



## EYFS Computing Knowledge

### Children in Reception will be learning to:

UW

AUTUMN:

To support Computer science and digital literacy

- To know which devices in the room are electronic

CL

To support the beginning of computational thinking

- Children can listen carefully to and follow simple one step instructions.

PSED

To support online safety

- Children seek out a familiar adult when they need help or are upset.

SPRING:

- To use in their play one or more of our electronic devices

- Children can listen carefully to and follow simple two step instructions.

- Children can follow classroom rules independently.

SUMMER:

- To choose an electronic device purposefully for a given task.

- Children can listen carefully to and follow simple three step instructions.

- Children know why we have rules and explain what good behaviour.



<b>National Curriculum Aims</b>	<p><b>Key Stage One:</b> Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</li> <li>• create and debug simple programs</li> <li>• use logical reasoning to predict the behaviour of simple programs</li> <li>• use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> <li>• recognise common uses of information technology beyond school</li> <li>• 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</li> </ul> <p><b>Key Stage Two:</b> Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>• use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>• 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</li> <li>• use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> <li>• 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</li> <li>• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>		
	<b>Y1/2</b>	<b>Y3/4</b>	<b>Y5/6</b>
<b>Digital Literacy Including Online Safety</b>	<b>Year 1 Expectations</b> <ul style="list-style-type: none"> <li>• Know how to log on safely.</li> <li>• Know how to understand the ideas of ‘ownership’ of their creative work.</li> </ul>	<b>Year 3 Expectations</b> <ul style="list-style-type: none"> <li>• Know that being a good digital citizen means being safe and responsible online.</li> </ul>	<b>Year 5 Expectations</b> <ul style="list-style-type: none"> <li>• Know how to describe their media choices and to begin to develop a definition of a healthy media balance.</li> </ul>



- Know how to find saved work.
- Know how search Purple Mash to find resources.
- Know the types of resources available in the Topics section.
- Know what the icons are in the Topics section.
- Know how to explore the Tools section of Purple Mash.
- Know how to start to add pictures and text to work.
- Know the common icons used for save, print, open and new.
- Know the importance of logging out when I have finished.
- Know when and why to take breaks from device time.
- Know why it's important to be aware and respectful of people while using devices.

#### **Year 2 Expectations**

- Know how to use the search facility on Purple Mash by year group and subject.
- Know how to share work to a display board.
- Know that work can be shared digitally on the internet.
- Know that Email is a form of digital communication.
- Know how we talk to others when they are not there in front of us.

- Know that digital devices can be distracting and recognise the importance of device free time for themselves and others.
- Know the kind of information that is private.
- Know that they should never give out private information online.
- Know how to compare and contrast how they are connected to different people and places, in person and on the internet.
- Know what online meanness can look like and how it can make people feel.
- Know ways to respond to mean words online, using S-T-O-P.

#### **Year 4 Expectations**

- Know what it means to give credit when using content they find online.
- Know what their online and in-person responsibilities are and how to describe how their behaviour affects themselves and others.
- Know why a strong password is important and how to create a memorable and strong password.
- Know how posting selfies or other images can lead to others making assumptions about them.
- Know how to post on-line in a way that best reflects who they are.
- Know what a community is both in person and online.
- Know why it is important to think about the words we use because everyone interprets things differently.

- Know the difference between personal and private information and explain why it is risky to share private information online.
- Know what 'digital footprint' means and identify online activities that contribute to it.
- Know what responsibilities they have for the digital footprints of themselves and others.
- Know what the positives and negatives are of social interaction in online games.
- Know and recognise what cyberbullying is and the options they have for dealing with it.

#### **Year 6 Expectations**

- Know how to reflect on their media balance.
- Know how to create a personalised plan for healthy and balanced media use.
- Know what is meant by 'the curiosity gap' and how clickbait uses this to get your attention.
- Know strategies for avoiding clickbait.
- Know what is meant by 'gender stereotypes' and how they can be present online.
- Know how gender stereotypes can lead to unfairness or bias.
- Know how to compare and contrast different kinds of online-only friendships.
- Know the benefits and risks of online-only friendships.



	<ul style="list-style-type: none"><li>• Know how to open and send simple online communication in the form of email using 2Respond on Purple Mash.</li><li>• Know that the information put online leaves a digital footprint or trail.</li><li>• Know how to think critically about the information they leave online.</li><li>• Know how to identify the steps that can be taken to keep personal data and hardware secure.</li></ul>	<ul style="list-style-type: none"><li>• Know how to explain the use of S-T-O-P when dealing with mean posts online.</li><li>• Know which kinds of statements are OK to say online and which are not.</li><li>• Know how to structure search queries to locate specific information.</li><li>• Know how to use search effectively to answer a series of questions.</li><li>• Know how to analyse the contents of a web page for clues about the credibility of the information.</li></ul>	<ul style="list-style-type: none"><li>• Know how to respond to an online-only friend if the friend asks something that makes them feel uncomfortable.</li><li>• Know the similarities and differences between in-person bullying, cyberbullying and being mean.</li><li>• Know strategies for dealing with cyberbullying and how to be an upstander for those being bullied.</li><li>• Know how to discuss different types of media used on websites.</li><li>• Know that websites are written in HTML.</li><li>• Know the common features of a web page.</li><li>• Know what media to include on my page.</li><li>• Know how to draw a web page layout that suits my purpose.</li><li>• Know why I should use copyright-free images.</li><li>• Know how to find copyright-free images.</li><li>• Know what is meant by the term 'fair use'.</li><li>• Know how to add content to my own web page.</li><li>• Know how to preview my web page.</li><li>• Know how to evaluate what my webpage looks like on different devices and make edits.</li><li>• Know what a navigation path is.</li></ul>
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	Y1/2	Y3/4	Y5/6
<b>Computer Science</b>	<p><b>Year 1 Expectations</b></p> <ul style="list-style-type: none"> <li>• Know what coding means in computing.</li> <li>• Know how to create unambiguous instructions.</li> <li>• Know how to use 2Code.</li> <li>• Know what a block of code is.</li> <li>• Know how to read through combined blocks of code.</li> <li>• Know how to add a background using Design Mode.</li> <li>• Know how to add characters using Design Mode.</li> <li>• Know how to use a drop-down menu.</li> <li>• Know how to design a simple program that controls how a character will move.</li> <li>• Know how to make a character move when clicked.</li> <li>• Know how to program a character to move given a variety of input events.</li> <li>• Know how to edit a scene by adding, deleting and moving objects.</li> <li>• Know how to change the size of an object using the properties scale.</li> <li>• Know how to create a design plan for their Free Code Scenes program.</li> <li>• Know how to use code to make the program they have designed work.</li> </ul> <p><b>Year 2 Expectations</b></p> <ul style="list-style-type: none"> <li>• Know how to use movement blocks and the reset button in ScratchJr.</li> </ul>	<p><b>Year 3 Expectations</b></p> <ul style="list-style-type: none"> <li>• Know how to create a design that represents a sequential algorithm.</li> <li>• Know how to use a flowchart design to create the code.</li> <li>• Know what Object, Action, Output, Control and Event are in computer programming.</li> <li>• Know how to create a program that uses a timer-after command</li> <li>• Know how to create a program that uses a timer-every command</li> <li>• Know that there can be different ways to solve a problem.</li> <li>• Know how the turtle object moves.</li> <li>• Know how to use the repeat command with an object.</li> <li>• Know how to create a computer program that includes use of the repeat command.</li> <li>• Know how to create computer programs using prior knowledge.</li> <li>• Know how to run, test and debug their programs.</li> <li>• Know how to consider nesting when debugging their programs.</li> <li>• Know how to use the properties table to set the properties of objects.</li> <li>• Know how to plan their scene and code before they create their program.</li> <li>• Know how to make several different things happen in a program.</li> </ul> <p><b>Year 4 Expectations</b></p>	<p><b>Year 5 Expectations</b></p> <ul style="list-style-type: none"> <li>• Know how to use sketch or storyboard to represent a program design and algorithm.</li> <li>• Know how to design and write a program that simulates a physical system.</li> <li>• Know how to select relevant features of a situation to incorporate into a simulation using decomposition and abstraction.</li> <li>• Know how to explain what a variable is in programming and can set/change the variable values appropriately.</li> <li>• Know ways that text variables can be used in coding.</li> <li>• Know how to combine the use of variables, if/else statements and repeats to achieve the desired effect in code.</li> <li>• Know how to read code so that it can be adapted, personalised and improved.</li> <li>• Know how to include buttons and objects that launch windows to websites and programs within a program.</li> </ul> <p><b>Year 6 Expectations</b></p> <ul style="list-style-type: none"> <li>• Know how to plan a program before coding to anticipate the variables that will be required to achieve the desired effect.</li> <li>• Know how to follow through plans to create the program.</li> <li>• Know how to debug their own program.</li> <li>• Know how to organise code into functions and explain what they are.</li> </ul>



	<ul style="list-style-type: none"><li>• Know how to set backgrounds and start on the green flag triggering block.</li><li>• Know that an algorithm is a set of instructions.</li><li>• Know how to describe the algorithm they created.</li><li>• Know that a computer needs clear instructions to make something happen.</li><li>• Know how to plan an algorithm that includes collision detection.</li><li>• Know how to create a program using collision detection.</li><li>• Know how to read blocks of code and predict what will happen when it is run.</li><li>• Know how to create a program that uses a timer-after command.</li><li>• Know how to explain what the timer-after command does in their program.</li><li>• Know how to predict what will happen in a program that includes a timer-after command.</li><li>• Know how to create a computer program that includes different object types.</li><li>• Know how to modify the properties of an object.</li><li>• Know how to use different events in their program to make objects move.</li></ul>	<ul style="list-style-type: none"><li>• Know how to use a sketch or storyboard to represent a program design and algorithm.</li><li>• Know how to create code that conforms to their design.</li><li>• Know how to create if/else statement.</li><li>• Know what a variable is in programming.</li><li>• Know how to create a variable.</li><li>• Know how to create a program which responds to the if/else command using the value of the variable.</li><li>• Know how to create a program with an object that repeats actions.</li><li>• Know how to use the Repeat Until command.</li><li>• Know how to program an object to respond to user keyboard input.</li><li>• Know how to make timers and counting machines using variables to print a new number to the screen every second.</li><li>• Know how to create an algorithm modelling the sequence of a simple event.</li><li>• Know how to use an algorithm when making a simulation of an event on the computer.</li><li>• Know what decomposition and abstraction are in computer science.</li><li>• Know how to make timers and counting machines using variables to print a new number to the screen every second.</li><li>• Know how to create an algorithm modelling the sequence of a simple event.</li><li>• Know how to use an algorithm when making a simulation of an event on the computer.</li></ul>	<ul style="list-style-type: none"><li>• Know how to include text inputs from the user in a program and attribute variables to user input.</li><li>• Know how to use flowcharts to test and debug a program.</li><li>• Know how to create a simulation of a room in which devices can be controlled.</li><li>• Know how to create a text-based adventure game.</li></ul>
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	<ul style="list-style-type: none"><li>• Know how to create a computer program that includes a button object.</li><li>• Know how to explain what a button does in their program.</li><li>• Know how to modify the properties of a button to fit their program design.</li><li>• Know how to explain what debug (debugging) means.</li><li>• Know how to use a design document to start debugging a program.</li><li>• Know how to debug simple programs.</li></ul>	<ul style="list-style-type: none"><li>• Know what decomposition and abstraction are in computer science.</li><li>• Know how to make timers and counting machines using variables to print a new number to the screen every second.</li><li>• Know how to create an algorithm modelling the sequence of a simple event.</li><li>• Know how to use an algorithm when making a simulation of an event on the computer.</li><li>• Know what decomposition and abstraction are in computer science.</li><li>• Know how to break down aims for a coding task into smaller achievable steps.</li><li>• Know that they need to start coding at a basic level of abstraction to remove superfluous details from their program that do not contribute to the aim of the task.</li></ul>	
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	Y1/2	Y3/4	Y5/6
<b>Information Technology</b>	<ul style="list-style-type: none"> <li>• <b>Year 1 Expectations</b></li> <li>• Know the difference between a traditional book and an e-book.</li> <li>• Know how to use different drawing skills to create a picture.</li> <li>• Know how to add text to a page.</li> <li>• Know how open previously saved worked.</li> <li>• Know how to add animation to a story.</li> <li>• Know how to save changes.</li> <li>• Know how to add sound to a story.</li> <li>• Know how to add a voice recording to a story.</li> <li>• Know how to create music for a story.</li> <li>• Know how to add a background to a story.</li> <li>• Know how to copy and paste a page of a story.</li> <li>• Know how to add extra pages to an ebook.</li> <li>• Know how to share my ebook on a display board.</li> <li>• <b>Year 2 Expectations</b></li> <li>• Know and explain what rows and columns are in a spreadsheet.</li> <li>• Know how to open, save and edit and spreadsheet.</li> <li>• Know how to add allocate images a value.</li> <li>• Know how to add the count tool to count items.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Year 3 Expectations</b></li> <li>• Know what PowerPoint is.</li> <li>• Know how to open PowerPoint.</li> <li>• Know how to create a page in a presentation by adding text, formatting it and adding shapes.</li> <li>• Know how to add media to a presentation by changing the design of the slides, inserting a new slide, inserting pictures, editing pictures and inserting video and audio.</li> <li>• Know how to use animations and transitions in a presentation.</li> <li>• Know how to add timings to a presentation.</li> <li>• Know how to present using a slideshow.</li> <li>• Know how to create a presentation linked to a curriculum topic.</li> <li>• <b>Year 4 Expectations</b></li> <li>• Know how to use the number formatting tools within 2Calculate to appropriately format numbers.</li> <li>• Know how to add a formula to a cell to automatically make a calculation in that cell.</li> <li>• Know how to use the timer, random number and spin button tools.</li> <li>• Know how to combine tools to make fun ways to explore number.</li> <li>• Know how to use a series of data in a spreadsheet to create a line graph.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Year 5 Expectations</b></li> <li>• Know how to search a database to answer questions correctly.</li> <li>• Know how to enter data into a class database.</li> <li>• Know how to create their own database and add records to their database.</li> <li>• Know what a database field is and how to correctly add field information.</li> <li>• Know how to word questions so that they can be effectively answered using a search of their database.</li> <li>• Know what a word processing tool is for.</li> <li>• Know how to create a word processing document altering the look of the text and navigating around the document.</li> <li>• Know how to add images to a word document.</li> <li>• Know how to edit images to reduce their file size.</li> <li>• Know how to wrap images and text.</li> <li>• Know how to add appropriate text and format in a suitable way.</li> <li>• Know how to use bullet points and numbering.</li> <li>• Know how to add text boxes and shapes.</li> <li>• Know how to consider paragraph formatting such as line spacing.</li> <li>• Know how to use page breaks, headers and footers.</li> <li>• Know how to add hyperlinks to places in the document and to an external website.</li> </ul>



- Know how to use copying and pasting to help make spreadsheets.
- Know how to automatically total rows and columns.
- Know how to use images in a spreadsheet.
- Know how to use a spreadsheet to calculate.

- Know how to use a line graph for practical purposes.
- Know how to plan actions using a spreadsheet.
- Know how to use the currency formatting in 2Calculate.
- Know how to allocate values to images and to use these to explore place value.
- Know how to use a spreadsheet in 2Calculate to check understanding of a mathematical concept.
- Know how to plan actions using a spreadsheet.
- Know how to use the currency formatting in 2Calculate.
- Know how to allocate values to images and to use these to explore place value.
- Know how to use a spreadsheet in 2Calculate to check understanding of a mathematical concept.

- Know how to add tables to present information.
- Know how to edit properties of tables.
- Know how to add word art for a heading.
- Know how to use a Word template and edit it appropriately.
- Know how to format a page using a combination of
  - images, headers and columns.
  - Know how to group objects.
  - Know how to lasso text to cut and past within a page.
  - Know how to save a documents so that it cannot be edited.
- **Year 6 Expectations**
- Know some uses of a spreadsheet and how to navigate using cell references.
- Know how to enter data into cells.
- Know how to carry out basic calculations on a spreadsheet.
- Know how to use the series fill function.
- Know how using formulae allows the data to change and the calculations to update automatically.
- Know how to use a spreadsheet to model a situation and to solve a problem.
- Know how to use the SUM function.
- Know how to present data in a spreadsheet by converting text to tables and
  - splitting cells.
  - Know what is meant by a delimiter.
  - Know how to sort data.



			<ul style="list-style-type: none"><li>• Know how to incorporate formulae for percentages, averages, max and min into their spreadsheets.</li><li>• Know some shortcuts that help to make data meaningful.</li><li>• Know that there are ways to represent their data graphically and that Excel can make these calculations for them.</li></ul>
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