Computing End Points

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|  | **Digital Literacy** | **Information Technology** | **Computer Science** |
| **Nursery** | • Seeks to acquire basic skills in turning on and operating some digital equipment • Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car • Plays with water to investigate “low technology” such as washing and cleaning • Uses pipes, funnels and other tools to carry/ transport water from one place to another |
| **Reception** | • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images • Knows that information can be retrieved from digital devices and the internet |
| **Year 1** | * Recognise common uses of information technology beyond school.
* 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.
* Develop an understanding of how to keep their personal information private and understand they need to use technology safely and respectfully.
 | * Use technology with support, to create, store and retrieve digital content such as text and images.
* Use a simple search to find information or files.
* Develop understanding of how simulations work through exploring simple examples.
 | * Understand what algorithms are and develop strategies to help find bugs in them.
* Make very simple programs.
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| **Year 2** | * Know their responsibilities from their school’s acceptable use policy and how to report any concerns they have.
* Recognise situations using technology and the internet involving content and contact that are not safe and know where to go for help.
* Begin to develop an understanding of the importance of computers and the internet to communicate.
* Develop their knowledge of the technology used in everyday life in a range of situations and be able to discuss their ideas.
 | * Use technology with purpose to create, store, organise, retrieve and manipulate digital content.
* Learn to make a range of simple digital assets such as presentations, movies, audio files and graphs.
* Navigate the web and carry out simple searches using suitable search engines and begin to understand that not everything on the internet is true.
* Use simple simulations and understand how they work.
 | * Use algorithms and know that they can be implemented as programs on devices.
* Know what debugging is and find errors in their programs.
* Understand that programs execute by following a precise set of instructions.
* Create simple programs and further develop their strategies and logical thinking to find bugs and predict outcomes in their algorithms and programs.
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| **Year 3** | * Use technology safely and respectfully and have an understanding of how to keep information secure.
* 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.
* Develop an understanding of what is acceptable and unacceptable online behaviour.
* Realise that not all information on the internet is trustworthy and there is a need to verify its reliability.
 | * Use a variety of software and devices to create digital assets such as programs, graphs and multimedia content for a defined purpose.
* Develop their search strategies further by refining their use of keywords and starting to use appropriate key phrases and questions.
* Use more complex simulations and understand the effects of changing variables.
 | * 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.
* Have knowledge and experience of using a range of different inputs and outputs.
* Describe some of components of a computer network and some of the ways in which computer networks can be used.
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| **Year 4** | * 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.
 | * 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.
 | * 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.
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| **Year 5** | * 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.
* Know a range of ways of reporting concerns about content and contact involving the internet and other communication technologies.
* Understand what acceptable and unacceptable online behaviour is.
* Use strategies to verify the reliability and accuracy of information on the internet and understand copyright.
 | * 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.
* Understand about the use of operators in searching and continue developing their effective search techniques by using Boolean operators in their searches.
* Create simple spreadsheet models to investigate real life problems.
 | * Design and write programs using sequence, repetition, selection and variables.
* Develop greater understanding of how to use selection and repetition in more complex programs.
* Understand how search engines work.
* 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.
* Plan and write programs to control external devices such as sensors and motors and explain about the inputs and outputs used.
* Have an understanding of how a computer network works and the opportunities that it offers for communication and collaboration.
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| **Year 6** | * Be competent users of technology using it safely, respectfully and responsibly and know about digital footprints and ‘strong’ passwords.
* 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.
* Understand what acceptable and unacceptable online behaviour is.
* 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.
 | * Independently select, use and combine a wide range of software on a variety of devices.
* Design and create a range of digital assets such as programs, systems and multimedia content for a defined purpose and audience.
* Use advanced searches including the use of operators.
* Create spreadsheet models to investigate real life problems, using their knowledge to make predictions.
 | * Know how search engines work and what ‘ranking’ is when related to search engines.
* Design and create more complex programs using sequence, repetition, selection and variables appropriately.
* Develop their computational thinking can demonstrate that they can decompose and evaluate their tasks and correct errors in their algorithms and programs.
* 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.
* Know how different computer networks work, including the roles of the components and the opportunities and benefits that they offer for communication and collaboration.
* Understand the difference between the internet and internet services.
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