Reepham Church of England Primary School
Be Known. Be Loved. Belong.
Long Term Planning

School Vision: Be Known. Be Loved. Belong.
"Who you are is God's gift to you. Who you become is your gift to God."
Subject Intent: Our Science curriculum will ensure we foster curiosity and a love for science, building foundational knowledge and skills in biology, chemistry, and physics, developing working scientifically skills like enquiry and questioning, and demonstrating the relevance of science in the real world.

Spirituality in SCIENCE.

Delight in discovering how things work. Opportunities to linger longer on the wonder.
What questions cannot be answered by science? How do you celebrate the achievement and break-through 'wows' of success?
How do you support the 'ows' of difficulty and frustrations?
How do you maximise the everyday moment of concentration and being in the present, creating a sense of calm and completeness?
To visit places of beauty, interest and challenge. (linking the local environment and residentials)
To admire and wonder at the natural environment and human creative efforts. (around the school and on relevant visits linked with the curriculum)
To participate in a wide range of events and activities e.g. trips and STEM club in school

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	BIOLOGY: **ANIMALS INCLUDING HUMANS – My Body** Pupils learn all about humans and other animals, the similarities and differences between them, and their senses, bodies and diets. By the end of the unit, students are expected to be able to: Describe activities that use each of the fives senses. Sort animals into simple groups, including groups based on animal diets. Describe animal bodies using	PHYSICS: **SEASONAL CHANGES (Autumn and Winter)** Observe changes across the four seasons, observe how the four seasons are different, identify how animals and humans are affected by the seasons, observe and describe weather associated with the seasons and how day length can vary.	CHEMISTRY: **MATERIALS** Identify a variety of common materials, distinguish between objects and the materials they are made from, identify and name everyday materials including wood, plastic, glass, metal, water and rock and their properties *Key Scientist - Materials Scientist: Charles Macintosh*	PHYSICS: **SEASONAL CHANGES (Spring and Summer)** Observe changes across the four seasons, observe how the four seasons are different, identify how animals and humans are affected by the seasons, observe and describe weather associated with the seasons and how day length can vary. *Key Scientist – Meteorologist: Joanne Simpson*	BIOLOGY: **PLANTS** Identify what a plant is, identify and name a variety of common wild and garden plants, including deciduous and evergreen trees, identify and describe the basic structure of a variety of common flowering plants including trees, observe the growth of plants *Key Scientist – Biologist: Joseph Banks*	*Scientists and Inventors*

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	relevant vocabulary. Understand the difference between carnivores, herbivores and omnivores. *Key Scientist – Zoologist: Steve Irwin*	*Key Scientist – Meteorologist: Joanne Simpson*				
Year 2	**BIOLOGY: LIVING THINGS & HABITATS** Identify that more living things live in habitats to which they are suited, describe how different habitats provide for the basic needs of different animals and plants and how they depend on each other, identify how animals obtain their food from plants and other animals using the idea of a simple food chain **Key Scientist** – Ecologist: Rachel Carson	**BIOLOGY: ANIMALS** Notice and identify that all animals including humans have offspring which grow into adults, identify the basic needs of animals including humans for survival (water, food and air), describe the importance of exercise for humans, including eating the right amounts of different types of foods, identifying the importance of hygiene **Key Scientist** – Zoologist: Howard Nelson	**CHEMISTRY: MATERIALS** Identify and compare the suitability of everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard including their uses, find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. **Key Scientist** - Materials Scientist: John Boyd Dunlop	**BIOLOGY: PLANTS** Observe and describe how seeds and bulbs grow into mature plants, identify and describe how plants need water, light and a suitable temperature to grow and stay healthy, identify the ways in which seeds are dispersed **Key Scientist** – Botanist: Jane Colden	Biodiversity - Minibeasts	*Scientists and Inventors*
Year 3	**PHYSICS: ROCKS AND SOILS** Compare and group different kinds of rocks based on their appearance and simply physical properties, describe in simple terms how fossils are formed when things that have lived are trapped within rock, recognise that soils are made from rocks and organic matter **Key Scientist** - Geologist: Johan Herman Lie Vogt	**BIOLOGY: ANIMALS INCLUDING HUMANS** Identify that animals including humans need the right types and amount of nutrition and that they cannot make their own food – they get nutrition from what they eat, identify the importance of a healthy balanced diet, identify humans and some other animals have skeletons and muscles for support, protection and movement **Key Scientist** – Zoologist: Jane Goodal	**PHYSICS: FORCES & MAGNETS** Identify forces acting on objects – push or pull, compare how things move on different surfaces, notice that some forces need contact between two objects but that magnetic forces can act at a distance, observe how magnets attract or repel each other and attract some materials and not others, compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, identify some magnetic materials, describe magnets as having two poles, predict whether two magnets will attract or repel each other depending on which poles are facing **Key Scientist** - Physicist: William Gilbert	**BIOLOGY: PLANTS** Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers, explore the requirements of plants for life and growth (air, light, water, nutrients from the soil, room to grow) and how they vary from plant to plant, investigate the way in which water is transported within plants, explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal Washington Carver	**PHYSICS: LIGHT** Recognise that we need light 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 the ways to protect from this **Key Scientist** – Optical Scientist: Thomas Young	*Scientists and Inventors*
Year 4	**CHEMISTRY: STATES OF MATTER** Compare and group materials together according to whether they are solids, liquids or gases, identify and explore the properties of gases, observe that some materials change state when they are heated or cooled, measure/research the temperature at which this happens in degrees Celsius, identify the part played	**PHYSICS: ELECTRICITY** Learn how and why electricity occurs, identify electrical appliances and the types of electricity they use, learn how to construct simple circuits, identify and name basic parts of a circuit, identify complete and incomplete circuits, Design, investigate and construct a simple circuit with a switch	**PHYSICS: SOUND** Identify how sounds are made, associating sone of them with something vibrating, recognise that vibrations from sounds travel through a medium to the ear, find patterns between the pitch of a sound and features of the object that produced it, find patterns between the volume of a sound and the strength of the vibrations that produced it, recognise that	**BIOLOGY: ANIMALS INCLUDING HUMANS** Describe the simple functions of the basic parts of the digestive system in humans, identify the different types of teeth in humans and their simple functions, compare the similarities between the teeth of herbivores, carnivores and omnivores. Investigate food chain.	**BIOLOGY: LIVING THINGS & HABITATS** Identify and classify plants (and animals) into different groups, identify living things that can be grouped into a variety of ways, explore the use of classification key., Group, identify and name a variety of living things in local and wider environment, recognise that environments can change and the dangers	*Scientists and Inventors*

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	by evaporation and condensation in the water cycle	**Key Scientist** – Physicist: André-Marie Ampère	sounds get fainter as the distance from the sound source increases, investigate ways to absorb sound **Key Scientist** – Acoustician Scientist: Dorte Hammershøi	**Key Scientist** – Zoologist: Evelyn Cheesman	this can pose to living things, identify changes and dangers in the local habitat, identify potential environmental dangers and endangered species **Key Scientist** – Ecologist: Wangari Maathai	
Year 5	**BIOLOGY:** **ANIMALS (INCLUDING HUMANS)** Recognise the stages of growth and development in humans, identify the gestational stages of humans and animals, recognise the stages of development during childhood, understand the initial changes during puberty, identify how puberty differs for boys and girls, understand how the body changes during adulthood and old age	**PHYSICS:** **FORCES & GRAVITY** Explain the force of gravity, identify the effects of friction, identify and explain effects of air resistance, identify and explain effects of water resistance, identify use of levers & pulleys allowing smaller forces to give greater effect, identify use of gears on a mechanism exerting greater & smaller force **Key Scientist** - Physicist: Galileo Galilea.	**PHYSICS:** **EARTH, SUN & MOON** Study shape of Sun, Earth & Moon as approximately spherical; Earth's rotation of Sun; Moon's orbit of Earth; structure of Solar System (heliocentric & geocentric theories); how position of Sun influences seasonal changes in sunrise etc. **Key Scientist** - Astronaut: Mae C Jemison	**BIOLOGY:** **LIVING THINGS & HABITATS** Asexual & sexual reproduction in plants; sexual reproduction in animals; comparing animal adaptation to habitats; compare life cycles of animals; study of work of famous naturalists. **Key Scientist** – Reproduction Scientist: Miriam Menkin	**CHEMISTRY:** **PROPERTIES OF MATERIALS** Reversible & irreversible changes to materials using mixing, dissolving (forming a solution using a solvent & solute); heating, cooling & burning. Key Scientist. Materials Scientist: Catherine Rae	*Scientists and Inventors*
Year 6	**BIOLOGY:** **ANIMALS (INCLUDING HUMANS)** **KEEPING HEALTHY** Scientific ideas on diet in the past (scurvy) compared to modern balanced diet; study digestive system; heart & lungs (circulatory); muscles in relation to skeletal movement & blood flow;	**PHYSICS:** **LIGHT (HOW WE SEE THINGS)** Review light (how it moves) & shadows; study & label eye in relation to light & sight; reflections & how to change light direction (periscopes); experiment on shadow behaviour & difference between reflection & shadow. **Key Scientist** – Physicist: James Clerk Maxwell	**BIOLOGY:** **LIVING THINGS - CLASSIFICATION** Study grouping of organisms based on shared & differing characteristics; classify plants by characteristics; Carl Linnaeus & classification system; identify, classify & group micro-organisms by characteristics in local study. **Key Scientist -** Taxonomist: Carl Linnaeus	**BIOLOGY:** **EVOLUTION & INHERITANCE** Study inherited traits in offspring; adaptation to environment may lead to evolution; Linnaeus & Darwin; human intervention in evolution (selective & cross breeding) **Key Scientist** - Biologist: Charles Darwin	**PHYSICS:** **ELECTRICITY** Major electrical discoveries (Volta, Edison etc); recap simple circuits; adapt circuits re bulbs & motor power; circuit symbols; investigate effect of wire length on circuits. **Key Scientist** – Physicist: Hertha Ayrton	*Scientists and Inventors*

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