Computing Curriculum Overview

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| --- | --- | --- | --- |
| **Term** | **Autumn** | **Spring** | **Summer** |
| **Strand** | **Computing systems and networks** | **Programming** | **Creating media** |
| **Year 1** | Technology around us | Moving a robot | Digital writing |
| **Year 2** | Information technology around us | Robot algorithms | Making music |
| **Year 3** | Connecting computers | Sequencing sounds | Desktop publishing |
| **Year 4** | The internet | Repetition in games | Photo editing |
| **Year 5** | Selection in physical computing | Selection in quizzes | Video production |
| **Year 6** | Internet communication | Variables in games | **Data and Information-**Introduction to spreadsheets |

Computing Unit Summaries

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| --- | --- | --- | --- |
| **Term** | **Autumn** | **Spring** | **Summer** |
| **Strand** | **Computing systems and networks** | **Programming** | **Creating media** |
| **Year 1** | Technology around usRecognising technology in school and using it responsibly. | Moving a robotWriting short algorithms and programs for floor robots, and predicting program outcomes. | Digital writingUsing a computer to create and format text, before comparing to writing non-digitally. |
| **Year 2** | Information technology around usIdentifying IT and how its responsible use improves our world in school and beyond. | Robot algorithmsCreating and debugging programs, and using logical reasoning to make predictions. | Making musicUsing a computer as a tool to explore rhythms and melodies, before creating a musical composition. |
| **Year 3** | Connecting computersIdentifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks. | Sequencing soundsCreating sequences in a block-based programming language to make music. | Desktop publishingCreating documents by modifying text, images, and page layouts for a specified purpose. |
| **Year 4** | The internetRecognising the internet as a network of networks including the WWW, and why we should evaluate online content.  | Repetition in gamesUsing a block-based programming language to explore count-controlled and infinite loops when creating a game. | Photo editingManipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled. |
| **Year 5** | Selection in physical computingExploring conditions and selection using a programmable microcontroller. | Selection in quizzesExploring selection in programming to design and code an interactive quiz. | Video productionPlanning, capturing, and editing video to produce a short film. |
| **Year 6** | Internet communicationIdentifying and exploring how data is transferred and information is shared online. | Variables in gamesExploring variables when designing and coding a game. | **Data and Information-**Introduction to spreadsheetsAnswering questions by using spreadsheets to organise and calculate data. |

National Curriculum Coverage Key Stage 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **1.1** | **1.2** | **1.3** | **1.4** | **1.5** | **1.6** |
|  | understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions | create and debug simple programs | use logical reasoning to predict the behaviour of simple programs | use technology purposefully to create, organise, store, manipulate and retrieve digital content | recognise common uses of information technology beyond school | 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 |
| **Year 1** | Programming-Moving a robot | Programming-Moving a robot | Programming-Moving a robot | Computing systems and networks- Technology around usCreating media- Digital writing | Computing systems and networks- Technology around usProgramming-Moving a robot | Computing systems and networks- Technology around usCreating media- Digital writing |
| **Year 2** | Programming-Robot algorithms | Programming-Robot algorithms | Programming-Robot algorithms | Computing systems and networks- IT around usProgramming-Robot algorithmsCreating media- Making music | Computing systems and networks- IT around us | Computing systems and networks- IT around us |

National Curriculum Coverage Key Stage 2

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2.1** | **2.2** | **2.3** | **2.4** | **2.5** | **2.6** | **2.7** |
|  | design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts | use sequence, selection, and repetition in programs; work with variables and various forms of input and output | use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs | 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 | use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content | 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 | use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact |
| **Year 3** | Programming-Sequencing sounds | Computing systems and networks- Connecting computersProgramming-Sequencing sounds | Programming-Sequencing sounds | Computing systems and networks- Connecting computers | Creating media- Desktop publishing | Computing systems and networks- Connecting computersProgramming-Sequencing soundsCreating media- Desktop publishing |  |
| **Year 4** | Programming- Repetition in games | Programming- Repetition in games | Programming- Repetition in games | Computing systems and networks- The Internet | Computing systems and networks- The InternetCreating media- Photo editing | Computing systems and networks- The InternetCreating media- Photo editing | Computing systems and networks- The InternetCreating media- Photo editing |
| **Year 5** | Programming- Selection in physical computing Programming- Selection in quizzes | Programming- Selection in physical computingProgramming- Selection in quizzes | Programming- Selection in physical computingProgramming- Selection in quizzes |  | Creating media- Video editing | Programming- Selection in physical computingProgramming- Selection in quizzes Creating media- Video editing | Creating media- Video editing |
| **Year 6** | Computing systems and networks- Internet communicationProgramming- Variables in games | Programming- Variables in games | Programming- Variables in games | Computing systems and networks- Internet communication | Computing systems and networks- Internet communication | Computing systems and networks- Internet communicationProgramming- Variables in gamesData and information- Introduction to spreadsheets  | Computing systems and networks- Internet communication |

Software and hardware overview

|  |  |  |  |
| --- | --- | --- | --- |
| Year 1 | **Laptop or desktop** | **iPad/tablet** | **Resource** |
| **Computing systems and networks-Technology around us** |  |  | Paintz.appMS Paint |
| **Programming- Moving a robot** |  |  | Bee bots |
| **Creating Media- Digital writing** |  |  | Microsoft word |

Software and hardware overview

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| --- | --- | --- | --- |
| Year 2 | **Laptop or desktop** | **iPad/tablet** | **Resource** |
| **Computing systems and networks- IT around us** |  |  | Microsoft power point  |
| **Programming- Robot algorithms**  |  |  | Bee bots |
| **Creating Media- Making music** |  |  | Chrome music lab |

Software and hardware overview

|  |  |  |  |
| --- | --- | --- | --- |
| Year 3 | **Laptop or desktop** | **iPad/tablet** | **Resource** |
| **Computing systems and networks-Connecting computers** |  |  | MS Paint |
| **Programming- Sequencing sounds** |  |  | Scratch  |
| **Creating Media- Desktop publishing**  |  |  | Adobe express  |

Software and hardware overview

|  |  |  |  |
| --- | --- | --- | --- |
| Year 4 | **Laptop or desktop** | **iPad/tablet** | **Resource** |
| **Computing systems and networks- The internet** |  |  | Various websites |
| **Programming- Repetition in games** |  |  | Scratch  |
| **Creating Media- Photo editing**  |  |  | Paint.NETphotopea |

Software and hardware overview

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| --- | --- | --- | --- |
| Year 5 | **Laptop or desktop** | **iPad/tablet** | **Resource** |
| **Programming- Selection in physical computing** |  |  | Crumble controller + starter kit + motor |
| **Programming- selection in quizzes**  |  |  | Scratch  |
| **Creating Media- Video editing**  |  |  | iMovie |

Software and hardware overview

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| --- | --- | --- | --- |
| Year 6 | **Laptop or desktop** | **iPad/tablet** | **Resource** |
| **Computing systems and networks- Internet communication**  |  |  | PowerPoint |
| **Programming- Variables in games** |  |  | Scratch  |
| **Data and Information- Introduction to spreadsheets** |  |  | Microsoft Excel  |