



The 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 technology and provides insights into both natural and artificial systems. At the core of computing is computing science, in which pupils are taught the principals of information and computation, how design systems work, and how to put this knowledge to use through programming. Building on all of this, children are equipped to use IT to create programs, systems and a range of content. Computing also ensures that children become digitally literate – able to use and express themselves and develop their ideas through computing – at a level suitable for the future workplace and as active participants in a digital world.

Aims of study

That all children:

- 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 IT, including new or unfamiliar technologies, analytically to solve problems.
- Are responsible, competent, confident and creative users of computing technology.

Based on the **Purple Mash Computing Scheme** the following coverage occurs across the year:

	Autumn	Spring	Summer
Year 3	<p>Introduction to Purple Mash - refresher in the basics of using Purple Mash and introduction to the essential skills needed for Year 3.</p> <p>Email – Communicating electronically using 2Email, including safe aspects of email communication.</p> <p>Route Planners – Using 2Go to create routes for screen turtles, coding with angles of turn and repetition.</p>	<p>Branching databases – Creating branching databases (binary tree databases) using 2Question.</p> <p>Spreadsheets –working with data using spreadsheets in the 2Calculate tool.</p> <p>Coding – Developing coding skills using 2Code.</p>	<p>Presenting ideas– Using industry standard software to create presentations.</p> <p>Touch Typing– Developing touch typing skills using 2Type.</p> <p>Micro:bit – Coding using a micro:bit as an external device.</p>



<p>Year 4</p>	<p>Introduction to Purple Mash – Refresher on the basic skills required for Purple Mash and introduction of essential skills for Year 4.</p> <p>Unpacking hardware and software – Understanding technology and computer systems in relation to their hardware and software.</p> <p>Animation – Creating digital animations using the 2Animate tool.</p>	<p>Logo – Learning a text-based logo coding language to create patterns and shapes, coding sequences, repetition and procedures.</p> <p>Sound Stories – Adding narrative and sound effects to create audiobooks using 2Cast.</p> <p>Effective Searching – exploring how to effectively search the internet. Exploring safety aspects of online information.</p>	<p>Coding – developing coding skills using 2Code.</p> <p>Making music – using the Busy Beats tool to explore and compose music digitally.</p> <p>Introduction to AI – understanding what artificial intelligence is, how it can help and the ethics around its use.</p> <p>Micro:bit – coding using a micro:bit</p>
<p>Year 5</p>	<p>Introduction to Purple Mash – Essential skills for beginning the Year 5 units.</p> <p>Quizzing – making effective quizzes using 2Quiz. Exploring questioning and effective presentation of quizzes.</p> <p>Databases – using table-based databases for collecting, presenting, searching and analysing data.</p>	<p>Game creator – Designing and making a 3D maze adventure game using 2DIT3D.</p> <p>Spreadsheets – Working with data using spreadsheets in 2Calculate tool.</p> <p>Coding – Developing coding skills.</p> <p>Word processing – using industry standard software to create documents.</p>	<p>Concept maps – Using and creating concept maps using 2Connect.</p> <p>Coding external devices – using the purple chip app alongside Purple Mash.</p> <p>Micro:bit – coding using a micro:bit.</p>
<p>Year 6</p>	<p>Introduction to Purple Mash – essential skills for beginning the Year 6 units.</p> <p>Graphing – understanding the benefits of creating common graph type digitally and presenting data.</p> <p>Blogging – understanding how blogs and their features can effectively engage an audience.</p> <p>Data detectives – Using the data detectives tool to work with large datasets to analyse complex data and answer questions.</p>	<p>Networks – learning what networks do and how they connect devices.</p> <p>Coding – developing coding skills using 2Code.</p> <p>Introduction to Python – introducing text-based Python coding using the Python in Pieces platform. Translating between block-code and Python.</p> <p>Spreadsheets – using industry standard software to work with spreadsheets.</p>	<p>3D modelling – exploring computer aided design in 3D using the 2Design and Make tool.</p> <p>Binary – understanding binary as a number system and its purpose and application in computing.</p> <p>Micro:bit – coding using a micro:bit.</p>



Coverage

Key Stage 2 Computing

Year 3	Year 4	Year 5	Year 6
<p>Introduction to Purple Mash</p> <ul style="list-style-type: none"> To know how to log in and out. To know how and where to save work. <p>Email</p> <ul style="list-style-type: none"> To compose and reply to emails. To know how to open and send attachments. To know how to use email safely. <p>Route Planners</p> <ul style="list-style-type: none"> To know how to write commands using rotation. To know how to create algorithms and writing code. To plan routes. To know how to use repetition in 2Go. 	<p>Introduction to Purple Mash</p> <ul style="list-style-type: none"> To recap previously learnt skills. To know the essential skills for Year 5. <p>Unpacking hardware and software</p> <ul style="list-style-type: none"> To define types of technology To know how systems work together. To be able to identify hardware. To understand software <p>Animation</p> <ul style="list-style-type: none"> To know the different types of animation. To understand onion skinning. To explore animation features To use storyboarding. <p>Logo</p> <ul style="list-style-type: none"> To know how to use Logo commands To know how to write commands in a sequence. 	<p>Introduction to Purple Mash</p> <ul style="list-style-type: none"> To know the essential skills for Year 5 <p>Quizzing</p> <ul style="list-style-type: none"> To know how to evaluate the features of a good quiz To choose appropriate questions types. To make use of feedback and titles. To test and edit quizzes. <p>Databases</p> <ul style="list-style-type: none"> To understand records and fields. To create a collaborative database To know how to search databases To analyse data <p>Game Creator</p> <ul style="list-style-type: none"> To know the features of a good game. To know how to design and make sprites and the game world. 	<p>Introduction to Purple Mash</p> <ul style="list-style-type: none"> To know the essential skills for Year 6 <p>Graphing</p> <ul style="list-style-type: none"> To create a range of graph types To know how to incorporate multiple datasets To use graphs to solve a problem To know how to export and import files. <p>Blogging</p> <ul style="list-style-type: none"> To plan the theme, content and structure of a blog To write, edit and publish a blog post To understand blog moderation To review and comment on blog posts. <p>Data Detectives</p> <ul style="list-style-type: none"> To know how to filter and sort data To group data To know how to link tables

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Branching databases

- To know how to ask binary questions.
- To complete branching databases in 2Question.
- Create and test branching databases.

Spreadsheets

- Create graphs
- To understand cell addresses.
- To know how to use the formula bar.
- Combine 2Calculate functions to analyse data.

Coding

- To use flowcharts in 2Chart
- To know how to use timers.
- To know how to introduce repetition.
- To test and debug

Presenting ideas

- To know how to add media.
- To customise with animation and timings
- To design an effective presentation.

- To know how to refine code using repetition and procedures.

Sound Stories

- To record audio content
- To know how to create sound effects.
- To know how to edit post-production.

Effective Searching

- To know how to use a search engine
- To understand what a search ranking is.
- To know how to make reliable searchings.
- To search algorithms.

Coding

- To be introduced to selection.
- To explore design properties.
- To begin to understand introducing loops.
- To know how to code number variables.

Making music

- Can explore pulse, rhythm and tempo
- To understand pitch and texture
- To know how to compose a melody

Introduction to AI

- Can explore how AI works
- To investigate the positive and negative impacts of AI.

To know how to evaluate the playability of games.

Spreadsheets

- To know how to use formulae
- To explore measurement conversations
- To carry out numerical investigations
- To create computational needs.

Coding

- To know how to code efficiently by refining code.
- To know how to simulate a physical system
- To explore decomposition and abstraction
- To know how to use functions and variables.

Word Processing

- To know how to create documents
- To know how to use images
- To enter and edit data
- To use tables and templates.

Concept Maps

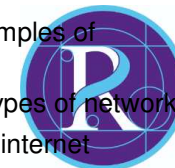
- To know how to create a concept map.
- To present from a concept map
- To make collaborative concept maps.

Coding external devices

- To know how to use device movement
- To explore text functions

Networks

- To identify examples of networks
- To recognise types of networks
- To understand internet services
- To be able to discuss positive and negative use of networks



Coding

- To use functions
- To understand flowcharts and control simulations
- To code for user input

Introduction to Python

- To compare block and text code views
- To code for text output
- To know how to work with different datatypes
- To code repetition in Python

Spreadsheets

- To perform calculations
- To enter data using formulae
- To know how to best present data
- To solve real life problems.

3D Modelling

- To work with viewpoints of 3D objects
- To add and edit points on a model
- To design for a purpose

Binary

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Touch Typing

- Recognise keyboard locations
- To understand and begin to use correct finger positioning
- Improve accuracy and speed of typing.

Micro:bit

- To use the LED display
- To know how to sequence and use timing.
- To understand inputs and outputs
- To add sounds and gestures.

- Can consider AI in the future.

Micro:bit

- To know how to explore the sensor inputs and the accelerometer
- Can use variables, inputs and outputs
- Can code with selection and loops.

- To use coding interactions with the environment

Micro:bit

- To explore sensor inputs and the accelerometer
- To know how to use selection, variables, inputs and outputs
- To using coding for the micro:bit pins.

- To examine how binary represents data in digital systems
- To count in binary
- To convert decimal to binary
- To explore binary in relation to game states.

Micro:bit

- To use the micro:bit as a data logger
- To measure, record and analyse environmental data
- To collect data and export to graphical software.

