Computing Progression of Skills

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	Information Technology	Computer Science	Digital Literacy	E-Safety
Year One	*Pupils recognise and can give examples of common uses of information technology they encounter in their daily routine.*	*Pupils create, **debug** and implement instruction (simple **algorithms**) as **programs** on a range of digital devices.* *Pupils understand that **digital devices** follow precise and unambiguous instructions.* *Pupils understand that digital devices **simulate** real situations.*	*Pupils increasingly use a range of technology to enquire with purpose, accessing and creating **digital content** such as still and moving images, video, audio and text.* *With appropriate levels of support, pupils collect **data** (e.g. numerical, research facts etc.) which they are able to retrieve, store and manipulate.* *They can present and communicate their learning to others in a variety of ways.* *With support, pupils are beginning to access and retrieve **online content**, making appropriate choices to achieve specific goals.*	*Pupils understand that information about themselves may be personal and they can choose who to share it with.* *With support, pupils can manage can their online activity safely, recognising which information should be kept private.* *They can explain what it means to stay safe online and older pupils identify some of the potential risks associated with the online world.* *They communicate safely and respectfully using a range of **digital devices**, making links to their behaviour in the physical world.* *Pupils start to develop strategies for managing concerns about online content or contact; seeking help and support when needed.*
Year Two	*Pupils recognise common uses of information technology beyond school, including those which they don't frequently encounter in their daily routine.*	*Pupils understand that **algorithms** are implemented as **programs** on **digital devices.*** *Pupils create and **debug programs** to achieve specific goals.* *Pupils use the **principles of logical reasoning** to plan and predict the behaviour of simple **programs**.* *Pupils solve real and imaginary problems on and off screen.*		

Year Three	*Pupils develop an understanding of how computers can be linked to form **local networks**.* *Pupils recognise and describe some of the **services offered by the Internet**, especially those used for communication and collaboration.*	*Pupils create **programs** to accomplish specific goals:* o *using an increasing range of **digital devices** and **applications**;* o *exploring and understanding the impact of changing instructions;* o *using **sequence** and **repetition**;* o ***decomposing** problems both on and off screen;* o *using the **principles of logical reasoning** in order to solve problems.*	*Pupils are confident and creative users of technology. They are beginning to make informed choices about the appropriateness of **digital content** they access and create, using an increasing range of **digital resources** and **devices*** *Pupils identify, collect and manipulate different types of **data** (e.g. numerical data from science experiments, words, still and moving images etc.) which they present as **information**, showing a greater awareness of purpose and audience.* *Pupils become more discerning in their choice of **search technology** to accomplish specific goals. They understand the need for efficiency when conducting searches, choosing keywords carefully.*	*Pupils, review their online activity, including maintaining and amending online profiles, **communication channels and publishing spaces** to ensure they do not inadvertently reveal personal details.* *Pupils show respect for content created by others by acknowledging sources, commenting respectfully and responsibly on other people's work and respecting privacy.* *They are discriminating about what they share and whether any permission is needed to do so.* *Pupils can identify a range of potential online risks including inappropriate contact or content and can identify ways of seeking support and reporting concerns.* *They exercise caution when receiving **attachments** and following **web links** contained in messages.*
Year Four		*Pupils create and debug **programs**.* *They can:* o *use **sequence** and **repetition**;* o *refine **algorithms** to improve efficiency;* o *control or simulate **physical systems**.* *Pupils begin to explore and notice the similarities and differences between **programming languages** and use this knowledge to help them create and **debug programs** efficiently.*		

Year Five	*Pupils understand and can explain how **computer networks** work (including the **Internet**).* *Pupils recognise that there is a difference between the **Internet** and the **World Wide Web** and know that the web is just one of the **services offered by the Internet**.* *Pupils appreciate how search results are ranked, including an understanding of the role of 'relevance' and 'importance' in presenting results.*	*Pupils create, **deconstruct** and refine **programs** to accomplish specific goals. They can:* o *improve efficiency;* o *use **selection** within programs;* o *use a range of simple **inputs** and **outputs** to control or simulate **physical systems**.* *Pupils use **logical reasoning** to explain how some **algorithms** work and to detect and correct errors in **programs**.* *They independently employ strategies to solve problems.*	*Pupils are confident, capable and creative users of technology, selecting and making effective use of **digital resources** and **devices** for purpose and effect. They create **programs**, **systems** and **digital content**, thinking carefully about aesthetics, functionality and impact on the user.* *They identify, collect and analyse different types of **data** (e.g. Numerical, words, images, video etc.) which they manipulate and re-present as **information** for a variety of audiences and purposes.* *Pupils are discerning in **evaluating digital content**. They use **search technologies** effectively to respond to enquiries and support their learning.*	*Pupils continue to maintain, review and amend **online identities**, considering the potential impact of these on their **digital footprint**. They communicate in a wide variety of ways and pay careful attention to what details might be inadvertently revealed.* *They engage in an increasing range of **online communities** safely, respectfully and responsibly both with friends and the wider online community. With adult support, they actively consider and use safety and **security settings** on a range of **digital devices**.* *When using **online resources** and **search technologies**, pupils are increasingly discerning about what **information** they gather, checking the validity of **data** and showing due respect to privacy and **copyright**.* *Pupils can recognise a range of potential online risks, including inappropriate contact or content and can identify ways of seeking support and reporting concerns.*
Year Six		*Pupils deconstruct, improve and create **programs** including:* o *using selection and working with variables;* o *using the principles of logical reasoning;* o *challenging themselves by making simple programs increasingly complex and employ a variety of strategies to solve problems.* *Pupils can explain why they have structured algorithms as they have and describe the effect this has on a program.*		