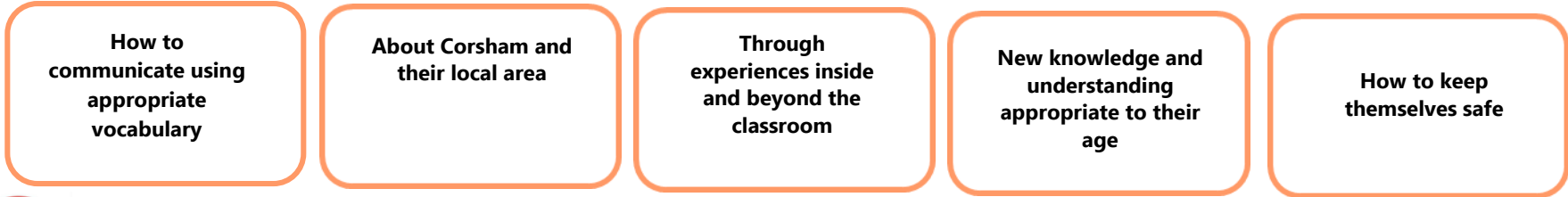


These 5 intentions underpin our curriculum because we want our pupils to have a love of learning which they can share, a sense of understanding and pride of where they live, and be safe in different situations.



These are the essential skills and knowledge that we want our pupils, to learn in science by the end of:

EYFS	
ELG: <u>Understand the world</u> <ul style="list-style-type: none"> • Children know about similarities and differences in relation to places, objects, materials and living things. • They talk about the features of their own immediate environment and how environments might vary from one another. • They make observations of animals and plants and explain why some things occur, and talk about changes. <p>In the EYFS, children use a range of 'Characteristics of Effective Learning' in their independent learning. These can be seen as complementing 'Working Scientifically'. Playing and exploring – engagement Finding out and exploring; playing with what they know; being willing to 'have a go' Active learning – motivation Being involved and concentrating; keeping trying; enjoying achieving what they set out to do Creating and thinking critically – thinking Having their own ideas; making links; choosing ways to do things.</p>	
EYFS Misconceptions	
Living Things Misconceptions <ul style="list-style-type: none"> • Plants are not alive because they do not move. • Trees are not plants • Humans are not animals. • Only pets or four-legged mammals are animals. • Insects and spiders are the same type of animal. Plant Growth Misconceptions <ul style="list-style-type: none"> • All plants start from seeds (children may not know about bulbs or cuttings). • All leaves are green. 	Materials Misconceptions <ul style="list-style-type: none"> • Only fabrics or building items are "materials." • "Solid" means the same as "hard." • Rock is an object rather than a material. Weather and Seasons Misconceptions <ul style="list-style-type: none"> • It always snows in winter. • Summer is always sunny. • Flowers only grow in spring or summer. Physical Science Misconceptions <ul style="list-style-type: none"> • Heavy objects sink and light objects float. • Bigger objects are always heavier.

KS1

Seasonal Change and daily weather

Plants

Animals, including humans

Everyday materials

Living things and their habitats

Animals, including humans

Uses of everyday materials

Materials Plants Revisit: Living things and their habitats/Animals including humans

KS1 Misconceptions

Animals Including Humans Misconceptions

- Humans are not animals.
- Only four-legged mammals are animals (e.g., pets).
- Insects are not animals.
- All "bugs" are insects (e.g., spiders counted as insects).
- Reptiles and amphibians are the same

Plants Misconceptions:

- Trees are not plants.
- All plants have flowers.
- All leaves are green.
- The trunk of a tree is not a stem

Everyday Materials Misconceptions:

- Only things used for building are materials.
- Fabric is the only type of material.
- "Solid" means hard.

Seasonal Changes Misconceptions:

- It always snows in winter.
- It is always sunny in summer.
- Flowers only grow in spring and summer.
- Rain mostly happens in winter.

Living things Misconceptions:

- Things that move are alive.
- Plants are not alive because they do not move.
- The Sun or clouds are alive because they move.

Forces and Movement

- Objects only move when a force is continuously applied.
- Heavier objects fall faster than lighter ones.
- Pushing always makes something move faster.

LKS2	UKS2
<p>Rocks</p> <p>Animals, including humans</p> <p>Forces and magnets</p> <p>Plants</p> <p>Light</p> <p>Living things and their habitats</p> <p>States of matter</p> <p>Animals, including humans</p> <p>Electricity</p> <p>Sounds</p>	<p>Properties and changes of materials</p> <p>Animals, including humans</p> <p>Forces</p> <p>Earth in space</p> <p>Living things and their habitats</p> <p>Electricity</p> <p>Animals including humans</p> <p>Light</p> <p>Living things and their habitats</p> <p>Evolution and inheritance</p>
LKS2 Misconceptions	UKS2 Misconceptions
<p>Living things & habitats</p> <ul style="list-style-type: none"> Plants get their food from the soil rather than making it themselves. Plants only need water to grow. Dead things are not part of food chains. All animals in the same habitat eat the same food. <p>Animals including humans</p> <ul style="list-style-type: none"> Food digestion starts in the stomach rather than the mouth. Bones are not living and cannot repair themselves. Muscles are only in the arms and legs. Bigger animals always have stronger muscles. <p>Rocks and soils</p> <ul style="list-style-type: none"> Rocks are not part of natural processes and never change. Soil is just dirt and does not contain living things or organic matter. All rocks are hard and heavy. <p>States of matter</p> <ul style="list-style-type: none"> Liquids are heavier than solids. Gases have no particles. When water evaporates, it disappears. Particles in liquids are further apart than gases. <p>Forces and magnets</p> <ul style="list-style-type: none"> Magnets attract all metals. Magnets only work when touching objects. Friction only occurs when objects move quickly. <p>Light</p> <ul style="list-style-type: none"> Light only comes from the Sun. We see objects because our eyes send light out to them. Shadows are objects themselves rather than areas where light is blocked. 	<p>Earth and space</p> <ul style="list-style-type: none"> The Sun moves around the Earth each day. Day and night are caused by the Sun moving, not Earth rotating. The Moon produces its own light. The Moon changes shape because it physically changes. Seasons happen because the Earth is closer to the Sun in summer. <p>Forces</p> <ul style="list-style-type: none"> A moving object always needs a force to keep moving. Gravity only exists on Earth. Air resistance does not exist. <p>Electricity</p> <ul style="list-style-type: none"> Electricity is used up as it moves around a circuit. Current is stronger after the bulb than before. Batteries store electricity rather than chemical energy. A single wire can make a circuit work. <p>Light</p> <ul style="list-style-type: none"> Light travels instantly. Mirrors create light rather than reflecting it. We see objects because they emit light. <p>Properties and changes of materials</p> <ul style="list-style-type: none"> Dissolving means a substance disappears permanently. All changes (melting, burning, dissolving) are the same type of change. Mixtures cannot be separated once combined. <p>Evolution and inheritance</p> <ul style="list-style-type: none"> Individual animals adapt during their lifetime and pass those changes to offspring. Humans evolved directly from monkeys. Evolution happens because animals try to change.

Knowledge Retention	
Our Science curriculum is planned so that the retention of knowledge is enhanced through Topic Talk Time and Explorify sessions. This enables children to retrieve key facts regularly whilst moving through the cumulative learning in our science lessons.	
Working Scientifically	
Science at Regis is taught through the three subject areas: biology, chemistry and physics. Working scientifically is threaded throughout our science lessons. Children are taught to think and act as scientists.	
Awareness Days	
We celebrate Science Week as a whole school. We have whole school assemblies throughout the year that promote STEM and international women in science and engineering day.	
Cross Curricular links	
Across the school through our topic blocks, we link science learning to other subjects where relevant. Science links well with other subjects in particular STEM and DT. Children have opportunities to draw upon their science knowledge including links to other subjects such as maths through tables and graphs.	
Range of Resources	
<p>Practical Equipment</p> <ul style="list-style-type: none"> • Magnifying glasses or hand lenses • Microscopes/ visualizers (basic or digital) • Thermometers • Measuring jugs and cylinders • Stopwatches and timers • Scales or balances • Magnets and magnetic materials • Circuits kits (bulbs, wires, batteries, buzzers, switches) • Seed trays, soil, and plant pots • Pulleys, levers, and ramps • Mirrors and prisms • Torches and light boxes • Skeleton and organ models 	<p>Digital & Interactive Tools</p> <ul style="list-style-type: none"> • Data loggers (for temperature, sound, light) • iPads/tablets with science apps • Online simulations and videos (e.g. BBC Bitesize, Explorify) • Microscopes/visualizers with USB/digital display <p>Classroom Resources</p> <ul style="list-style-type: none"> • Science vocabulary on displays • Topic boxes or kits (e.g., electricity, forces, habitats) • Science books / encyclopedias • Worksheets and investigation templates • Dioramas or displays (e.g., life cycles, food chains) <p>Outdoor/Nature Resources</p> <ul style="list-style-type: none"> • Bug viewers • Mini-beast identification guides • School greenhouse / gardening supplies • Bug hotel



As a scientist leaving Regis, every child will:

have the skills to work scientifically by asking meaningful questions, planning and carrying out investigations, observing and measuring accurately, recording and interpreting data, and drawing evidence-based conclusions with confidence and curiosity.

have a secure knowledge of the disciplines of biology, physics and chemistry with excellent knowledge and skills in which they can take to develop further in secondary school and beyond.



have experienced a wide range of investigations and demonstrations including WOW days and science and engineering visitors.

be inspired by diverse, famous scientists, to understand the range of science career opportunities and to understand the fact that science is ever changing and they could be part of a new discovery!

Together **E**veryone **A**chieves **M**ore