

### Computing Matrix

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>1</b>	<b>Computing systems and networks</b>	<b>Programming 1</b>	<b>Programming 2</b>	<b>Creating Media</b>	<b>Data Handling</b>	<b>Skills showcase</b>
	<b>Improving Mouse Skills</b> <ul style="list-style-type: none"> <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</li> </ul>	<b>Algorithms Unplugged</b> <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> </ul>	<b>Beebots</b> <ul style="list-style-type: none"> <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>• 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> </ul>	<b>Digital Imagery</b> <ul style="list-style-type: none"> <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>• 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>	<b>Introduction to Data</b> <ul style="list-style-type: none"> <li>• Use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> <li>• Recognise common uses of information technology beyond school</li> </ul>	<b>Rocket to the Moon</b> <ul style="list-style-type: none"> <li>• Use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> <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> </ul>
<b>Year 1 Online Safety</b>						
	<b>Using the Internet Safely</b> <ul style="list-style-type: none"> <li>• Understand what the internet is</li> <li>• Know how to offer advice to anyone that is being treated unkindly online</li> <li>• Know who to go to when I need help and advice with online matters</li> </ul>	<b>Online Emotions</b> <ul style="list-style-type: none"> <li>• Recall what the internet is</li> <li>• Recognise advice to stay happy and safe online</li> <li>• Provide advice on ways to stay happy and safe online</li> </ul>	<b>Always Be Kind and Considerate</b> <ul style="list-style-type: none"> <li>• Recall the top tips for using the internet safely</li> <li>• Recognise how actions on the internet can affect others</li> <li>• Understand the ways to use the top tips to be in control of my actions when on the internet</li> </ul>	<b>Posting and Sharing Online</b> <ul style="list-style-type: none"> <li>• Understand the meaning of ‘sharing’ and ‘posting’ information online</li> <li>• Understand what ‘digital footprint’ means</li> <li>• Recognise the information types of my own digital footprint</li> </ul>		

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
2	<b>Computing systems and networks 1</b>	<b>Computing systems and networks 2</b>	<b>Programming 1</b>	<b>Programming 2</b>	<b>Data handling</b>	<b>Creating Media</b>
	<b>What is a computer?</b> <ul style="list-style-type: none"> <li>Recognise common uses of information technology beyond school</li> <li>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> <li>Use logical reasoning to predict the behaviour of simple programs</li> </ul>	<b>Word Processing</b> <ul style="list-style-type: none"> <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</li> </ul>	<b>Algorithms and Debugging</b> <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>Solve problems by decomposing them into smaller parts</li> <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 and repetition in programs</li> <li>Use logical reasoning to explain how some simple algorithms work</li> <li>Use logical reasoning to predict the behaviour of simple programs</li> </ul>	<b>Programming: Scratch JR</b> <ul style="list-style-type: none"> <li>Use logical reasoning to predict the behaviour of simple programs</li> <li>Create and debug simple programs</li> <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> </ul>	<b>International Space Station</b> <ul style="list-style-type: none"> <li>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> </ul>	<b>Stop Motion</b> <ul style="list-style-type: none"> <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</li> </ul>
<b>Year 2 Online Safety</b>						
	<b>What happens when I post online?</b> <ul style="list-style-type: none"> <li>Explain what online information is</li> <li>Know what is safe to share online</li> <li>Know who to talk to if something is shared that makes me feel sad or worried</li> </ul>	<b>How do I keep my things safe online?</b> <ul style="list-style-type: none"> <li>Know what passwords are for</li> <li>Explain how to create a strong password</li> <li>Know what information is private and can explain how I can keep this private</li> </ul>	<b>Who should I ask?</b> <ul style="list-style-type: none"> <li>Understand why I ask permission</li> <li>Explain who I need to ask permission from before sharing content online</li> <li>Explain people's feelings if I share things online without their permission</li> </ul>	<b>It's my choice</b> <ul style="list-style-type: none"> <li>Explain why I have the right to say no</li> <li>Know who to ask for help if I am unsure or feel pressure to do something</li> <li>Explain why I need to ask a trusted adult before clicking 'accept'</li> </ul>	<b>Is it true?</b> <ul style="list-style-type: none"> <li>Explain the difference between things that are 'imaginary', 'made up' or 'make believe' and those that are true or real</li> <li>Explain why some information I find online may not be true</li> <li>Explain why people may post things online that are not true</li> </ul>	

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
3	<b>Computing systems and networks</b>	<b>Computing systems and networks</b>	<b>Programming</b>	<b>Creating media</b>	<b>Handling data</b>	<b>Computing systems and networks</b>
	<b>Emailing</b> <ul style="list-style-type: none"> <li>Understand computer networks, including the internet;</li> <li>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</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>Journey Inside a Computer</b> <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>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 logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> </ul>	<b>Programming Scratch</b> <ul style="list-style-type: none"> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <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 outputs</li> </ul>	<b>Digital Imagery</b> <ul style="list-style-type: none"> <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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</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> <li>Solve problems by decomposing them into smaller parts</li> <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> </ul>	<b>Comparison Cards Databases</b> <ul style="list-style-type: none"> <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>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>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>Networks</b> <ul style="list-style-type: none"> <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>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> </ul>
	<b>Year 3 Online Safety</b>					
	<b>Beliefs, opinions and facts on the internet</b> <ul style="list-style-type: none"> <li>Understand that not all information on the internet is true</li> <li>Explain the terms 'belief', 'opinion' and 'fact'</li> <li>Use key phrases within a search engine to produce accurate results</li> </ul>	<b>When being online makes me upset</b> <p>Understand that being on the internet can affect my mood</p> <p>Recognise steps to take in dealing with matters on the internet that upset me</p> <p>Explore other methods to seek help when dealing with issues on the internet</p>	<b>Sharing of Information</b> <ul style="list-style-type: none"> <li>Understand what 'privacy settings' are</li> <li>Recognise that devices can communicate with one another to share personal information</li> <li>Explain what 'autocomplete' is and how to choose the best suggestion</li> </ul>	<b>Rules of Social Media Platforms</b> <ul style="list-style-type: none"> <li>Understand what social media platforms are used for</li> <li>Recognise why social media platforms are age-restricted</li> <li>List some top tips on using social media platforms for people to stay safe</li> </ul>		

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
4	<b>Computer systems and Networks</b>	<b>Programming 1</b>	<b>Creating Media</b>	<b>Skills Showcase</b>	<b>Data Handling</b>	<b>Programming 2</b>
	<b>Collaborative Learning</b> <ul style="list-style-type: none"> <li>Understand computer networks, including the internet;</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> <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> </ul>	<b>Further Coding with Scratch</b> <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 logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> </ul>	<b>Website Design</b> <ul style="list-style-type: none"> <li>Understand computer networks including the internet; how they can provide multiple services, such as the world wide web and the opportunities they offer</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>HTML</b> <ul style="list-style-type: none"> <li>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems</li> <li>Solve problems by decomposing them into smaller parts</li> </ul>	<b>Investigating Weather</b> <ul style="list-style-type: none"> <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>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> </ul>	<b>Computational Thinking</b> <ul style="list-style-type: none"> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <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> </ul>
	<b>Year 4 Online Safety</b>					
	<b>What happens when I search online?</b> <ul style="list-style-type: none"> <li>Describe how to search for information on search engines, social media and image and video sites</li> <li>Make judgments about the accuracy of the information I am presented with</li> </ul>	<b>How do companies encourage us to buy online?</b> <ul style="list-style-type: none"> <li>Describe some methods used by companies such as 'in-app purchases' and 'pop-ups'</li> <li>Recognise some of these when they appear</li> <li>Think about ways to avoid purchases</li> </ul>	<b>Fact, opinion or belief</b> <ul style="list-style-type: none"> <li>Explain the difference between facts, opinions and beliefs</li> <li>Make my own judgments about what I read and see online</li> </ul>	<b>What is a bot?</b> <ul style="list-style-type: none"> <li>Explain what a 'bot' is</li> <li>Provide examples of bots</li> <li>Describe the benefits and the risk of using bots now and in the future</li> </ul>	<b>What is my tech timetable like?</b> <ul style="list-style-type: none"> <li>Explain how technology can be both a positive and negative distraction</li> <li>Recognise the amount of time I spend on technology</li> <li>Suggest strategies to help limit time spent on technology</li> </ul>	

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
5	<b>Creating media</b>	<b>Programming 1</b>	<b>Computing systems and networks</b>	<b>Programming 2</b>	<b>Data handling</b>	<b>Skills Showcase</b>
	<b>Search Engines</b> <ul style="list-style-type: none"> <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) to create content that accomplishes given goals, including collecting 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>Sonic Pi</b> <ul style="list-style-type: none"> <li>Design, write and debug programs that accomplish specific goals</li> <li>Use sequence, selection, and repetition in programs, work with variables and various forms of input and output</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 program</li> </ul>	<b>Micro:bit</b> <ul style="list-style-type: none"> <li>Design, write and debug programs that accomplish specific goals use sequence, selection, and repetition in programs</li> <li>Solve problems by decomposing them into smaller parts</li> <li>Use sequence and repetition in programs; work with 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>Work with variables and various forms of input</li> </ul>	<b>Stop motion animation</b> <ul style="list-style-type: none"> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.</li> <li>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller part.</li> </ul>	<b>Mars Rover 1</b> <ul style="list-style-type: none"> <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> </ul>	<b>Mars Rover 2</b> <ul style="list-style-type: none"> <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>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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> </ul>
	<b>Year 5 Online Safety</b>					
	<b>Online protection</b> <ul style="list-style-type: none"> <li>Understand the importance of keeping passwords safe</li> <li>Identify that passwords are needed for access to 'apps'</li> <li>Explore how apps require permission to access private information</li> <li>Know how to alter the permissions apps require</li> </ul>	<b>Online communication</b> <ul style="list-style-type: none"> <li>Understand different types of online communication</li> <li>Become aware of some of the different types of online communication</li> <li>Recognise the positive and negative forms of online communication</li> </ul>	<b>Online Reputation</b> <ul style="list-style-type: none"> <li>Understand why people search personal information about others online</li> <li>I know how to search for personal information about others online</li> <li>I can form opinions about the reliability of the information about a person</li> </ul>	<b>Online Bullying</b> <ul style="list-style-type: none"> <li>Recognise differences between online and offline bullying</li> <li>Describe some of the differences between online and offline bullying</li> <li>Identify ways to help those being bullied online</li> <li>Recall organisations and people who can help with online bullying issues</li> </ul>	<b>Online Health</b> <ul style="list-style-type: none"> <li>Identify the advantages and disadvantages technology has to health (mental and/or physical)</li> <li>Research advice and ways to support others with their online health and wellbeing</li> <li>Know where I can go to for support if my wellbeing is being negatively affected by technology</li> </ul>	

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
6	<b>Creating Media</b> History of Computers <ul style="list-style-type: none"> <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>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> </ul>	<b>Computing systems and networks</b> Bletchley Park <ul style="list-style-type: none"> <li>Solve problems by decomposing them into smaller parts</li> <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>Select, use and combine a variety of software [...] 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> </ul>	<b>Programming</b> Intro to Python <ul style="list-style-type: none"> <li>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>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> </ul>	<b>Data handling</b> Big Data 1 <ul style="list-style-type: none"> <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> </ul>	<b>Data handling</b> Big Data 2 <ul style="list-style-type: none"> <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>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> </ul>	<b>Skills Showcase</b> Inventing a Product <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>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> </ul>
	<b>Year 6 Online Safety</b>					
	<b>Life Online</b> <ul style="list-style-type: none"> <li>Describe scenarios that could make someone feel sad, worried, uncomfortable or frightened</li> <li>Give examples of how to get help online and offline</li> <li>Explain the importance of asking for help</li> </ul>	<b>Sharing Online</b> <ul style="list-style-type: none"> <li>Describe how to be kind and show respect for others online</li> <li>Know the risk involved with sharing things online even if it is sent privately</li> </ul>	<b>Creating a positive online reputation</b> <ul style="list-style-type: none"> <li>Describe what a positive online reputation is</li> <li>Explain strategies to create a positive online reputation</li> </ul>	<b>Capturing Evidence</b> <ul style="list-style-type: none"> <li>Know a range of strategies to collect evidence</li> <li>Know who to share evidence with to help me</li> </ul>	<b>Password Protection</b> <ul style="list-style-type: none"> <li>Know how to create a strong password</li> <li>Know a range of strategies for managing my passwords</li> <li>Explain what to do if my password is shared, lost or stolen</li> </ul>	<b>Think before you click</b> <ul style="list-style-type: none"> <li>Describe simple ways to increase my privacy settings</li> <li>Explain why I should keep my software updated</li> <li>Describe strategies to identify scams</li> </ul>