

## COMPUTING CURRICULUM MAP

Our Sheen Mount curriculum maps have been developed and updated throughout 2019-2020. However, in this coming academic year, 2020-2021, there are some areas of the curriculum that will be modified, because of Covid-19, in line with the government guidance issued most recently.

- 1) Teach an ambitious and broad curriculum in all subjects from the start of the autumn term, but make use of existing flexibilities to create time to cover the most important missed content.
- 2) Aim to return to the school's normal curriculum in all subjects by summer term 2021. Substantial modification to the curriculum may be needed at the start of the year, so teaching time should be prioritised to address significant gaps in pupils' knowledge with the aim of returning to the school's normal curriculum content by no later than summer term 2021.

*Our Sheen Mount Computing curriculum is designed to equip children with the necessary skills and knowledge to thrive and be safe in our constantly evolving technological society. Our children's existing skills are enhanced through a range of engaging and developing experiences to prepare them for their future application and use of technological skills.*

*We aim to build confidence and teach transferrable skills to enable all pupils to access a wide range of technology.*

### Purpose of study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing 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.

## COMPUTING CURRICULUM MAP

|               | Autumn Term   |   | Spring Term  |  | Summer Term   |  |
|---------------|---|---|--|--|---|--|
| <b>Year 1</b> | <p><b>Technology in our Lives (e-safety)/Keyboard skills:</b><br/>Children learn to follow rules when using the internet. Children learn how to use a computer and develop keyboard skills. Use of 'Busythings.com' to develop skills of typing, identifying placement of keys on keyboard. Use of games to develop clicking and dragging skills using the mouse.</p> |   | <p><b>Multimedia:</b><br/>Children to use J2e5 to access basic skills of word processing, creating graphs of collected data.</p> <p>Use 'Make a' on Busy Things – draw vehicle transport topic link?</p>   | <p><b>Programming:</b><br/>Children, firstly, 'programme' a partner to learn basic movements using positional language.<br/>Children then develop programming skills using programmable robots and Bee-Bots.<br/>Make Bee-Bot move towards a point</p> | <p><b>Handling Data:</b><br/>Children learn to collect data and use it to create a graph.</p> <p>Busy Things – Maths - Statistics, pictograms + other charts.</p>   | <p><b>Programming:</b><br/>Children use software to create movements on a screen.<br/>Use of Code.org to build skills in programming. CS Fundamentals (Course A – 2019). Children to use 'Course A' to further develop mouse skills of clicking and dragging, whilst learning very basics of coding.</p> |
| <b>Year 2</b> | <p><b>e-Safety/Technology in our lives</b><br/>Children explore technology in our lives and learn about the importance of using the internet safely. They build on their typing and keyboard skills. Use of 'Busythings.com' to develop skills of typing, identifying placement of keys on keyboard.</p>  | <p><b>Multimedia</b><br/>Keyboard skills<br/>Using BBC Dance Mat typing, learn how to use all fingers when typing</p>   | <p><b>Programming</b><br/>Use of Code.org to further develop skills in programming, attempting more challenging sequences, such as 'Course B'. CS Fundamentals 2019 _ Course B.</p>  | <p><b>Multimedia</b><br/>Children explore how edit and create an animation using the program '2Animate'.</p> <p>Aim to do PowerPoint (G Slides) – link to science and plants.</p>  | <p><b>Programming</b><br/>Children explore how to set a series of instructions using the program 'Scratch' and other programming software.<br/>Use of Code.org to build skills in programming. Children to use 'Course C'</p>   | <p><b>Data Handling</b><br/>Children think of a line of enquiry and collect the necessary data. Children tom use J2e5 to access basic skills of word processing, creating graphs of collected data.</p>  |
| <b>Year 3</b> | <p><b>Technology in our lives – Touch typing</b><br/>. Use of 'Busythings.com' to further develop skills of typing, identifying placement of keys on keyboard.</p>  | <p><b>e-Safety</b><br/><b>Multimedia (Presentation)</b><br/>Learn how to use Microsoft PowerPoint and make posters on safety. Learn a new rule for staying safe online each week.<br/>Children can use 'J2Office' to develop basic skills of word processing.</p> | <p><b>Programming</b><br/>Create sprite and edit/animate to create rainforest scene.</p>   | <p><b>Handling Data</b><br/>Use databases to find, collect and organise information on local history.</p>  | <p><b>Programming</b><br/>Use of Code.org to further develop skills in programming, attempting more challenging sequences, such as 'Course 'D'.</p>   | <p><b>Multimedia (Photo/Video manipulation)</b><br/>Create mini movies by filming, performing then editing footage using Movie Maker. Using our Ancient Egyptian topic as the theme.</p> <p>Research using Ancient Egyptian topic as stimulus</p>  |
| <b>Year 4</b> | <p><b>e-Safety</b><br/>Technology in our lives create posters with keeping safe using technology in mind. Children to learn about the 'SMART Rules' and how to implement them online.</p>   | <p><b>Multimedia</b><br/>Word Presentations following current topic.<br/>Children to be trained on the basics of Google docs Office equivalent.</p>   | <p><b>Programming</b><br/>Use of Code.org to further develop skills in programming, attempting more challenging sequences, such as 'Course F'.</p>   | <p><b>Handling Data</b><br/>Using a Sherlock Holmes database to solve<br/><b>Handling Data</b><br/>Using spreadsheets to analyse data on tooth decay a crime.</p>  | <p><b>Programming</b><br/>Children to use 'Code.org' to further develop skills of programming. Use 'CS Express' course, starting from Lesson 1, to challenge pupils and build on previously acquired knowledge.</p>   | <p><b>Multimedia</b><br/>Create a film following current topic. Create a film based upon their year in Year 4, utilising animations, music and pictures. Work in small groups to support each other.</p>   |
| <b>Year 5</b> | <p><b>e-Safety</b><br/><b>Technology in our Lives</b><br/>Developing a greater understanding of e-Safety and how computers are changing the way we live.</p>  | <p><b>Multimedia (Presentation)</b><br/>Using PowerPoint to showcase our understanding of e-Safety and how computers are changing the way we live.</p>  | <p><b>Programming</b><br/>Children to continue to use 'Code.org' to further develop skills of programming. Use 'CS Express' course, starting from Lesson 16, 'Functions' which challenges children to select from a menu of commands, building skills to understand the basics of scratch, leading into Summer 1 Programming sequence.</p> | <p><b>Handling Data</b><br/>Examining how different software packages allow us to collect and use data. Applying our growing data handling skills to an investigation involving Data Loggers.</p>  | <p><b>Multimedia (Photo/Video manipulation)</b><br/>Planning, creating, editing and publishing movies. Focus on adding sound clips to Windows Movie Maker projects.<br/><b>Programming</b><br/>Using Scratch to learn the language of programming and create a programmed, on-screen fish-tank. Logical</p> | <p><b>Multimedia (Photo/Video manipulation)</b><br/>Planning, creating, editing and publishing movies. Focus on adding sound clips to Windows Movie Maker projects. Create a movie about their year in Year 5, or a topic they have enjoyed. Isle of Wight film.</p>                                     |



# COMPUTING CURRICULUM MAP

## Subject Content

### 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
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

### Key stage 2

Pupils should be taught to:

- 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
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

## COMPUTING CURRICULUM MAP

Reception: Take pics w/ ipads, unlock with code, programme bee-bots, discuss technology at home i.e. Alexa, role play areas – use of phones, microwaves, electrical equipment etc...

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