HIPPINGS METHODIST PRIMARY COMPUTING PROGESSION OF SKILLS UKS2

COMPUTING SKILLS	Year 5	Year 6
Computer Science Hardware	✓ Learning that external devices can be programmed by a separate computer. ✓ Learning the difference between ROM and RAM. ✓ Recognising how the size of RAM affects the processing of data. Understanding the fetch, decode, execute cycle.	✓ Learning about the history of computers and how they have evolved over time. ✓ Using the understanding of historic computers to design a computer of the future. ✓ Understanding and identifying barcodes, QR codes and RFID. Identifying devices and applications that can scan or read barcodes, QR codes and RFID. ✓ Understanding how corruption can happen within data during transfer (for example when downloading, installing, copying and updating files).
Networks and Data Representation	✓ Learning the vocabulary associated with data: data and transmit. ✓ Learning how the data for digital images can be compressed. ✓ Recognising that computers transfer data in binary and understanding simple binary addition. ✓ Relating binary signals (Boolean) to the simple character-based language, ASCII. ✓ Learning that messages can be sent by binary code, reading binary up to eight characters and carrying out binary calculations. ✓ Understanding how bit patterns represent images as pixels.	✓ Understanding that computer networks provide multiple services.
Computer Science **Computational Thinking**	✓ 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.

Computer Science Programming	✓ Programming an animation. Iterating and developing their programming as they work. ✓ Confidently using loops in their programming. ✓ Using a more systematic approach to debugging code, justifying what is wrong and how it can be corrected. ✓ Writing code to create a desired effect. ✓ Using a range of programming commands. ✓ Using repetition within a program. ✓ Amending code within a live scenario.	✓ Debugging quickly and effectively to make a program more efficient. ✓ Remixing existing code to explore a problem. ✓ Using and adapting nested loops. ✓ Programming using the language Python. ✓ Changing a program to personalise it. ✓ Evaluating code to understand its purpose. ✓ Predicting code and adapting it to a chosen purpose.
Information Technology Using software	✓ Using logical thinking to explore software more independently, making predictions based on their previous experience. ✓ Using software programme Sonic Pi/Scratch to create music. ✓ Using the video editing software to animate. ✓ Identify ways to improve and edit programs, videos, images etc. ✓ Independently learning how to use 3D design software package TinkerCAD.	✓ Using logical thinking to explore software independently, iterating ideas and testing continuously. ✓ Using search and word processing skills to create a presentation. ✓ Creating and editing sound recordings for a specific purpose. ✓ Creating and editing videos, adding multiple elements: music, voiceover, sound, text and transitions. ✓ Using design software TinkerCAD to design a product. ✓ Creating a website with embedded links and multiple pages.
Information Technology Using Email and Internet	✓ Developing searching skills to help find relevant information on the internet. ✓ Learning how to use search engines effectively to find information, focussing on keyword searches and evaluating search returns.	✓ Understanding how search engines work.
Information Technology **Using Data**	✓ Understanding how data is collected in remote or dangerous places. ✓ Understanding how data might be used to tell us about a location.	✓ Understanding how barcodes, QR codes and RFID work. ✓ Gathering and analysing data in real time. ✓ Creating formulas and sorting data within spreadsheets.
Information Technology **Wider use of Technology**	✓ Learn about different forms of communication that have developed with the use of technology.	✓ Learning about the Internet of Things and how it has led to 'big data'. Learning how 'big data' can be used to solve a problem or improve efficiency.

Digital Literacy	✓ Identifying possible dangers online and learning how to stay safe. ✓ Evaluating the pros and cons of online communication. ✓ Recognising that information on the internet might not be true or correct and learning ways of checking validity. ✓ Learning what to do if they experience bullying online. ✓ Learning to use an online community safely	✓ Learning about the positive and negative impacts of sharing online. ✓ Learning strategies to create a positive online reputation. ✓ Understanding the importance of secure passwords and how to create them. ✓ Learning strategies to capture evidence of online bullying in order to seek help. ✓ Using search engines safely and effectively. ✓ Recognising that updated software can help to prevent data corruption and hacking.