Opportunities

Resilience

Wellbeing

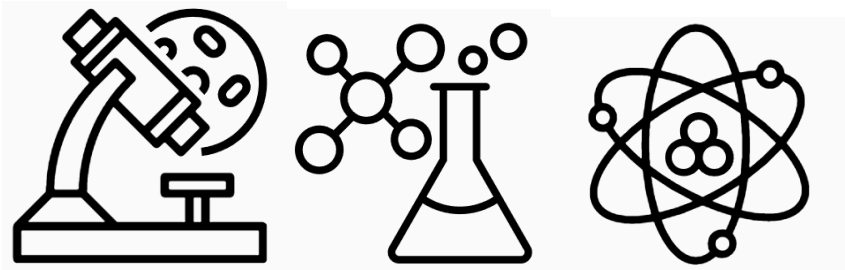
Challenge

kNowledge

Underpinned by our Christian Values

CROWN CURRICULUM

Science



#everythingispossible

Our School Vision

For with God, everything is possible

(Matthew 19:26)

#everythingispossible

Through our continued service to our community and rooted in our Christian Values, the opportunities we provide, inspire our children and adults at our school to learn, to grow and to flourish. We are committed to developing our children into confident individuals who make a positive difference through developing a respect for themselves, each other and the world around them. For with God, everything is possible. (Matthew 19:26)

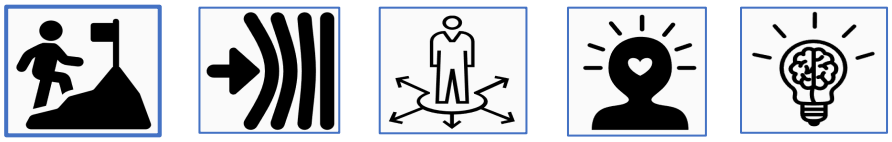
In line with the Primary Science National Curriculum, we encourage pupils to develop scientific knowledge, enquiry skills, and an understanding of the natural world, fostering curiosity and a sense of wonder. We are committed to developing confident individuals who make a positive difference by showing respect for themselves, each other, and the world around them.

Spirituality at Queen's Park

The spiritual development of our children is a priority across all areas of the curriculum. At Queen's Park CE/URC Primary School, we define spirituality as connecting with ourselves, others, the world and God, through whom, everything is possible (Matthew 19:26).
We explore spirituality through our Spiritual Capacities (our Spiritual C's) which are curiosity, creativity, compassion, captivation, consciousness, being courageous contributors and having opportunities to contemplate.

We understand the importance of both planned and spontaneous opportunities in all aspects of our CROWN Curriculum. This is evidenced in our class reflections book, through 'spirituality in the spotlight' and through speaking to our children.

Our Five Crown Principles



Challenge **R**esilience **O**pportunities **W**ellbeing k**N**owledge

Our five Crown Principles drive our Science curriculum.

Rationale for our Science Curriculum

Challenge

Our ambitious curriculum is the challenge for our children Through the 'challenge' curriculum driver we want our children relish challenges that being a scientist can bring. We want to ensure that the children have a secure understanding of the subject disciplines: Biology, Chemistry and Physics.

Resilience

Through the 'resilience' curriculum driver, we promote optimism and determination in Science. The Working Scientifically Cycle promotes resilience as children are encouraged to consider variables, value their mistakes. Children are encouraged to be resilient when working through the difference stages of scientific investigations.

Opportunities

Through 'opportunities', we raise aspirations to broaden our children's horizons – opening their eyes to the myriad careers they might pursue. Through careful planning, we have chosen key scientists, including women in STEM for the children to aspire to be. We invite scientists into school to provide tangible role models to raise our pupils' aspirations. We have a celebration of science once a year, hosting a science fair for all stakeholders to enjoy. We want our pupils to have a clear understanding of the link between achieving well and having goals for the future.

Wellbeing

#everythingispossible

At Queen's Park, we understand that happiness is linked to personal growth, health and development. We ensure our children are happy, healthy individuals. In biology, a huge focus is on wellbeing and looking after your body – physically and mentally. With 'wellbeing' as a curriculum driver, we give children the confidence to thrive in a diverse, global society and be respectful citizens with British and Christian Values at the core.

kNowledge

Through the 'kNowledge' curriculum driver, we encourage our children to be resourceful learners. It is uniquely challenging and coherent to our children. The knowledge imparted in science is crafted by our curriculum leader and science subject leader to ensure that all pupils achieve secure substantive and disciplinary knowledge in science. All our teachers teach with the aim to ensure pupils have sufficient knowledge to progress through primary school and beyond, using our science road maps, the knowledge is carefully mapped out across each year group in biology, chemistry and physics.

Being a Scientist means that disciplinary and substantive knowledge complement each other harmoniously. Before every unit of work, we ensure all children are aware of what 'being a biologist', 'chemist' and 'physicist' entails.

Through disciplinary literacy, all children read like scientists: reading graphs, tables, research, texts linked to science. Reading is the 'beating heart' of our science curriculum.

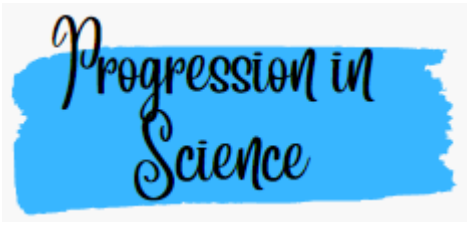
Science Long Term Plan

For with God, everything is possible (Matthew 19:26)

Science Long Term Plan

Queen's Park Crown Curriculum All our planning is based on our key principles and intent for our curriculum						
Year Group	Challenge Resilience Opportunities Wellbeing kNowledge					
	Autumn		**Spring**		**Summer**	
NC Science strand	**Chemistry, Biology and Physics**		**Chemistry, Biology and Physics**		**Chemistry, Biology and Physics**	
EYFS	Children will be taught from the strands of Biology, Chemistry and Physics through continuous provision and linked to texts and experiences throughout the year.					
Year One	Seasonal changes	Use of everyday materials	Seasonal changes	Plants	Animals including humans	Seasonal changes
Year Two	Living things and their habitats	Use of everyday materials		Plants	Animals including humans	
Year Three	Rocks	Forces and Magnets		Plants	Light	Animals including humans
Year Four	Sound	Electricity		Living things and their habitats	States of Matter	Animals including humans
Year Five	Earth, Moon and Space	Properties of materials		Forces	Animals including humans`	Living things and their habitats
Year Six	Living things and their habitats	Light Electricity	Animals including habitats			Evolution and Inheritance

Science is taught four to five times throughout the year.



Progression documents

Our progression documents have been created by the Curriculum Leader and Science Subject Leader to ensure clear progress in the three disciplines of Science: Biology, Chemistry, Physics.

#everythingispossible

The progression documents show key knowledge (substantive knowledge), key vocabulary and key skills (disciplinary knowledge) and assessment outcomes from EYFS – Year 6.

Progression of knowledge, vocabulary, skills and suggested assessment outcomes in Biology

	Key knowledge progression to be explicitly taught throughout unit of work (and revised constantly through retrieval practice)	Key vocabulary All vocabulary on Crown Planners (to be explicitly taught)	Key skills progression	Assessment outcome
	EYFS – A foundation of scientific skills and knowledge Pupils should be taught to • Ask questions • Talk about what they see using a wide vocabulary • Use talk to help work out problems and organise thinking and activities • To explain how things work and why they might happen • Articulate their ideas and thoughts in well-formed sentences • Use new vocabulary in different contexts (linked to the vocabulary on the Year One crown planners) • Daily weather discussions • Understanding the effects of changing seasons on the natural world around us • Describe what they can see, hear and feel whilst outside • Explore the natural world around them • Begin to understand the need to care and respect for the natural environment and all living things • Recognise that some environments are different to the one which they live • Know some similarities and differences between the natural world around them and contrasting environments • Plant seeds and care for growing plants • Understand the key features of the life cycle of a plant and an animal • Make observation and drawings of animals and plants • Make healthy choices about food, drink, activity and toothbrushing			

Progression of knowledge, vocabulary, skills and suggested assessment outcomes in Biology

PLANTS	YEAR ONE Pupils should be taught to: • 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.	YEAR ONE Leaf (noun) Stem (noun) Root (noun) Bulb (noun) Deciduous (adjective) Evergreen (adjective)	YEAR ONE • I know the name the roots, trunk, branches and leaves of a tree. • I know the name the petals, stem, leaf and root of a plant. • I know the name a variety of common wild and garden plants	YEAR ONE Name and label plants and trees. Label the parts of a flowering plant
	YEAR TWO Pupils should be taught to: • observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	YEAR TWO Seedlings (noun) Shoot (noun) Suitable (noun) Healthy (adjective) Temperature (noun) Germination (noun) Reproduction (noun)	YEAR TWO • I know and can describe how seeds and bulbs grow into plants. • I know and can describe what plants need in order to grow and stay healthy (water, light & suitable temperature).	YEAR TWO Explain how different conditions effect how plants grow

Oracy at Queen's Park

Oracy is a fundamental pillar of our curriculum and underpins all learning. We recognise that strong communication and language skills are essential foundations for pupils' success across the curriculum and in later life. From the earliest years, children are taught to listen attentively, speak clearly, and express their ideas with confidence, using a rich and ambitious vocabulary.

Our curriculum places a strong emphasis on developing oracy through structured talk, discussion, and purposeful opportunities to articulate thinking. By embedding high-quality talk across all subjects, we enable pupils to deepen understanding, build knowledge, and make connections in their learning. Strong foundations in oracy support pupils' reading and writing development, enhance engagement, and ensure all children, including those who may experience language barriers, can access the full curriculum.

As a result, pupils become confident communicators who can explain their thinking, collaborate effectively with others, and engage thoughtfully with the world around them.

Vocabulary

Vocabulary is V.I.T.A.L in Science

Valued

We value vocabulary in Science and in everything we do.

Identified

Science vocabulary is identified by the science subject leader and is explicitly planned for.

Taught

Vocabulary is explicitly taught in every lesson. Our Crown Planners are used as a teaching tool for key scientific vocabulary and the science medium-term plans include additional vocabulary to be taught.

#everythingispossible

Applied

Once vocabulary is taught, it is applied. Children apply their vocabulary in their speaking and listening, writing and assessment outcomes in Science.

Learned

Vocabulary is revisited and relearned. Vocabulary sticks in the children's long-term memory. Lesson by lesson, year by year, children revisit and relearn key vocabulary.

Through an **'explosion of experiences',** our youngest scientists are exposed to the foundations of their scientist learning. Carefully planned scientist knowledge, skills and experiences are provided for our children. High quality books, stories and rhymes are the beating heart of our science curriculum in EYFS. Scientific vocabulary is planned for. Staff are role models in demonstrating scientific vocabulary and this is further enhanced in our excellent provision. The foundations of scientific learning in EYFS is linked to Year 1 and beyond.

Year 1 to Year 6

Year on year, children will build upon their scientific knowledge, skills and vocabulary. The curriculum leader and science subject leader have created a meaningful, sequential learning journey through science. Careful curriculum thinking and planning ensures that our children have the subject knowledge and components embedded in their long-term memories.

Implementation

Pedagogy

Both our staff and children are enthusiastic about science. Through ongoing CPD, we strive to ensure our teachers have expert knowledge of the science they teach. Our pedagogy is firmly based upon our curriculum intent of embedding concepts into long-term memory so that they are able to be recalled, to ensure substantive and disciplinary knowledge and skills can be applied fluently.

Our 'Queen's Park Quality First Teaching' model ensures that lessons are effectively sequenced so that new knowledge and skills build on what has been taught before and towards defined end points.

We firmly believe that all children should have full access, including those with additional needs, to our science curriculum therefore lessons are scaffolded where appropriate in order to meet the needs of all our children

Digital Strategy

For with God, everything is possible: Empowering Learners for a Global Future

At our school, we believe that with God, everything is possible. We create a caring and exciting learning environment where children are encouraged to be curious, confident, and to believe in themselves.

We use digital technology to help children learn, explore, and prepare for the world around them. By using technology in positive and meaningful ways, we help our children become confident learners who are ready for life in an increasingly digital world.

We teach our children how to use technology safely, responsibly, and kindly. This helps them grow into respectful digital citizens who understand how to make good choices online and treat others with care.

Our aim is to give every child the skills they need for the future. Technology supports our teaching, helping us to personalise learning and provide extra support where needed. It is always used to enhance learning and never replaces high-quality teaching or the important relationships between teachers and children.

We also use technology to make learning accessible for all children, supporting different learning needs and helping every child to find their voice. By building confidence, communication skills, and independence, we prepare our children to become lifelong learners who are ready to face future challenges.

The **sequence of lessons** across science follows the same structure:

Phase 1 - Revise

- Pre- assessment task
- Prior learning revisited - Spaced Retrieval task
- Key question introduced
- Crown Planner shared
- We are 'biologist', 'chemists' or 'physisists'

Phase 2 - New learning

- Medium term planning to inform lessons
- Knowledge-rich lessons
- Vocabulary explicitly taught
- Reference to Crown Planners throughout
- Queen's Park Quality First Teaching

Phase 3 - Review

- Post-assessment task
- Children know more and remember more

Each lesson, within the sequence, follows the structure so prior knowledge is constantly revisited and transferred to long term memory.

Phase 1 - Revise

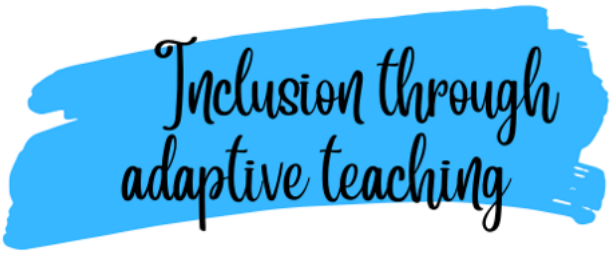
- Spaced Retrieval Lesson Starter - key knowledge revision
- Reference to key question
- Vocabulary (some will be tier 3 - subject specific words)
- Crown Planner shared

Phase 2 - New learning

- Queen's Park Quality First Teaching
- New knowledge taught
- New skills taught
- Crown Planners to be used as a point of reference

Phase 3 - Review

- Revise and review - knowledge and vocabulary
- Formative assessment / low-stakes quiz



Both our staff and children are enthusiastic about DT. Through ongoing CPD, we strive to ensure our teachers have expert knowledge of the Design & Technology they teach. Our pedagogy is firmly based upon our curriculum intent of embedding concepts into long-term memory so that they are able to be recalled, to ensure substantive and disciplinary knowledge and skills can be applied fluently.

Our 'Queen's Park Quality First Teaching' model ensures that lessons are effectively sequenced so that new knowledge and skills build on what has been taught before and towards defined end points.

At Queen's Park, we implement an adaptive teaching approach to ensure that all learners engage in meaningful, challenging, and achievable learning experiences. Our strategy is informed by the Education Endowment Foundation (EEF) research on adaptive teaching, emphasising high expectations, scaffolded support, and responsive adjustments to meet the needs of all pupils. We ensure effective, early identification of any additional barriers to learning, inclusive of but not restricted to Special Educational Needs, Pupil Premium and EAL.

Adaptive teaching is essential to our quality first teaching offer as part of our graduated response.

Our Approach: 80% Proactive, 20% Reactive

We recognise that effective adaptive teaching is most successful when it is intentionally planned in advance (proactive) while also allowing for real-time adjustments (reactive) based on pupil responses and progress. Our model ensures:

80% Proactive Adaptive Teaching: Teachers anticipate and plan for diverse learning needs by designing lessons that provide challenge while being accessible to all. This includes the following:

- Carefully structured tasks that encourage all learners to think hard but remain achievable with time, effort, and support.
- Scaffolded instruction, including modelling, worked examples, and guided practice.
- Strategic use of questioning to check understanding and deepen learning.
- Use of visuals and concrete resources to support learning.
- Scaffolded tasks that enable all children to access the curriculum without lowering expectations.
- Planned opportunities for retrieval throughout the curriculum and where appropriate planned opportunities for pre-teach of new learning.
- Use of accessibility features on iPads to support learning tasks or use of ICT to provide further scaffolding.
- Where necessary, a modified curriculum to ensure full curriculum entitlement for children who are working below the age-related expectations as identified on the SEND register.

20% Reactive Adaptive Teaching: Teachers remain responsive during lessons, adapting in the moment to ensure all learners stay engaged and make progress. This includes:

- Making in-the-moment adjustments, such as providing additional explanations, breaking down tasks further, or offering immediate feedback.
- Using formative assessment strategies to identify and address misconceptions as they arise.
- Adjusting levels of support, such as peer collaboration, teacher intervention, or additional scaffolding, based on pupil responses.

Our pedagogy around adaptive teaching is based on our Crown Curriculum principles:

Challenge

We ensure that all learners engage in thinking hard about their learning while accessing tasks that are **achievable with time, effort, and support**. We do not lower expectations or simplify content unnecessarily; instead, we provide the right scaffolds and strategies to enable all pupils to **meet ambitious learning goals**.

Resilience

We ensure that all learners develop the ability to embrace mistakes as part of learning and take ownership of their progress. We recognize that resilience is not just a personal trait but a skill that can be developed through carefully structured learning experiences.

Opportunities

Our adaptive teaching strategy is designed to **provide every learner with opportunities to succeed and raise their aspirations**. We believe that every child, regardless of their starting point, should have access to a **rich, challenging, and supportive curriculum** that enables them to achieve success now and in their futures.

Wellbeing

Our adaptive teaching strategy is designed not only to support academic success but also to **prioritize pupil wellbeing**. We recognize that effective learning happens when children feel **safe, valued, and supported** and our approach ensures that every pupil can engage with challenge and make progress without feeling overwhelmed. By embedding wellbeing into our teaching practices, we create a learning environment where all children thrive and feel personal success.

kNowledge

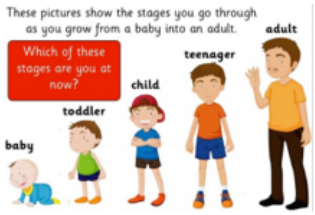
Our adaptive teaching strategy prioritises learning through knowledge acquisition. By tailoring instruction to meet diverse learners' needs, we facilitate deeper engagement with the curriculum

Our Crown Planners support our children with vocabulary and key knowledge for each unit of work. They enhance children's understanding of key concepts, present information clearly and promote appropriate discussion.

Crown Planner - Year Two **Biology: Animals including humans**

<table>
<tr><td colspan="2">Year group: 2</td><td>Subject: Science (Biology)</td><td>Term: Summer</td></tr>
<tr><td colspan="2">WOW/Starting Question – How to be a healthy, happy human!</td><td rowspan="2"> 

<u>Eatwell Plate</u>
  </td><td rowspan="2"><u>Key Knowledge</u>
<u>How to wash your hands to stop the spread of germs</u>
 

 
</td></tr>
<tr><td>Key vocabulary:</td><td></td></tr>
<tr><td>Hygiene (noun)</td><td>keeping yourself and your surroundings clean, especially in order to prevent illness or the spread of diseases</td></tr>
<tr><td>Nutrition (noun)</td><td>taking food into the body and absorbing the nutrients in those foods.</td></tr>
<tr><td>Reproduce (verb)</td><td>When people, animals, or plants reproduce, they produce young.</td></tr>
<tr><td>Offspring (noun)</td><td>a person's children or an animal's young as their offspring.</td></tr>
<tr><td>Healthy (adjective)</td><td>Being well and not suffering from any illness.</td></tr>
<tr><td colspan="2"> 
</td></tr>
</table>

reflections book, through 'spirituality in the spotlight' and through speaking to our children.

We understand that we may not see the true impact of our Science curriculum on our children as our Science curriculum is just the beginning of a lifetime of learning.

Our well-constructed and well-taught Science curriculum leads to great outcomes. Our results are a reflection of what our children have learnt. At Queen's Park, our philosophy is that broad and balanced leads to great outcomes and meeting end points at the end of each key stage. National assessments are useful indicators of the outcomes our children achieve.

We ensure all groups of children are given the knowledge and cultural capital they need to succeed in life. We strive to ensure that our children are equipped with the skills (through a growth mindset approach) to fluently be able to retrieve key facts from their semantic memory.

The quality of our children's work, at every stage, is of a high standard. All learning is built towards an end point and at each stage of their education, we prepare our children for the next stage.

We ensure all our children read to a stage appropriate level and fluency. Through disciplinary literacy in Science lessons.

The impact of Queen's Park Science curriculum is measured through the following:

- Assessment at the end of each unit of work
- Vocabulary and knowledge are assessed at the end of each lesson and at the end of each sequence
- Pupil voice
- Progress evident in children's books and record of experiences
- Seeking views of parents where appropriate