Computing Skills Progression

EYFS		Key Stage One			Key Stage Two	
Hardware (Technology in our lives)						
Reception	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
To know how to operate simple equipment.

To show an interest in technological toys with knobs or pulleys, or real objects.

To show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.

To recognise that a range of technology is used in places such as homes and schools.

To select and use technology for particular purposes. | Recognising the ways we use technology in our classroom.

Recognising the ways that technology is used in places such as homes and in the community.

Learning how to use links to websites to find information.

Learning how to identify some of the benefits of using technology. | Understanding why we use technology in the classroom.

Identifying why we use technology in homes and the community.

Understanding that other people have created the information I use.

Identifying benefits of using technology including finding information, creating and communicating.

Learning how to talk about the differences between the Internet and things in the physical world. | Understanding what the different components of a computer do and how they work together.

Learning how to describe the World Wide Web as the part of the Internet that contains websites.

Learning about the ways to communicate with others online

Learning how to describe the World Wide Web as the part of the Internet that contains websites.

Learning to think about whether I can use images that I find online in my own work. | Learning about the purpose of routers

Identifying key words to use when searching safely on the World Wide Web.

Thinking about the reliability of information read on the World Wide Web.

Understanding how to check who owns photos, text and clipart.

Learning to create a hyperlink to a resource on the World Wide Web.

Recognising that websites use different methods to advertise products. | Learning that external devices can be programmed by a separate computer.

Describing different parts of the Internet.

Using different online communication tools for different purposes

Learning how to use a search engine to find appropriate information and check its reliability.

Recognising and evaluate different types of information I find on the World Wide Web.

Describing the different parts of a webpage. | Learning about the history of computers and how they have evolved over time.

Describing how information is transported on the Internet.

Recognising the way search results are selected and ranked.

Understanding the Internet services needed to use for different purposes.

Selecting an appropriate tool to communicate and collaborate online.

Understanding how to check the reliability of a website.

Learning that websites can use my data to make money and target their advertising. |

Networks and Data Representation (Handling Data)						
To show an interest in technological toys with knobs or pulleys, or real objects. To know that information can be retrieved from computers.	Learning how to talk about the different ways in which information can be shown. Learning to use technology to collect information, including photos, video and sound. Understanding how to sort different kinds of information and present it to others. Learning how to add information to a pictograph and talk to you about what I have found out.	Learning about the different ways I use technology to collect information, including a camera, microscope or sound recorder. Learning to make and save a chart or graph using the data I collect. Recognise and talk about the data that is shown in my chart or graph. Learning about what kind of information I could use to help me investigate a question. Learning what a branch database is.	Identifying different ways data can be organised. Learning how to search a ready-made database to answer questions. Understanding how to collect data to help me answer a question. Learning to add to a database. Learning how to make a branching database. Learning what a network is and its purpose. Recognising links between networks and the internet.	Learning how to organise data in different ways. Understanding how to collect data and identify where it could be inaccurate. Learning to plan, create and search a database to answer questions. Identifying the best way to present data to my friends. Learning how to use a data logger to record and share my readings with my friends. Consolidating understanding of the key components of a network. Understanding that websites & videos are files that are shared from one computer to another.	Understanding how to use a spreadsheet and database to collect and record data. Identifying an appropriate tool to help me collect data. Understanding how to present data in an appropriate way. Understanding how to search a database using different operators to refine my search. Learning to talk about mistakes in data and suggest how it could be checked.	Learning to interpret the data I collect. Identifying how to present the data I collect in an appropriate way. Learning how to plan the process needed to investigate the world around me. Understanding how to select the most effective tool to collect data for my investigation. Understanding how to check the data I collect for accuracy and plausibility. Understanding how to use the skills I have developed to interrogate a database.

Computational Thinking						
To show an interest in technological toys with knobs or pulleys, or real objects. To show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. To complete a simple program on a computer.	Learning that decomposition means breaking a problem down into smaller parts. Using decomposition to solve unplugged challenges. Using logical reasoning to predict the behaviour of simple programs. Developing the skills associated with sequencing in unplugged activities. Learning that an algorithm is a set of step by step instructions used to carry out a task, in a specific order. Assembling instructions into a simple algorithm.	Articulating what decomposition is. Decomposing a game to predict the algorithms used to create it. Using decomposition to decompose a story into smaller parts. Learning what abstraction is. Learning that there are different levels of abstraction. Explaining what an algorithm is. Following an algorithm. Creating a clear and precise algorithm. Learning that computers use algorithms to make predictions.	Using decomposition to explain the parts of a laptop computer. Using decomposition to explore the code behind an animation. Using repetition in programs. Understanding that computers follow instructions. Using an algorithm to explain the roles of different parts of a computer. Using logical reasoning to explain how simple algorithms work. Explaining the purpose of an algorithm.	Solving unplugged problems by decomposing them into smaller parts. Using decomposition to understand the purpose of a script of code. Using decomposition to help solve problems. Identifying patterns through unplugged activities. Using past experiences to help solve new problems. Creating algorithms for a specific purpose.	Decomposing animations into a series of images. Decomposing a program without support. Decomposing a story to be able to plan a program to tell a story. Predicting how software will work based on previous experience. Writing more complex algorithms for a purpose.	Decomposing a program into an algorithm. Using past experiences to help solve new problems. Writing increasingly complex algorithms for a purpose.

Programming						
To know how to operate simple equipment. To show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. To complete a simple program on a computer.	Learning to debug instructions when things go wrong. Learning to give instructions to a sprite and follow the instructions to move around. To describe what actions are needed to make something happen and begin to use the word algorithm. Begin to predict what will happen for a short sequence of instructions.	Using logical thinking to explore software, predicting, testing and explaining what it does. Using an algorithm to write a basic computer program. Learning what loops are. Incorporating loops to make code more efficient. Learning how to watch a program execute and spot where it goes wrong to debug it.	Using logical thinking to explore more complex software; predicting, testing and explaining what it does. Learning how to keep testing my program and can recognise when I need to debug it. Incorporating loops to make code more efficient. Using a more systematic approach to debugging code, justifying what is wrong and how it can be corrected.	Understanding that I need to keep testing my program while I am putting it together. Recognising how to use a variety of tools to create a program. Learning how to recognise an error in a program and debug it. Recognising that an algorithm will help me to sequence more complex programs. Recognising that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology.	Iterating and developing their programming as they work. Beginning to use nested loops (loops within loops). Debugging their own code. Writing code to create a desired effect. Using a range of programming commands. Using repetition within a program. Understanding how to use logical reasoning to detect and debug mistakes in a program Learning to use logical thinking, imagination and creativity to extend a program.	Debugging quickly and effectively to make a program more efficient. Remixing existing code to explore a problem. Using and adapting nested loops. Explain and program each of the steps in an algorithm. Evaluating code to understand its purpose. Predicting code and adapting it to a chosen purpose. Altering a website's code to create changes.

Online Safety						
Begin to understand what a password is and that it belongs to them. Understand what the internet is. Understand different types of technology around them. Experience using a range of technology safely. Develop knowledge of online behaviour and who can help them when they are online. Begin to explore the internet for information (mostly supported). Technology must be shared, and children develop understand of turn-taking. Recognise when they need help when working online and who they can ask for help.	Pupils will learn that many websites ask for information that is private and discuss how to responsibly go about responding to this. Develop their knowledge of their online behaviour Begin to recognise how to recognise signs of online bullying. Children know who to tell when they see something that makes them uncomfortable	Continue to understand what personal information is and who and what they should be sharing and what they shouldn't be. Describe the things that happen online that I must tell an adult about. Begin to talk about why you should go online for a short amount of time. Understand why it is important to be kind and polite online and in real life. Understand that not everyone is who they say they are on the Internet.	Children begin to understand that any personal information they put online can be seen and used by others and cannot be removed once added Understanding how to protect personal information when doing different things online. Learning how to use the safety features of websites as well as reporting concerns to an adult. Recognise websites and games appropriate for my age. Learning how to make good choices about how long I spend online. Understanding the need to ask an adult before downloading files and games from the Internet. Learning how to post positive comments online.	Begin to understand how your online behaviour can affect other people (positively and negatively) Understand that anything they share online can be seen by others. Recognise the ways I can protect myself and my friends from harm online. Understanding how to use the safety features of websites as well as reporting concerns to an adult. Recognising how to choose websites, apps and games that are appropriate for my age. Learning how to help my friends make good choices about the time they spend online. Recognising why I need to ask a trusted adult before downloading files and games from the Internet. Learning how to comment positively and respectfully online and through text messages.	Secure understanding of how your online behaviour can affect other people both positively and negatively Begin to understand the difference between appropriate usage of the internet and over-usage of it Explain why they need to protect themselves and friends and the best ways to do this, including reporting concerns to an adult Talk about the dangers of spending too long online or playing a game. Explain why I need to protect my computer or device from harm.	Begin and secure the dangers of social media and other online sites can impact on people's finances Understand just how important it is to respect the views and opinions of other people online. Explain the consequences of sharing too much about myself online Explain the consequences of spending too much time online or on a game. Explain the consequences to myself and others of not communicating kindly and respectfully. Identifying how to protect a computer or device from harm on the Internet.