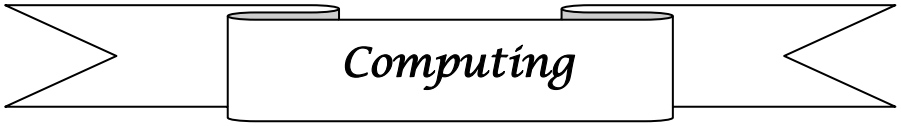
St. John's Primary School



- **The New Curriculum:**

A high-quality computing education equips pupils to understand and change the world through logical thinking and creativity, including by making links with mathematics, science, and design and technology. The core of computing is computer science, in which pupils are taught the principles of information and computation, and how digital systems work. Computing equips pupils to use information technology to create programs, systems and a range of media. It also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Aims

The national curriculum for computing aims to ensure that all pupils:

- *can 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*
- *can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems*
- *are responsible, competent, confident and creative users of information and communication technology.*

- **Why so much so soon?**
  - So children are not just consumers but creators
  - For the future- the best programmers start young & to really achieve in the field, an early start is essential.
  - Children with a natural talent can be caught early and challenged.
  - Develops thinking skills necessary in all areas of the curriculum.
  - Children's ability in this area is underestimated-they will find it easier than us!

- **Key stage 1**

Pupils should be taught to:
 understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
 create and debug simple programs
 use logical reasoning to predict the behaviour of simple programs
 use technology purposefully to create, organise, store, manipulate and retrieve digital content
 use technology safely and respectfully, keeping personal information private; know where to go for help and support when they have concerns about material on the internet
 recognise common uses of information technology beyond school.

- **Key stage 2**

 design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
 use sequence, selection, and repetition in programs; work with variables and various forms of input and output
 use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
 understand computer networks including the internet; how they can provide multiple services, such as the world-wide web; and the opportunities they offer for communication and collaboration
 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
 use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour
 select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

The New Curriculum Simplified

1. **Computer Science –** Programming, coding
2. **Digital Skills –** using computers efficiently, confidently & safely
3. **I.T –** Design & application of computer system
4. **E-Safety**

FS/KS1 Progression of skills & resources (Key -NC statement, Education city/Espresso activity, Skills, Resources

	Digital Skills	E-Safety	Computer Science - Programming & Coding	Skills and Technology in the World
FS1	Uses ICT hardware to interact with age-appropriate computer software. • Completes a simple program on a computer. Use mouse to open, use, close a program Use IWB to drag & drop Open iPad app Class PC iPads Tuff Cam		• Completes a simple program on a computer Operate Remote control bugs/cars	Tech hunt nursery
FS2	They select and use technology for particular purposes Use mouse for drawing/paint program. Use IWB to drag & drop Open iPad app Class PCs iPads Camera CD player/listening station Espresso Driving Licence 1 Purple Mash	Smartie the Penguin e-book **https://www.thinkuknow.co.uk/5_7/hectorsworld/ cartoons**	They select and use technology for particular purposes Remote control cars & lorries TTS make & Go Purple Mash	Children recognise that a range of technology is used in places such as homes and schools. Technology hunt school & homework sheet Espresso Purple Mash

Diamond (Y1 only) Topaz & Emerald 2 year cycle
https://www.purplemash.com/site#app/schemes_of_work/computing_schemes_of_work/computing_sow_overview

Theme Key:							
Coding and Computational thinking	Spreadsheets	Internet and Email	Art and Design	Music	Databases and graphing	Writing and Presenting	Communication and networks

In year 1 and 2 coding the lessons need to be taught in sequence as each lesson introduces skills that are consolidated and developed in the next lesson. Therefore, it is proposed to teach coding for 11 weeks in Cycle A and none in Cycle B. It is also beneficial for all children to recap unit 1.1 in both cycles as this introduces children new to the class with key skills needed to make the most of Purple Mash.

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
YEAR 1 & 2 – CYCLE A	Unit 1.1 Online Safety & Exploring Purple Mash Weeks – 4 Programs – Various				Unit 2.5 Effective Searching Weeks – 3 Programs – Browser			Unit 1.4 Lego Builders Weeks – 3 Programs – 2DIY			Unit 1.9 Technology outside school Weeks – 2 Programs – Various		Unit 1.2 Grouping & Sorting Weeks – 2 Programs – 2DIY		Unit 2.6 Creating Pictures Weeks – 5 Programs – 2PaintAPicture					Unit 1.8 Spreadsheets Weeks – 3 Programs – 2Calculate			Unit 1.7 Coding Weeks – 6 Programs – 2Code						Unit 2.1 Coding Weeks – 5 Programs – 2Code				

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
YEAR 1 & 2 – CYCLE B	Unit 1.1 Online Safety & Exploring Purple Mash Weeks – 4 Programs – Various				Unit 1.5 Maze Explorers Weeks – 3 Programs – 2Go			Unit 2.4 Questioning Weeks – 5 Programs – 2Question, 2Investigate						Unit 2.2 Online Safety Weeks – 2 Programs – Various		Unit 1.6 Animated Story Books Weeks – 5 Programs – 2Create A Story					Unit 2.7 Making Music Weeks – 3 Programs – 2Sequence			Unit 2.3 Spreadsheets Weeks – 4 Programs – 2Calculate				Unit 1.3 Pictograms Weeks – 3 Programs – 2Count			Unit 2.8 Presenting Ideas Weeks – 4 Programs – Various			

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Class 1 (Y3)	Online Safety Email	Touch-Typing Spreadsheets	Branching Databases	Coding	Simulation	Graphing
Class 2 (Y3/4)	Online Safety Spreadsheets	Coding	Email	Branching Databases	Simulations Graphing	Graphing Touch-typing
Class 3 (Y4/5)	Online Safety Animation	Coding	Spreadsheets	Logo	Hardware Investigators Effective Searches	Writing for Different Audiences
Class 4 (Y5/Y6)	Online Safety Concept Maps	Coding	Spreadsheets	Databases	Game Creator	3D Modelling
Class 5 (Y6)	Online Safety Concept Maps	Coding	Spreadsheets	Databases	Game Creator	3D Modelling