

## Computing Knowledge Progression Grid - KS2 - Cycle 1

### Key stage 2 - National Curriculum

Pupils should be taught to:

- 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 3/4	Year 5/6
Autumn 1	<p><b>Digital Literacy - Online safety (PM 3.2)</b>  <b>Computer Science – Coding (PM 3.1)</b></p> <ul style="list-style-type: none"> <li>• I can use technology safely and responsibly.</li> <li>• I can recognise acceptable/ unacceptable behaviour</li> <li>• I can identify how to report concerns</li> <li>• I can design and write programs that accomplish specific goals</li> <li>• I can debug programs</li> <li>• I can use repetition commands</li> <li>• I can use “if” statements</li> </ul> <p><b>Digital Literacy - Online safety (PM 4.2)</b>  <b>Computer Science – Coding (PM 4.1)</b></p> <ul style="list-style-type: none"> <li>• I can use technology safely and responsibly.</li> <li>• I can recognise acceptable/ unacceptable behaviour</li> <li>• I can identify how to report concerns</li> <li>• I can design and write programs that accomplish specific goals</li> <li>• I can debug programs</li> <li>• I can use repetition commands</li> <li>• I can use “if” and “else” statements</li> </ul>	<p><b>Digital Literacy - Online safety</b>  <b>Computer Science – Programming (PM 5.1)</b></p> <ul style="list-style-type: none"> <li>• I can use technology safely and responsibly</li> <li>• I can recognise acceptable/unacceptable behaviour</li> <li>• I can use different sources to double check information found online</li> <li>• I can use simplified code to make a programme more efficient</li> <li>• I can define what a simulation is</li> <li>• I can simulate a physical system using 2code</li> <li>• I can solve a problem by decomposing it into smaller parts</li> <li>• I can define a variable as something that is changing</li> <li>• I can improve a game by using variables</li> </ul> <p><b>Computer Science – Programming (PM 6.1)</b></p> <ul style="list-style-type: none"> <li>• I can</li> <li>• I can</li> </ul>

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Autumn 2	<p><b>Information Technology – Data -Spreadsheets (PM 3.3)</b></p> <ul style="list-style-type: none"> <li>• I can read data and information on a spreadsheet</li> <li>• I can use 2calculate to present data in a spreadsheet</li> <li>• I can debug a spreadsheet program</li> <li>• I can use a spreadsheet to total amounts</li> <li>• I can use the ‘more than’, ‘less than’ and ‘equals’ tools.</li> <li>• I can find a location in a spreadsheet using coordinates</li> </ul> <p><b>Digital Literacy - Online safety (PM 4.2)</b></p> <ul style="list-style-type: none"> <li>• I can protect myself from online identity theft</li> <li>• I can identify the risks and benefits of installing software</li> <li>• I can identify appropriate behaviour online</li> <li>• I can understand the importance of balancing screen time</li> <li>• I can identify the positive and negative influences of technology on health and the environment.</li> </ul>	<p><b>Digital Literacy - Online safety</b></p> <p><b>Information Technology - Data (PM 5.3) Spreadsheets</b></p> <ul style="list-style-type: none"> <li>• I can name sources of help if something concerns me online (childline, cybermentors etc)</li> <li>• I can explain what sort of privacy settings might be relevant to reducing different risks.</li> <li>• I can explain when and when not to answer a question online.</li> <li>• I can enter data accurately into a spreadsheet</li> <li>• I can create a spreadsheet to plan an event</li> <li>• I can explain what an item of data is</li> <li>• I can create simple formula that use different variables</li> <li>• I can apply formulas to data</li> </ul> <p><b>Digital Literacy - Online safety (PM 6.2)</b></p> <p><b>Information Technology - Data (PM 6.3) Spreadsheets</b></p> <ul style="list-style-type: none"> <li>• I can</li> <li>• I can</li> </ul>
Spring 1	<p><b>Digital Literacy – Typing (PM 3.4)</b></p> <ul style="list-style-type: none"> <li>• I can sit at a keyboard correctly</li> <li>• I can navigate the 2Type software</li> <li>• I can navigate around and use home, top and bottom row keys</li> <li>• I can identify keys to be used with left and right hands</li> </ul> <p><b>Information Technology - Data (PM 4.3) Spreadsheets</b></p> <ul style="list-style-type: none"> <li>• I can read data and information on a spreadsheet</li> <li>• I can use 2calculate to present data in a spreadsheet</li> <li>• I can debug a spreadsheet program</li> <li>• I can use a spreadsheet to total amounts</li> <li>• I can use the ‘more than’, ‘less than’ and ‘equals’ tools.</li> <li>• I can find a location in a spreadsheet using coordinates</li> </ul>	<p><b>Information Technology - Data (PM5.4) Data Bases</b></p> <ul style="list-style-type: none"> <li>• I can explain what a database and a database field is</li> <li>• I can navigate a database in different ways to find information and answers to questions</li> <li>• I can create and enter information into a database</li> <li>• I can outline how ‘and’ and ‘or’ can be used to refine data selection</li> <li>• I can group and sort data to answer questions effectively</li> </ul> <p><b>Information Technology - Data (PM 6.3) Spreadsheets</b></p> <p><b>Digital Literacy – Online (PM6.6) Blogging</b></p> <ul style="list-style-type: none"> <li>• I can</li> <li>• I can</li> </ul>

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Spring 2	<p><b>Digital Literacy - Online safety (PM 3.2)</b> <b>Digital Literacy – Email (PM 3.5)</b></p> <ul style="list-style-type: none"> <li>• I can navigate the 2Email program</li> <li>• I can understand that the internet can be used for communicating in a variety of ways, including email</li> <li>• I can open and respond to an email</li> <li>• I can compose and send an email using “address book”</li> <li>• I can add an attachment to an email</li> <li>• I can use email safely and know how to report unsafe usage</li> </ul> <p><b>Digital Literacy – Online - Email (PM 3.5)</b></p> <ul style="list-style-type: none"> <li>• I can navigate the 2Email program</li> <li>• I can understand that the internet can be used for communicating in a variety of ways, including email</li> <li>• I can open and respond to an email</li> <li>• I can compose and send an email using “address book”</li> <li>• I can add an attachment to an email</li> <li>• I can use email safely and know how to report unsafe usage</li> </ul>	<p><b>Computer Science – Programming (PM5.5) Game Creator</b></p> <ul style="list-style-type: none"> <li>• I can create a background and setting for my game by uploading images and using drawing tools</li> <li>• I can design and create a game quest</li> <li>• I can edit scene elements using game creator tools and create the desired effect for my game</li> <li>• I can evaluate and improve the programming sequence of my game</li> </ul> <p><b>Computer Science – Programming (PM6.5) Text Adventure</b></p> <ul style="list-style-type: none"> <li>• I can</li> <li>• I can</li> </ul>
Summer 1	<p><b>Information Technology – Branching Databases (PM 3.6)</b></p> <ul style="list-style-type: none"> <li>• I can navigate 2Question</li> <li>• I can understand that variables have various outcomes</li> <li>• I can navigate a “Yes/No” branching diagram to arrive at an answer</li> <li>• I can design a database to achieve a goal</li> <li>• I can debug a database program</li> </ul> <p><b>Computer Science – Programming Animation (PM 4.6)</b></p> <ul style="list-style-type: none"> <li>• I can decide what makes a good, animated film or cartoon and discuss favourite animations.</li> <li>• I can learn how animations are created by hand.</li> <li>• I can find out how 2Animate animations can be created in a similar way using technology</li> </ul>	<p><b>Information Technology – Multimedia (PM5.6) 3D Modelling</b></p> <ul style="list-style-type: none"> <li>• I can explain that CAD means computer aided design and give examples of how it is used in industry</li> <li>• I can state whether an image is 2D , 3D or a net</li> <li>• I can use the 2Design programme to create a model vehicle</li> <li>• I can adapt a model vehicle by moving points to alter the shape</li> <li>• I can design a 3D model, changing the style, colour and texture to fit certain criteria</li> <li>• I can refine a 2D design and print the net to create a 3D model</li> </ul> <p><b>Digital Literacy – Online (PM6.6) Networks</b></p> <ul style="list-style-type: none"> <li>• I can</li> <li>• I can</li> </ul>

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	<ul style="list-style-type: none"> <li>• I can learn about onion skinning in animation.</li> <li>• I can add backgrounds and sounds to animations.</li> </ul>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Summer 2</p>	<p><b>Information Technology – Multimedia -Simulations and Graphing (PM 3.7, 3.8)</b></p> <ul style="list-style-type: none"> <li>• I can navigate the StickBots software</li> <li>• I can use StickBots to create a simple animation</li> <li>• I can enter data into 2Graph</li> <li>• I can select an appropriate graph to represent the data</li> <li>• I can collect data and represent it in graph form</li> <li>• I can insert a graph into a simple document</li> </ul> <p><b>Digital Literacy – Online (PM 4.7) Browsing and Searching</b></p> <ul style="list-style-type: none"> <li>• I can locate information on the search results page</li> <li>• I can use searches effectively to find information</li> <li>• I can assess whether an information source is true and reliable</li> </ul>	<p><b>Information Technology - Data (PM5.7) Concept Maps</b></p> <ul style="list-style-type: none"> <li>• I can explain what a concept map is</li> <li>• I can name some uses of a concept map e.g timeline, story plan, experiment</li> <li>• I can create a basic concept map</li> <li>• I can explain what a 'node' and a 'connection' is</li> </ul> <p><b>Information Technology - Data (PM6.7) Quizzing</b></p> <ul style="list-style-type: none"> <li>• I can</li> <li>• I can</li> </ul>