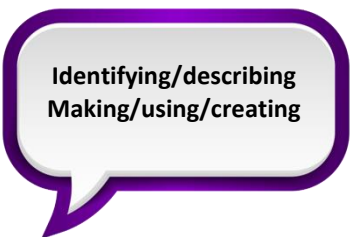
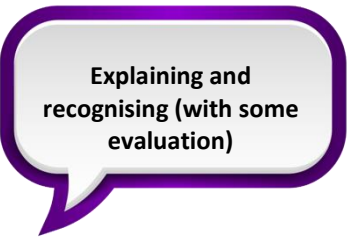



Substantive Knowledge in Computing

Strand	Definition
Computer systems and networks	Understand what a computer is and how networks can be used to retrieve and share information, and how they come with associated risks.
Creating media	Select and create a range of media including text, images, sounds, and video
Data and information	Understand how data is stored, organised, and used to represent real-world artefacts and scenarios.
Design and development	Understand the activities involved in planning, creating, and evaluating computing artefacts.
Effective use of tools	Use software tools to support computing work.
Impact of technology	Understand how individuals, systems, and society as a whole interact with computer systems.
Programming and algorithms	Create software to allow computers to solve problems and be able to comprehend, design, create, and evaluate algorithms
Safety and security	Understand risks when using technology, and how to protect individuals and systems.

Disciplinary Skills in Computing

Below are examples of the disciplinary skills in each key stage. As the children move up through the school, they will build on the skills learned previously. E.g. in UKS2 children will still continue to identify & use (KS1) and explain & recognise (LKS2), but will also demonstrate their ability to and evaluate and develop.

Strand	KS1 Key Disciplinary Skills	LKS2 Key Disciplinary Skills	UKS2 Key Disciplinary Skills
	 <p>Identifying/describing Making/using/creating</p>	 <p>Explaining and recognising (with some evaluation)</p>	 <p>Evaluating/comparing and developing</p>
Computer systems and networks examples	To identify information technology beyond school. To create rules for using technology responsibly.	To explain how digital devices function To recognise how networked devices make up the internet	To evaluate different ways of working together online To evaluate different ways of working together online
Programming examples	To identify the effect of changing a value. To use logical reasoning to predict the outcome of a program (series of commands).	To explain that in programming there are infinite loops and count controlled loops To recognise that a sequence of commands can have an order	To evaluate my project To develop a program to use inputs and outputs on a controllable device
Creating media examples	To identify that there are patterns in music. To use a computer on my own to paint a picture.	To explain that digital images can be changed To recognise how text and images convey information	To evaluate my vector drawing To develop and improve a digital 3D model To compare working digitally with 2D and 3D graphics
Data and information examples	To identify that objects can be counted. To create a pictogram,	To explain that data gathered over time can be used to answer questions	To compare paper and computer-based databases