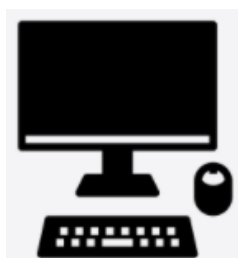




Computing



#EverythingIsPossible

Our School Vision

"For with God, everything is possible"

(Matthew 19:26)

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, and the world around them. For with God, everything is possible. (Matthew 19:26)

Through our vision, we serve our community by providing an inclusive, happy, secure and caring Christian environment where all are valued and respected. We believe that God loves all his children unconditionally and values the uniqueness of the individual and recognise the diversity and range of contributions that each child can make. In our computing curriculum, we ensure that children fully understand the role and benefits that technology can have on our daily lives. We ensure our school vision drives our computing curriculum as we understand that this subject is pivotal for our children's futures. When they master computing skills, 'everything is possible', as we are equipping them for careers in the future that haven't been invented yet!

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Our Five Crown Principles



Challenge



Resilience



Opportunities



Wellbeing



Knowledge

Our five Crown Principles drive our computing curriculum.

Rationale for our Computing Curriculum

Challenge

Through the 'challenge' curriculum driver we want our children to relish challenges that being a computer scientist can bring: asking perceptive questions, thinking critically, weighing evidence, sifting arguments, and developing perspective and judgement. Our computing curriculum is to prepare our children for a rapidly changing world through the use of technology. Our high-quality computing curriculum is designed to enable them to use computational thinking and creativity to further understand the world.

Resilience

Through the 'resilience' curriculum driver, we promote optimism and determination in computing. Not only do we want our pupils to be digitally literate and competent end-users of

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technology, we also want them to develop creativity, resilience and problem-solving as well as critical thinking skills. A selection of carefully chosen challenges are embedded within our computing curriculum to promote resilience. Children are encouraged to be resilient and good at problem solving using key computational thinking skills such as abstraction, decomposition, generalisation and pattern spotting.

Opportunities

Through 'opportunities', we raise aspirations to broaden our children's horizons - opening their eyes to the myriad careers they might pursue. We have carefully planned and incorporated visits from guest speakers within the local area who have careers in computer technology. Our children aspire to work towards careers in the field of computing. These tangible role models have the effect of raising the aspirations of our pupils to inspire them to work even harder to be the best that they can be. We want our pupils to have a clear understanding of the link between achieving well and having goals for the future.

Wellbeing

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 computing, children can discuss and reflect upon the impact that computing has on their learning, development and their wellbeing. Pupils are able to find a balance between their online and offline life and understand why this balance is essential. Our computing curriculum inspires confident users of technology who are competent digital citizens of the future. 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

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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 computing is crafted by our curriculum leader and computing subject leader to ensure that all pupils understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems. All our teachers teach with the aim to ensure pupils have sufficient knowledge to progress through primary school and beyond.

Being a Queen's Park Computer Scientist

Being a computer scientist means that children will have developed the knowledge, skills and understanding to help them access and use a range of technology in a safe and creative way. Our approach to digital wellbeing cross references Teaching Online Safety in Schools (DFE 2019) and Education for a Connected World (UK Council for Internet Safety 2020). It is delivered via our PSHE and SMSC curriculum, alongside stand-alone digital wellbeing lessons which are taught 6 times a year. After reading Children and Parents: Media Use and Attitudes Report, we knew this needed to be high priority in our Computing curriculum.

'Importantly, there is a positive correlation when we look at the proportion of children who are having regular lessons about online safety and how useful they are finding these lessons - highlighting the importance of having more frequent lessons in this area.' Ofcom 2024

Children will have developed skills that equip them to use computational thinking and creativity to understand and change the world. Our computing curriculum is enhanced by the use of carefully selected quality fiction and non-fiction texts which have been embedded in our guided reading lessons.



Intent

Computing Long Term Plan

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

Computing Long Term Plan

Digital Wellbeing is taught throughout the year each half term: Self-Image & Identity, Online Relationships, Online Reputation, Online Bullying, Managing Online Information, Health, Wellbeing and Lifestyle				
Queen's Park 'Crown Curriculum' - all our planning is based on our key principles and intent for our curriculum				
<i>Challenge Resilience Opportunities Wellbeing & Knowledge</i>				
Computing strands	Computer Science	Information Technology / Digital Artefacts	Data Representation (taught through STEM / Geography Lessons)	Digital Literacy (taught through STEM / Geography Lessons)
EYFS <small>(Computing and technology is within day to day provision)</small>	Year 1 children deliver 'How to use a Beebot' to Reception children. Beebots are then used within the provision. Introduction to unplugged algorithms and following precise instructions (Jam Sandwich, Robin bird feeder precise instructions)		Grouping objects and counting (Maths)	Keyboard familiarity using 2simple and 2type and 2paint
Year One	Algorithms unplugged Programming - Beebots (Programming A) Programming - Scratch (Programming B)	Technology Around Us Unit 2: Creating Media: Digital Painting (Art)	Weather Pictograms using JIT5 (Science)	Digital Writing (English)
Year Two	Programming A - Beebots Programming B - Scratch Jr (animation or quiz)	Computing Systems and Networks Creating Media - Digital Photography	Materials hunt (Science) Tally and bar graph using Word	Digital Music (Composition) Digital Painting (DT design)
Year Three	Programming A Scratch - Sequencing sounds Programming B Scratch - Events and actions	Computing Systems and Networks Stop frame Animation	Traffic Survey data - using Word to consolidate (Geography and maths)	Desktop Publishing (English/PSHE)
Year Four	Programming A - Turtle Academy	Computing Systems and Networks - The Internet	Sound investigation graph using Data Loggers (TC Lessons 2-4) (Science)	Creating Media - Photo editing Creating Media - Audio Production - Podcast



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Computing Long Term Plan



	Programming B – Repetition in Games using Scratch	Using Tinkercad for a design (D&T)	Order data loggers	(English/PSHE)
Year Five	Programming B – Sensing Movement (Micro:bit)	Computing Systems & Networks – Systems & Searching	Introduction to Spreadsheets (1 +2) Babies age and height data using Excel (Science)	Creating Media – Video Production
Year Six	Programming A – Selection in Physical Computing using Crumble	Computing Systems & Networks – Communication and Collaboration	Spreadsheets 3,4,5,6 Fairground Rides data – Excel (D&T)	Creating Media – Webpage Creation (English)


Computing is taught explicitly for some units of work. However, at Queen’s Park we believe that ‘computing is like glitter – it gets everywhere!’ therefore, we ensure that computing enhances a range of different subjects and it is used effectively cross-curricularly.

Progression in Computing

Our progression documents have been created by the Curriculum Leader and Computing Subject Leader to ensure clear progress in the five strands of computing we focus on at Queen’s Park: Computer Science, Information Technology / Digital Artefacts, Data representation and Digital Literacy. Our Digital Wellbeing curriculum is also progressive and is taught discretely.

The progression documents show key knowledge, key vocabulary, key skills and assessment outcomes from EYFS – Year 6 in these strands.

Progression document example:

Computing Digital Wellbeing - Progressive Overview							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
 Self-Image & Identity	I can recognise, online or offline, that anyone can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset.	I can recognise that there may be people online who could make someone feel sad, <u>embarrassed</u> or upset. If something happens that makes me feel sad, worried, <u>uncomfortable</u> or frightened I can give examples of when and how to speak to an adult I can trust and how they can help.	I can explain how other people may look and act differently online and offline. I can give examples of issues online that might make someone feel sad, worried, <u>uncomfortable</u> or frightened; I can give examples of how they might get help	I can explain what is meant by the term 'identity' I can explain how people can represent themselves in different ways online I can explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why.	I can explain how my online identity can be different to my offline identity I can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this.	I can explain how identity online can be copied, <u>modified</u> or altered. I can explain how people can represent themselves in different ways online. I can demonstrate how to make responsible choices about having an online identity, depending on context	I can identify and critically evaluate online content relating to gender, race, religion, disability, <u>culture</u> and other groups, and explain why it is important to challenge and reject inappropriate representations online. I know and can give examples of how to get help, both on and offline. I can explain the importance of asking until I get the help needed.

Vocabulary

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

Valued

We value vocabulary in computing and in everything we do.

Identified

Computing vocabulary is identified by the computing 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 computing

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vocabulary and the *computing medium term plans* include additional *vocabulary* to be taught.

Applied

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

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 *computing vocabulary*.



Through an 'explosion of experiences', our youngest computer scientists are exposed to the foundations of their computing learning. Computing knowledge, skills and experiences are provided for through play-based, unplugged (no computer) activities that focus on building children's listening skills, curiosity and creativity and problem solving. High quality, carefully selected books, stories and rhymes are the beating heart of our computing curriculum in EYFS. Computing *vocabulary* is planned for. Staff are role models in demonstrating *computing vocabulary* and this is further enhanced in our excellent provision. Children take part in a variety of tasks with digital devices, such as Bee Bots, tablets, laptop and the interactive whiteboard. This develops their understanding of a technologically diverse world and gains familiarity with the foundations of computing learning in EYFS which are linked to Year 1 and beyond.

Year 1 to Year 6

Year on year, children will build upon their computing knowledge, skills and vocabulary. The curriculum leader and computing subject leader have created a meaningful, sequential learning journey through computing. 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 computing. Through ongoing CPD, we strive to ensure our teachers have expert knowledge of the computing 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.

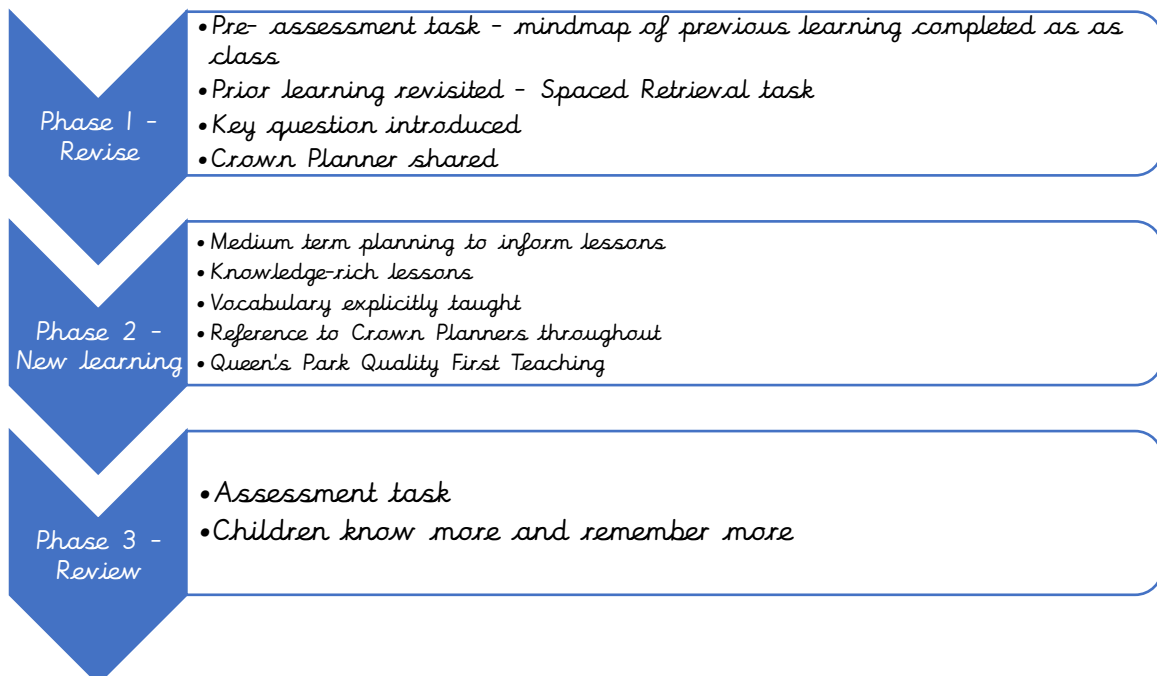


Seesaw

All our computing learning is uploaded onto our online platform 'Seesaw'. Children independently utilise their Seesaw accounts to store and record their learning. Teachers assess and feedback using the online platform.

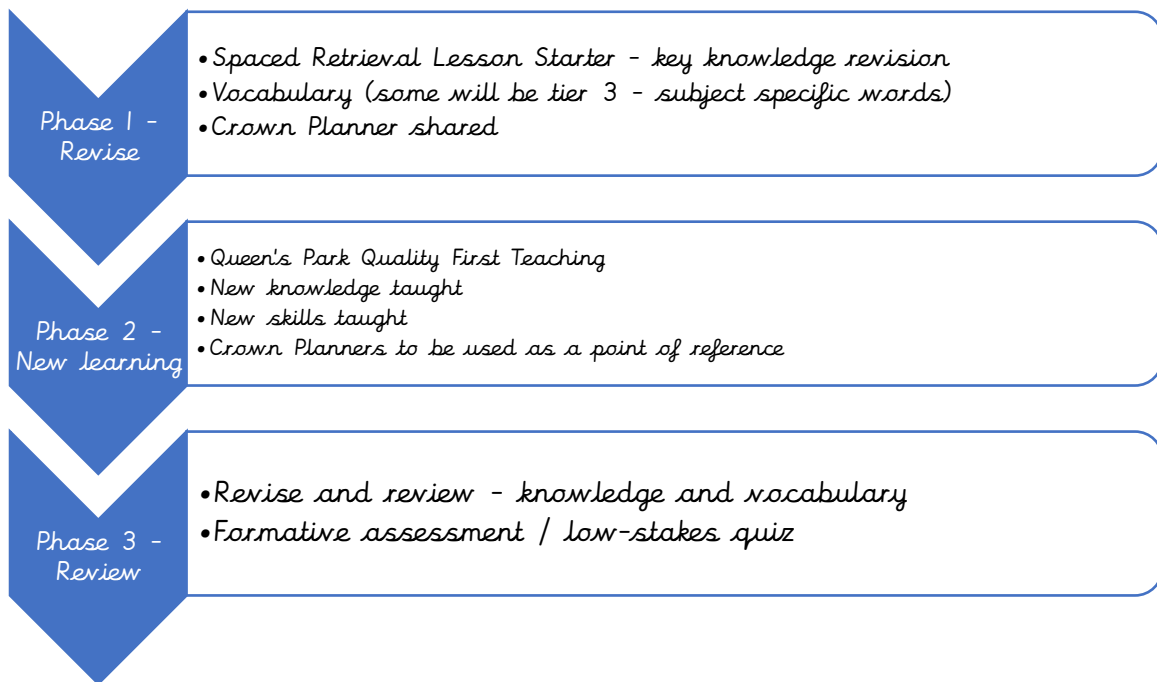
Lesson Structure

The sequence of lessons across computing follows the same structure:



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

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Crown Planners

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 Planners are uploaded onto Seesaw to support the children with their learning and are used as a teaching tool during the lesson input.






Crown Planner – Year 4: Computer systems and networks: The Internet.

Key Knowledge

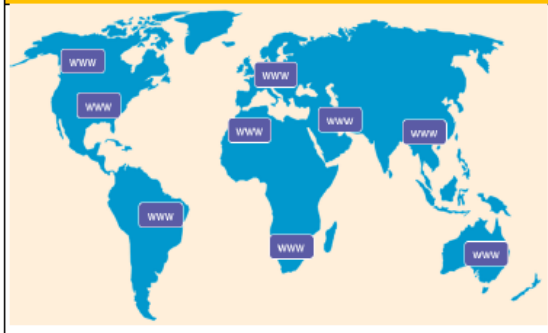
- I know that the Internet is a network of networks and there are different types of media on the World Wide Web
- I know how information is shared across the internet
- I know how network devices connect via a router
- I know that the World Wide Web is part of the Internet and it contains websites and webpages
- I know that there are rules to protect content online



Key Vocabulary

networks n-e-t-w-ur-k-s	 a group or system of interconnected people or things.
router r-oo-t-r	 a device that forwards data packets to the appropriate parts of a computer network.
website w-e-b-s-igh-t	 a set of related web pages located under a single domain name, typically produced by a single person or organization.
content c-o-n-t-e-n-t	 any written, audio, or visual content on a website that users experience as part of their online usage
ownership o-w-n-r-sh-i-p	 having rights and control over a website.

Websites are stored all around the world



Impact

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

Our well-constructed and well-taught computing 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. Reading is the beating heart of our computing curriculum. Through disciplinary literacy in computing lessons, the impact of reading on the children's computational learning is paramount.

The impact of Queen's Park computing 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 on Seesaw and record of experiences
- Seeking views of parents where appropriate