Progression in Computing Capability 2022-2023
These progression statements are designed to complement the National Curriculum for Computing in England.

	Computer science *(How computers and computer systems work and how they are designed and programmed)*		Information Technology *(the purposeful use of existing programs to develop products and solutions)*		Digital literacy *(the skills, knowledge and understanding needed in order to participate fully and safely in an increasingly digital world)*
	Computing systems and Networks	Programming	Creating media	Data and information	online safety
Year 1	Pupils recognise and can give examples of common uses of **information technology** they encounter in their daily routine.	Pupils create, **debug** and implement instructions (simple **algorithms**) as **programs** on a range of digital devices. Pupils understand that **digital devices** follow precise and unambiguous instructions. They understand that digital devices can **simulate** real situations.	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: ● enquire with purpose, accessing **digital content** such as text, still and moving images, video and audio ● 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	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: ● collect **data** (e.g. numerical, research facts etc.) which they are able to retrieve, store and present as graphs, tables and charts	Pupils are becoming increasingly aware of **content**, **contact** and **conduct** 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. They are beginning to develop a better understanding of their own and others' **'identity'** (including online), the importance of keeping personal information private and of seeking permission before sharing. They check with an adult before clicking on **pop ups**, **notifications** or **dialogue boxes**. They increasingly use a range of **digital devices** to communicate safely and respectfully online, making links to positive behaviour in the physical world.
Year 2	Pupils recognise and can give examples of common uses of **information technology** they 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 and understand the importance of **sequence**. Pupils use the **principles of logical reasoning** to plan and predict the behaviour of simple **programs**. They solve problems on and off screen			
Year 3	Pupils recognise common uses of **information technology** beyond school, including those which they don't frequently encounter in their daily routine. Pupils understand that computers are not intelligent but can appear to be when following **algorithms**. They can share examples of this.	Pupils create **programs** to accomplish specific goals using an increasing range of **digital devices** and **applications**. They can **decompose** programs to test them and understand how making even small changes to an **algorithm** can have a significant impact on the outcome. They begin using **simple repetition** (e.g. *'repeat x times'* and *'repeat forever'*) and understand how this can be used to improve **efficiency** in their programs.	With increasing levels of autonomy, pupils are becoming confident and creative users of technology. Within both specific computing lessons and cross curricular contexts, pupils are able to: ● follow and expand on agreed lines of enquiry, using key words and phrases to effectively access **digital content** such as text, still images, video and audio ● present and communicate their learning to others in a variety of ways using text, still images, video and audio ● They combine **digital tools** to achieve **specific goals** and think carefully about the **impact on their audience**	With increasing levels of autonomy, pupils are becoming confident and creative users of technology. Within both specific computing lessons and cross curricular contexts, pupils are able to: ● identify, collect and manipulate different types of **data** (e.g. numerical, research facts etc.) which they present as **information**, showing a greater awareness of purpose and audience	Pupils are able to identify a range of **content, contact** and **conduct** benefits and risks, describe how to manage them safely and respectfully and know where to go for help and support when they have concerns. They can explain what is meant by **'identity'**, how this might be represented differently in different situations and why others might mis-represent their identity. They develop their understanding of **'trust'** and the importance of being careful about what is shared online and of giving and gaining **consent**.
Year 4	Pupils understand that **computers** (in various forms) generally accept **inputs** and produce **outputs** and can give examples of this. Pupils recognise - and can describe - some of the services offered by the **Internet**, especially those used for communication and collaboration.	Pupils create **programs** to accomplish specific goals using an increasing range of **digital devices** and **applications**. They can **decompose** programs to test them and understand how making even small changes to an **algorithm** can have a significant impact on the outcome.			Pupils can describe **positive and negative effects of online activity / behaviours** and begin to understand how to make safer and healthier decisions, including considering the appropriateness of games and online content for different ages. Pupils can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them.

Year 5	Pupils understand that **computers** (in various forms) generally accept **inputs** and produce **outputs** and can give examples of this. Pupils recognise - and can describe - some of the services offered by the **Internet**, especially those used for communication and collaboration. Pupils develop a basic understanding of how computers can be linked to form a **local network** such as those found in schools. Pupils recognise that there is a difference between the **Internet** and the **World Wide Web.** They can recognise and describe some of the services offered by the **Internet**, especially those used for communication and collaboration	They begin using **simple repetition** (e.g. *'repeat x times'* and *'repeat forever'*) and understand how this can be used to improve **efficiency** in their programs. Pupils create and debug **programs** containing **simple repetition** (e.g. *'repeat x times'* and *'repeat forever'*) as well as more **complex repetition** (e.g. *'nested loops'*) Pupils increasingly use their programming capability to control or simulate a range of different **outputs** in **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.	Pupils are confident, capable and creative users of technology. Within both specific computing lessons and cross curricular contexts, pupils are able to: ● create and effectively follow lines of enquiry to support their learning, and are discerning in **evaluating digital content** they encounter ● select and make effective use of **digital tools** to create **digital artefacts** both under instruction and of their own choosing ● decide on the most appropriate way to present their learning - thinking about **aesthetics**, **functionality** and **impact** on the user, and responding appropriately.	Pupils are confident, capable and creative users of technology. Within both specific computing lessons and cross curricular contexts, pupils are able to: ● 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 identify and manage the benefits and risks of a range of online activities in terms of **content**, **contact** and **conduct** to ensure they are **safe**, **respectful** and **responsible** online. They know how to report concerns, seek support for themselves and others and persist until they get the help they need. Pupils make responsible choices about their own online **identity** and consider the potential impact of this on their **digital footprint.** They understand that online **identities** can be **copied** or **modified** and some of the possible implications of this. They can describe times when they might responsibly share **personal information** (including payment details), the importance of seeking permission and the need for **strong passwords**. They can describe ways technology may impact their own and others' **physical and mental wellbeing** (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.
Year 6	Pupils understand that **computers** (in various forms) generally accept **inputs** and produce **outputs** and can give examples of this. Pupils recognise - and can describe - some of the services offered by the **Internet**, especially those used for communication and collaboration. Pupils develop a basic understanding of how computers can be linked to form a **local network** such as those found in schools. Pupils recognise that there is a difference between the **Internet** and the **World Wide Web.** They can recognise and describe some of the services offered by the **Internet**, especially those used for communication and collaboration.				