St Margaret's Academy

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
	Identifying/describing Making/using/creating	**Explaining and recognising (with some evaluation)**	**Evaluating/comparing and developing**
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