light that make white light when mixed together? What colours do you get if you mix different colours of light together? *(1.5)*		How would you classify the animals and plants in your immediate environment? *(1.1, 1.3, 1.6)*	Compare the skeletons of apes, humans and Neanderthals *(1.5)*	Which organs of the body make up the circulatory system? *(1.5)*	
Comparative Tests	Which material is most reflective? *(1.1, 1.3)*	Which type of fruit makes the best fruity battery? *(1.1, 1.4)*	Which is the most common invertebrate on our school playing field? *(1.1, 1.3, 1.5)*		Which types of exercise has the greatest effect on our heart rate? *(1.1, 1.2, 1.3, 1.4)*	
Fair Tests	How does the angle that a light ray hits a plane mirror affect the angle at which it reflects off the surface? *(1.1)*	How does the voltage of the batteries in a circuit affect the brightness of the lamp? *(1.4)*			Can exercising regularly affect your lung capacity? *(1.6)*	
Working Scientifically Outcomes	1.1 Can plan different types of scientific enquiries to answer questions, including recognising and controlling variable where necessary. 1.2 Can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. 1.3 Can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar graphs. 1.4 Can use test results to make predictions to set up further comparative and fair tests. 1.5 Can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. 1.6 Can identify scientific evidence that has been used to support or refute ideas or arguments.					
Gospel Values	Compassionate and loving	Faith filled and hopeful	Curious and Active	Learned and wise	Grateful and generous Attentive and Discerning	

Nursery Assessment Overview

	Autumn		Spring		Summer	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1 Assessment Overview		**Communicating**	**Knowledge and Understanding**			**Exploring and Observing**
Working Towards	Is beginning to ask questions about aspects of his familiar world - for example such as the place where he lives. With a little adult prompting, can talk about some of the things he has observed such as plants, animals, natural and found objects. Is gaining the confidence to talk about their ideas about why things happen and how things work.		Is beginning to understand patterns of growth, decay and changes over time.		Is beginning to show greater care and concern for living things and the environment. Makes observations of animals and plants through words. Is beginning to explores and notice patterns in the natural world e.g. all the birds we can see in the sky have wings.	
Working Within	Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. Can talk about some of the things they have observed such as plants, animals, natural and found objects. Can talk about and discuss their ideas about why things happen and how things work.		Developing understanding of growth, decay and changes overtime.		Shows care and concern for living things and the environment. Makes observations of animals and plants through pictures, words or photographs. Explores and notice patterns in the natural world e.g. all the birds we can see in the sky have wings.	
Working Beyond	Is inquisitive and comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. Can talk about some of the things they have observed such as plants, animals, natural and found objects using simple science words. Can talk about and discuss their ideas about why things happen and how things work in a range of contexts.		Can look closely at similarities, differences, patterns and change.		Is beginning to understand how to care for living things and their environment (e.g. knowing plants need water). Makes observations of animals and plants through pictures, words, photographs, videos and other secondary sources. Explores and notice a range of patterns in the natural world e.g. all the birds we can see in the sky have wings.	

Reception Assessment Overview

	Autumn		Spring		Summer	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1 Assessment Overview	**Knowledge and Understanding** The image part with relationship ID rId7 was not found in the file.		**Communicating** The image part with relationship ID rId7 was not found in the file.		**Exploring and Observing** The image part with relationship ID rId7 was not found in the file.	
Working Towards	With some support, can talk about the features of their own immediate environment and how environments might vary from one another. Can look closely at similarities, differences, patterns and change. Is beginning to recognise some similarities and differences in relation to places, objects, materials and living things.		With some support, can talk about the features of their own immediate environment and how environments might vary from one another. Is beginning to Explain with some support why some things occur and talk about changes.		Is beginning to look closely at similarities and differences between things in the world. Is beginning to explore and notice patterns in the results of experimenting. Understands some important processes and changes in the natural world around them, including the seasons. Is beginning to looks closely at changes e.g. the way a caterpillar changes into a butterfly or a leaf changes colour. Is beginning to explore the natural world around them.	
Working Within	Talk about features of own immediate environment. Knows some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Knows about similarities and differences in relation to objects and materials. Knows about similarities and differences in relation living things.		Talk about the features of my own immediate environment and how environments might vary from one another. Explain why some things occur and talk about changes.		Looks closely at similarities and differences between things in the world. Explores and notices patterns in the results of experimenting. Understands some important processes and changes in the natural world around them, including the seasons and changing states of matter. Looks closely at changes e.g. the way a caterpillar changes into a butterfly or a leaf changes colour. Explores the natural world around them, making observations and drawing pictures of animals and plants.	
Working Beyond	Talk about features of own immediate environment in some detail. Knows that the environment and living things are influenced by human activity. Can describe the properties of some materials. Can group living things based on similarities and differences.		Talk about features of own immediate environment in some detail and how environments may vary from one another such as by landscape, weather and plants. Explain why some things occur and talk about changes for a range of things.		Looks closely, in detail at similarities and differences between things in the world. Enjoys experimenting and learning through practical activities e.g. is familiar with some basic scientific concepts for example floating and sinking. Understands some important processes and changes in the natural world around them, including the seasons, changing states of matter, animals and plant growth. Looks closely at changes, describing what can be seen e.g. the way a caterpillar changes into a butterfly or a leaf changes colour. Explores, observes and describes the natural world around them, making observations and drawing pictures of animals and plants.	

Year 1 Assessment Overview

	Autumn		Spring		Summer	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1 Assessment Overview	Everyday Materials The image part with relationship ID rId7 was not found in the file.		Animals Including Humans The image part with relationship ID rId7 was not found in the file.		Plants The image part with relationship ID rId7 was not found in the file.	Seasons The image part with relationship ID rId7 was not found in the file.
Working Towards	Is starting to understand that the material of an object is what it is made from. Can recognise a variety of simple everyday materials. Is learning to describe the simple properties of everyday materials. Can compare materials with support.		Recognises common fish, amphibians, reptiles, birds and mammals. Is beginning to understand that animals have different diets. Can name the basic parts of some animal bodies. Can identify the main parts of the human body.		Is starting to recognise some common plants and trees. Recognises the main parts of flowering plants and trees.	Has observed the changes that happen in spring, summer, autumn and winter. Has observed the weather associated with the seasons and how day length varies.
Working Within	Can identify the material that a simple object has been made from. Can name a variety of simple everyday materials. Can describe the simple properties of everyday materials. Can group materials by their properties.		Can identify a variety of common fish, amphibians, reptiles, birds and mammals. Understands what is meant by carnivore, herbivore and omnivore Can name the main parts of a range of animal bodies. Can draw and label the main parts of the human body, and say which part of the body is associated with each sense.		Can recognise a variety of common plants and trees. Label the main parts of flowering plants and trees.	Can give examples of the changes that happen in spring, summer, autumn and winter. Can observe and describe the weather associated with the seasons and how day length varies
Working Beyond	Can identify the material that a simple object has been made from, and suggest a reason why. Can name a variety of simple everyday materials and give examples of how they might be used. Can describe the simple properties of everyday materials and can suggest how this affects how the materials are used. Can group materials by their answers.		Can identify a wide range of common fish, amphibians, reptiles, birds and mammals Can name a variety of animals that are carnivores, herbivores and omnivores. Can compare similarities and differences in animal bodies. Can draw and label the main parts of the human body, and give examples of activities that use each of the five senses.		Recognises a variety of common plants, and can explain the difference between deciduous and evergreen trees. Can label the main parts of flowering plants and trees and describe what they do.	Can describe the changes that happen in spring, summer, autumn and winter. Can observe and describe in detail the weather associated with the seasons and how day length varies.

Year 2 Assessment Overview

	Autumn		Spring		Summer	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 2 Assessment Overview	Animals Including Humans The image part with relationship ID rId7 was not found in the file.		Uses Of Everyday Materials The image part with relationship ID rId7 was not found in the file.		Plants The image part with relationship ID rId7 was not found in the file.	Living Things ad their Habitats The image part with relationship ID rId7 was not found in the file.
Working Towards	Can identify a range of animal babies. Understands that animals, including humans, need food, water and air for survival. Is beginning to understand that humans need exercise, nutrition and hygiene to stay healthy.		Can describe and compare a variety of simple materials. Has taken part in an investigation comparing how things move on different surfaces. Has explored how the shape of some materials can be changed.		Has cared for seeds and bulbs and can describe how they grew into adult plants. Can explain with support that plants need water, sunlight, and a suitable temperature to grow and stay healthy.	Is beginning to understand the difference between things that are living, dead, and things that have never been alive. Is beginning to explore the different habitats of living things. Can identify some common plants and animals in their habitats Can describe, with support, how animals obtain their food from plants and other animals..
Working Within	Can order the stages in animal life cycles and can identify a range of animal babies. Can describe that animals, including humans, need food, water and air for survival. Can describe what humans need to stay healthy.		Can compare a variety of materials and say which is more suitable for a range of uses. Has taken part in an investigation comparing how things move on different surfaces and recorded the outcome. Has explored how the shape of some materials can be changed, and can describe materials that have these properties.		Has cared for seeds and bulbs and has recorded their growth by writing and drawing. Can explain that plants need water, sunlight, and a suitable temperature to grow and stay healthy.	Can classify things that are living, dead and things that have never been alive. Can describe how different habitats provide a suitable environment for different kinds of plants and animals. Can identify and name common plants and animals in their habitats. Can draw a simple food chain to describe how animals get their food from plants and other animals.
Working Beyond	Can describe the stages in animal life cycles and can identify a range of animal babies. Can describe that animals, including humans, need food, water and air for survival, and suggest reasons why. Can describe what humans need to stay healthy, and suggest reasons why.		Can compare a variety of materials and say which is more suitable for a range of uses, giving reasons for his/her answers. Name has taken part in an investigation comparing how things move on different surfaces, and can explain the reasons for the outcome. Has explored how the shape of some materials can be changed, and understands that this happens when the material is subject to a force.		Has cared for seeds and bulbs and has recorded and compared their growth in a range of ways. Can explain that plants need water, sunlight, and a suitable temperature to grow and stay healthy, and suggest reasons why.	Describe the differences between things that are living, dead and things that have never been alive Can describe how plants and animals within a habitat depend on each other for survival. Can identify and name a variety of plants and animals in their habitats. Can draw a simple food chain to describe animals get their food from plants and other animals, and can identify a range of food sources.

Lower KS2 **A** Assessment Overview

	Autumn		Spring		Summer	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
LKS2 A Assessment Overview	States of Matter The image part with relationship ID rId7 was not found in the file.	Sound The image part with relationship ID rId7 was not found in the file.	Animals Including Humans The image part with relationship ID rId7 was not found in the file.		Living Things and their Habitats The image part with relationship ID rId7 was not found in the file.	Electricity The image part with relationship ID rId7 was not found in the file.
Working Towards	Can identify if a material is a solid, a liquid or a gas. Can explain that some materials change state when they are heated or cooled. Can explain the role of evaporation and condensation in the water cycle.	Can describe in simple terms how sounds are made. Can describe in simple terms how sound is transmitted to the ear. Can compare the pitch of the sounds made by different musical instruments. Can describe how to change the volume of a sound. Understands that sounds get fainter as the distance from the sound source increases.	Can identify the basic parts of the human digestive system. Can identify the different kinds of human teeth. Can interpret simple food chains.		Can sort common plants and animals into a range of groups. Can use a simple key to identify a variety of living things. Can give examples of positive and negative effects on the local environment.	Can identify common appliances that run on electricity. Can construct a simple series electric circuit. Is learning to identify if a circuit is complete. Understands that a switch opens and closes a circuit, and can build a circuit that includes a switch. Recognises some common conductors and insulators.
Working Within	Can compare and group solids, liquids and gases. can explain, with examples, that different materials change state at different temperatures Can explain how temperature affects the rate of evaporation.	Can describe how sounds are made. Can describe how sound is transmitted to the ear. Can compare the pitch of the sounds made by different musical instruments and suggest reasons why this might be the case. Can describe and explain how to change the volume of a sound. Can describe why sound get fainter as the distance from the sound source increases.	Can identify and describe the functions of the basic parts of the human digestive system. Can identify the different kinds of human teeth and describe their functions. Can construct and interpret simple food chains.		Can sort a wide variety of plants and animals into a range of groups. Can develop a simple key to classify a variety of living things. Can give examples of positive and negative effects on the local environment, and say how these affect living things.	Can accurately sort appliances that run on electricity from those that do not. Can construct a simple series electric circuit, and identify and name its basic parts. Can identify if a circuit is complete. Can explain why a switch opens and closes a circuit, and can build a circuit that includes a switch. Recognises some common conductors and insulators, and understands that metals are good conductors.
Working Beyond	Can compare and group solids, liquids and gases, and describe their physical properties. Can compare, with examples, the different temperatures that cause different materials to change state. Can explain, with evidence, how temperature affects the rate of evaporation in the water cycle.	Can describe how sounds are made using scientific vocabulary. Can describe in detail how sounds are transmitted to the ear. Can compare the pitch of the sounds made by different musical instruments, and explain this using scientific vocabulary. Describe and explain, using scientific vocabulary, how to change the volume of a sound. Can use scientific vocabulary to explain why sounds get fainter as the distance from the sound source increases.	Can identify and describe the functions of most parts of the human digestive system. Can compare different types of animal teeth and understand how they relate to animal diets. Can construct and interpret detailed food chains.		Can decide upon different ways to group a wide range of plants and animals. Can develop a detailed key to classify a variety of living things. Can describe ways that humans can have a more positive effect on the local environment.	Can accurately sort appliances that run on electricity from those that do not, and explain how he has done so. Can construct a simple series electric circuit, and represent it in a circuit diagram. Can identify if more complex circuits are complete. Can build a simple device that includes a switch. Recognises common conductors and insulators, and can suggest practical ways to use these materials.

Lower KS2 **B** Assessment Overview

	Autumn		Spring		Summer	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
LKS2 A Assessment Overview	Rocks The image part with relationship ID rId7 was not found in the file.	Animals Including Humans The image part with relationship ID rId7 was not found in the file.	Light The image part with relationship ID rId7 was not found in the file.		Plants The image part with relationship ID rId7 was not found in the file.	Forces and Magnets The image part with relationship ID rId7 was not found in the file.
Working Towards	Understands that we need light in order to see and that dark is the absence of light. Can describe in simple terms how light is reflected from surfaces, and understands that light travels in straight lines. Recognises that the sun can be dangerous and that there are ways to protect the eyes from damage. Can explain in simple terms how shadows are formed. Has investigated the way the size of shadows change.	Can identify that they cannot make their own food; they get nutrition from what they eat. Can identify that humans and some other animals have skeletons.	Can compare different kinds of rocks based on their appearance and simple properties. Can explain, with support how fossils are formed. Has explored the formation of soil from rocks and organic matter.		Can identify the parts of flowering plants. Can describe what plants need to grow well with support. Has investigated the way that water is transported through plants. Has explored the life cycle of flowering plants and the functions of flowers.	Understands that a moving object travels differently on different surfaces. Understands that magnetic forces can act at a distance Has explored how magnets attract and repel each other. Can test if a material is magnetic or non-magnetic. Understands that a magnet has two poles. Can predict with support whether two magnets will attract or repel each other, depending on which poles are facing.
Working Within	Can explain that we need light in order to see and that dark is the absence of light. Can explain how light is reflected from surfaces, and understands that light travels in straight lines. Recognises that the sun can be dangerous and can give examples of ways to protect the eyes from damage. Can explain why shadows are formed when the light from a light source is blocked by an opaque object. Can explain how and why the size of shadows change.	Can identify that animals, including humans, need the right types of nutrition. Can identify that humans and some other animals have skeletons for support, protection and movement.	Can compare and group different kinds of rocks based on their appearance and simple properties. Can describe how fossils are formed. Can describe the formation of soil from rocks and organic matter.		Can identify the parts of flowering plants and describe what they do. . Can describe what plants need to grow well and understands that different plants have different needs. Can explain how water is transported through plants. Can describe the life cycle of flowering plants and the functions of flowers.	Can suggest reasons why a moving object travels differently on different surfaces. Can explain that magnetics forces can act at a distance and compare this to other kinds of force. Can describe how magnets attract and repel each other, and are attracted to some materials but not others. Can test and sort magnetic and non-magnetic materials. Can draw a labelled diagram of a magnet, showing that it has two poles. Can predict whether two magnets will attract or repel each other, depending on which poles are facing.
Working Beyond	Can explain using scientific vocabulary that we need light in order to see and that dark is the absence of light. Can explain how light is reflected from surfaces and give examples of how we use this to help us. Can explain why the sun can be dangerous and can give examples of ways to protect the eyes. Can explain how shadows are formed and understands what is meant by opaque, translucent and transparent. Can explain with evidence how and why the size of shadows change.	Can identify that animals, including humans, need the right amount of nutrition, identifying differences and similarities related to simple scientific processes. Can identify that humans and some other animals have muscles for movement.	Can compare different kinds of rocks and decide on groups to sort them into. Can describe in detail how fossils are formed. Can describe the formation of soil from rocks and organic matter, and explain similarities and differences in soil types.		Can identify the parts of plants and flowers and describe what they do Can describe what different plants need to grow well and give reasons for his/her answers. Can explain with evidence how water is transported through plants. Can describe the life cycle of flowering plants and the structure and functions of flowers.	Can explain how gravity and friction act upon objects moving on different surfaces Can explain, with examples, that magnetic forces can act at a distance and compare this to other kinds of force. Can describe using scientific vocabulary how magnets attract and repel each other, and are attracted to some materials but not others. Can test and sort magnetic and non-magnetic materials, and predict what group a material will fall into. Can draw a labelled diagram of a magnet showing that it has two poles, and explain how this relates to the earth's magnetic field. Can confidently predict whether two magnets will attract or repel each other, and give reasons for his/her answers.

Upper KS2 **A** Assessment Overview

	Autumn		Spring		Summer	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
UKS2 A Assessment Overview	Earth and Space The image part with relationship ID rId7 was not found in the file.	Forces The image part with relationship ID rId7 was not found in the file.	Properties and Changes of Materials The image part with relationship ID rId7 was not found in the file.		Animals Including Humans The image part with relationship ID rId7 was not found in the file.	Living Things and their Habitats The image part with relationship ID rId7 was not found in the file.
Working Towards	Can name the Sun, the Earth and other planets in the solar system, and is beginning to describe how planets move in simple terms. Beginning to comment on the movement of the moon relative to the Earth. Can use simple words to describe the shape of the Sun, Earth, Moon. Can explain in simple terms that the Earth's rotation causes day and night.	Can use the word 'gravity' to explain that unsupported objects fall towards the Earth. Can conduct simple investigations into how things move and is beginning to comment on air resistance and friction. Is beginning to recognise that levers and gears allow a smaller force to have a greater effect. Can observe the use of levers, gears and/or springs in existing toys and products.	Can group together some everyday materials on the basis of their properties. Can observe materials dissolving in liquid to form a solution, commenting on what happens. Can identify if a material is a solid, liquid or a gas. Can suggest reasons for the uses of some everyday materials. Can explain that dissolving and mixing are reversible changes. Recognised some changes result in the formation of new materials.		Can identify some changes that happen to humans as they develop to old age. Is beginning to identify differences in the gestation periods of animals compared to humans.	Can order the stages in the life cycle of a mammal, an amphibian, an insect or a bird. Is beginning to comment on the reproduction processes in some plants and animals. Is beginning to identify differences between sexual and asexual reproduction.
Working Within	Can name the planets and describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the Moon relative to the Earth. Can describe the Sun, Earth and Moon as approximately spherical bodies. Can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	Can explain that unsupported objects fall towards Earth because of gravity acting between the object and the Earth. Can identify the effects of air resistance, water resistance and friction that act between moving surfaces, when investigating how things move. Recognises that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. Suggests ways to make a simple product using levers, pulleys, gears and/or springs.	Can compare everyday materials on the basis of their properties, e.g. hardness and transparency, and can choose his/her own criteria for sorting materials. Can name some materials that will dissolve in liquid to form a solution, and is beginning to comment on the process of recovering a substance from a solution. Can use knowledge of solids, liquids and gases to comment on how mixtures are separated. Can use evidence from comparative and fair tests to give reasons for the particular uses of some everyday materials. Can explain and demonstrate that dissolving, mixing and changes of state are reversible changes. Can give examples of changes that result in the formation of new materials, and can explain that this kind of change is not usually reversible.		Can describe the changes that happen to humans as they develop to old age, such as the changes that occur in puberty. Has conducted research into the gestation periods of humans and animals and can make some simple comparisons.	Can note some differences between the life cycles of a mammal, an amphibian, an insect or a bird. Can describe the life process of reproduction in some plants and animals. Can give examples of different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals.
Working Beyond	Can use scientific language to confidently describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Use scientific language to describe and explain the movement of the Moon relative to the Earth, and can talk about moons that orbit other planets. Can describe the Sun, Earth and Moon as approximately spherical bodies, and can offer explanations as to why they are this shape. Confidently uses the idea of the Earth's rotation to confidently explain day and night and the apparent movement of the sun across the sky.	Can confidently describe gravity, and can explain how gravity affects everything on the Earth and in the solar system. Can identify the effects of air resistance, water resistance and friction that act between moving surfaces, and can make predictions about how they will affect how fast or slow an object will move. Can explain how mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. Can design and make products that use levers, pulleys, gears, and/or springs and explore their effects.	Is able to compare and group together everyday materials on the basis of their properties, including more complex properties including solubility, conductivity, and response to magnets. Can name materials that will dissolve in liquid to form a solution, and can describe how to recover a substance from a solution. Can use knowledge of solids, liquids and gases to describe how mixtures might be separated in different ways. Can use evidence from comparative and fair tests to give reasons for the particular uses of a range of everyday materials, using scientific language and data in his/her explanations. Can demonstrate that dissolving, mixing and changes or state are reversible, explaining the processes using data and scientific language. Can give examples of changes that result in the formation of new materials, and can use data and scientific language to explain that this kind of change is not usually reversible.		Can confidently describe the stages in the growth and development of humans, and can indicate these on a timeline. Has worked scientifically by researching the gestation periods of humans and other animals and can confidently identify differences between them.	Can confidently describe the differences between the life cycles of a mammal, an amphibian, an insect or a bird, using scientific language. Can confidently describe the life process of reproduction in a range of plants and animals, using scientific language. Can use scientific language to confidently describe different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals.

Upper KS2 **B** Assessment Overview

	Autumn		Spring		Summer	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
UKS2 A Assessment Overview	Light The image part with relationship ID rId7 was not found in the file.	Electricity The image part with relationship ID rId7 was not found in the file.	Living Things Including Humans The image part with relationship ID rId7 was not found in the file.	Evolution and Inheritance The image part with relationship ID rId7 was not found in the file.	Animals Including Humans The image part with relationship ID rId7 was not found in the file.	
Working Towards	Has explored the way that light behaves. Is beginning to recognise how objects are seen. Recognises that we need light to see objects. Recognises that shadows have the same shape as the objects that cast them.	Can identify changes that occur in a circuit when the voltage or components are changed. Recognises that there are variations in how components function. Can draw a simple circuit and include some recognised symbols.	Can group living things according to common observable characteristics. Is beginning to suggest reasons for classifying plants and animals based on specific characteristics.	Recognises that living things have changed over time. Recognises that living things produce offspring of the same kind. Can identify some ways in which animals and plants are adapted to suit their environments.	Can identify and name the main parts of the circulatory system. Can describe the impact of diet and exercise on our bodies in simple terms. Recognises that animals, including humans, need nutrients and water to maintain their bodies.	
Working Within	Recognises that light appears to travel in straight lines. Can 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. Can 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. Can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	Recognises that the brightness of a lamp or the volume of a buzzer is affected by the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches Can use recognised symbols when representing a simple circuit in a diagram.	Can describe how living things are classified into broad groups according to common observable characteristics. Can give reasons for classifying plants and animals based on specific characteristics.	Recognises that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognises that living things produce offspring of the same kind, but normally offspring vary and are not identical to his/her parents. Can identify how animals and plants are adapted to suit his/her environment in different ways and that adaptation may lead to evolution.	Can identify and name the main parts of the circulatory system, and can describe the functions of the heart, blood vessels and blood in simple terms. Recognises the impact of diet, exercise, drugs and lifestyle on the way our bodies function. Describe the ways in which nutrients and water are transported within animals, including humans.	
Working Beyond	Recognises that light appears to travel in straight lines, and can offer explanations for this. Can use scientific language to confidently explain how objects are seen. Can explain how light travels, and can use this scientific knowledge when designing and making products. Can use his/her scientific knowledge of light to explain shadows, reflection, rainbows and other phenomena.	Can construct his/her own circuits and work systematically to answer questions about how voltage affects the brightness of a lamp or the volume of a buzzer. Can construct he own circuits to compare and give reasons for variations in how components function, testing his/her own predictions. Can use recognised symbols when representing a more complex circuit in a diagram.	Can describe how living things are classified into broad groups according to common observable characteristics, and can subdivide these into further groups, such as invertebrates. Can give reasons for classifying plants and animals based on specific characteristics, and can classify familiar and unfamiliar animals and plants.	Recognises that living things have changed over time and can suggest types of information that can be found in fossils about living things that inhabited the Earth millions of years ago. Recognises that living things produce offspring of the same kind, and is beginning to identify what happens when different breeds of the same species reproduce. Can identify how animals and plants are adapted to suit his/her environment and suggest reasons for this.	Can identify and name the main parts of the circulatory system, and can describe the functions of the heart, blood vessels and blood, using scientific language. Recognises the impact of diet, exercise, drugs and lifestyle on the way our bodies function and can explain how bodies can be damaged by drugs and other substances. Can describe the ways in which nutrients and water are transported within animals, including humans, and the impacts they have on different processes within the body.	

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Early Years Foundation Stage Outcomes Nursery

1	Working Scientifically
1.1	I begin to use science words.
1.2	I question why things happen.
1.3	I have my own ideas.
1.4	I test my ideas.
1.5	I notice similarities and differences.
1.6	I can use my senses and look closely.
1.7	I use equipment and tools carefully.
1.8	I can create simple representations of people and objects.
1.9	I can talk about things like plants, animals, natural and found objects.
2	**Communicating**
2.1	Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.
2.2	Can talk about some of the things they have observed such as plants, animals, natural and found objects.
2.3	Talks about why thigs happen and how things work.
3	**Knowledge and Understanding**
3.1	I have a developing understanding of growth, decay and changes over time.
4	**Exploring and Observing**
4.1	Shows care and concern for living things and the environment.
4.2	I make observations of animals and plants through pictures, words or photographs.
4.3	I explore and notice patterns in the natural world e.g. all the birds we can see in the sky have wings.

The image part with relationship ID rId7 was not found in the file.

Early Years Foundation Stage Outcomes Reception

1	Working Scientifically
1.1	I begin to use science words.
1.2	I question why things happen.
1.3	I have my own ideas.
1.4	I test my ideas.
1.5	I notice similarities and differences.
1.6	I can use my senses and look closely.
1.7	I use equipment and tools carefully.
1.8	I can create simple representations of people and objects.
2	**Knowledge and Understanding**
2.1	Knows some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.
2.2	Knows about similarities and differences in relation to objects and materials.
2.3	Knows about similarities and differences in relation living things.
3	**Communicating**
3.1	Talk about the features of my own immediate environment and how environments might vary from one another.
3.2	Explain why some things occur and talk about changes.
4	**Exploring and Observing**
4.1	Looks closely at similarities and differences between things in the world.
4.2	Explores and notices patterns in the results of experimenting e.g. every time I drop the marbles in the water, they sink.
4.3	Understands some important processes and changes in the natural world around them, including the seasons and changing states of matter.
4.4	Looks closely at changes e.g. the way a caterpillar changes into a butterfly or a leaf changes colour.
4.5	Explores the natural world around them, making observations and drawing pictures of animals and plants.

The image part with relationship ID rI7 was not found in the file.

Year 1 National Curriculum Outcomes

	Working Scientifically
1.1	Can ask simple questions and recognising that they can be answered in different ways.
1.2	Can observe closely, using simple equipment (hand lenses, magnifying glasses)
1.3	Can perform simple tests (sand timer, non-standard units of measure)
1.4	Can identify and classify phenomena (sorting hoops, draw and label)
1.5	Can use their observations and ideas to suggest answers to questions
1.6	Can gather and recording data to help in answering questions (drawings, tally chart, pictogram)
2	**Plants**
2.1	Identify and name a variety of common wild and garden plants, including trees classified as deciduous and evergreen.
2.2	Identify and describe the basic structure of a variety of common flowering plants including trees such as roots, stem, leaves and flowers, petals, fruit, bulb, seed, branches.
3	**Animals including humans**
3.1	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.
3.2	Identify and name a variety of common animals that are carnivores, herbivores and omnivores.
3.3	Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
3.4	Identify, name, draw and label the basic parts of the human body (head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth and teeth) and say which part of the body is associated with each sense.
4	**Everyday Materials**
4.1	Distinguish between an object and the material from which it is made.
4.2	Identify and name a variety of everyday materials, such as wood (including paper), plastic, glass, metal (including foil), water, and rock (including brick).
4.3	Describe the simple physical properties of a variety of everyday materials such as: hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent.
4.4	Compare and group together a variety of everyday materials on the basis of their simple physical properties.
5	**Seasonal Changes**
5.1	Observe changes across the four seasons.
5.2	Observe and describe weather associated with the seasons and how day length varies.

The image part with relationship ID rId7 was not found in the file.

Year 2 National Curriculum Outcomes

	Working Scientifically
1.1	Can ask simple questions and recognising that they can be answered in different ways.
1.2	Can observe closely, using simple equipment (microscope).
1.3	Can perform simple tests (ruler, stop watch).
1.4	Can identify and classify phenomena (venn diagram)
1.5	Can use their observations and ideas to suggest answers to questions
1.6	Can gather and recording data to help in answering questions (block graph, bar graph, simple table)
2	**Animals including humans**
2.1	Understand and notice that animals, including humans, have offspring which grow into adults.
2.2	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).
2.3	Describe the importance for humans to exercise, eating the right amounts of different types of food and hygiene.
3	**Uses of everyday materials**
3.1	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.
3.2	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
4	**Plants**
4.1	Observe and describe how seeds and bulbs grow into mature plants.
4.2	Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.
5	**Living things and their habitats**
5.1	Explore and compare the differences between things that are living, dead and things that have never been alive.
5.2	Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.
5.3	Identify and name a variety of plants and animals in their habitats, including micro-habitats.
5.4	Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

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Lower KS2 A National Curriculum Outcomes

	Working Scientifically
1.1	Can ask relevant questions and using different types of scientific enquiries to answer them.
1.2	Can set up simple practical enquiries, comparative and fair tests.
1.3	Can make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers, beakers, test tubes and data loggers.
1.4	Can gather, record, classify and present data in a variety of ways to help in answering questions. (Classification keys, Bar charts, Venn diagrams, line graphs and time graphs)
1.5	Can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.
1.6	Can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
1.7	Can use results to draw simple conclusions and make predictions for new values, suggest improvements and raise further questions.
1.8	Can identify differences, similarities or changes related to simple scientific ideas and processes. (Venn diagrams)
1.9	Can use straightforward scientific evidence to answer questions or to support their findings.
2	**States of Matter**
2.1	Compare and group materials together, according to whether they are solids, liquids or gases.
2.2	Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).
2.3	Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
3	**Sound**
3.1	Identify how sounds are made, associating some of them with something vibrating.
3.2	Recognise that vibrations from sounds travel through a medium to the ear.
3.3	Find patterns between the pitch of a sound and features of the object that produced it.
3.4	Find patterns between the volume of a sound and the strength of the vibrations that produced it.
3.5	Recognise that sounds get fainter as the distance from the sound source increases.
4	**Animals including humans**
4.1	Describe the simple functions of the basic parts of the digestive system in humans.
4.2	Identify the different types of teeth in humans and their simple functions.
4.3	Construct and interpret a variety of food chains, identifying producers, predators and prey.
5	**Living things and their habitats**
5.1	Recognises that living things can be grouped in a variety of ways.
5.2	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.
5.3	Recognise that environments can change and that this can sometimes pose dangers to living things.
6	**Electricity**
6.1	Identify common appliances that run on electricity.
6.2	Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
6.3	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.
6.4	Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.
6.5	Recognise some common conductors and insulators, and associate metals with being good conductors.

Lower KS2 B National Curriculum Outcomes

	Working Scientifically
1.1	Can ask relevant questions and using different types of scientific enquiries to answer them.
1.2	Can set up simple practical enquiries, comparative and fair tests.
1.3	Can make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including magnets, measuring tapes, mirrors and torches.
1.4	Can gather, record, classify and present data in a variety of ways to help in answering questions. (bar line graph, carroll diagram, tally chart)
1.5	Can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.
1.6	Can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
1.7	Can use results to draw simple conclusions and make predictions for new values.
1.8	Can identify differences, similarities or changes related to simple scientific ideas and processes. (Sorting hoops)
1.9	Can use straightforward scientific evidence to answer questions or to support their findings.
2	**Light**
2.1	Recognise that they need light in order to see things and that dark is the absence of light.
2.2	Notice and understand that light is reflected from surfaces.
2.3	Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.
2.4	Recognise that shadows are formed when the light from a light source is blocked by an opaque object.
2.5	Find patterns in the way that the size of shadows change.
3	**Animals including humans**
3.1	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.
3.2	Identify that humans and some other animals have skeletons and muscles for support, protection and movement.
4	**Rocks**
4.1	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.
4.2	Describe in simple terms how fossils are formed when things that have lived are trapped within rock.
4.3	Recognises that soils are made from rocks and organic matter.
5	**Plants**
5.1	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.
5.2	Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.
5.3	Investigate the way in which water is transported within plants.
5.4	Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
6	**Forces and Magnets**
6.1	Compare how things move on different surfaces.
6.2	Notice and understand that some forces need contact between two objects, but magnetic forces can act at a distance.
6.3	Observe how magnets attract or repel each other and attract some materials and not others.
6.4	Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.
6.5	Describe magnets as having two poles.
6.6	Predict whether two magnets will attract or repel each other, depending on which poles are facing.

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Upper KS2 A National Curriculum Outcomes

	Working Scientifically
1.1	Can plan different types of scientific enquiries to answer questions including recognising and controlling variable where necessary.
1.2	Can take measurements, using a range of scientific equipment, with increasing accuracy and precision.
1.3	Can record data and results of increasing complexity using scientific diagrams and labels, tables, bar and line graphs.
1.4	Can use test results to make predictions to set up further comparative and fair tests.
1.5	Can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
1.6	Can identify scientific evidence that has been used to support or refute ideas or arguments.
2	**Earth and space**
2.1	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.
2.2	Describe the movement of the Moon relative to the Earth.
2.3	Describe the Sun, Earth and Moon as approximately spherical bodies.
2.4	Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.
3	**Forces**
3.1	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
3.2	Identify the effects of air resistance, water resistance and friction that act between moving surfaces.
3.3	Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.
4	**Properties and change of materials**
4.1	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.
4.2	Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.
4.3	Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.
4.4	Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.
4.5	Demonstrate that dissolving, mixing and changes of state are reversible changes.
4.6	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.
5	**Animals including humans**
5.1	Describe the changes as humans develop to old age.
6	**Living things and their habitats**
6.1	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
6.2	Describe the life process of reproduction in some plants and animals.

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Upper KS2 B National Curriculum Outcomes

	Working Scientifically
1.1	Can plan different types of scientific enquiries to answer questions, including recognising and controlling variable where necessary.
1.2	Can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
1.3	Can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar graphs.
1.4	Can use test results to make predictions to set up further comparative and fair tests.
1.5	Can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
1.6	Can identify scientific evidence that has been used to support or refute ideas or arguments.
2	**Light**
2.1	Recognise that light appears to travel in straight lines.
2.2	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.
2.3	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.
2.4	Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
3	**Electricity**
3.1	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.
3.2	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.
3.3	Can use recognised symbols when representing a simple circuit in a diagram.
4	**Living things and their habitats**
4.1	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.
4.2	Give reasons for classifying plants and animals based on specific characteristics.
5	**Evolution and inheritance**
5.1	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
5.2	Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.
5.3	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
6	**Animals including humans**
6.1	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.
6.2	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.
6.3	Describe the ways in which nutrients and water are transported within animals, including humans.