Newton Hill Community School: Progression Documents

Computing: Year Group: 6

Prior Learning Year 5	Year 6 Learning	Future Learning	Vocabulary - Subject Specific	Linked Vocabulary
Computer Science: Children may attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts. Children are able to test and debug their programs as they go and can use logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code. Children can translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. They are combining sequence, selection and repetition with other coding structures to achieve their algorithm design. When children code, they are beginning to think about their code structure in terms of the ability to debug and interpret the code later, e.g. the use of tabs to organise code and the naming of variables. Pupils will develop their understanding of computer systems and how information is transferred between systems and devices.	**Computer Science:** Pupils will be introduced to the Micro: bit where they will design their own code that will be used to perform different outputs. Pupils will apply their skills of debugging, sequencing, selection, repetition and variables. It offers the opportunity to use all of these constructs in a different, but still familiar environment whilst also utilising a physical device. Pupils will learn about the World Wide Web as a communication tool. First, they will learn how we find information on the World Wide Web, through learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines. They will then investigate different methods of communication, before focusing on internet-based communication. Finally, they will evaluate which methods of internet communication to use for particular purposes. Pupils will recognise that digital systems represent all types of data using number codes that ultimately are patterns of 1s and 0s (called binary digits, which is why they are called digital systems). They will also represent whole numbers in binary, for example counting in binary from zero to 15, or writing a friend's age in binary.		Audience, audio, case-sensitive, clone, cloze, preview, quiz, Hub \ switch, internet, local area network (LAN), network, World Wide Web, Wide area network (WAN), Wi-Fi, Data analysis, digital footprint, inappropriate, location sharing, password, PEGI rating, phishing, print screen, screen time, secure websites, spoof, Action, algorithm, command, co-ordinates, event, decomposition, execute \ run, debug/ debugging, flowchart, function, object, procedure, selection, tab, input, properties, sequence, simulation, timer, launch command, output, predict, repeat, repeat until, variable.	Audience, audio, case-sensitive, clone, cloze, preview, quiz, inappropriate, spoof, action, command, co-ordinates, event, decomposition, execute flowchart, function, object, procedure, selection, input, properties, sequence, simulation, timer, launch command, output, predict, repeat, variable.

Learners will consider small-scale systems as well as large-scale systems. They will explain the input, output, and process aspects of a variety of different real-world systems. Pupils will also take part in a collaborative online project with other class members and develop their skills in working together online. **Information Technology** Pupils search with greater complexity for digital content when using a search engine. Pupils are able to explain in some detail how credible a webpage is and the information it contains. Pupils will use the Purple Mash application '2Design' to design and print their own 3D model. Pupils will create their own database that will then be used to group and organise data e.g. through the Year 5 history unit where they can create data for Egyptian gods. **Digital Literacy:** Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact See 'Online Safety'.	**Information Technology** Pupils will be supported in organising data into columns and rows to create their own data set. They will be taught the importance of formatting data to support calculations, while also being introduced to formulas and will begin to understand how they can be used to produce calculated data. **Digital Literacy:** Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact See 'Online Safety'.			
Common Misconceptions	Key Questions:		Famous People Links	

• Misunderstanding of key vocabulary. • Tools and their functions. • Use of simulations. • Coding accuracy. • Debugging accuracy. • Use of different variables. • Sharing. • Plagiarism / sources.	• What factors do you need to consider when creating a quiz? • Name three question types in 2Quiz. • Apart from the questions, what else does a quiz need to contain? • What is the difference between the Internet and the World Wide Web? • What is the difference between a LAN and a WAN? • Who is Tim Berners- Lee? • Why do I need to be aware of the dangers of being online? • What is meant by my digital footprint? • Why is it important to think about how much time use a screen for? • How can you use Tabs in 2Code Gorilla? • What is a function in coding? Give an example that you have used in 2Code Gorilla. • In 2Code Gorilla, how can a program receive user input?	• Charles Babbage – First person to make a mechanical computer. • Alan Turing – Mathematician who famously helped break Germany's Enigma code by design a computer to decipher the code. • John Von Neumann – Mathematician who developed computer architecture. E.g. memory (RAM). • Douglas Engelbart – pioneer in the development of modern computers. • Steve Jobs – Co-founder of Apple which invented iPad, iPhone, Apple Mac. • Philip Don Estridge – Developed the first IBM personal computer which paved the way for universal parts/ peripherals. • Bill Gates – Founder of Microsoft. • Tim Berners-Lee – invented the WWW. • https://www.sutori.com/en/story/famous-people-in-computer-history--TcHp7hWrDd1ZfLW2zQfxCs5h
Assessment Opportunities/Final Assessment		
• FFT – Termly Assessments • Continuous assessment (AfL / formative).		