

# Steeple Morden Progression in Computing Capability

	Understanding Technology	Programming	Digital Literacy	Online Safety
Year R	<p>ELG 13 People and Communities</p> <p>ELG 15 Technology</p> <p>Pupils explore technology they encounter at home and school and recognise how this has changed over time.</p>	<p>ELG 2 Understanding</p> <p>ELG 4 Moving and Handling</p> <p>Pupils use control technology such as programmable robots, and explore their uses through play.</p>	<p>ELG 16 Exploring and using media and materials</p> <p>ELG 17 Being imaginative</p> <p>Pupils interact with adults and peers, exploring their environment using multimedia equipment to capture sound, still and moving images and play these back.</p>	<p>ELG 6 Self-confidence and self-awareness</p> <p>ELG 7 Managing feelings and behaviour</p> <p>Online safety messages delivered through guided use of continuous provision in school and at home. Pupils learn about online reputation, managing information online, privacy and security and copyright and ownership.</p>
Year 1	<p>Pupils recognise and can give examples of common uses of <b>information technology</b> they encounter in their daily routine.</p>	<p>Pupils create, <b>debug</b> and implement instructions (simple <b>algorithms</b>) as <b>programs</b> on a range of digital devices.</p> <p>Pupils understand that <b>digital devices</b> follow precise and unambiguous instructions. They understand that digital devices can <b>simulate</b> real situations.</p>	<p>With adult guidance, pupils use a range of technology to enhance and present their learning. Within both specific computing lessons and cross curricular contexts, pupils are able to:</p> <ul style="list-style-type: none"> <li>enquire with purpose, accessing <b>digital content</b> such as text, still and moving images, video and audio</li> </ul>	<p>Pupils are becoming increasingly aware of <b>content, contact</b> and <b>conduct</b> benefits and risks, how to manage them safely and where to go for help and support when they have concerns or feel unsafe, worried or upset.</p> <p>They are beginning to develop a better understanding of their own and others' <b>'identity'</b> (including online), the importance of keeping personal information private and of seeking permission before sharing. They check with an adult before clicking on <b>pop ups, notifications</b> or <b>dialogue boxes</b>.</p>
Year 2	<p>Pupils recognise common uses of <b>information technology</b> beyond school, including those which they don't frequently encounter in their daily routine.</p> <p>Pupils understand that computers are not intelligent but can appear to be when following <b>algorithms</b>. They can share examples of this.</p>	<p>Pupils understand that <b>algorithms</b> are implemented as <b>programs</b> on <b>digital devices</b>.</p> <p>Pupils create and <b>debug programs</b> to achieve specific goals and understand the importance of <b>sequence</b>.</p> <p>Pupils use the <b>principles of logical reasoning</b> to plan and predict the behaviour of simple <b>programs</b>. They solve problems on and off screen</p>	<ul style="list-style-type: none"> <li>collect <b>data</b> (e.g. numerical, research facts etc.) which they are able to retrieve, store and present as graphs, tables and charts</li> <li>present and communicate their learning to others in a variety of ways using text, still images, video and audio, including combining 2 or more of these mediums</li> </ul>	<p>They increasingly use a range of <b>digital devices</b> to communicate safely and respectfully online, making links to positive behaviour in the physical world.</p>
Year 3	<p>Pupils understand that <b>computers</b> (in various forms) generally accept <b>inputs</b> and produce <b>outputs</b> and can give examples of this.</p> <p>Pupils recognise - and can describe - some of the services offered by the <b>Internet</b>, especially those used for communication and collaboration.</p>	<p>Pupils create <b>programs</b> to accomplish specific goals using an increasing range of <b>digital devices</b> and <b>applications</b>.</p> <p>They can <b>decompose</b> programs to test them and understand how making even small changes to an <b>algorithm</b> can have a significant impact on the outcome.</p> <p>They begin using <b>simple repetition</b> (e.g. <i>'repeat x times'</i> and <i>'repeat forever'</i>) and understand how this can be used to improve <b>efficiency</b> in their programs.</p>	<p>With increasing levels of autonomy, pupils are becoming confident and creative users of technology.</p> <p>Within both specific computing lessons and cross curricular contexts, pupils are able to:</p> <ul style="list-style-type: none"> <li>follow and expand on agreed lines of enquiry, using key words and phrases to effectively access <b>digital content</b> such as text, still images, video and audio</li> </ul>	<p>Pupils are able to identify a range of <b>content, contact</b> and <b>conduct</b> benefits and risks, describe how to manage them safely and respectfully and know where to go for help and support when they have concerns.</p> <p>They can explain what is meant by <b>'identity'</b>, how this might be represented differently in different situations and why others might mis-represent their identity. They develop their understanding of <b>'trust'</b> and the importance of being careful about what is shared online and of giving and gaining <b>consent</b>.</p>
Year 4	<p>Pupils develop a basic understanding of how computers can be linked to form a <b>local network</b> such as those found in schools.</p> <p>Pupils recognise that there is a difference between the <b>Internet</b> and the <b>World Wide Web</b>.</p> <p>They can recognise and describe some of the services offered by the <b>Internet</b>, especially those used for communication and collaboration.</p>	<p>Pupils create and debug <b>programs</b> containing <b>simple repetition</b> (e.g. <i>'repeat x times'</i> and <i>'repeat forever'</i>) as well as more <b>complex repetition</b> (e.g. <i>'nested loops'</i>)</p> <p>Pupils increasingly use their programming capability to control or simulate a range of different <b>outputs</b> in <b>physical systems</b>.</p> <p>Pupils begin to explore and notice the similarities and differences between <b>programming languages</b> and use this knowledge to help them create and <b>debug programs</b> efficiently.</p>	<ul style="list-style-type: none"> <li>identify, collect and manipulate different types of <b>data</b> (e.g. numerical, research facts etc.) which they present as <b>information</b>, showing a greater awareness of purpose and audience</li> <li>present and communicate their learning to others in a variety of ways using text, still images, video and audio</li> <li>They combine <b>digital tools</b> to achieve <b>specific goals</b> and think carefully about the <b>impact on their audience</b></li> </ul>	<p>Pupils can describe <b>positive and negative effects of online activity / behaviours</b> and begin to understand how to make safer and healthier decisions, including considering the appropriateness of games and online content for different ages.</p> <p>Pupils can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them.</p>
Year 5	<p>Pupils know that there is a difference between the <b>Internet</b> and the <b>World Wide Web</b> and understand that the web is just one of the services offered by the Internet (as well as, e.g. <b>email</b> and <b>VoIP services</b> such as Skype).</p> <p>They appreciate how <b>search results</b> are ranked, including an understanding of the use of different <b>algorithms</b> to prioritise results. Pupils understand that the highest-ranking search results may not always be the most relevant. They appraise search results based on their <b>relevance</b> and <b>trustworthiness</b>, and can explain what is meant by <b>'fake news'</b></p>	<p>Pupils create, <b>deconstruct</b> and refine <b>programs</b> to accomplish specific goals.</p> <p>They create programs with <b>loops</b> which terminate when <b>conditions</b> are met or continue whilst <b>conditions</b> are present (e.g. <i>'repeat until'</i> and <i>'repeat whilst'</i>).</p> <p>Pupils understand and use simple <b>selection</b> (e.g. <i>if/then</i> and <i>if/then/else</i>) to create <b>interactive programs</b> based on <b>conditions</b> being met / not met. They begin to use simple <b>operators</b> within their programs.</p>	<p>Pupils are confident, capable and creative users of technology.</p> <p>Within both specific computing lessons and cross curricular contexts, pupils are able to:</p> <ul style="list-style-type: none"> <li>create and effectively follow lines of enquiry to support their learning, and are discerning in <b>evaluating digital content</b> they encounter</li> <li>identify, collect and analyse different types of <b>data</b> (e.g. numerical, words, images, video etc.) which they manipulate and re-present as <b>information</b> for a variety of audiences and purposes</li> </ul>	<p>Pupils identify and manage the benefits and risks of a range of online activities in terms of <b>content, contact</b> and <b>conduct</b> to ensure they are <b>safe, respectful</b> and <b>responsible</b> online. They know how to report concerns, seek support for themselves and others and persist until they get the help they need.</p> <p>Pupils make responsible choices about their own online <b>identity</b> and consider the potential impact of this on their <b>digital footprint</b>. They understand that online <b>identities</b> can be <b>copied</b> or <b>modified</b> and some of the possible implications of this.</p>
Year 6	<p>Pupils understand and can explain how <b>computer networks</b> work, including the <b>Internet</b>. They begin to understand how <b>data</b> travels across <b>networks</b> in <b>packets</b> and how these can be broken up and reconstructed.</p> <p>When accessing information online, pupils recognise that <b>opinions</b> may be presented as <b>facts</b>. They can describe why an opinion may easily become popular online but they understand that this doesn't necessarily make it true.</p> <p>They understand that some online content may be commercially sponsored such as <b>advertises in search results</b> or content presented by <b>social media influencers</b>.</p>	<p>Pupils create, <b>deconstruct</b> and refine an increasingly complex range of <b>programs</b> to accomplish specific goals.</p> <p>Pupils create <b>programs</b> which store, change and report <b>variables</b> (e.g. scores in a game or time) and can include multiple <b>variables</b> in a single <b>program</b>.</p> <p>Pupils can explain why they have structured <b>algorithms</b> as they have and describe the effect this has on a <b>program</b>.</p>	<ul style="list-style-type: none"> <li>select and make effective use of <b>digital tools</b> to create <b>digital artefacts</b> both under instruction and of their own choosing</li> <li>decide on the most appropriate way to present their learning - thinking about <b>aesthetics, functionality</b> and <b>impact</b> on the user, and responding appropriately.</li> </ul>	<p>They can describe times when they might responsibly share <b>personal information</b> (including payment details), the importance of seeking permission and the need for <b>strong passwords</b>.</p> <p>They can describe ways technology may impact their own and others' <b>physical and mental wellbeing</b> (positively and negatively), understand their responsibilities in regard to this and can suggest a range of positive strategies to limit the negative impact of technology and online behaviours.</p>