

## Computing Objectives and Sticky Knowledge by Year Group

Objectives highlighted in yellow show the 'sticky / essential knowledge' for each year group.

Terminology in bold is "sticky vocabulary" from the National Curriculum.

Links to specific lessons can be found in the Purple Mash Computing Scheme of Work.

[https://www.purplemash.com/#tab/teachers/computing\\_sow](https://www.purplemash.com/#tab/teachers/computing_sow)

### EYFS

EYFS NC Objectives	
	<p>Computing in Foundation One is learnt through experiences - children have access to beebots, talking postcards, remote controlled cars, interactive games on the whiteboard and discussions about experiences from home, for example technology in the home.</p>
<b>Programming</b>	<p>Give instructions to a friend and begin to use the terms left/right and forwards/backwards.            Give instructions or control a device to guide it around a shape/mat.            Predict what will happen when the device is given an instruction (forwards/backwards and left/right).</p> <p>I can give instructions to control my friend/device            I can use positional vocabulary- forwards, backwards, left and right</p>
<b>Data handling</b>	<p>Talk about the data shown on a pictogram</p> <p>I can use the pictogram to identify which eye colour most children in the class have.</p>
<b>Multimedia</b>	<p>Begin to select and use technology for a certain purpose.            Capture simple images.            Record simple sounds (talking postcards)            Move objects on a screen (2 paint)</p> <p>I can use technology (ipad) to capture simple images and videos.            I can use a talking postcard to record my voice            I can use my fingers to move an object on the screen (2 paint)</p>

<p>Using technology</p>	<p>Talk about some technology used at home and in school. I can draw one type of technology in my home. Operate simple equipment including remote control toys/walkie talkies. I can operate a device using remote controls.</p>
<p>Online -safety</p>	<p>Esafety powerpoint Circle time on kind and unkind words. I can tell an adult if I am worried when I am using the internet. Talk about why it is important to be kind and polite.</p>

Year 1

Area of learning	NC Objectives	
Programming Unit 1.7	<ul style="list-style-type: none"> <li>· Give instructions to a friend and also follow their instructions to move around. (Lesson 1)</li> <li>· Describe what happens when I press buttons on a robot. (Unit 1.5)</li> <li>· Press the buttons in the correct order to make my robot do what I want.</li> <li>· Describe the actions I will need to make something happen and begin to use the word <b>algorithm</b>. (Lesson 2)</li> <li>· Begin to <b>predict</b> what will happen for a short sequence of instructions.</li> <li>· Begin to use software/apps to create movement and patterns on a screen.</li> <li>· Begin to use the word <b>debug</b> when I try to correct mistakes in a program.</li> </ul>	
Data Handling Autumn 2 Unit 1.3 & 1.8	<ul style="list-style-type: none"> <li>· Sort different kinds of information and present it to others.</li> <li>· Add data to a pictogram, table or simple spreadsheet and talk about the information involved.</li> </ul>	
Multimedia Spring 1 Unit 1.6	<ul style="list-style-type: none"> <li>· Create text and graphics with different tools and resources. (Lesson 1)</li> <li>· Use the keyboard or a word bank on my computer or digital device to enter text. (Lesson 1)</li> <li>· Use a digital device to take a picture.</li> <li>· Make and play back an audio recording using a digital device.( Lesson 3)</li> <li>· Save information in a designated place and retrieve it again. (Unit 1.1 Lesson 2)</li> </ul>	
Using Technology Spring 2 Unit 1.9	<ul style="list-style-type: none"> <li>· Recognise ways that technology is used in my home, classroom and community. Lesson 2)</li> <li>· Begin to identify and describe some of the benefits of using technology. (Lesson 1)</li> <li>· Contribute to both creating and delivering a collaborative presentation.</li> </ul>	
Online - safety	<ul style="list-style-type: none"> <li>· Keep my password private.</li> <li>· Describe what personal information is.</li> </ul>	

Summer 1 Unit 1.1	<ul style="list-style-type: none"><li>· Tell an adult when I see something unexpected or worrying online.</li><li>· Talk about why it is important to be kind and polite.</li><li>· Recognise what is an age -appropriate website.</li></ul>	
----------------------	--	--

## Year 2

Area of learning	NC Objectives	
Programming Unit 2.1	<ul style="list-style-type: none"> <li>· Give instructions to a friend (using forward, back, left and right) and physically follow their instructions. (Unit 1.1 Lesson 1)</li> <li>· Describe the order I need to do things in order to make something happen and talk about this as an algorithm. (Lessons 1 &amp; 2)</li> <li>· Program a robot (or piece of software) to do a particular task. (Lessons 3,4&amp;5)</li> <li>· Look at someone else's program and predict what will happen when it is run.</li> <li>· Watch a program execute and identify any errors, then suggest ways to debug it. (Lesson 6)</li> </ul>	
Multimedia Spring 1 Unit 2.8	<ul style="list-style-type: none"> <li>· Use technology to organise and present my ideas in different ways. (Lesson 1,2&amp;4)</li> <li>· Use the keyboard on my device to add, delete and space text for others to read.</li> <li>· Change font size and colour and understand bold, italic and underline.</li> <li>· Capture and play back a video on a digital device.</li> <li>· Edit moving images and sounds in simple ways. (Lesson 4)</li> <li>· Save and open files on the digital device I use.</li> </ul>	
Using Technology Spring 2 Unit 2.5	<ul style="list-style-type: none"> <li>· Give reasons why I use technology in my home, in the classroom and outside of school.</li> <li>· Identify benefits of using technology including finding useful information and communicating with people. (Lesson 1 &amp; 3) (Unit 3.5 also)</li> <li>· Present to an audience. (Unit 2.8 Lessons 1-4)</li> </ul>	
Online safety Summer 1 Unit 2.2	<ul style="list-style-type: none"> <li>· Explain why I need to keep my password and personal information private.</li> <li>· Describe the things that happen online that I must tell an adult about.</li> <li>· Talk about the importance of being kind and polite in real life and online.</li> <li>· Know that not everyone on the internet is who they say they are.</li> </ul>	

Data Handling Autumn 2 Unit 2.3	<ul style="list-style-type: none"><li>· Talk about some of the different ways I use technology to collect information, including a camera, microscope, sound recorder or data-logger.</li><li>· Input data into a simple spreadsheet. (Lessons 1,2&amp;3)</li><li>· Create and save a chart or graph using the data I have collected. (Lesson 4)</li><li>· Talk about the data that is shown in my chart or graph.</li></ul>	
---------------------------------------	--	--

Year 3

Area of learning	NC Objectives	
Programming Unit 3.1	<ul style="list-style-type: none"> <li>· Break an open-ended problem up into smaller parts in order to make programming easier. (Lesson 1)</li> <li>· Put programming commands into a <b>sequence</b> to achieve a specific outcome. (Lesson 2)</li> <li>· <b>Keep testing a program and recognise when I may need to debug it.</b></li> <li>· Use <b>repeat commands</b>. (Lessons 3 &amp; 4)</li> <li>· <b>Describe the algorithm I will need for a simple task.</b> (Lesson 4)</li> </ul>	
Multimedia Autumn 2 Unit 3.9	<ul style="list-style-type: none"> <li>· Create different effects with a range of technology tools.</li> <li>· Combine a mixture of text, graphics and sound to communicate my ideas. (Lessons 1-6)</li> <li>· <b>Use appropriate keyboard commands to amend text on my device, including making use of a spellcheck.</b> (Unit 3.4)</li> </ul>	
Data Handling Autumn 1 Units 3.3, 3.6 & 3.8	<ul style="list-style-type: none"> <li>· Talk about the different ways that data can be organised. (Unit 3.8 Lesson 1 &amp; 2)</li> <li>· Search a ready-made database to answer various types of questions.</li> <li>· Add data to a ready-made database. (Unit 3.6 Lessons 1-3)</li> <li>· Search a database for specific information.</li> <li>· Sort data in a spreadsheet or database for a specific purpose. (Unit 3.3 Lessons 1-3)</li> <li>· <b>Create bar, pie and line graphs from a spreadsheet or database.</b> (Unit 3.8 Lessons 1 &amp; 2)</li> </ul>	
Using Technology Spring 2 Unit 3.5	<ul style="list-style-type: none"> <li>· <b>Save and retrieve work on the school network or my own digital device.</b></li> <li>· Describe some of the ways to communicate safely with others online.</li> <li>· Describe the world wide web as the part of the internet that contains websites.</li> <li>· Use search tools to find and use an age-appropriate website.</li> <li>· Add and open e-mail attachments.</li> <li>· Create a presentation aimed at a specific audience.</li> </ul>	

<p>Online -safety Summer 1 Unit 3.2</p>	<ul style="list-style-type: none"><li>· Explain what makes a secure password and why it is important.</li><li>· Protect my personal information when I do different things online. (Lesson 1)</li><li>· Use the safety features of websites as well as reporting concerns to an adult.</li><li>· Recognise and describe websites and games appropriate for my age. (Lesson 2)</li><li>· Understand the need to make good choices about the time I spend online.</li><li>· Know to ask an adult before downloading files and games from the internet.</li></ul>	
---	--	--

Year 4

Area of learning	NC Objectives	
Programming Unit 4.1 Unit 4.5	<ul style="list-style-type: none"> <li>· Use logical thinking to solve an open-ended problem by <b>breaking it up into smaller parts.</b></li> <li>· Use an efficient procedure to <b>simplify a program.</b></li> <li>· Use a sensor to detect a change which can select an action within my program.</li> <li>· Know that on-going testing of a program is important while it is still being put together.</li> <li>· <b>Recognise an error in a program and debug it.</b></li> <li>· <b>Recognise that an algorithm can help me to sequence more complex programs.</b></li> </ul>	
Online - safety Summer 1 Unit 4.2	<ul style="list-style-type: none"> <li>· <b>Choose a secure password when I am using a website. (Lesson 1)</b></li> <li>· <b>Talk about the ways I can protect myself and my friends from harm online, both in and out of school. (lesson 1)</b></li> <li>· Use the safety features of websites as well as reporting concerns to an adult.</li> <li>· Know that anything I post online can be seen by others.</li> <li>· Choose websites and games that are appropriate for my age.</li> <li>· Understand the need to ask a trusted adult before downloading files and games from the internet. (lesson 2)</li> <li>· Comment positively and respectfully to and about others online.</li> </ul>	
Multimedia Autumn 2 Unit 4.4 Unit 4.8	<ul style="list-style-type: none"> <li>· <b>Use a keyboard confidently and make use of a spellcheck to write and review my work.</b></li> <li>· Use an appropriate tool to share my work and collaborate.</li> <li>· Give constructive feedback to others to help them improve their work and refine my own work.</li> </ul>	
Data Handling Autumn 1	<ul style="list-style-type: none"> <li>· Organise a range of data in different ways. (Lesson 3)</li> <li>· Collect data and identify where it might be inaccurate. (lesson 4)</li> <li>· <b>Plan, create and search a database to answer a range of questions. (Lesson 2)</b></li> </ul>	

<p>Unit 4.3</p>	<ul style="list-style-type: none"> <li>· Create a formula using + - * /. (lesson 1)</li> <li>· Copy and paste a formula within a spreadsheet. (Lesson 1)</li> <li>· Change some aspects of the appearance of a spreadsheet eg colour, cells, borders etc.</li> <li>· Choose the best way to present data to an audience. (Lesson 3)</li> </ul>	
<p>Using Technology Spring 1 Unit 4.7</p>	<ul style="list-style-type: none"> <li>· Know whether a resource I am using is on the internet, the school network or my own device.</li> <li>· Identify key words to use when searching safely on the internet. (Lessons 1-3)</li> <li>· Consider the reliability of information I read on the internet. (Lessons 1-3)</li> <li>· Create a hyperlink to a resource on the internet.</li> <li>· Plan, create and adapt a presentation for a specific audience.</li> </ul>	

Year 5

Area of learning	NC Objectives	
Programming Unit 5.1	<ul style="list-style-type: none"><li>· Decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program. (Lessons 1-3)</li><li>· Refine a procedure using repeat commands to improve a program. (Lesson 3 &amp; 4)</li><li>· Use a variable to increase programming possibilities.</li><li>· Change an input to a program to achieve a different output. (Lesson 5)</li><li>· Use if and then commands to select an action.</li><li>· Use logical reasoning to detect and debug mistakes in a program. (Lesson 6)</li></ul>	
Multimedia Autumn 2	<ul style="list-style-type: none"><li>· Select, use and combine text, photo, sound and video editing tools to create effects that will have an impact on others.</li><li>· Review and improve my own work and support others to improve their work.</li></ul>	
Data Handling Autumn 1  Unit 5.3 Unit 5.4	<ul style="list-style-type: none"><li>· Create and then use a spreadsheet and database to collect and record data.</li><li>· Present a range of data in an appropriate way.</li><li>· Talk about mistakes in data and suggest how it could be checked.</li><li>· Use simple functions to solve problems eg sum, average</li><li>· Change data in a formula to answer 'What if...?' questions.</li><li>· Use graphs to analyse data.</li></ul>	
Using Technology Spring 1 Unit 5.2	<ul style="list-style-type: none"><li>· Describe different parts of the internet and the opportunities for communication and collaboration. (Lesson 4)</li><li>· Use a search engine to find appropriate information and check its reliability. (Lesson 3)</li><li>· Recognise and evaluate different types of information I find on the internet.</li></ul>	

	<ul style="list-style-type: none"> <li>· Describe the different parts of a webpage.</li> </ul>	
<p>Online - safety Spring 2 Unit 5.2</p>	<ul style="list-style-type: none"> <li>· Protect my password and other personal information. (Lesson 2)</li> <li>· Explain why I need to protect myself and my friends and the best ways to do this, including reporting concerns to an adult. (Lesson 1)</li> <li>· Know that anything I post online can be seen, used and may affect others. (Lesson 2)</li> <li>· Talk about the dangers of spending too long online or playing a game.</li> <li>· Communicate both kindly and respectfully.</li> <li>· Discuss the importance of choosing an age-appropriate website or game. (Lesson 1)</li> <li>· Explain why I need to protect my computer or device from harm.</li> <li>· Know which resources on the internet I may download and use.</li> </ul>	

Year 6

Area of learning	NC Objectives	
Programming Unit 6.1	<ul style="list-style-type: none"> <li>· Deconstruct a problem into smaller steps, recognising similarities to solutions used before. (Lessons 1-4)</li> <li>· Explain and program each of the steps in my algorithm. (Lesson 6)</li> <li>· Evaluate the effectiveness and efficiency of my algorithm.</li> <li>· Recognise when I need to use a variable to achieve a required output. (Lesson 5)</li> <li>· Use different inputs to control a device or action and predict what will happen. (Lesson 5)</li> <li>· Use logical reasoning to detect and debug errors in algorithms and programs. (Lessons 1,2,4)</li> </ul>	
Data Handling Autumn 1  Unit 6.3 Unit 6.9	<ul style="list-style-type: none"> <li>· Select the most effective tool to collect data for my investigation.</li> <li>· Check the data I collect for accuracy and plausibility.</li> <li>· Interpret the data that I collect.</li> <li>· Present the data that I collect in an appropriate way.</li> <li>· Use the skills I have developed to interrogate a database.</li> <li>· Identify data errors, patterns, &amp; sequences</li> </ul>	
Using Technology Spring 1 Unit 6.6	<ul style="list-style-type: none"> <li>· Describe the internet services I need to use for different purposes. (Lesson 1)</li> <li>· Describe how information is transported on the internet. (Lesson 1)</li> <li>· Select an appropriate tool to communicate and collaborate online.</li> <li>· Describe the way search results are selected and ranked.</li> <li>· Check the reliability of a website.</li> <li>· Talk about copyright and acknowledge the sources of information that I find online.</li> </ul>	

	<ul style="list-style-type: none"> <li>· Prepare and present from a variety of sources choosing from a variety of software. (Lesson 3)</li> </ul>	
<p>Multimedia Unit 6.4 Unit 6.5</p>	<ul style="list-style-type: none"> <li>· Talk about audience, atmosphere and structure when planning a particular outcome.</li> <li>· Combine a range of media, recognising the contribution of each to achieve a particular outcome.</li> <li>· Explain why I selected a particular online tool for a specific purpose.</li> </ul>	
<p>Online -safety Spring 2 Unit 6.2</p>	<ul style="list-style-type: none"> <li>· Protect my password and other personal information. (Lesson 1)</li> <li>· Explain the consequences of sharing too much about myself online. (Lesson 2)</li> <li>· Support my friends to protect themselves and make good choices online, including reporting concerns to an adult.</li> <li>· Explain the consequences of spending too much time online or playing an online game. (Lesson 3)</li> <li>· Explain the consequences to myself and others of not communicating kindly and respectfully. (Lesson 2)</li> <li>· Protect my computer or device from harm on the internet. (Lessons 1 &amp; 2)</li> </ul>	