



Subject: **Computing**

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Moorside Primary School, Lancaster

National Curriculum 2022-23

Background Information and Implementation

From Reception to Y2, computing is taught by the children's class teacher through specific computing lessons. Children also practice their skills when using computers (including a range of devices) to enhance learning in other subjects.

From Y3 to Y6, computing is taught by a computing teacher. Children also continue to make use of computers in other subjects.

Online safety is taught both in the context of specific computing lessons, explored in assemblies and class discussions or through part of the Kidsafe programme. The table below shows where online safety is taught as part of computing lessons. In computing lessons, the children are also given the opportunity to use a range of technology and multi-media to present their work, including posters, presentations or videos to teach others about an online safety message. When taught in this context a piece of work is produced as an outcome to show the learning which has taken place.

Where online safety is taught in other contexts, it is included on a separate table below to show coverage across the terms of the year. Online safety content is based on 'Project Evolve' which provides 'I can' statements covering eight strands of learning. More detail is provided in the Safeguarding section of our website.

	DIGITAL LITERACY	INFORMATION TECHNOLOGY	COMPUTER SCIENCE
Year 1 Objectives	<ol style="list-style-type: none"> 1. Recognise common uses of information technology beyond school. 2. Understand the rules and responsibilities outlined by the school's acceptable use policy and begin to understand where to go for help when they have concerns. 3. Develop an understanding of how to keep their personal information private and understand they need to use technology safely and respectfully. 	<ol style="list-style-type: none"> 4. Use technology with support, to create, store and retrieve digital content such as text and images. 5. Use a simple search to find information or files. 6. Develop understanding of how simulations work through exploring simple examples. 	<ol style="list-style-type: none"> 7. Understand what algorithms are and develop strategies to help find bugs in them. 8. Make very simple programs.
Year 1 Content	<p>Autumn:</p> <ul style="list-style-type: none"> • Online Safety Strand 1 through Kidsafe- Devices, ratings, worries and getting help <p>Spring</p> <ul style="list-style-type: none"> • Online Safety Strand 8 – Copyright and Ownership • Strand 2 - Online Relationships • Strand 3, - Online Reputations • Strand 7 - Privacy and Security <p>Both areas addressed through Hector's World</p> <ul style="list-style-type: none"> • Strand 4 - Online Bullying 	<p>Autumn:</p> <ul style="list-style-type: none"> • Logging on/off • Use 'Paint' and maths games to develop accurate mouse control <p>Spring:</p> <ul style="list-style-type: none"> • Create documents knowing that my work belongs to me <p>Summer:</p> <ul style="list-style-type: none"> • Navigate a website based on Topic – Make use of search engines 	<p>Spring:</p> <ul style="list-style-type: none"> • Espresso Coding: Unit 1- Simple algorithms

Year 2 Objectives	<ol style="list-style-type: none"> 1. Know their responsibilities from their school's acceptable use policy and how to report any concerns they have. 2. Recognise situations using technology and the internet involving content and contact that are not safe and know where to go for help. 3. Begin to develop an understanding of the importance of computers and the internet to communicate. 4. Develop their knowledge of the technology used in everyday life in a range of situations and be able to discuss their ideas. 	<ol style="list-style-type: none"> 5. Use technology with purpose to create, store, organise, retrieve and manipulate digital content. 6. Learn to make a range of simple digital assets such as presentations, movies, audio files and graphs. 7. Navigate the web and carry out simple searches using suitable search engines and begin to understand that not everything on the internet is true. 8. Use simple simulations and understand how they work. 	<ol style="list-style-type: none"> 9. Use algorithms and know that they can be implemented as programs on devices. 10. Know what debugging is and find errors in their programs. 11. Understand that programs execute by following a precise set of instructions. 12. Create simple programs and further develop their strategies and logical thinking to find bugs and predict outcomes in their algorithms and programs.
Year 2 Content	<p>Autumn:</p> <ul style="list-style-type: none"> • Online Safety • Design e-safety poster: what could go wrong? SUPERHERO to the rescue! • Sessions with Kid Safe (Lisa Newton) <p>Keyboard Skills (BBC DANCEMAT)</p>	<p>Spring:</p> <ul style="list-style-type: none"> • Using the Internet: Navigate the web and carry out simple searches using suitable search engines and begin to understand that not everything on the internet is true. (research some facts about China topic to present in the next unit). • Digital Media: Learn to make a range of simple digital assets such as presentations, movies, audio files and graphs. 	<p>Summer:</p> <ul style="list-style-type: none"> • Programming Espresso Coding: Unit 2- Simple algorithms. Use skills to create own game
Year 3 Objectives	<ol style="list-style-type: none"> 1. Use technology safely and respectfully and have an understanding of how to keep information secure. 2. Realise the importance of reporting any concerns they have using the internet and other communication technologies, and know some ways in which they can do it. 3. Develop an understanding of what is acceptable and unacceptable online behaviour. 4. Realise that not all information on the internet is trustworthy and there is a need to verify its reliability. 	<ol style="list-style-type: none"> 5. Use a variety of software and devices to create digital assets such as programs, graphs and multimedia content for a defined purpose. 6. Develop their search strategies further by refining their use of keywords and starting to use appropriate key phrases and questions. 7. Use more complex simulations and understand the effects of changing variables. 	<ol style="list-style-type: none"> 8. Plan and write algorithms and programs using sequence and repetition and further develop their computational thinking strategies to solve problems and errors in their algorithms and programs. 9. Have knowledge and experience of using a range of different inputs and outputs. 10. Describe some of components of a computer network and some of the ways in which computer networks can be used.

Year 3 Content	<p>Autumn:</p> <ul style="list-style-type: none"> Refine keyboard, and introduce word-processing, skills as a prelude to creating the SMART poster in spring <p>Spring:</p> <ul style="list-style-type: none"> Online Safety understanding SMART. Taught in designated computing lessons and supported through work in classes: <p>Strand 1 - Self image and identity (Hectors World - class assembly)</p> <p>Strand 2 - Online relationships -</p> <p>Strand 3 -Online reputations</p> <p>Strand 4 - Online bullying -</p> <p>Strand 5 - Managing online information</p> <p>Strand 7 -Privacy and security-</p>	<p>Spring:</p> <ul style="list-style-type: none"> Digital Media <p>Design and make a SMART poster using word processing and publishing skills (Publisher) to promote key messages learnt in Online Safety lessons</p> <p>Summer</p> <ul style="list-style-type: none"> Digital Media: <p>Using computer software, use basic publishing skills to create a publication which is a user's guide to accompany their game.</p>	<p>Summer:</p> <ul style="list-style-type: none"> Programming <p>Learn skills needed to design and then create own maze game, using conditionals.</p>

Year 4 Objectives	<ol style="list-style-type: none"> Use technology respectfully, responsibly and safely, knowing how to keep their information and passwords secure. Know different ways of reporting concerns about content and contact involving the internet and other communication technologies. Have a greater understanding of what is acceptable and unacceptable online behaviour. Start to develop strategies to verify the reliability and accuracy of information on the internet and develop an awareness of copyright. 	<ol style="list-style-type: none"> Use and combine a variety of software and devices with increasing independence, to create a range of digital assets such as programs, databases, systems and multimedia content. Understand how Boolean operators can change searches and select appropriate information for their tasks. Use models and simulations to produce graphs and explore patterns and relationships. 	<ol style="list-style-type: none"> Design and write more complex algorithms and programs using sequence, repetition and selection. Further develop their computational thinking to help debug their programs and design and solve problems and tasks. Have a simple understanding of how search engines work. Develop their understanding of inputs and outputs further, demonstrating how they can use programs to control external devices such as sensors, motors and robots. Understand the difference between the internet and World Wide Web.

Year 4 Content	<p>Spring:</p> <ul style="list-style-type: none"> • Online Safety - Online Gaming • Kidsafe covering cyberbullying 	<p>Autumn:</p> <ul style="list-style-type: none"> • Programming Controlling devices and simulations. Linked to class-based learning topic <i>Engineering</i>. <p>Spring:</p> <ul style="list-style-type: none"> • Digital Media: Use Chromebooks and the Comic Life app to create a comic about an online gaming issue. – Link to Online Safety Themes can include: -contact with strangers -inappropriate content/age restrictions -unhealthy use/obsession 	<p>Summer:</p> <ul style="list-style-type: none"> • Programming Espresso Coding: Unit 4- Complex algorithms. Learn skills needed to design and create own game using variables, loops and repetitions.
Year 5 Objectives	<ol style="list-style-type: none"> 1. Use technology safely, respectfully and responsibly and continue to develop skills to identify risks involved with contact and content including developing an understanding of digital footprints. 2. Know a range of ways of reporting concerns about content and contact involving the internet and other communication technologies. 3. Understand what acceptable and unacceptable online behaviour is. 4. Use strategies to verify the reliability and accuracy of information on the internet and understand copyright. 	<ol style="list-style-type: none"> 5. Select, use and combine a range of software and use a wider range of devices to create a variety of digital assets such as programs, systems, databases, spreadsheets and multimedia content for a defined purpose. 6. Understand about the use of operators in searching and continue developing their effective search techniques by using Boolean operators in their searches. 7. Create simple spreadsheet models to investigate real life problems. 	<ol style="list-style-type: none"> 8. Design and write programs using sequence, repetition, selection and variables. 9. Develop greater understanding of how to use selection and repetition in more complex programs. 10. Understand how search engines work. 11. Further develop their computational thinking showing they can plan and decompose tasks; explain how the algorithms they write work and correct errors in their programs. 12. Plan and write programs to control external devices such as sensors and motors and explain about the inputs and outputs used. 13. Have an understanding of how a computer network works and the opportunities that it offers for communication and collaboration.

Year 5 Content	<p>Summer:</p> <ul style="list-style-type: none"> • Online Safety – Taught Unit in Computing Lessons <p>Online Bullying:</p> <ul style="list-style-type: none"> • Different types • Victim/ bystander/ bully • How to identify • How to get help/ help others <p>Online Safety – Covered in PSHE, Class and Assemblies</p>	<p>Autumn:</p> <ul style="list-style-type: none"> • Digital Media <p>Using computer software, include class-based learning and research to create animated presentations about Space which resemble a web page. (Power Point)</p> <p>Spring:</p> <ul style="list-style-type: none"> • Spreadsheet <p>Create simple spreadsheet models to investigate real life problems.</p> <p>Summer:</p> <ul style="list-style-type: none"> • Digital Media <p>Create visual concepts, using photography & computer software to communicate ideas that inspire, inform, and captivate consumers based on <i>Cyberbullying</i>. Link to Online Safety.</p> <p>Think about the audience, key facts and messages to give.</p>	<p>Spring:</p> <ul style="list-style-type: none"> • Programming <p>Espresso coding: Introduction to HTML or Python coding.</p>
	<ol style="list-style-type: none"> 1. Be competent users of technology using it safely, respectfully and responsibly and know about digital footprints and 'strong' passwords. 2. Demonstrate that they can identify the risks involved with content and contact and they know a wide range of ways of reporting any concerns they have. 3. Understand what acceptable and unacceptable online behaviour is. 4. Use strategies to verify and evaluate the reliability and accuracy of information on the internet and understand what copyright and plagiarism is and how it relates to their work. 	<ol style="list-style-type: none"> 5. Independently select, use and combine a wide range of software on a variety of devices. 6. Design and create a range of digital assets such as programs, systems and multimedia content for a defined purpose and audience. 7. Use advanced searches including the use of operators. 8. Create spreadsheet models to investigate real life problems, using their knowledge to make predictions. 	<ol style="list-style-type: none"> 9. Know how search engines work and what 'ranking' is when related to search engines. 10. Design and create more complex programs using sequence, repetition, selection and variables appropriately. 11. Develop their computational thinking can demonstrate that they can decompose and evaluate their tasks and correct errors in their algorithms and programs. 12. Be confident in their knowledge of inputs and outputs and plan and write programs to solve tasks to control external devices such as sensors and motors. 13. Know how different computer networks work, including the roles of the components and the opportunities and benefits that they offer for communication and collaboration. 14. Understand the difference between the internet and internet services.

Year 6 Content	<p>Autumn:</p> <ul style="list-style-type: none"> • Online Safety – Privacy and Security – Assembly – Sharing Pictures and Personal Information needs to be orange <p>Spring:</p> <ul style="list-style-type: none"> • Online Safety – Copyright and Ownership - Assembly • Online Safety - Social Media & Online Reputation - Assembly • Negatives and Positives • How to recognise addiction <p>Sessions with KS (Alison Lay): cyberbullying, social media</p>	<p>Spring:</p> <ul style="list-style-type: none"> • SPREADHSEETS 1 <p>Use Excel to plan a party on a budget and model quantities and costs</p> <ul style="list-style-type: none"> • 3D C.A.D. Design <p>Learn basic skills to be able to create 3D images.</p> <p>Summer:</p> <ul style="list-style-type: none"> • SPREADSHEETS 2 <p>Use Excel to create graphs and charts based on Social Media Survey. Compare and analyse charts with previous trends at Moorside and the UK.</p> <ul style="list-style-type: none"> • DIGITAL MEDIA <p>Create visual concepts, using computer software to communicate ideas that inspire, inform, and captivate consumers based on <i>Social Media</i>.</p>	<p>Autumn:</p> <ul style="list-style-type: none"> • Programming <p>Use complex algorithms to create a 3D computer game, solving problems, correcting errors and evaluating work.</p>