SCIENCE SUBJECT CURRICULUM LONG TERM PLAN

Subject: Science **Subject Team: Jenny Wallace and Laura Nee** **2025-26**

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2 SCIENCE WEEK	SUMMER 1	SUMMER 2
EYFS (UNDERSTANDING THE WORLD – SCIENCE LINKS)		A Walk in the Woods Seasons	Super You, Super Me! Changes in states of matter	A long time ago Plants and living things Revisit seasons	Animal Magic Animals and plants.	Around the World Revisit seasons
YR 1	Everyday Materials Seasonal change (Autumn x 1 lesson)	Weather Seasonal change (Winter x 1 lesson)	Animals including humans	Animals including humans (cont) (Spring x 1 lesson)	Plants	Plants (cont) (Summer x 1 lesson)
YR2	Animals including humans	Animals including humans (cont)	Uses of everyday materials	Uses of everyday materials (cont)	Living things and their habitats	Plants
YR3	Animals including humans	Forces and Magnets	Light		Plants (Biodiversity)	Rocks and Soils
YR4	Living things and their Habitats	Animals including humans	Electricity		States of Matter	Sound
YR5	Properties and changes of materials	Forces		Earth and Space	Living Things and their habitats	Animals including humans
YR6	Evolution and Inheritance	Living things & their habitats	Animals including humans		Light	Electricity

*CRITICAL SKILLS TO BE USED FOR THE FOUNDATION STAGE ASSESSMENT SHEETS ARE HIGHLIGHTED FOR EACH UNIT.

SCIENCE SUBJECT AIMS

Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics

Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them

Ensure pupils are equipped with the scientific knowledge required I understand the uses and implications of science, today and for the future.

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Subject rationale: *(Consider how your subject rationale connects with the Curriculum rationale)*

Science at Balfour focuses on an enquiry-based curriculum that encourages curious and analytical thinkers. From reception to year six, our learners build upon firm foundations and their own prior knowledge, developing a strong awareness of themselves and the world around them. Our young scientists are provided with a variety of opportunities that cement and challenge their natural love of science through accessible practical, physical and interactive learning experiences which are promoted by trips, parental involvement and community links. They are also able to make use of our local environments and habitat. Pupils will be empowered via the use of a broad and balanced understanding of science, developed through fun, exciting and relevant lessons that allow them to successfully transition to the next stage of their education.

Threshold Concepts and Skills: *(What are the fundamental concepts and ideas that pupils must have grasped in your subject*)

The key knowledge and skills required to be a young scientist involve building upon prior scientific knowledge and conceptual understanding of the implications of science, today and the future through developing their understanding of the nature, processes and methods of science. This is done using different types of scientific enquiries that enable them to answer scientific questions about the world around them.

Pupils will be able to describe associated processes and key characteristics in common language, and are familiar with, and using, technical terminology accurately and precisely. They build up an extended specialist vocabulary, applying their mathematical knowledge to their understanding of science by collecting, presenting and analysing data. The social and economic aspects of science are further developed within the wider school curriculum.

'Working Scientifically (ensure all skills have been covered by the end of the year)' specifies the understanding of the nature, processes and methods of science. Pupils use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry include observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils seek answers to questions through collecting, analysing and presenting data. They are encouraged to pursue their own ideas for investigations during science topics, coming up with their own questions to explore and designing appropriate tests.

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Year Group: Reception

Foundations in Scientific Enquiry - What Scientists Do				Foundations in Scientific Skills - How to Be a Scientist			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Observe over time Look carefully Sorting Grouping (Classify) Compare Testing Noticing patterns Exploring Research		Signs of autumn Owl visit, observational drawings. Cress heads Ice investigation		Question Test Equipment Sorting hoops Answer Results Look carefully Explore Sorting Predict Explain	Seasons in year 1	Signs of autumn Owl visit, observational drawings. Cress heads Ice investigation	
Threshold Concepts *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*				**Key skills** *Which can be applied once the knowledge is understood*			
• I know how to make careful observations. • I am beginning to know how to sort and classify. • I know how to explore my ideas. • I know some changes occur over time. • I am beginning I know how to test my ideas.				• I can use my senses to help me explore. • I can ask questions to find out more and to check I understand what has been said to me. • I can make links between my ideas. • I can articulate my ideas and use new vocabulary. • I can describe some events in detail.			

• I know books and the internet can help me find information.		• I can begin to make close observations, draw pictures of the natural world, including animals and plants. • I can use simple equipment.	

Foundations in Weather and Seasons

Key Vocabulary	Interleaving *Opportunities* *(e.g. when past topics can be revisited)*	Links to wider curriculum *(e.g. different subjects or key stages)*	SMSC
Winter Spring Summer Autumn Cold Hot Rainy Windy Bare trees Evergreen Hibernate Day Night Season		-Discussions of seasons (ice) -Links to key texts: Bear Hunt / Owl Babies. Making soup – veg collected at Harvest time. Outside area, changes in weather and temperature.	Thinking about the difference in seasons in UK compared to others -British wildlife (compare and contrast) -Daily discussions of British weather

Threshold Concepts *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*	**Key skills** *Which can be applied once the knowledge is understood*
• I know why some changes occur. • I am beginning I know some scientific vocabulary, such as evergreen, hibernate. (see above)	• I can use my senses to help me explore. • I can use talk to explain why some • things might happen. • I can make links between my ideas. • I can articulate my ideas and use new vocabulary.

Foundations in Changing States of Matter

Key Vocabulary	Interleaving *Opportunities* *(e.g. when past topics can be revisited)*	Links to wider curriculum *(e.g. different subjects or key stages)*	SMSC
Ice Water Cold Wet Hard Solid Liquid	Was there snow and ice in winter?	Discussions of seasons (ice) -Links to key texts (Super Daisy) -Exploring water tray and key vocabulary -Changes of state when cooking -Junk modelling	-Differences of materials (material box) – sustainability, key vocabulary (man-made/natural) -Properties -Fascination and imagination of ice experiment (making predictions)

Threshold Concepts *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*	**Key skills** *Which can be applied once the knowledge is understood*
• I am beginning to understand some changing states of matter. • I know ice will only remain frozen if it is very cold. • I know when ice warms up it melts and becomes liquid.	• I can use my senses to help me explore. • I can use talk to explain why some • things might happen. • I can make links between my ideas. • I can articulate my ideas and use new vocabulary.

• I know there are four seasons in the UK and what they are called. • I know how the weather changes in the four seasons. • I know some generalisations associated with the seasons. (Eg it is cold in winter.)	• I can describe some events in detail. • I can begin to make close observations, draw pictures of the natural world, including animals and plants. • I can use simple equipment.	• I know ice is frozen water and can be observed in the natural environment.	• I can describe some events in detail. • I can make close observations, draw pictures of the natural world, including animals and plants. • I can use simple equipment.

Foundations in Plants

Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Leaf Shoot Root Stem Seeds Water Soil Grow Flower	Own experiences of growing seeds at home or on an allotment.	Observations in the outdoor area -Links to seasons (when plants can grow) -UW -Maths – measurement and length -Family tree -Flowers and trees in Yr1.	-Working with others (group growing – ecology) -Fascination in making observations of the natural environment and observing changes -Caterpillars – making observations -Understanding of consequences (e.g. what does a plant need to grow?)

Threshold Concepts *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge** *The minimum all pupils should know*	**Key skills** *Which can be applied once the knowledge is understood*
• I know from observing plants, what changes occur when they grow. • I am beginning I understand a life-cycle of a plant.	• I can use my senses to explore. • I can use talk to explain why some things might happen. • I can make links between my ideas.

Foundations in Animals Including Humans

Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Baby Grow Adult Offspring Furry Young Old Born Die		People and communities -Literacy – key texts (furry) -Plants, growth -Reptylers visit (observations of living things, making comparisons) -School trip, farm. -Woodsmill Yr1 trip.	Links to Marvellous Me – different types of families.

Threshold Concepts *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge** *The minimum all pupils should know*	**Key skills** *Which can be applied once the knowledge is understood*
• I know some natural processes and changes in relation to animals and humans. • I know from my own experience how I have changed.	• I can use my senses to explore. • I can use talk to explain why some things might happen. • I can make links between my ideas.

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• I am beginning I know the parts of a plant. • I am beginning I understand the need to respect and care for the environment.	• I can articulate my ideas and use new vocabulary. • I can describe some events in detail. • I can make close observations, draw pictures of the natural world, including animals and plants. • I can use simple equipment.	• I am beginning I understand the life-cycle of humans and animals. • I am beginning I understand the need to respect and care for the environment.	• I can articulate my ideas and use new vocabulary. • I can describe some events in detail. • I can make close observations, draw pictures of the natural world, including animals and plants. • I can use simple equipment.

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Year Group: 1

Autumn Term 1 – Everyday Materials				**Autumn Term 2 – Weather (and Seasons taught throughout year)**			
Key Vocabulary ***Materials*** *(Happily Ever After)*	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary** ***Weather and seasons*** ***(Happily Ever After)***	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Natural Man-made Manufactured Object plastic Change hard Soft smooth Float sink Sink see-through Bend fragile Twist paper Bake fire environment Re-cycle Stretch magnetic Fabric Wood wooden Glass metal Stone group Brick classify sort Same different Similar observe	<u>Year R</u>: Making gingerbread (baking Aut 2) <u>Early Learning Goal:</u> Children know about similarities and differences in relation to places, objects, materials and living things.	<u>English:</u> Three Little Pigs / DT make a house for pigs. DT: Make a hand puppet.	**Did mother pig do the right thing asking the little pigs to leave?** **Do we all have a safe place to live?** **How can we help homeless people?** **Are all houses the same around the world?**	**SEASONS:** Winter Spring Summer Autumn Bare trees Evergreen Hibernate Observe Measure **WEATHER:** Rain gauge Thermometer Record Day night Cold Hot Rainy Windy Snow Day night Cold Hot Rainy Windy Snow	<u>Year R:</u> Autumn walk: Signs of autumn, make hedgehogs, make soup, draw veg, firework pics. The passage of time, Moving up from Year R.	Harvest festival Christmas / winter festivals, Diwali. Hanukah. <u>History</u> – Year 1 'Our Year' timeline. Chinese New Year. Music: songs about weather and seasons.	**Why do we celebrate harvest festival?** **Does everyone have enough to eat?** **Why do we feed the birds in winter?** **Why do we need to look after animals?** **What is a flood?** **What is a hurricane?** **How do we help people who have been affected by extreme weather?** **How have architects designed buildings to withstand extreme weather?**
Threshold Concepts *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge**		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge**		**Key skills** *Which can be applied once the knowledge is understood*	

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The minimum all pupils should know		*The minimum all pupils should know*	
Everyday Materials: • I know the difference between an object and the material from which it is made • I know a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • I understand the simple physical properties of a variety of everyday materials • I understand how to group together a variety of everyday materials based on their simple physical properties	Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask simple questions and recognise that they can be answered in different ways • I can use simple equipment to observe closely • I can perform simple tests • I can identify and classify • I can use my observations and ideas to suggest answers to questions • I can gather and I can record data to help in answering questions	Seasons: • I understand the changes across the 4 seasons Weather: • I understand weather associated with the seasons and know how day length varies Climate change Curriculum (to be covered across unit) • I understand the distinction between 'weather' and 'climate' • I know that the climate is always changing but is changing faster today than it has before • I can name some actions which would have a positive impact on the climate and some ways in which we can stop having a negative impact • I can choose some actions they / their class / their school / their family could take to have a positive impact on the climate • I can describe at least one simple example of how a group of people are taking positive climate action together	Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask simple questions and recognise that they can be answered in different ways • I can use simple equipment to observe closely • I can perform simple tests • I can identify and classify • I can use my observations and ideas to suggest answers to questions • I can gather and I can record data to help in answering questions

Spring Term 1 – Animals including Humans				**Spring Term 2 - Animals including Humans**			
Key Vocabulary ***Animals including humans (All Creatures Great and Small)***	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary** ***Animals including humans (Are we Nearly There Yet?)***	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Fish Bones Skeleton Fins Scales	Year R: Marvellous me. Also, healthy eating. Reception topic Animal Magic,	Art : sketch and label a fish. Looking after stray animals, school	**Sp 1 R.E Holi festival of colour to mark the coming of spring.**	Ourselves see Senses hear Eye smell Ear touch Nose feel	Year R: Health and Self Care, healthy eating, washing, getting dressed.	Maths: measuring, hand span, non-standard units of measure. Ordering, height.	**How are we the same?** **How are we different?**

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Labelling Observing Healthy Food Exercise Senses grow Move adult Young baby Reptile mammal fish herbivore bird Amphibian pet Carnivore Sort classify Graph Tally	learning about wild animals. Visit from Reptylers. (Reception) Life cycles, reception growing caterpillars / tadpoles.	values: caring / charity <u>English Year 1 Sp 1:</u> Percy the Park Keeper / write an animal fact file.	**Why is spring seen as a happy time?** **Is spring the same all over the world?** **What are the five welfare needs?** **What other charities across the world look after animals?** **E.g. WWF** **World Veterinary Day 25 April 2020** **Young Vets Club WVS (Worldwide Vets Service)**	Mouth alive Hand not alive Foot human Feet animal Arm tall Leg taller Head tallest Neck like Knee similar to Wing difference Same body Bodies change Short shorter Shortest grow Move adult Classify baby Graph Tally (and seasons cont..)	<u>Marvellous me, Aut 1</u>: self-portrait & family drawing.. <u>Animal Magic; Sum 1:</u> Reptilers visit – animal handling. Observing life-cycles, trip to farm. <u>Early Learning Goal.</u> They talk about the features of their own immediate environment and how environments might vary from one another. They I can make observations of animals and plants and explain why some things occur, and talk about changes.		
Threshold Concepts *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	
Animals including humans: • I understand the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • I know a variety of common animals that are carnivores, herbivores and omnivores **CARRIED ON IN SPRING 2**		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask simple questions and recognise that they can be answered in different ways • I can use simple equipment to observe closely • I can perform simple tests • I can identify and classify • I can use my observations and ideas to suggest answers to questions		Animals including humans : • I know a variety of common animals including fish, amphibians, reptiles, birds and mammals. • I know the basic parts of the human body and say which part of the body is associated with each sense. Seasons cont..		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask simple questions and recognise that they can be answered in different ways • I can use simple equipment to observe closely • I can perform simple tests • I can identify and classify • I can use my observations and ideas to suggest answers to questions	

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		• I can gather and I can record data to help in answering questions		• I understand the changes across the 4 seasons		• I can gather and I can record data to help in answering questions	
Summer Term 1 – Plants: Flowers				**Summer Term 2: Plants: Trees**			
Key Vocabulary ***Plants (Commotion in the Ocean)***	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary** ***Plants (Panic in Pudding Lane)***	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Tree Leaf Trunk Roots Flower Stem Seeds Warmth Soil Grow Evergreen Deciduous Oak Beech Ash Acorn Nut Conker Observe Record Sort classify Question		Planting trees for the environment, protection of the rain forests. Sustainability and recycling. We should not waste wood or paper.	**Why are people cutting down the rain forest?** **How can we protect trees?**	Flower Stem Leaf Roots Soil Dandelion Rose Daisy Buttercup Observe Record Sort Classify Question Season Wildlife Habitat Grow Survive Seed (And seasons cont..)	<u>Year R:</u> Planting cress (sp 2) <u>Early learning Goal:</u> They I can make observations of animals and plants and explain why some things occur, and talk about changes. Revisit seasons from Aut 2. How have the tress or plants changed? How is the weather different?	Trip to Woods mill. Making our school a better habitat for wildlife. RSPB free visit (needs to be booked each year)	**How can we make our school a better habitat for animals?** **Why are bees and insects under threat?**
Threshold Concepts *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge**		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge**		**Key skills** *Which can be applied once the knowledge is understood*	

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The minimum all pupils should know		*The minimum all pupils should know*	
Plants: flowers • I know a variety of common wild and garden plants, including deciduous and evergreen trees • I understand the basic structure of a variety of common flowering plants, including trees **CARRIED ON IN SUMMER 2**	Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask simple questions and recognise that they can be answered in different ways • I can use simple equipment to observe closely • I can perform simple tests • I can identify and classify • I can use my observations and ideas to suggest answers to questions • I can gather and I can record data to help in answering questions •	Plants: Trees • I know a variety of common wild and garden plants, including deciduous and evergreen trees • I understand the basic structure of a variety of common flowering plants, including trees Seasons cont.. • I understand the changes across the 4 seasons	Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask simple questions and recognise that they can be answered in different ways • I can use simple equipment to observe closely • I can perform simple tests • I can identify and classify • I can use my observations and ideas to suggest answers to questions • I can gather and I can record data to help in answering questions •

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Year Group: 2

Autumn Term 1 - Animals including Humans				**Autumn Term 2 - Animals including Humans**			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Produce young Reproduce Baby Child Adult Offspring Hygiene Diet Exercise	Year 1 trip to Woods Mill. (minibeasts, trees and plants) Global learning – making animal footprint trap (Sussex Wildlife Trust)	Global Learning Week – making birdfeeders – (Sussex Wildlife Trust) Autumn Watch on BBC	Being part of the school community, taking care of our environment, our school.	Herbivore Omnivore Carnivore Teeth Diet Growth Health Exercise Activity Survival Basic needs Measure Healthy eating Hygiene Germs	Healthy eating (reception) Looking after pets Eat them to defeat them campaign. Eat more vegetables. Spring 1 year 1	Healthy eating school. Daily active, mini mile. Helping those without food, food banks, harvest. Charity. Olympics, sporting achievement. (PSHE – Global Learning) Trying food from other cultures eg, Indian food (year 1)	Who has done a park run? How many park runs are there in Brighton? Why is exercise important? Who has seen the statue of Steve Ovett? (Brighton's very own Olympic gold medal runner, went to Varndean)
Threshold Concepts *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	
Animals including humans: • I know that animals, including humans, have offspring which grow into adults • I understand the basic needs of animals, including humans, for survival (water, food and air) Climate change Curriculum (to be covered across unit)		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum (Year 2 focus) • I can use simple equipment to observe closely including changes over time		Animals including humans: • I understand the importance for humans of exercise, eating the right amounts of different types of food, and hygiene		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum (Year 2 focus) • I can use simple equipment to observe closely including changes over time	

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• I know that many of the choices I and others make have an impact on the environment / climate • I know that habitats are changing due to climate change (pollution and its impact on warming up the Earth) **CARRIED ON IN AUTUMN 2**	• I can communicate my ideas, what we do and what we find out in a variety of ways • I can perform simple comparative tests • I can group and classify • I can use my observations and ideas to suggest answers to questions noticing similarities, differences and patterns • I can gather and I can record data to help in answering questions including from secondary sources of information •		• I can communicate my ideas, what we do and what we find out in a variety of ways • I can perform simple comparative tests • I can group and classify • I can use my observations and ideas to suggest answers to questions noticing similarities, differences and patterns • I can gather and I can record data to help in answering questions including from secondary sources of information •

Spring Term 1 – Uses of Everyday Materials				**Spring Term 2 - Uses of Everyday Materials**			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Squashing Twisting Stretching Brick Rock Glass Cardboard Plastic Wood Metal Stone Material Fabric Manmade Natural Group Classify Observe Properties Suitability	STEM activity in year 1 – Three Little Pigs houses. Global Learning Week – year 1, recycling, looking after the planet.	Plastic, recycling, climate change, the environment. Music – songs with a message, singing assembly: reuse, recycle song.	What is the Silent Disco Beach Clean? Why is it especially important to keep the beaches clean?	Squashing Twisting Stretching Brick Rock Glass Cardboard Plastic Wood Metal Stone Material Fabric Manmade Natural Group Classify Observe	Year one floating and sinking investigation.	D.T – what do we make boats from?	Thinking about not using up all the world's resources. Replanting trees, as we have at Balfour. How to be sustainable.

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Threshold Concepts *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*	**Key skills** *Which can be applied once the knowledge is understood*	**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*	**Key skills** *Which can be applied once the knowledge is understood*
Uses of everyday materials: • I understand the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • I know that the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching Climate change Curriculum (to be covered across unit) • I know that many of the choices I and others make have an impact on the environment / climate • I know that the process of changing materials can result in pollution. **CARRIED ON IN SPRING 2**	Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum (Year 2 focus) • I can use simple equipment to observe closely including changes over time • I can communicate my ideas, what we do and what we find out in a variety of ways • I can perform simple comparative tests • I can group and classify • I can use my observations and ideas to suggest answers to questions noticing similarities, differences and patterns • I can gather and I can record data to help in answering questions including from secondary sources of information	Uses of everyday materials: • I understand the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • I know how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum (Year 2 focus) • I can use simple equipment to observe closely including changes over time • I can communicate my ideas, what we do and what we find out in a variety of ways • I can perform simple comparative tests • I can group and classify • I can use my observations and ideas to suggest answers to questions noticing similarities, differences and patterns • I can gather and I can record data to help in answering questions including from secondary sources of information •

Summer Term 1 – Living Things and Their Habitats				**Summer Term 2 - Plants**			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)* .	**SMSC**
Habitat Micro habitat Survival Quadrant Minibeasts Bare soil Square Lichen	Life cycles, in reception tadpole, caterpillars. 'All About Me' reception topic.	PSHE – families, growing up.	Thinking about family. Thinking about the UNCRC rights of the child.	Grow Germinate Produce Reproduce Seed Seedling Plant Soil	Growing cress in reception. Growing from child to teenager and adult. (link to year 1 pets, animals growing up.	Moving on to KS2, growing up, leavers assembly, passage of time	Think about what they have learned and how that impacts of their understanding of the world around them.

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Moss Prediction Alive Healthy Sort Identify Woodland Compare Observe Record Explain				Earth Within Under Next to Fruit Weed Growing Stem Trunk Leaf Healthy Dead	Plants and seeds – growing.		
Threshold Concepts *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	
SUMMER 1 Living things and their habitats: • I understand the differences between things that are living, dead, and things that have never been alive. • I know 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. • I know a variety of plants and animals in their habitats, including microhabitats. • I understand 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. Climate change Curriculum (to be covered across unit) • I know that some impacts of our changing climate are happening now and others will happen in the future		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum (Year 2 focus) • I can use simple equipment to observe closely including changes over time • I can communicate my ideas, what we do and what we find out in a variety of ways • I can perform simple comparative tests • I can group and classify • I can use my observations and ideas to suggest answers to questions noticing similarities, differences and patterns • I can gather and I can record data to help in answering questions including from secondary sources of information •		SUMMER 2 Plants: • I know how seeds and bulbs grow into mature plants • I understand how plants need water, light and suitable temperature to grow and stay healthy Climate change Curriculum (to be covered across unit) • I know that trees help to cool the world down. • I know that trees give O2 and absorb CO2		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum (Year 2 focus) • I can use simple equipment to observe closely including changes over time • I can communicate my ideas, what we do and what we find out in a variety of ways • I can perform simple comparative tests • I can group and classify • I can use my observations and ideas to suggest answers to questions noticing similarities, differences and patterns • I can gather and I can record data to help in answering questions including from secondary sources of information •

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• I understand the impacts of our changing climate on some animals, plants and environments both in our locality (school/city/beach/Downs) and elsewhere • I know about habitats disappearing and what we can do to help • I know some of the impacts of our changing climate on people, both in our locality and elsewhere • I know that we are part of a system (care for self/care for others/care for our environment) • I can begin to understand that the future will be different depending on what we do now			

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Year Group: 3

Autumn Term 1 - Animals including humans				Autumn Term 2 – Forces and magnets			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
skeleton skull vertebrate spine contract bone relax bones ribs contraction joint move muscles muscle nutrition food water carbohydrate protein dairy fat sugar fruit vegetable	**Year 1 Spring 1 –** Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense **Year 2 Autumn 1 + 2 –** find out about and describe the basic needs of animals, including humans, for survival (water, food and air) describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene **Year 2 Summer 1 –** Describe how animals obtain their food from	Geography (global week) – looking at places where children might not get enough food. Looking at regions of the UK and how the landscape has shaped the development of human experience, and how humans and animals are connected in the food chain. English – biography writing about important figures from the past. Labelling Maths – symmetry, counting, shape, Art – use of line and observation in scientific drawings. DT- how the structure of the human body is designed to aid making skills, and how consideration of the human body is taken	Sustainable farming Poverty – locally/ nationally & worldwide What happens when humans have missing limbs? (disability)	friction air resistance water resistance force meter resists forces surface area Newtons magnet push away from pull towards repulsion repel attraction non-magnetic magnetic attract iron copper aluminium steel brass	**Year 1 Autumn 1 -** identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock describe the simple physical properties of a variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties **Year 2 Spring 2 –** Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	Maths – calculating, comparing, measuring, analysing, creating data, using data, creating and using charts and tables, mass English – reading scientific texts - using glossaries, index, dictionaries, using features of non-chronological reports, labelling, widening vocabulary, summarising. Geography – knowledge of the poles and the magnetic pole, structure of the earth and geographical features such are weather/wind/ DT – how mass and gravity are linked to weight and how this impacts on design	Spiritual - Enjoy learning about themselves, others and the world around them I can use my imagination and creativity in their learning Think about what they have learned and how that impacts of their understanding of the world around them. Social- Use of a range of social skills when working with other pupils, including those from different religious, ethnic and socio-economic backgrounds Moral- Understand the consequences of their behaviour and actions.

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	plants and other animals, using the idea of a simple food chain, and identify and name different sources of food	into account in designing products.				considerations. Importance of forces such as friction, effort and gravity in design.	
Threshold Concepts *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	
FIRST LESSON OF THE YEAR – children to learn about the different enquiry types. • I know what the different Scientific Enquiry types are and when to use them. ○ Pattern Seeking ○ Observing Over Time ○ Identifying and Classifying ○ Fair Test and Comparative Testing Animals including humans: • I know 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 • I know that humans and some other animals have skeletons and muscles for support, protection and movement Climate change Curriculum (to be covered across unit) • I can identify actions that can be taken at the level of their school and locality (e.g. food packaging/food waste)		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask relevant questions and use scientific enquiry to answer them • I can set up simple practical fair tests • I can make observations and, where appropriate, take accurate measurements using standard units • I can gather, record, classify and present data to help answer questions • I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • I can use results to draw simple conclusion and suggest improvements • I can identify differences, similarities or changes related to simple scientific ideas and processes • I can use simple scientific evidence to answer questions or to support findings •		Forces and magnets: • I understand how things move on different surfaces • I know that some forces need contact between 2 objects, but magnetic forces can act at a distance • I understand how magnets attract or repel each other and attract some materials and not others. • I know a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. • I know that magnets have 2 poles. • I understand whether 2 magnets will attract or repel each other, depending on which way the poles are facing.		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask relevant questions and use scientific enquiry to answer them • I can set up simple practical fair tests • I can make observations and, where appropriate, take accurate measurements using standard units • I can gather, record, classify and present data to help answer questions • I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • I can use results to draw simple conclusion and suggest improvements • I can identify differences, similarities or changes related to simple scientific ideas and processes • I can use simple scientific evidence to answer questions or to support findings •	
Spring Term 1 - Light				**Spring Term 2**			
Key Vocabulary	**Interleaving *Opportunities***	**Links to wider curriculum** *(e.g.*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities***	**Links to wider curriculum** *(e.g.*	**SMSC**

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	(e.g. when past topics can be revisited)	*different subjects or key stages)*			*(e.g. when past topics can be revisited)*	*different subjects or key stages)*	
light dark shadow light travels translucent shortest direction opaque transparent longest highest object material light source day night sun light beam reflect reflection opaque mirror light travelling source reflected travel block shiny surface	**<u>Year 1</u>** Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies **<u>Year 2 Summer 2 –</u>** Find out and describe how plants need water, light and suitable temperature to grow and stay healthy	Maths – geometry, shape, measurement, reflection, symmetry. English – word level, vocabulary, description, labelling,- Art- light and shade, tone and texture – how this is used in drawing. DT – consideration of light on aesthetic aspects of design. Geography – global, national and local geographical locations – how light changes and affects where we live and the space we live in. History – how physical evidence is changed over the course of time through light/lack of. How recording of historical events is shaped by our understanding and control of light.	Social - use social skills when working and socialising with other pupils, including those from different religious, ethnic and socio-economic backgrounds. Cultural – Recognise and value the things we share in common. Moral – Understand the consequences of their behaviour and actions. Spiritual – Enjoy and be fascinated in learning about themselves, and the world around them. I can use my imagination and creativity in their learning Have opportunities to reflect on their experiences				
Threshold Concepts *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge**		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge**		**Key skills** *Which can be applied once the knowledge is understood*	

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The minimum all pupils should know		*The minimum all pupils should know*	
Light: • I know that we need light in order to see things and that dark is the absence of light. • I understand that light is reflected from surfaces. • I know that light from the sun can be dangerous and that there are ways to protect their eyes. • I understand that shadows are formed when the light from a light source is blocked by an opaque object. • I know that there are patterns in the way that the size of shadows change.	Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask relevant questions and use scientific enquiry to answer them • I can set up simple practical fair tests • I can make observations and, where appropriate, take accurate measurements using standard units • I can gather, record, classify and present data to help answer questions • I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • I can use results to draw simple conclusion and suggest improvements • I can identify differences, similarities or changes related to simple scientific ideas and processes • I can use simple scientific evidence to answer questions or to support findings		

Summer Term 1 - Plants				**Summer Term 2 - Rocks**			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
plants light warmth	**Year 1 Summer 2 –** Identify and name a variety of common	Maths – measures, charts & graphs.	Spiritual - enjoy and be fascinated in learning	rock slate granite	**Year 1 Autumn 1 –** distinguish between an object and the	Maths – sorting, analysing, categorising, measuring,	Cultural –

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water leaves roots stem flower grow growth air light nutrients soil transport pollinate seed dispersal	wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees **Year 2 Summer 2 –** Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and suitable temperature to grow and stay healthy	Geography – plants in our local area. English – reading scientific texts relating to topic Art – use of line and observation in scientific drawings. DT – healthy wraps/soup	about themselves, others and the world around them I can use my imagination and creativity in their learning. Think about what they have learnt and how this connects with their own experiences. Cultural – Recognise and value the things we share in common. Moral – Understand the consequences of their behaviour and actions	sandstone quartz marble chalk soil clay sand limestone absorbent characteristic surface stone pebble texture fossil pressure mineral	material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock describe the simple physical properties of a variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties **Year 2 Spring 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 Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	English – reading scientific texts - using glossaries, index, dictionaries, using features of non-chronological reports, labelling, widening vocabulary, summarising. Geography – links I understanding of local, national and global places and spaces and how humans have developed the natural landscape and its resources to improve their world. i.e. areas of land that have a high clay content in their soil are more prone to flooding. DT – learning how natural materials have been used and shaped by humans to create objects and products. Art- learning how natural materials (rocks, stones,) have been used to create artistic mediums – paint, plaster, clay etc. History – how the development of	Recognise, and value, the things they share in common across cultural, religious, ethnic and socio-economic communities Social Use of a range of social skills when working with other pupils, including those from different religious, ethnic and socio-economic backgrounds Moral- Understand the consequences of their behaviour and actions. Spiritual Enjoy and be fascinated by the world around them and themselves. I can use my imagination and creativity in their learning Think about what they have learnt and their experiences and how what they have learnt affects their lives.

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						natural materials have been used by humans through time – ie stone age	
Threshold Concepts *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	
Plants: • I understand the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • I know the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and understand how they vary from plant to plant. • I understand the way in which water is transported within plants. • I know that the part that flowers play in the life cycle of flowering plants, including understanding pollination, seed formation and seed dispersal. Climate change Curriculum (to be covered across unit) • I know that some natural processes like trees growing, healthy soils and oceans take greenhouse gases out of the atmosphere. • I understand the importance of trees for the climate and can explain why protecting / replanting forests is important for the climate • I know that action or lack of it now will have an effect on these different futures		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask relevant questions and use scientific enquiry to answer them • I can set up simple practical fair tests • I can make observations and, where appropriate, take accurate measurements using standard units • I can gather, record, classify and present data to help answer questions • I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • I can use results to draw simple conclusion and suggest improvements • I can identify differences, similarities or changes related to simple scientific ideas and processes • I can use simple scientific evidence to answer questions or to support findings		Rocks: • I understand that there are different kinds of rocks on the basis of their appearance and simple physical properties. • I know in simple terms how fossils are formed when things that have lived are trapped within rocks. • I understand that soils are made from rocks and organic matter		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask relevant questions and use scientific enquiry to answer them • I can set up simple practical fair tests • I can make observations and, where appropriate, take accurate measurements using standard units • I can gather, record, classify and present data to help answer questions • I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • I can use results to draw simple conclusion and suggest improvements • I can identify differences, similarities or changes related to simple scientific ideas and processes • I can use simple scientific evidence to answer questions or to support findings

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Year Group: 4

Autumn Term 1 – living things and their habitats				Autumn Term 2 - Animals including humans			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
habitat nutrition environment keys condition consumer producer organism prey food chain similar predator different mammal reptile bird fish insect	**Year 2 Summer 1 –** 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 **Year 3 Autumn 1 -** Identify that humans and some other animals have skeletons and muscles for support, protection and movement **Year 3 Summer 1 –** Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. **Year 4 Autumn 2 –** Construct and interpret a variety of food chains, identifying producers, predators and prey.	Geography – Effects of environment. Nurture v nature. English – Fact files about different types of animals DT/Art -Create their own animals and environment and say why and how they will survive	I can use my imagination and creativity in their learning Think about what they have learnt and their experiences and how what they have learnt affects their lives. Deforestation – link to Amazon rainforest. Genetic modification of animals. Cultural – Recognise, and value, the things they share in common across cultural, religious, ethnic and socio-economic communities Social Use of a range of social skills when working with other pupils, including those from different religious, ethnic and socio-	feed food groups vegetables fish feeding meat activity growth cereals sugars teeth incisor fats molar fruits starches canine tooth diet healthy balanced diet unhealthy root decay food	**Year 1 Spring 2 –** Identify and name a variety of common animals that are carnivores, herbivores and omnivores **Year 3 Autumn 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 Identify that humans and some other animals have skeletons and muscles for support, protection and movement	English – persuasive writing tasks. Letter/adverts Geography – what types of food people eat around the world.	Effect of diet on teeth and body. Is the world population getting bigger? Why? Diet of different people around the world Cultural – Recognise, and value, the things they share in common across cultural, religious, ethnic and socio-economic communities Social Use of a range of social skills when working with other pupils, including those from different religious, ethnic and socio-economic backgrounds. Moral- Understand the consequences of their behaviour and actions.

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			economic backgrounds. Moral- Understand the consequences of their behaviour and actions. Spiritual Enjoy and be fascinated by the world around them and themselves. I can use my imagination and creativity in their learning Think about what they have learnt and their experiences and how what they have learnt affects their lives				Spiritual Enjoy and be fascinated by the world around them and themselves. I can use my imagination and creativity in their learning Think about what they have learnt and their experiences and how what they have learnt affects their lives.
Threshold Concepts *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	
Living things and their habitats: • I know that living things can be grouped in a variety of ways. • I know that classification keys to help group, identify and name a variety of living things in their local and wider environment. • I know that environments can change and that this can sometimes pose dangers to living things		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask relevant questions and use different types of scientific enquiries to answer them • I can set up simple practical enquiries, comparative and fair tests • I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units,		Animals including humans: • I understand the simple functions of the basic parts of the digestive system in humans. • I know the different types of teeth in humans and understand their simple functions. • I understand a variety of food chains, understanding the terms 'producers', 'predators' and 'prey'.		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask relevant questions and use different types of scientific enquiries to answer them • I can set up simple practical enquiries, comparative and fair tests • I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment,	

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Climate change Curriculum (to be covered across unit) • I understand what renewable energy is and can explain why it is important in reducing greenhouse gas emissions MOVE TO SUMMER 1	• using a range of equipment, including thermometers and data loggers • I can gather, record, classify and present data in a variety of ways to help in answering questions • I can record findings using scientific language, drawings, labelled diagrams, keys, bar charts, and tables • I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • I can identify differences, similarities or changes related to simple scientific ideas and processes • I can use scientific evidence to answer questions or to support their findings	Climate change Curriculum (to be covered across unit) • I can identify a range of observed impacts of our changing climate on people locally and across the world the world	• including thermometers and data loggers • I can gather, record, classify and present data in a variety of ways to help in answering questions • I can record findings using scientific language, drawings, labelled diagrams, keys, bar charts, and tables • I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • I can identify differences, similarities or changes related to simple scientific ideas and processes • I can use scientific evidence to answer questions or to support their findings

Spring Term 1 – electricity				**Spring Term 2**			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
electricity electrical circuit bulb crocodile clip buzzer motor		DT – creating night lights using simple switches.	Think about what they have learnt and their experiences and how what they have learnt affects their lives.				

battery conduct conductor power insulate bright insulator brightness dim switch open close break batteries			Renewable energy Use of fossil fuels Electricity safety Cultural – Recognise, and value, the things they share in common across cultural, religious, ethnic and socio-economic communities Social Use of a range of social skills when working with other pupils, including those from different religious, ethnic and socio-economic backgrounds. Moral- Understand the consequences of their behaviour and actions. Spiritual Enjoy and be fascinated by the world around them and themselves.				
Threshold Concepts *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	

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Electricity: • I know common appliances that run on electricity. • I understand the term 'simple series electrical circuit', knowing its basic parts, including cells, wires, bulbs, switches and buzzers. • I understand 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. • I know that a switch opens and closes a circuit and understand whether or not a lamp lights in a simple series circuit with a switch. • I know some common conductors and insulators, and understand metals as being good conductors.	Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask relevant questions and use different types of scientific enquiries to answer them • I can set up simple practical enquiries, comparative and fair tests • I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • I can gather, record, classify and present data in a variety of ways to help in answering questions • I can record findings using scientific language, drawings, labelled diagrams, keys, bar charts, and tables • I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • I can identify differences, similarities or changes related to simple scientific ideas and processes I can use scientific evidence to answer questions or to support their findings		

Summer Term 1 – states of matter				**Summer Term 2 – Sound**			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**

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strong not transparent soft hard waterproof absorbent weak flexible transparent rough shiny comparison hot cold description characteristics dull smooth opaque rigid compare describe stretchy material properties solid liquid gas mix sieve undissolved separate dissolve dissolved filter solidify freeze melt water solid liquid gas evaporate evaporation	**Year 1 Spring 2 –** Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Identify and name a variety of common animals that are carnivores, herbivores and omnivores **Year 2 Summer 2 –** Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees	Geography – lakes, rivers, oceans + part water cycle plays in this Maths – measures Music/DT – Creating their own musical instrument History – Alexander Graham Bell. First telephone/ sending and receiving sounds Maths – interpreting and presenting data	Environmental effects. Greenhouse effect, rising temperatures, melting ice etc. Cultural – Recognise, and value, the things they share in common across cultural, religious, ethnic and socio-economic communities Social Use of a range of social skills when working with other pupils, including those from different religious, ethnic and socio-economic backgrounds. Moral- Understand the consequences of their behaviour and actions. Spiritual Enjoy and be fascinated by the world around them and themselves. I can use my imagination and creativity in their learning	sounds pitch loudness vibration vibrate muffle tuning quiet soft noise sound source loud high low vibrating soundproof fainter	**Year 1 Autumn 1 –** distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock describe the simple physical properties of a variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties **Year 2 Spring 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 **Year 1 Spring 1 –** Compare and group materials together, according to whether they are solids, liquids or gases.		How do deaf people communicate if they can't hear? Noise pollution Cultural – Recognise, and value, the things they share in common across cultural, religious, ethnic and socio-economic communities Social Use of a range of social skills when working with other pupils, including those from different religious, ethnic and socio-economic backgrounds. Moral- Understand the consequences of their behaviour and actions. Spiritual Enjoy and be fascinated by the world around them and themselves. I can use my imagination and creativity in their learning

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condense condensation precipitate precipitation collection lake river sea ocean stream pond cloud water vapour temperature			Think about what they have learnt and their experiences and how what they have learnt affects their lives.				
Threshold Concepts *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	
States of Matter: • I know which materials are solids, liquids or gases. • I understand that some materials change state when they are heated or cooled and know the temperature at which this happens in degrees Celsius (°C). • I understand the part played by evaporation and condensation in the water cycle and know the rate of evaporation is linked with temperature. • (Remember to revise geography – rivers and their role in the water cycle. Geography LO must be covered within science water cycle) Climate change Curriculum (to be covered across unit) • I can identify a range of impacts of past and / or present climate change on plants and animal species,		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask relevant questions and use different types of scientific enquiries to answer them • I can set up simple practical enquiries, comparative and fair tests • I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • I can gather, record, classify and present data in a variety of ways to help in answering questions • I can record findings using scientific language, drawings, labelled diagrams, keys, bar charts, and tables • I can report on findings from enquiries, including oral and written		**Sound:** • I know how sounds are made, understanding that some of them are made through something vibrating. • I understand that vibrations from sounds travel through a medium to the ear • I understand that the pitch of a sound is linked to the features of the object that produced it. • I understand the volume of a sound is linked to the strength of the vibrations of the object that produced it. • I know that sounds get fainter as the distance from the sound source increases. Climate change Curriculum (to be covered across unit)		Working Scientifically (ensure all skills have been covered by the end of the year) • I can ask relevant questions and use different types of scientific enquiries to answer them • I can set up simple practical enquiries, comparative and fair tests • I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • I can gather, record, classify and present data in a variety of ways to help in answering questions • I can record findings using scientific language, drawings, labelled diagrams, keys, bar charts, and tables • I can report on findings from enquiries, including oral and written	

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including extinctions, and on environments locally and across the world MOVE TO AUTUMN 1	explanations, displays or presentations of results and conclusions • I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • I can identify differences, similarities or changes related to simple scientific ideas and processes • I can use scientific evidence to answer questions or to support their findings	• I know about some of the impacts that higher temperatures are having on people already. • I understand that the future will be different depending on what we do now and have the power to make positive changes.	explanations, displays or presentations of results and conclusions • I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • I can identify differences, similarities or changes related to simple scientific ideas and processes • I can use scientific evidence to answer questions or to support their findings

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Year Group: 5

Autumn Term 1 – Properties and Changes of Materials				Autumn Term 2 - Forces			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
transparent translucent opaque dissolve dissolving filter cloudy clear separate pure evaporate mixture undissolved solution solute reversible irreversible burning insoluble properties material filter sieve soluble evaporation evaporate condensation condense change of state state solid liquid gas freezing point freeze	**<u>Year 1 Autumn 1 –</u>** distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock describe the simple physical properties of a variety of everyday materials **<u>Year 2 Spring 2-</u>** Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses **<u>Year 4 Summer 2 –</u>** Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled, and measure or research	DT – cooking (previous year groups?) DT – materials Geography – climate change	Why do churches use translucent glass for windows? Should we experiment to find new materials to replace plastic? Is there a way to filter microplastics from our washing to save the environment? Will it ever be possible for humans to be frozen? Why would we want to do that? Why is plastic so bad for the environment?	friction gravity air resistance water resistance force meter resists forces surface area Newtons levers pulleys gears mechanism smaller greater effect	**<u>Year 3 Autumn 2 –</u>** compare how things move on different surfaces Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance	Maths – reading scales, presenting/interpreting data DT unit – switches Y5	Migrant situation – amount of weight to safely go into a boat without it sinking What do other countries need to do to safely drive their vehicles – think about ice truck drivers crossing rivers etc?

solidify conditions melt melting conductor insulator	the temperature at which this happens in degrees Celsius (°C).						
Threshold Concepts *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	
Properties and changes of materials: • I know everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. • I know that some materials will dissolve in liquid to form a solution, and understand how to recover a substance from a solution. • I know how to separate mixtures of solids, liquids and gases by understanding the purpose of filtering, sieving and evaporating. • I know the particular uses of everyday materials, including metals, wood and plastic. • I understand that dissolving, mixing and changes of state are reversible changes. • I understand 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. Climate change Curriculum (to be covered across unit) • I can explain the link between burning fossil fuels and climate change using appropriate scientific vocabulary		Working Scientifically (ensure all skills have been covered by the end of the year) • I can plan scientific enquiry to answer questions, including recognising and controlling variables where necessary • I can take measurements, using a range of scientific equipment, taking repeat readings when appropriate • I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • I can use test results to make predictions to set up further comparative and fair tests • I can report and present findings from enquiries, including conclusions in oral and written forms such as displays and other presentations • I can identify simple scientific evidence that has been used to support or refute ideas or arguments •		Forces: • I know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • I understand the effects of air resistance, water resistance and friction that act between moving surfaces. • I understand that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.		Working Scientifically (ensure all skills have been covered by the end of the year) • I can plan scientific enquiry to answer questions, including recognising and controlling variables where necessary • I can take measurements, using a range of scientific equipment, taking repeat readings when appropriate • I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • I can use test results to make predictions to set up further comparative and fair tests • I can report and present findings from enquiries, including conclusions in oral and written forms such as displays and other presentations • I can identify simple scientific evidence that has been used to support or refute ideas or arguments •

• I can explain global warming.							
Spring Term 1 - Forces				**Spring Term 2 – Earth and Space**			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
				Earth sun moon sphere revolve orbit spin rotate axis sunrise sunset north south east west light source shadow season winter summer autumn spring daytime night-time year day solid liquid gas	**Year 1** Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies **Year 3 Spring 1 –** Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. **Year 4 Summer 2 –** Compare and group materials together, according to whether they are solids, liquids or gases. **Year 5 Summer 1 –** Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.	Geography mapwork/comparing places in the world – daylight hours etc. Maths – interpreting data Geography mapwork/comparing places in the world – daylight hours, temperatures around the world	How big are we really in comparison to the galaxy? Can I still make a difference? https://www.youtube.com/watch?v=zGz2giUoeIs https://www.youtube.com/watch?v=GoW8Tf7hTGA&t=94s (Jenny has a PowerPoint on this too – just ask) How do other cultures/religions believe the world/universe began? Should we travel to Mars to look at living there?
Threshold Concepts *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	

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		Earth and Space: • I understand the movement of the Earth and other planets relative to the sun in the solar system • I know the movement of the moon relative to the Earth • I know the sun, Earth and moon as approximately spherical bodies • I understand that the Earth's rotation is the cause of day and night and the apparent movement of the sun across the sky.	Working Scientifically (ensure all skills have been covered by the end of the year) • I can plan scientific enquiry to answer questions, including recognising and controlling variables where necessary • I can take measurements, using a range of scientific equipment, taking repeat readings when appropriate • I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • I can use test results to make predictions to set up further comparative and fair tests • I can report and present findings from enquiries, including conclusions in oral and written forms such as displays and other presentations • I can identify simple scientific evidence that has been used to support or refute ideas or arguments •

Summer Term 1 – Living Things and Their Habitats				**Summer Term 2 - Animals Including Humans**			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
reproduce reproduction life cycle babyhood childhood adolescence adulthood born die amphibian mammal bird egg insect	**Year 1 Autumn 1 –** notice that animals, including humans, have offspring which grow into adults **Year 1 Summer 2 –** Observe and describe how seeds and bulbs grow into mature plants **Year 2 Autumn 1 –** Explore the part that flowers play in the life cycle of flowering	PSHE – SRE English text – The Last Wild	Why is a caterpillar's life cycle a good representation for different religion's beliefs about life after death? We are mammals. Do we behave like other mammals? Why do human babies require so much looking	Baby Infant Child Teenager Adolescence Puberty Adult Elderly Grow Change Life cycle Born Die Healthy	**Year 2 Autumn 1 + 2 –** notice that animals, including humans, have offspring which grow into adults find out about and describe the basic needs of animals, including humans, for survival (water, food and air) describe the importance for humans	PE lessons – fitness, heart rate etc, keeping healthy DT – cooking (previous year groups) PSHE – SRE, drugs and alcohol	Why do humans need to change as they get older? If you could reverse the process of aging, would you? How do we treat our elderly in comparison to other cultures?

larvae pupae chrysalis hatch metamorphosis	plants, including pollination, seed formation and seed dispersal.		after compared to other mammals?		of exercise, eating the right amounts of different types of food, and hygiene **Year 2 Spring 2 + Summer 1 –** Explore and compare the differences between things that are living, dead, and things that have never been alive Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other 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 **Year 3 Autumn 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 Identify that humans and some other animals		

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					have skeletons and muscles for support, protection and movement **<u>Year 4 Autumn 2 –</u>** Describe the simple functions of the basic parts of the digestive system in humans.		
Threshold Concepts *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	
Living things and their habitats: • I know the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • I understand the life process of reproduction in some plants and animals.		Working Scientifically (ensure all skills have been covered by the end of the year) • I can plan scientific enquiry to answer questions, including recognising and controlling variables where necessary • I can take measurements, using a range of scientific equipment, taking repeat readings when appropriate • I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • I can use test results to make predictions to set up further comparative and fair tests • I can report and present findings from enquiries, including conclusions in oral and written forms such as displays and other presentations • I can identify simple scientific evidence that has been used to support or refute ideas or arguments •		Animals including humans: • I understand the changes as humans develop to old age.		Working Scientifically (ensure all skills have been covered by the end of the year) • I can plan scientific enquiry to answer questions, including recognising and controlling variables where necessary • I can take measurements, using a range of scientific equipment, taking repeat readings when appropriate • I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • I can use test results to make predictions to set up further comparative and fair tests • I can report and present findings from enquiries, including conclusions in oral and written forms such as displays and other presentations • I can identify simple scientific evidence that has been used to support or refute ideas or arguments •

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Year Group: 6

Autumn Term 1 –Evolution and Inheritance				Autumn Term 2 - Living Things and Their Habitats			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
evolution adaptation classify biological extinct inheritance environment animals fossil survival habitat species plants suited reproduce	**Year 2 Spring 1 + Summer 1 -** Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other Identify and name a variety of plants and animals in their habitats, including microhabitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food **Year 3 Summer 2 –** Describe in simple terms how fossils are formed when things that have lived are trapped within rocks. **Year 4 Autumn 2 -** Identify the different types of teeth in humans and their simple functions.	Art – George Stubbs artwork focusing on animals Maths – average, interpreting data PSHE –SRE – inheriting features etc.	Looking at human impact on the world – environments/habitats etc and consequences of human impact Understanding the importance of ecosystems and their roles within the world Vegetarians/vegans choice not to eat meat even though humans are apex predators (again, possible links to human impact on environments and the world) Nature/nurture. Different cultures approach to respecting/neglecting environments – Amazonian tribes respect, loggers neglect etc	environment animals survival habitat species plants food chain energy consumer predator producer prey food suited habitats micro-organism microbe germ virus decay mould bacteria reproduce grow feed	**Year 1 Spring 2 + Summer 1 -** Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) **Year 1 Summer** Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees **Year 2 Spring 1 + Summer 1 -** Identify that most living things live in habitats to which	Art – George Stubbs artwork focusing on animals	Understanding the importance of ecosystems and their roles within the world Vegetarians/vegans choice not to eat meat even though humans are apex predators (again, possible links to human impact on environments and the world) Nature/nurture. Different cultures approach to respecting/neglecting environments – Amazonian tribes respect, loggers neglect etc

	Construct and interpret a variety of food chains, identifying producers, predators and prey.				they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other Identify and name a variety of plants and animals in their habitats, including microhabitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food **Year 4 Autumn 2 -** Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey. **Year 4 Summer 1 –** Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in		

SCIENCE SUBJECT CURRICULUM LONG TERM PLAN

					their local and wider environment. Recognise that environments can change and that this can sometimes pose dangers to living things.		
Threshold Concepts *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	
Evolution and inheritance: • I understand that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • I know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. • I understand how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. Climate change Curriculum (to be covered across unit) • I can identify a range of impacts of our changing climate on people in their local area, in the UK, and also across the world • I can identify current impacts, and a range of predicted future impacts depending on levels of global warming, including human migration. • I know that extreme weather is a result of climate change. • I can outline different possible future scenarios - typically in 2100 - depending on levels of heating		Working Scientifically (ensure all skills have been covered by the end of the year) • I can plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary • I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • I can record data and results of increasing complexity and accuracy using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • I can use test results to ask new questions to investigate, make predictions and set up further comparative and fair tests • I 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 • I can identify scientific evidence that has been used to support or refute ideas or arguments • I can describe and evaluate their own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources	Living things and their habitats: • I know that living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. • I understand how to classify plants and animals based on specific characteristics. Climate change Curriculum (to be covered across unit) • I understand how climate change is a factor in the current loss of biodiversity • I can explain how some agriculture and deforestation has impacted climate change and reduced biodiversity. • I understand the impact of climate change on ecosystems locally and across the world, both in the present and a range of future scenarios • I can make the connection between climate change and things that we consume / activities we participate in		Working Scientifically (ensure all skills have been covered by the end of the year) • I can plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary • I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • I can record data and results of increasing complexity and accuracy using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • I can use test results to ask new questions to investigate, make predictions and set up further comparative and fair tests • I 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

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	• I can group and classify things and recognise patterns • I can find things out using a wide range of secondary sources of information • I can use appropriate scientific language and ideas from the national curriculum to explain, evaluate and communicate their methods and findings				• I can identify scientific evidence that has been used to support or refute ideas or arguments • I can describe and evaluate their own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources • I can group and classify things and recognise patterns • I can find things out using a wide range of secondary sources of information • I can use appropriate scientific language and ideas from the national curriculum to explain, evaluate and communicate their methods and findings	
Spring Term 1 – Animals Including Humans				**Spring Term 2**			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
heart beat pulse pulse rate blood blood vessel muscle exercise lung breathe healthy diet balanced diet side effect fats sugars	**Year 1 Summer 1 -** Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense **Year 2 Autumn 1 + Autumn 2–** Find out about and describe the basic needs of animals,	PE lessons – fitness, heart rate etc, keeping healthy DT – biscuit making PSHE – SRE, drugs and alcohol, peer pressure	What is a good balance of diet and exercise? Should I feel bad about my lifestyle? Motivating factors. How to continue to lead a healthy lifestyle. Are we all made up of the same things on the inside even though we look different on the outside? Which countries have healthier lives?				

circulation heart food types starches growth nutrients water circulatory drugs lifestyle function	including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene **<u>Year 3 Autumn 1 –</u>** Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat Identify that humans and some other animals have skeletons and muscles for support, protection and movement **<u>Year 4 Autumn 2 –</u>** Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. **<u>Year 5 Summer 2 –</u>**		What about parts of the world that are poorer?				

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	Describe the changes as humans develop to old age.						
Threshold Concepts *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* **/ Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	
Animals including humans: • I know the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. • I understand the impact of diet, exercise, drugs and lifestyle on the way their bodies function. • I understand the ways in which nutrients and water are transported within animals, including humans. COINTINUED IN SPRING 2 (SATS Prep)		Working Scientifically (ensure all skills have been covered by the end of the year) • I can plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary • I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • I can record data and results of increasing complexity and accuracy using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • I can use test results to ask new questions to investigate, make predictions and set up further comparative and fair tests • I 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 • I can identify scientific evidence that has been used to support or refute ideas or arguments • I can describe and evaluate their own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources • I can group and classify things and recognise patterns • I can find things out using a wide range of secondary sources of information				

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		• I can use appropriate scientific language and ideas from the national curriculum to explain, evaluate and communicate their methods and findings					
Summer Term 1 – Light				**Summer Term 2 - Electricity**			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**	**Key Vocabulary**	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**

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LIGHT light dark shadow transparent opaque direction light travels translucent shortest longest highest object material light source sun night day	**LIGHT** **Year 3 Spring 1 –** Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows changes.	**LIGHT** Geography mapwork/comparing places in the world – daylight hours etc Maths – angles English text – Letters from the Lighthouse	What about countries that don't have access to electricity? Look at water bottle lights. https://www.bbc.co.uk/news/magazine-23536914 (Proud to be poor) Do we rely too much on electricity?	**ELECTRICITY** changing circuits circuit complete circuit symbol voltage component electricity circuit diagram insulator conductor series switch bulb wire	**ELECTRICITY** **Year 4 Autumn 1 –** Identify common appliances that run on electricity. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.	**ELECTRICITY** Year 5 DT unit – using electricity to make switches Maths – reading scales	
Threshold Concepts *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*		**Threshold Concepts** *Knowledge without which later concepts will not be fully understood* / **Core Knowledge** *The minimum all pupils should know*		**Key skills** *Which can be applied once the knowledge is understood*	

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Light: • I know that light appears to travel in straight lines. • I understand that objects are seen because they give out or reflect light into the eye. • I understand that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. • I understand why shadows have the same shape as the objects that cast them. •	Working Scientifically (ensure all skills have been covered by the end of the year) • I can plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary • I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • I can record data and results of increasing complexity and accuracy using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • I can use test results to ask new questions to investigate, make predictions and set up further comparative and fair tests • I 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 • I can identify scientific evidence that has been used to support or refute ideas or arguments • I can describe and evaluate their own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources • I can group and classify things and recognise patterns • I can find things out using a wide range of secondary sources of information • I can use appropriate scientific language and ideas from the national curriculum to explain, evaluate and communicate their methods and findings	**Electricity:** • I know that the brightness of a lamp or the volume of a buzzer is associated with the number and voltage of cells used in the circuit. • I understand variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. • I know the symbols used when representing a simple circuit in a diagram.	Working Scientifically (ensure all skills have been covered by the end of the year) • I can plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary • I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • I can record data and results of increasing complexity and accuracy using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • I can use test results to ask new questions to investigate, make predictions and set up further comparative and fair tests • I 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 • I can identify scientific evidence that has been used to support or refute ideas or arguments • I can describe and evaluate their own and other people's scientific ideas related to topics in the national

			curriculum (including ideas that have changed over time), using evidence from a range of sources • I can group and classify things and recognise patterns • I can find things out using a wide range of secondary sources of information • I can use appropriate scientific language and ideas from the national curriculum to explain, evaluate and communicate their methods and findings