St. Paul's Dorking
Church of England (Aided) Primary School

Computing Overview – September 2024

Computing and Online Safety

Intent

In line with the National Curriculum (2014) and the Education for a Connection World (2020) framework we aim to **equip** pupils to have the **confidence and skills** to use digital tools and technologies to **enhance** their learning and to **appreciate** the possibilities available to them to **connect** with a rapidly changing digital world at a level suitable **for the future** workplace and as active participants.

Our broad Computing curriculum encompasses **computer science**, **information technology** and **digital literacy** to **inspire** and **enable** our pupils to experience technology positively, responsibly and safely. Pupils are encouraged to use computational thinking and **creativity** through computer science and to apply the computing and IT skills they experience to **enrich learning** across all other areas of the curriculum.

We seek to ensure that our children are **furnished** with the skills to enable them to become **responsible, competent, confident** and **creative** users of information and communication technology.

Implementation

Our Computing and Online Safety curriculum has been created to provide a comprehensive progression document to guide the teaching and exploration of all areas of the curriculum. The curriculum has been designed as a **spiral curriculum** to allow pupils to revisit areas of learning and build upon previous knowledge and to **progressively** build their **understanding**, **respect** and **resilience** for technology. The curriculum falls under three areas:

IT – Information Technology	CS – Computer Science	DL – Digital Literacy
Having the skills to create, manipulate, store and retrieve digital content. Selecting the right software to accomplish given goals.	Understanding how computers and computer systems work.	Using technology safely and responsibly. Understanding opportunities technology offers for communication and collaboration. Evaluating digital content.
Word Processing / Typing Data Handling Presentations and Web Design Animation Media Creation (Video, Photography and Digital Art). Augmented Reality and Virtual Reality Sound	Computational Thinking Programming Computer Networks	Self-Image and Identity Online Relationships Online Reputation Online Bullying Managing Online Information Health, Wellbeing and Lifestyle Privacy and Security Copyright and Ownership Impact of Technology Research

Online Safety is taught and explored as part of the **Digital Literacy** area of the **Computing** curriculum as well as within the **PSHE** curriculum so that pupils are taught not only the **safe** and **responsible** use of technology but also the **social** and **emotional impact** of technology.

Year Groups are timetabled one lesson per week for Computing (CS) and one lesson every two weeks to cover the (IT) and (DL – non OLS) areas of the curriculum. **Online Safety** is taught in the first week of every half term and revisited if necessary at other times in the year as required. Many of the (IT) and (DL) areas of the curriculum will be **explored** as part of a **cross-curricular** provision – for example: Using Excel to graph Science results or using the Internet to research Topic areas.

Differentiation in Computing means providing for each pupil's individual needs by the various ways support is offered and final outcomes are achieved. Depending on the topic, some differentiation is planned into the lesson and some will occur as more support is required or outcomes are amended during the lesson. All pupils are given the opportunities to excel.

Outcomes are saved to each pupil's network storage area or (in the case of Online Safety projects into their PSHE books) and, over their Primary School career, will provide a record of their projects and achievements.

Impact

Pupils are encouraged to **enjoy** and **value** the Computing curriculum we deliver. They are asked the **WHY** behind their **exploration** and **learning** and not just the **HOW**. Pupils are encouraged to **discuss, reflect, revisit** and **appreciate** the **impact** technology has, and will have, on their **learning, development** and **well-being**.

We encourage and support pupils to find **balance** with technology as the key to an **effective** education and a **healthy life-style**. Pupils are supported to realise the National Curriculum and Education for a Connective World end of keystage expectations but also to develop **resilience** and **understanding** to support them to build on into their next stage of education and beyond. We encourage regular discussions between staff, pupils and parents to best embed and understand this. Pupils are encouraged to **showcase**, **share, celebrate** and **publish** their work to best show the **impact** of our curriculum and we will observe and record evidence of their achievements through each unit of the curriculum.

Curriculum Overview – Updated Sept 2024

RECEPTION

Curriculum Area COMPUTING	Term	Activities

EYFS – The new Early Years Foundation Stage curriculum is due to come into force in September of 2023. The 'Technology' strand has now been removed from 'Understanding the World' and has not been replaced with any updated guidance. Many are asking if we should still be teaching Computing in the EYFS. The answer is an emphatic YES!

Computing and technology are still vitally important subjects to deliver to Reception children. Not only will teaching a well-planned Computing curriculum ensure that children enter Year 1 with a strong foundation of knowledge, but Computing lessons in the EYFS also ensure that children develop listening skills, problem-solving abilities, and thoughtful questioning — as well as improving subject skills across the seven areas of learning.

We live in a technological world and there is no escape from the reality that technology is integrated into the lives of young children. Just as we ensure the children in our care are ready for the adult world by teaching them maths and literacy, we should also make sure that they are fluent in computer literacy and all-important online safety.

Computing in Reception doesn't mean typing out a Word document or creating a code. In fact, teaching technology in the Early Years doesn't have to involve computer work at all.

Computing for the EYFS is 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 means:

- 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
- listening to stories or music
- using recording devices to story tell or explain
- creating algorithms (lists of instructions)

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.

The Development Matters Report (reviewed 2021) states that best practice in early years is creative, active, exploratory, playful and encourages critical thinking. The activities below are just suggestions to meet these criteria where feasible. Tasks are outlined for each area of the EYFS framework, although many other opportunities exist to use technology with Reception children; particularly when linked to a topic studied within class. Allowing children to choose their device is important as is providing opportunities to 'tinker' and explore a variety of technology (but not take apart the BeeBots with a screwdriver!). *(Ideas taken from a variety of sources including CAS (Computing at School) and Barefoot Computing).*

Understanding the world	Continuous Provision	A role play area is provided with a range of technology, both functioning and model / broken devices, or a variety of electronic toys, such as remote controlled cars, walkie-talkies and interactive pets, as part of continuous provision. Further technology could be included in conjunction with other activities, such as digital cameras for pupils to photograph their own learning, **although the EYFS Framework states children need to "select and use technology for a particular purpose", rather than simply being given a device.** Children are provided with opportunities to tinker, or play, with a device, in order to discover how it functions. BeeBots, Code-a-Pillars and Botley the Coding Robot are provided with a selection of BeeBot map activities so that children can explore how they work and discover coding strings. The children also have access to the classroom computer and IWB at all times and have a selection of 'approved' games and learning software to explore.
Literacy		BeeBots to provide opportunities to verbally describe and record the 'story' of a journey. They can also be used to help sequence the alphabet and numbers 1-20. Fake Bots (Barefoot Computing) are also good for story telling.
Physical development		Many EYFS children are familiar with the use of a tablet but not with a keyboard and mouse. Regular opportunity should be given to become familiar with keyboard skills (Dance Mat Typing / Cool Maths Games / Phonics Games etc.)
Communication and language		Unplugged activities allow children to develop their understanding of technology and computational thinking – see unplugged activities in planning and Sandwich Making Robot activities on Barefoot Computing. Links can be made to use of

		the correct vocabulary, speaking clearly and sequencing. Sequential and 'what if' instructions could also form part of sessions linked to physical development activities such as rules for playground games.
Personal, social and emotional development		Voice recorders are used to record how pupils are feeling, or to discuss their relationships with others. This can be extended through pupils creating their own videos (recorded on a laptop or digital camera), which could also link to children giving online safety guidance to their peers on using technology safely and what to do if they feel worried or concerned when using a device. Using voice and video recorders also allows children to self evaluate their own speaking. See below for specific OLS units and planning.
Expressive arts and design		IT Suite time / classroom computers can be used to access painting and graphics applications which can further develop children's keyboard and mouse skills – MS Paint / paintz.app. Creative outcomes can be produced, which allow pupils to take ownership of their work and can be part of an extended project such as creating story mats for BeeBots. Code-a-Pillar, Botley the Coding Robot. Outfits for the device to wear, such as Bee Bot head dresses, could also be developed.
Mathematics		Controlling devices (BeeBots, Code-a-Pillar, Botley the Coding Robot and unplugged activities) provide opportunities to develop pupils' understanding of left and right, along with directional language. Pupils are asked to guide a device around a shape, and use activities from programming related websites, such as code.org, to develop their understanding further. However, activities which engage pupils in programming tasks need to be carefully considered to ensure they have a clear purpose.

In addition to the Continuous Provision activities described above, the activities below will be scheduled for certain times in the year.

COMPUTING	**Autumn**		**Spring**		**Summer**	
RECEPTION Understanding the World Technology Physical Development Personal, social and emotional development	Discussing different types of technology that is used at home (link to role play area above).	Visiting the IT Suite to practise logging on and keyboard skills. Using the Internet to research Nocturnal animals, their habitats and what they eat.	Safer Internet Day 6th February 2024		Using the Internet to research Farm animals and how they live and what they provide.	Using the Internet to research Sea creatures, their habitats and what they eat. Also how they interact with humans.

COMPUTING	Autumn	Spring	Summer
Birth to Five Technology	Technology Range 6 • Completes a simple program on electronic devices • Uses ICT hardware to interact with age appropriate computer software • Can create content such as a video recording, stories, and/or draw a picture on screen • Develops digital literacy skills by being able to access, understand and interact with a range of technologies • Can use the internet with adult supervision to find and retrieve information of interest to them		Statutory ELG: None Birth to Five Matters: Children require access to a range of technologies, both digital and non-digital in their early lives. Exploring with different technologies through play provides opportunities to develop skills that children will go on to develop in their lifetimes. Investigations, scientific inquiry and exploration are essential components of learning about and with technology both digitally and in the natural world. Through technology children have additional opportunities to learn across all areas in both formal and informal ways. Technologies should be seen as tools to learn both from and with, in order to integrate technology effectively within early years practice.

Curriculum Area ONLINE SAFETY	Term	Activities
Online Safety	Continuous Provision	**<u>Project Evolve – Directed Activities</u>**. Choose one per half term to explore in groups: Managing Online Information; Health, Well-being and Lifestyle; Copyright and Ownership; Online Relationships; Online Reputation; Privacy and Security; Self-Image and Identity. Can also use Smartie the Penguin Stories (1 and 2) and discussion questions. A range of age-appropriate books are available for young children to examine online safety, such as Chicken Clicking, Goldilocks (A hashtag cautionary tale). **See planning files on (S: Curriculum) for Lesson plans, resources and discussion questions.**

KS1 / KS2

Computing Curriculum

All Computing lessons below highlight the NC and Education for a Connected World Requirements on the lesson plans. Lessons can be taught in any order within the year group, **BUT** please teach CS (A) and (B) in that order as they are progressive. You can replace (B) with the Discovery Education (Espresso) unit for your year group if you prefer or use this as extra CS sessions.

Strands

IT – Information Technology	**CS – Computer Science**	**DL – Digital Literacy**
Having the skills to create, manipulate, store and retrieve digital content. Selecting the right software to accomplish given goals.	Understanding how computers and computer systems work. Developing computational thinking (algorithms). Programming (Coding). **Espresso Coding** – The second (B) CS unit can be replaced with Espresso Coding OR extra IT Suite slots can be used.	Using technology safely and responsibly. Understanding opportunities technology offers for communication and collaboration. Evaluating digital content.
Word Processing / Typing Data Handling Presentations and Web Design Animation Media Creation (Video, Photography and Digital Art). Augmented Reality and Virtual Reality Sound	Computational Thinking Programming Computer Networks	Self-Image and Identity / Online Relationships / Online Reputation / Online Bullying / Managing Online Information / Health, Wellbeing and Lifestyle / Privacy and Security / Copyright and Ownership Impact of Technology Research Future use

Online Safety Curriculum

OLS (Online Safety) – part of DL **BU**T also part of PSHE so not just the safe and responsible use of technology but also the social and emotional impact of technology. OLS **MUST** be taught in the first week of each half term. Additionally, all year groups will take part in **SID (Safer Internet Day)** in February. Planning folders contain resources for the year from both Rising Stars and from Project Evolve – choose which ones you prefer. The Project Evolve lessons follow (where possible) the subject matter from the Rising Stars PoS. However, there are many more Project Evolve lessons available, particularly if you need to cover a specific subject and so a link to Project Evolve is also in your planning folders.

Extra IT Suite Slots (3 per term plus additional slots which can be booked using the sheets on the door of the Suite as available) – Please use these for Cross Curricular lessons for IT or DL primarily (using MS Word, PPT, Publisher, Excel or for Research projects). There are some ideas below but these are not definitive. Please add in extra ideas as you develop them. If you need extra software or hardware, please ask.

Assessment – The Units below have summative assessment activities included, but, as a minimum, please complete Pupil Asset data termly and a 'best fit' assessment at the end of each unit (template in your planning folder) and save to (S: Staffroom/Assessments/Computing).

YEAR 1

planning in (Shared (S:) Curriculum [Year Group]

COMPUTING YEAR 1	Autumn		Spring		Summer	
Unit	Technology around us	Digital Painting	Moving a robot (A)	Grouping Data	Digital Writing	Programming Animations (B)
Curriculum Area	IT	DL	CS	IT	DL	CS
Resources	https://paintz.app	MS Paint	Bee-Bots	MS PPT	MS Word	Scratch Jr

ONLINE SAFETY YEAR 1	Autumn		Spring		Summer	
Rising Stars	1.1 – We are Year 1 rule writers	1.2 – We are kind and thoughtful	1.3 – We are responsible internet and device users	1.4 – We are information protectors	1.5 – We are good digital citizens	1.6 – We are responsible gamers
Project Evolve	Health, Well-being and Lifestyle	Online Relationships	Self-Image and Identity	Online Reputation	Copyright and Ownership	Online Bullying

Extra Lessons	Term	Extra slot ideas	Notes
IT	Any	XC Topic / Science	Research
CS	Any	Espresso Coding Unit Level 1	Discovery Education

YEAR 2

planning in (Shared (S:) Curriculum [Year Group]

COMPUTING YEAR 2	Autumn		Spring		Summer	
Unit	Information Technology around us	Digital Photography	Robot Algorithms (A)	Pictograms	Digital Music	Programming Quizzes (B)
Curriculum Area	IT	DL	CS	DL	DL	CS
Resources	MS PPT	Digital Cameras Pack	Bee-Bots	https://www.j2e.com/jit5#pictogram	https://musiclab.chromeexperiments.com/	Scratch Jr

ONLINE SAFETY YEAR 2	Autumn		Spring		Summer	
Rising Stars	2.1 – We are Year 2 rule writers	2.2 – We are not online bullies	2.3 – We are safe searchers	2.4 – We are code masters	2.5 – We are online behaviour experts	2.6 – We are game raters
Project Evolve	Privacy and Security	Online Bullying	Managing Online Information	Copyright and Ownership	Online Relationships	Self-Image and Identity

Extra Lessons	Term	Extra slot ideas	Notes
IT	Any	XC Literacy	MS Word
IT	Any	XC Topic / Science	Research
CS	Any	Espresso Coding Unit Level 2	Discovery Education

YEAR 3

planning in (Shared (S:) Curriculum [Year Group]

COMPUTING YEAR 3	Autumn		Spring		Summer	
Unit	Connecting Computers	Stop-frame Animation	Sequence sounds (A)	Branching databases	Desktop publishing	Events and actions in programs (B)
Curriculum Area	CS	DL	CS	DL	IT	CS
Resources	MS Paint	iMotion (or Zu3D)	Scratch	https://www.j2e.com/j2data/	Adobe Spark ***(create free login)*** https://spark.adobe.com/sp	Scratch

ONLINE SAFETY YEAR 3	Autumn		Spring		Summer	
Rising Stars	3.1 – We are Year 3 rule writers	3.2 – We are digital friends	3.3 – We are internet detectives	3.4 – We are aware of our digital footprint	3.5 – We are netiquette experts	3.6 – We are avatar creators
Project Evolve	Privacy and Security	Online Relationships	Managing Online Information	Online Reputation	Copyright and Ownership	Self-Image and Identity

Extra Lessons	Term	Extra slot ideas	Resources
IT	Any	XC Literacy	MS Word
DL	Any	XC Topic / Science	MS PPT – Topic Presentations
IT	Any	XC Topic / Science	Research
IT	Any	XC Maths/Science - Graphs	Excel
CS	Any	Espresso Coding Unit Level 3	Discovery Education

YEAR 4

planning in (Shared (S:) Curriculum [Year Group]

COMPUTING YEAR 4	Autumn		Spring		Summer	
Unit	The Internet	Audio production	Repetition in shapes (A)	Data logging	Photo editing	Repetition in games (B)
Curriculum Area	CS	DL	CS	IT	DL	CS
Resources	Selection of websites (see LP)	Audacity	FMSLogo	Data Loggers	Paint.Net	Scratch

ONLINE SAFETY YEAR 4	Autumn		Spring		Summer	
Rising Stars	4.1 – We are Year 4 rule writers	4.2 – We are standing up to peer pressure	4.3 – We are aware that our online content lasts forever	4.4 – We are online risk managers	4.5 – We are respectful of digital rights and responsibilities	4.6 – We are careful when talking to virtual friends
Project Evolve	Privacy and Security	Online Bullying	Managing Online Information	Online Reputation	Copyright and Ownership	Managing Online Information

Extra Lessons	Term	Extra slot ideas	Notes
IT	Any	XC Literacy	MS Word
IT	Any	XC Topic / Science	Research
IT	Any	XC Maths/Science - Graphs	Excel
CS	Any	Espresso Coding Unit Level 4	Discovery Education

YEAR 5

planning in (Shared (S:) Curriculum [Year Group]

COMPUTING YEAR 5	Autumn		Spring		Summer	
Unit	Systems and searching	Video production	Selection in physical computing (A)	Flat-file databases	Introduction to Vector graphics	Selection in quizzes (B)
Curriculum Area	CS/DL	DL	CS	IT	CS/IT	CS
Resources	Google slides / MS PPT	MS Photos	Crumble	J2data Database https://www.j2e.com/j2data/	Google Drawings / FlexiCad	Scratch

ONLINE SAFETY YEAR 5	Autumn		Spring		Summer	
Rising Stars	5.1 – We are Year 5 rule writers	5.2 – We are responsible for our online actions	5.3 – We are content evaluators	5.4 – We are protecting our online reputation	5.5 – We are respectful of copyright	5.6 – We are game changers
Project Evolve	Privacy and Security	Online Relationships	Managing Online Information	Self-Image and Identity	Copyright and Ownership	Health, Well-being and Lifestyle

Extra Lessons	Term	Extra slot ideas	Notes
IT	Any	XC Literacy	MS Word
IT	Any	XC Topic / Science	Research
IT	Any	XC Maths/Science - Graphs	Excel
CS	Any	Espresso Coding Unit Level 5	Discovery Education

YEAR 6

planning in (Shared (S:) Curriculum [Year Group]

COMPUTING YEAR 6	Autumn		Spring		Summer	
Unit	Communication and collaboration	Web page creation	Variables in games (A)	Introduction to spreadsheets	3D Modelling	Sensing movement (B)
Curriculum Area	CS/IT	CS/DL	CS	IT	IT	CS
Resources		Google slides	Scratch	MS Excel	Tinkercad	Micro:bit / MS Make Code

ONLINE SAFETY YEAR 6	Autumn		Spring		Summer	
Rising Stars	6.1 – We are online safety ambassadors	6.2 – We will not share inappropriate images	6.3 – We are safe social networkers	6.4 – We are respectful of others	6.5 – We are OLS Problem Solvers	6.6 – We are safe gaming experts
Project Evolve	Privacy and Security	Self Image and Identity	Online bullying	Online Relationships	Managing Online Information	Health, Well-being and Lifestyle

Extra Lessons	Term	Extra slot ideas	Notes
IT	All	XC Literacy	MS Word
IT	All	XC Maths/Science - Graphs	Excel
IT	All	XC Topic / Science	Research
CS / IT	Aut 1	XC DT – Computer Aided Design	FlexiCAD
IT	Aut 1	XC History – Mapping WWI / WWII	Digimaps
CS	Aut 2	Espresso Coding Unit – Python	Discovery Education
DL / OLS	Spr 1	SID 2022	MS Publisher

Extra Lessons	Term	Extra slot ideas	Notes
IT	Spr 2	XC Literacy – Superheroes	Presi Scrapbook
CS	Sum 1	XC with DT – Crumble	Crumble
DL	Sum 2	Year Book	MS PPT / MS Photo