COMPUTING

CURRICULUM: COMPUTING

St. John the Evangelist Catholic Primary School

Christ at the Centre, Children at the Heart

CURRICULUM NARRATIVE

KEY:

- Information Technology
- Computer Science
- Digital Literacy

Cycle A

Welcome to secondary school!

Year 5/6

- Graphing
- Spreadsheets
- Coding
- Word Processing
- 3D Modelling
- Game Creator
- Quizzing

Year 3/4

- Unpacking Hardware and Software
- Route Planners
- Effective Searching
- Coding
- Presentations
- Spreadsheets
- Email

Year 1/2

- Creative Computing
- Creating Pictures
- Spreadsheets
- Animated Stories
- Coding 1
- Coding 2
- Introduction to PM

Your Computing journey starts here!

EYFS

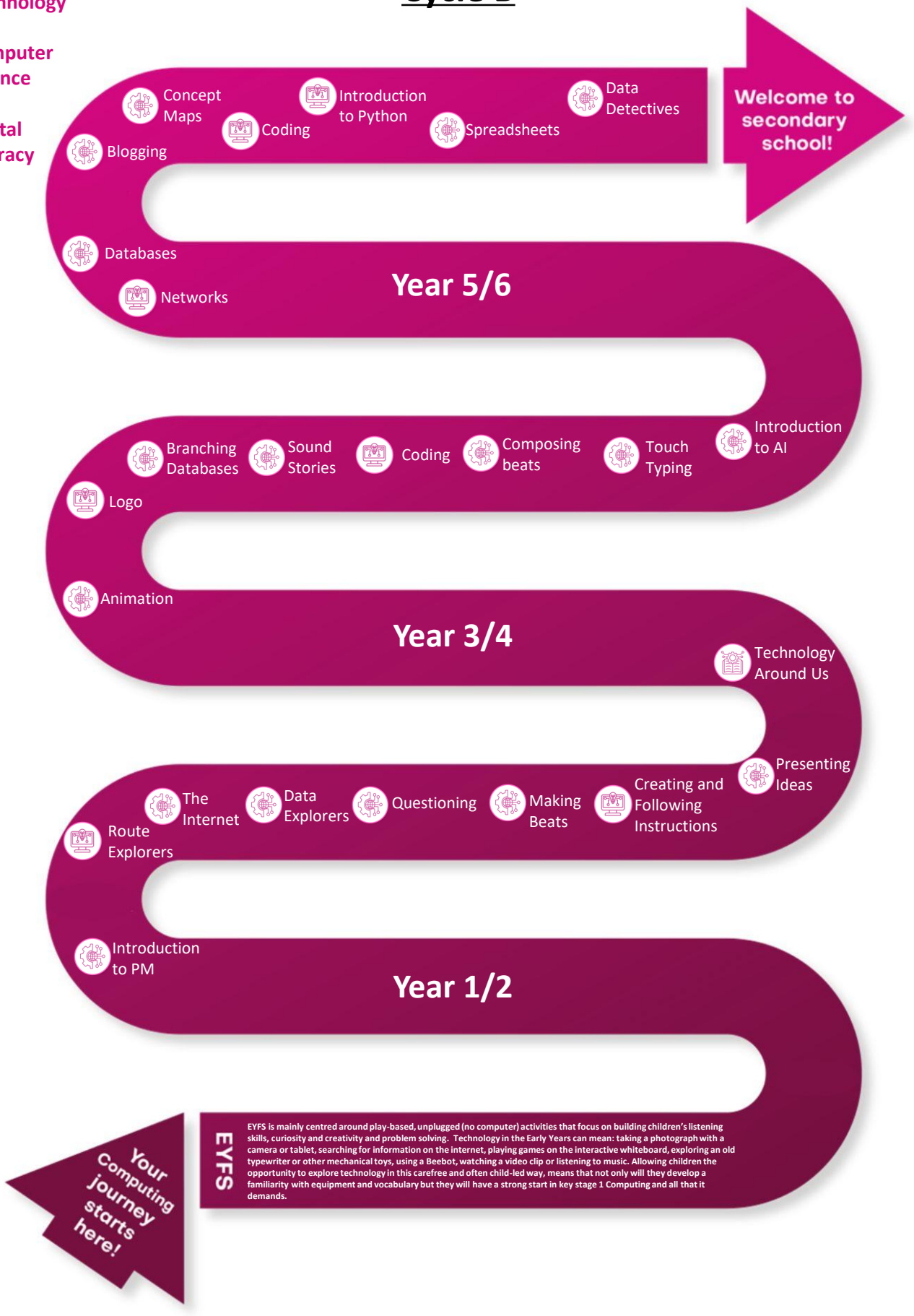
EYFS is mainly centred around play-based, unplugged (no computer) activities that focus on building children's listening skills, curiosity and creativity and problem solving. Technology in the Early Years can mean: taking a photograph with a camera or tablet, searching for information on the internet, playing games on the interactive whiteboard, exploring an old typewriter or other mechanical toys, using a Beebot, watching a video clip or listening to music. Allowing children the opportunity to explore technology in this carefree and often child-led way, means that not only will they develop a familiarity with equipment and vocabulary but they will have a strong start in key stage 1 Computing and all that it demands.

CURRICULUM NARRATIVE

KEY:

- Information Technology
- Computer Science
- Digital Literacy

Cycle B



CURRICULUM NARRATIVE

Why do Computer Scientists read?

To find evidence and gather information.

To learn how to perform tasks on computer-based systems

To analyse instructions and make predictions

To evaluate and apply new technologies to existing technologies.

Write like a Computer Scientist

Instruction - Record how to perform a particular function.

Inform – Provide information to impart knowledge.

Critique – Review and analysis of systems and strategies to determine how it is fit for purpose.

Similarity and difference - Analysis of the extent and type of difference between systems and strategies.

Question – Question why and how it does or doesn't work and give possible explanations.

Key Strands

- **Algorithms –** Being able to comprehend, design, create and critique algorithms
- **Computer networks** — Understanding how networks can be used to retrieve and share information and how they come with associated risks
- **Computer systems** — Understanding what a computer is and how its constituent parts function together as a whole
- **Creating media** — Selecting and creating a range of media including text, images, sound and video.
- **Data and information** — Understanding how data is stored, organised and used to represent real-world artefacts and scenarios.
- **Design and development** — Understanding the activities involved in planning, creating and evaluating computing artefacts.
- **Effective use of tools** — Using software tools to support computing work.
- **Impact of technology** — Understanding how individuals, systems and society as a whole interact with computer systems
- **Programming** — Creating software to allow computers to solve problems
- **Safety and security** — Understanding risks when using technology and how to protect individuals and systems

The study of Computing allows pupils to be in control of a technology which is everywhere and will play a pivotal part in their lives. Therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We want our pupils to be creators not consumers and our broad curriculum encompassing computer science, information technology and digital literacy reflects this. We want our pupils to understand that there is always a choice with using technology and as a school we utilise technology to model positive use. We recognise that the best prevention for a lot of issues we currently see with technology/social media is through education. Building our knowledge in this subject will allow pupils to effectively demonstrate their learning through creative use of technology. We recognise that technology can allow pupils to share their learning in creative ways. We also understand the accessibility opportunities technology can provide for our pupils. Our knowledge-rich curriculum has to be balanced with the opportunity for pupils to apply their knowledge creatively which will in turn help our pupils become skilful computer scientists.

The units for KS1 and KS2 are based on a spiral curriculum, which means the strands are revisited regularly (at least once in each year group) and pupils revisit each strand through a new unit that consolidates and builds on prior learning within that strand.

CURRICULUM NARRATIVE

Curriculum Intent
At St. John's, we recognise the vital role that computing plays in preparing pupils for a rapidly-evolving, digital world. Our intent is to equip all learners, including those in mixed-age classes, with the knowledge, skills and understanding they need to thrive as digital citizens. We aim to develop pupils who are confident, creative and safe users of technology, with strong problem-solving skills and the ability to think computationally.

Our computing curriculum, delivered through Purple Mash, is designed to:

- Provide a broad and balanced experience that progressively builds skills across the three strands of computing: Computer Science, Information Technology and Digital Literacy.
- Promote e-safety awareness at every stage, ensuring pupils understand how to use technology responsibly.
- Encourage cross-curricular opportunities where technology supports wider learning and communication.
- Address the needs of mixed-age classes through a spiral curriculum model, allowing children to revisit and deepen their understanding of key concepts over time.

Implementation
Computing is taught weekly through discrete lessons using the Purple Mash Computing Scheme of Work, which is fully aligned with the National Curriculum. This scheme provides comprehensive, age-appropriate resources that support progression across year groups and allows for flexibility in mixed-age settings. Where appropriate, lessons are adapted to ensure that all pupils are challenged and supported, regardless of age or ability.

In addition:

- Teachers follow long-term and medium-term plans which ensure consistent coverage and progression.
- Lessons are interactive and practical, often involving the use of tablets, laptops, and online tools.
- Mixed-age teaching is supported by careful grouping and differentiated tasks within the Purple Mash platform, allowing all children to access learning at their level while revisiting or extending skills as needed.
- E-safety is embedded throughout the year and supported by national initiatives such as Safer Internet Day and school-wide, digital citizenship work.
- Opportunities are provided for pupils to apply their computing skills across the curriculum, such as using digital media in English or presenting data in Maths and Science.

Impact
By the end of each key stage, pupils will have developed:

- A secure understanding of the key concepts in computing, including coding, data handling and multimedia design.
- The ability to use a range of technology tools confidently and appropriately for different tasks.
- A strong understanding of how to stay safe online and how to act responsibly in digital spaces.
- Problem-solving and logical thinking skills that support their learning across the curriculum.

Progress is monitored through formative assessment within lessons, summative assessments at the end of each unit and regular pupil discussions and digital portfolio reviews. As a result of our computing curriculum, children leave our school as digitally literate learners, well-prepared for the challenges of the next stage in their education and for life in an increasingly digital society.

CURRICULUM SUMMARY - EYFS

'Digital technology is driving extraordinary global changes, so it's crucial that children and young people are educated to make use of their opportunities.'
- Amanda Spielman

EYFS COVERAGE

Technology in Our Lives
- I can tell you about technology that is used at home and in school.
- **I can operate simple equipment.**
- **I can use a safe part of the Internet to play and learn.**

Multimedia
- I can move objects on a screen.
- **I can create shapes and text on a screen.**
- **I can use technology to show my learning.**

Understanding the world
Children see adults use simple search engines such as Kiddle and Kidrex to find information. They are given opportunities to explore information sites such as Infant Encyclopedia, CBeebies Topics and Glossopedia.

Listening, Attention and Understanding
Children share conversations with experts and other classes using video chat such as Facetime. The classes could be within their own school or in other schools, nationally and internationally.

Writing
Children have a variety of experiences to type their name or label images using 2Publish or other simple software/apps. They are given opportunities to use a tablet and laptop keyboard and a mouse.

Being Imaginative and Expressive, Writing
Children are taught skills to take a photo. They ask permission before taking photos of friends. Children photograph artefacts and scenery that are part of learning. These are added to software and apps for labelling.

People, Culture and Communities
Children help their teacher to make decisions about photos that show their learning experiences to a global audience via school website, a blog or Twitter. They are supported to show their learning to family beyond school.

Speaking
Children offer explanations for why things happen as they use different technologies such as a printer, photocopier, microwave and a range of computing devices such as tablets, laptops and interactive whiteboards.

Being imaginative and Expressive
Children use video to retell and create stories. Green screening is used for children to imagine themselves in different places.

The Natural World / Speaking
Children record sounds on a wellie walk or during exploration of musical instruments. Actions are imagined around the sound when it is played back. Children record phrases to describe feelings and objects.

People, Culture and Communities
Children use play technology and junk models to role play work environments such as vets, builders, shop, hospital etc. They have opportunities to explore old technology such as phones, keyboards, old PCs etc.

Understanding the World
Children experience travelling the world using Google Earth software or app. They see photos and visit 3D buildings. Teachers model safe use of YouTube to view videos of places around the globe.

Creating with Materials
Children use 2Paint or other simple software/apps to make marks and to paint a picture.

Gross and Fine Motor Skills
IWB is used to encourage big arm movements. Apps and paint software used to develop fine motor control.

Creating with Materials
2Simple Music Toolkit, Music Sparkles or Tap a Tune App used to create music. Simple apps and websites used to create animations eg ABCYA.

ONLINE SAFETY / SAFE USE OF TECHNOLOGY

- I use rules given to me by a trusted adult when I use technology.
- I am kind to my friends
- I use a safe part of the Internet to play and learn.
- I make sure a trusted adult is with me.

- I use a login to access devices.
- I see information that is put online about me.
- I use devices with other people, talking about what we do. I am careful with technology devices.

- I tell you the things that are the same about my friend and me.
- I use apps, games and websites that trusted adults show me.
- I use a device for a limited time.

Based on elim-edtech

CURRICULUM COVERAGE – EYFS and KS1

EYFS COVERAGE CONTINUED

Programming

- **I can make a floor robot move.**
- **I can use simple software to make something happen.**
- I make choices about buttons and icons I press, touch or click.

Handling Data

- I can tell you about different kinds of information such as pictures, video, text and sound.

Self-Confidence and Self-Awareness Children explore the buttons of a floor robot and remote-control toys. They are guided to discover ways to make the object move. Adults talk about what has been achieved by the children.	**Building Relationships** Children have opportunities to build environments for floor robots. They work together to navigate the robot or remote-control toy around obstacles.	**Speaking / Building Relationships** Children take photos and video to capture learning. They know where it is stored to go back and reflect on their learning and the learning of their friends. They talk about what they can learn from photos and video online or photos in books.	**Past and Present** Children use QR codes to select information they want to find out. Aurasma can be used to recall information that has been collected.
Building Relationships / Communication and Language Children follow sets of instructions. They communicate instructions to each other and to supporting adults.	**Numerical Patterns** Children use appropriate language to describe position and distance of floor robots. **Number** Children count steps and movement of floor robots.	**Communication and Language** Children collect sounds to provide evidence in an investigation. They record interviews to collect information from adults or other experts. They know where the information is stored and replay it.	**Select and Use Technology** Children use digital microscopes or Magniscope app or a visualiser to examine objects they have collected. They capture the image to label what they have found out.
Self-Regulation / Speaking / Numerical Patterns Children explore apps such as BeeBot / Kodable to make things happen. They talk about solving problems as they work at the low levels in the apps. Adults support them to be willing to make mistakes and learn from them.	**Managing Self** Children explore appropriate software, such as 2Go (Simple level) or Poisson Rouge, to make things happen. They are supported to be willing to make mistakes and to find out what they can make happen.	**Number** Children use software such as 2Count and apps such as DoodleBuddy to count information and to talk about what they have found out. They sort photos of things they have investigated.	**Managing Self / Speaking** Children are supported to know their own important information. They use talking tins or sound recorder apps to practise their information. Adults rehearse who they can tell this information.

SEND

The BHCET Computing curriculum has been designed to be delivered to the whole class. However, the tasks are adapted by class teachers to meet the needs of individual children. To ensure pupils with SEND achieve well, they should be exposed to the same learning as their peers; however, the way they evidence their learning through the tasks can be adapted.

Through scaffolding, tasks can be adapted to ensure all learners can access and evidence the same threshold concepts and learning objectives as their non-SEND counterparts. Scaffolding strategies can include providing sentence starters, a writing frame, vocabulary banks, sorting and matching cards or visual prompts. Reactive or proactive adaptations can make the BHCET curriculum accessible and achievable for all.

Other strategies of adaptation are outlined through the EEF's Five-a-Day principles, which include explicit instruction, metacognitive strategies, flexible grouping and the use of technology.

Scaffolding
'Scaffolding' is a metaphor for temporary support that is removed when it is no longer required. Initially, a teacher would provide enough support so that pupils can successfully complete tasks that they could not do independently. This requires effective assessment to gain a precise understanding of the pupil's current capabilities.

Examples: Support could be visual, verbal, or written. Writing frames, partially completed examples, knowledge organisers, sentence starters can all be useful. Reminders of what equipment is needed for each lesson and classroom routines can be useful. Scaffolding discussion of texts: promoting prediction, questioning, clarification and summarising.

Explicit Instruction
Explicit instruction refers to a range of teacher-led approaches, focused on teacher demonstration followed by guided practice and independent practice. Explicit instruction is not just "teaching by telling" or "transmission teaching" One popular approach to explicit instruction is Rosenshine's 'Principles of Instruction'.

Examples: Worked examples with the teacher modelling self-regulation and thought processes is helpful. A teacher might teach a pupil a strategy for summarising a paragraph by initially 'thinking aloud' while identifying the topic of the paragraph to model this process to the pupil. They would then give the pupil the opportunity to practise this skill. Using visual aids and concrete examples promotes discussion and links in learning.

Cognitive and Metacognitive Strategies
Cognitive strategies are skills like memorisation techniques or subject-specific strategies like methods to solve problems in maths. Metacognitive strategies help pupils plan, monitor and evaluate their learning.

Examples: Chunking the task will support pupils with SEND. This may be through provision of checklists, instructions on a whiteboard or providing one question at a time which helps reduce distractions to avoid overloading working memory. Prompt sheets help pupils to evaluate their progress with ideas for further support.

Flexible Grouping
Flexible grouping describes when pupils are allocated to smaller groups based on the individual needs that they currently share with other pupils. Such groups can be formed for an explicit purpose and disbanded when that purpose is met.

Examples: Allocating temporary groups can allow teachers to set up opportunities for collaborative learning for example, to read and analyse source texts, complete graphic organisers, independently carry out a skill, remember a fact or understand a concept. Pre-teaching key vocabulary is a useful technique.

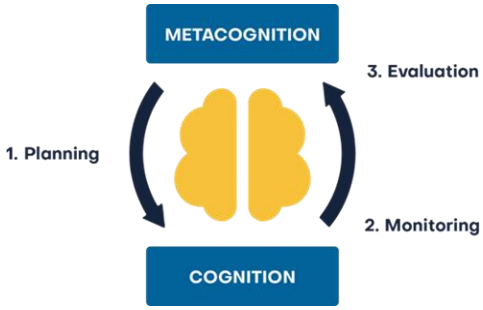
Use of Technology
Technology can assist teacher modelling. Technology, as a method to provide feedback to pupils and/ or parents, can be effective, especially when the pupil can act on this feedback.

Examples: Use a visualiser to model worked examples. Technology applications, such as online quizzes, can prove effective. Speech-generating apps to enable note-taking and extended writing can be helpful.

ASSESSMENT

Assessment comprises two linked processes:

Formative Assessment provides Assessment **for** Learning, is a continuous process and an integral part of teaching and learning. Informal observations, dialogue/effective use of questioning, consolidation activities, low stakes quizzing, routine marking and pupil/peer assessment all contribute to the developing profile of progress. When pupils make changes and consider actions to their work based on the activity, they are 'self-regulating' their work. Self-regulating activities can be termed Assessment **as** Learning. Self-regulated learners are aware of their strengths and weaknesses and can motivate themselves to engage in and improve their learning. Pupils start by **planning** how to undertake a task, working on it while **monitoring** the strategy to check progress, then **evaluating** the overall success.



Metacognitive Regulation Cycle
(EEF Metacognition & Self regulation Guidance)

Summative Assessment provides Assessment **of** Learning and is a judgement of attainment at key points throughout the year using past knowledge to measure attainment and progress. Examples of this are standardised tests, tasks and end of term/annual assessments which include a sample of pupils' prior learning.

Assessment is a continuous process which is integral to teaching and learning and:

- Enables an informed judgement to be made about a pupil's understanding, skills, attitude to learning and successful acquisition of knowledge as they move through the curriculum.
- Incorporates a wide range of assessment techniques to be used in different contexts/purposes.
- Is accompanied by **clear assessment criteria** that enable effective marking and feedback, give a reliable progress evaluation and demonstrate clearly what a pupil must do to improve.
- Provides feedback recognising achievement and increasing pupil confidence/motivation.
- Supports learning by making clear to pupils: what they are trying to achieve; what they have achieved; what the learning gaps and misconceptions are and what the next steps in learning are.
- Allows regular subject-specific extended writing and access to high quality texts/reading.
- Should be moderated and standardised to ensure **purposeful, meaningful and timely feedback.**
- Includes feedback to pupils to help them understand what they need to improve, challenging them to achieve their target rather than a grade.
- Allows leaders and staff to make timely adaptations to the curriculum.