Computing Year 4

Unit of work	Build Your Own Computer	Introducing Networks	Events, Actions and Sequences
Link to Programme of study	**Computers, networks and the WWW**	**Computers, networks and the WWW**	**Computer science**
Composite knowledge	Understand that computers are machines that follow instructions Understand the key hardware components that make up computer systems Write and debug programs that accomplish specific goals	Understand that computers are machines that follow instructions Understand computer networks as computers connected together that allow computers to communicate and users to collaborate	Design, write and debug sequences of instructions to create specific outcomes Use and recognise sequence and repetition within programs Use logical reasoning to predict the outcome of simple programs and detect and correct errors Write algorithms create a solution to a problem and implement them in code.
Intentional knowledge they need to understand (Component knowledge)	Can assemble a raspberry Pi computer and identify the different parts Can explain the function of the key components inside a computer Recognise that the Operating System files are what makes the computer work Use code blocks to create sequences of code Can take a role as part of a team (paired Programming)	That a network is created by joining computers together Users can collaborate together because the computers are joined together Experience of joining computers together using cables and switches Begin to recognise the internet as joined computer networks Use decomposition to help break down big challenges	Write algorithms and implement them as programs Use and recognise a range of events can be used to trigger programs Look for patterns in sequences and use repeat loops to shorten them Break challenges into smaller steps Use sequences to create a range of animations Create digital art work using a paint editor Create more complex sequences of instructions which link together

	Read and follow tutorials to create specific outcomes		Use what they have learnt to create an increasingly complex program incorporating linked sequences, animations and repeat loops
National Curriculum KS12 (skills)	**Key stage 2** **Pupils should be taught to:** • design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		
Vocabulary	Operating System, Files, Hard drive, SD card, Motherboard, CPU, RAM Input, Output, USB, HDMI, Raspberry PI, Driver, Navigator	Operating System, Files, SD card, HDMI, Network, Network cable, Switch, Collaborate	Algorithm, Programming, Code, Order, Sequences, Repeat, Loop, Decomposition, Animation, Debug, events
Links to prior knowledge	Year 3 what's inside your computer Programming units of work in Year 1 , 2 and 3	Year 4 Build Your Own Computer Year 3 What's inside your computer	Programming units in Years 3,2,1: using algorithms, programming in Scratch, Year 1 – Using Paint
Key knowledge for assessment	Can assemble the parts of a raspberry pi and identify the files and operating system as the most important part of the computer	Recognise a network as computers joined together Can describe one way to make a network	Can write an algorithm to express their intentions Can write a simple sequence of code to achieve a specific outcome Can explain what their code does and find and correct errors

	Explain the function of the key components inside a computer Work as a member of a team Write, test and debug sequences of code to create specific outcomes	Collaborated as a member of a group via a network to complete a group challenge	Can create more complex programs using animation, repetition and linked sequences
Cross Curricular Links	Art		History Dance Music
Oracy & Outdoor Learning Links	Partner talk Working in pairs	Group collaboration, explaining and sharing ideas	