



Science

Our TRUST Curriculum Principles

A Kaleidoscope Schools curriculum has been designed to enable children to develop wide knowledge/ skills and become well rounded and confident individuals who are curious and want to learn. Schools design and develop their own curriculums but encapsulate the following which are linked to the Kaleidoscope 5C's.





Intent

Our science curriculum is designed to ignite curiosity, foster critical thinking, and equip pupils with the knowledge and skills they need to understand and engage with the world around them. We believe that Science is not just a subject—it is a lens through which children can explore real-world phenomena, solve problems, and make informed decisions about their lives and the environment.

Implementation

Science is taught weekly across all year groups using a carefully sequenced curriculum that builds knowledge and skills over time. Lessons follow the National Curriculum and are designed to be engaging, practical, and inclusive.

We implement our science curriculum by:

- **Delivering lessons with clear learning objectives**, ensuring progression in scientific knowledge and enquiry skills.
- **Using practical investigations** to help children explore concepts and develop curiosity.
- **Embedding key vocabulary** to support scientific understanding and communication.
- **Making links across subjects**, especially with maths, English, and computing, to deepen learning.
- **Providing opportunities for outdoor learning**, real-life contexts, and visits to enrich science experiences.
- **Assessing learning regularly**, using questioning, observation, and simple tasks to check understanding and inform teaching.
- **Supporting all learners**, including those with SEND, through adapted resources and targeted support.

Teachers use high-quality resources and CPD to stay confident and up-to-date with science teaching. Our approach ensures that all pupils develop a strong foundation in science and are well-prepared for future learning.

Impact

Assessment sheets



SCIENCE National Curriculum Milestones (Trust Milestones)

All pupils within the MAT will have an opportunity to research, create and exhibit at the annual Stem fair.

Key Theme	Reception	KS1 (Y1–Y2)	KS2 (Y3–Y4)	KS2 (Y5–Y6)
Plants	Children explore their immediate environment and learn about the natural world. Observing Plant Growth	Identifying and classifying plants Exploring what plants need to survive, such as water, food, and light.	Securing knowledge of plant parts and functions including pollination Exploring what plants need to survive, such as water, food, and light.	Be able to reason choices for classification
Animals including humans	Looking at animal behaviours	Identifying and classifying plants Exploring what animals need to survive, such as water, food, and light.	Learning about different body systems, such as the digestive and respiratory systems. Explore and use classification keys	Studying the heart, blood vessels, and the importance of a healthy lifestyle. Understanding Lifecycles of different animal classifications
Materials	Encouraging children to ask questions and make observations about their surroundings.	Investigating materials like wood, plastic, and metal, and understanding their uses and properties.	Studying different types of rocks and soils and learning about how fossils are formed. Understand and observe different states of matter.	Exploring how materials change state, such as melting, freezing, and dissolving.
Forces			Understanding how forces like push and pull work and exploring magnetic attraction and repulsion. Look in detail Clifton Suspension bridge	Understand the effects of gravity, air resistance and friction. Explore the effect of levers and pulleys on forces



Earth and Space				Learning about the solar system, the movement of planets, and the phases of the moon.
Light and Sound			Understand the need for light and the performance of shadows and patterns. Understand the dangers of the sun. Identify and find patterns in sounds including pitch and volume.	Understand the movement of light
Electricity			Construct circuits and problem solve	Compare and reason the construction of circuits



	Autumn	Spring	Summer
Reception			
Year 1	<u>Seasonal Changes – Autumn and Winter</u> <u>Every day materials</u>	<u>Human body parts</u> <u>Naming and grouping animals</u>	<u>Seasonal changes- spring and summer</u> <u>Identifying Plants</u>
Year 2	<u>Uses of everyday materials</u> <u>New life</u>	<u>Introduction to food chains</u> <u>Healthy Me</u>	<u>Living things and where they live</u> <u>Growing plants</u>
Year 3	<u>Rocks and soils</u> <u>Introduction to human skeleton and muscles</u>	<u>Simple forces including magnets</u> <u>Healthy eating</u>	<u>What plants do and what they need</u> <u>Introduction to light and shadows</u>
Year 4	<u>Introduction to human digestive system</u> <u>Introduction to states of matter and changing state</u>	<u>Simple electrical circuits</u> <u>Introduction to sound</u>	<u>Living things and the environment</u> <u>More about food chains</u>
Year 5	<u>Reproduction and Life Cycles : Plants</u> <u>Reproduction-and-life-cycles-animals</u>	<u>Human development</u> <u>Earth, sun and moon</u> <u>Forces including simple machines</u>	<u>Properties, changes and separating materials</u>
Year 6	<u>Changing circuits</u> <u>Light and how it travels</u>	<u>Evolution and inheritance</u> <u>Why we group and classify living things</u>	<u>The human circulatory system</u> <u>Keeping healthy</u>



CURRICULUM YEAR 1

Term	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1 Materials	Everyday objects and materials	Materials for recycling 3R's	Material properties	Waterproof materials	Transparent and opaque materials	TAPS experiment
2 Seasonal Changes	Signs of autumn – decorate tree	Weather in autumn	Signs of winter – decorate tree	Weather in winter Day length in winter	Plants around home	The structure of a tree
3 Animals	Naming and grouping animals	Naming mammals	Naming birds and reptiles	Naming fish and amphibians	Animal structure	What animals eat
4 Humans	Humans are animals	Body parts on the inside	Body parts on the outside	Senses	Sight, smell and sound	Taste and touch
5 Seasonal Changes	Signs of spring – decorate tree	Weather in spring	Signs of summer – decorate tree	Weather in summer Day length in summer		
6 Plants	Deciduous and evergreen trees	Naming trees	Structure of a flowering plant	Common flowering plants	wildflowers	Taps experiment



CURRICULUM YEAR 2

Term	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1 Materials	Materials and their uses	Suitable and unsuitable materials	Where materials come from	Absorbent materials	Stretchy materials	Changing Shape
2 New Life	Young animals	Growing up	Life Cycles	Changes in Life Cycles	The basic needs of animals	
3 Food chains	How animals get food	Introduction to food chains	Roles within food chains	Comparing food chains		
4 Healthy me	Washing hands	Brushing teeth	The importance of exercise	Different types of food	Different amounts of food	Staying healthy
5 Living things and where they live	Living or non living	Living things and movement	Alive, dead or never alive	Animal habitats	Plant habitats	Micro habitats
6 Growing plants	Plants from seeds	Plants from bulbs	What plants need to grow and stay healthy	Plant health and growth	Plants without water	Plants without warmth and light



CURRICULUM YEAR 3

Term	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1 Rocks and Soils	Introduction to rocks	Appearance of rocks	Physical properties of rocks: hardness	Physical properties of rocks: permeability	Everyday use of rocks	Weathering and erosion of rocks
2 Human Skeleton	How fossils are formed	The Human skeleton: support	The Human skeleton: protection	Animals without bones	Bones for movement	Muscles
3 Simple forces including magnets	Different surfaces	Contact forces	Magnetic forces	Magnetic and non – magnetic materials	Attract or repel	Blocking magnetic force
4 Healthy eating	Making or finding food	Types of food	Amounts of food	Nutrition from food	Fats in food	Different diets
5 Plants	What plants need	The function of leaves	The function of roots	Plants without roots	How water is transported	The function of flowers



6 Light and Shadows	Parts of a flower	Pollination	Seed dispersal	Light and light sources	Opaque, translucent and transparent	Shadows
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CURRICULUM YEAR 4

Term	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1 Introduction to human digestive system	Types of teeth	Functions of teeth	Different teeth for different food	Human digestive system	The journey of food	The journey of food
2 Introduction to states or matter and changing states	Properties of solids, liquids and gases	Comparing solids, liquids and gases	Changing state: solid to liquid	Changing state: liquid to solid	Thermometers and data loggers	Melting temperatures Evaporation and condensation
3 Simple electric circuits	Electrical appliances	Components in an electrical circuit	Building simple circuits	Switches	Insulators	Working with electricity
4 Introduction to sound	How sounds are made	How vibrations travel	Vibrations and solid materials	Louder and quieter sounds	Sound insulation	Higher and lower sounds



5 Living things and the environment	Introducing observable characteristics	Grouping animals	Grouping plants	Classification Keys	Classification Keys to identify plants and animals	Environments and seasonal changes
6 Food chains	Simple food chains	Producers in food chains	Consumers in food chains	Predator and prey in food chains	Comparing food chains	Protecting food chains

CURRICULUM YEAR 5

Term	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1 Reproduction and life cycle: plants	Asexual reproduction in plants	Plants from cuttings	Parts of a flowering plant and what they do	Plant life cycles	Plant reproduction from cuttings	Animal groups
2 Reproduction and life cycles: animals	Mammal life cycles	Bird life cycles	Comparing the life cycles of mammals and birds	Amphibian life cycles	Insect life cycles	Comparing the life cycles of amphibian and insects
3 Human Development	Changes in Childhood and puberty	Changes in adulthood and old age	The shape of earth	The shape of objects in space	Observing the moon	Why we have day and night



Earth, Sun and Moon						
4 Earth, Sun and Moon cont. Forces including simple machines	Why the sun appears to move across the sky	How we see the moon from earth The movement of the moon	Gravity	Pushes and Pulls Friction	Air resistance / water resistance	Gears Levers Pulleys
5 Properties , changes and separating materials	Properties of materials Everyday uses of materials	Thermal Insulators	Soluble and insoluble	Recovering soluble solids	Separating soluble solids from solutions	Reversible changes of state
6 Properties , changes and separating materials	More reversible changes	Burning	Rusting	More irreversible changes		



CURRICULUM YEAR 6

Term	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1 Changing circuits	Components and simple circuits	Circuit symbols and diagrams	Investigating voltage	Variables in electrical circuits	Buzzers: changing the volume	The position of switches
2 Light and how it travels	How light travels	Light enters our eyes	Reflected light	Changing the direction of light	Measuring reflected light	Shadows
3 Evolution and Inheritance	What fossils tell us about the past	How living things have changed over time	Offspring: similar but not identical	Inherited characteristics	Animal adaptations	Charles Darwin and finches
4 Evolution and Inheritance	Plant adaptations	Survival of the fittest	Evolution			
5 The human circulatory system	Function of the heart	Function of blood	Function of blood vessels	How nutrients and water are transported within humans	The circulatory system in humans	
6 Keeping Healthy	The impact of a balanced diet	Healthy heart rate	Impact of smoking	Impact of drugs	Impact of alcohol	