NICHOLAS HAWKSMOOR PRIMARY SCHOOL

LONG TERM PLANNING Key Stage 2 Computing/IT

The Purpose of Study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world.
Computing has deep links with mathematics, science, and design technology and provides insights into both natural and artificial systems. At the core of computing is computing science, in which pupils are taught the principals of information and computation, how design systems work, and how toput this knowledge to use through programming. Building on all of this, children are equipped to use IT to create programs, systems and a range of content. Computing also ensures that children become digitally literate – able to use and express themselves and develop their ideas through ICT – at a level suitable for the future workplace and as active participants in a digital world.

Aims of study

That all children:

- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
- Can analyse problems in computational terms and have repeated practical experience of writing computer programs in order to solve such problems.
- Can evaluate and apply IT, including new or unfamiliar technologies, analytically to solve problems.
- Are responsible, competent, confident and creative users of ICT.

At Nicholas Hawksmoor children are taught in half-classes every other week while the other half go to Art lessons. Thus, in a six week term, the children will cover 3 lessons, each of which is an extended half-morning or full afternoon session.

	Autumn	Spring	Summer
Year 3	We are programmers / We are bug fixers	We are network engineers / We are communicators	We are presenters / We are opinion pollsters
Year 4	We are software developers / we are designers	We are musicians / we are HTML editors	We are wiki authors / we are meteorologists
Year 5	We are programmers / we are presenters	We are cryptographers / we are game developers	We are artists / we are architects
Year 6	We are Planners / we are project managers	We are researchers / we are interface designers	We are app developers / we are marketers

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Coverage	Key Stage 2 Computing/IT
Year 3 and 4 CodeMonkey & Lightbot – simple algorithmic design Scratch – creating content and understanding UI. Using costumes to make things appear and disappear. What is a network / what is the internet? How does our school server system work? – walk round the school How physical is the internet? Undersea cables, repairs, connections and junctions. What is it to 'communicate'? Facetime / Oovoo / email / IM services Create a short story with no words using clip art only, in Powerpoint Powerpoint – create presentations on animals with active transitions and animations including text and pictures. Publisher – making simple posters and other publishable materials. Scratch – making simple scripts (algorithms) to make sprites move. Create a maze game where movement is controlled by keyboard keys. Use www.buttonbass.com and www.incredibox.com to create musical compositions which are structured and organised musically. HTML editing through Chrome extension 'X-Ray Goggles' to alter web pages and edit content. PBWorks - creating and editing a wiki page. Understanding the opensource nature of a wiki, curating and using it while appreciating its inherent usefulness and associated unreliability..	**Year 5 and 6** Scratch – Code Club booklets level 1 and 2 from Barefoot Computing Beginning simple game development where sprites chase, follow, replace and communicate with each other. This includes development of scoring and timing games including on-screen messages 'bonuses' under certain criteria. Coding/decoding & ciphers – a history: Codes as part of espionage and protection of information. Morse code/semaphore etc Passwords and 'keys' allow certain users but not others – online safety. Mathematical patterns help us 'unlock' codes and 'crack' them. http://www.simonsingh.net/The_Black_Chamber/ Fusing Geometry & Art through Scratch and http://www.onemotion.com/flash/sketch-paint/ https://illuminations.nctm.org/Activity.aspx?id=3533. https://sites.google.com. Creating and developing a website in small groups about cyber safety to embed within the school website. Google SketchUp for 3D CAD design to create simple buildings and learn UI techniques to design and construct a Greek Temple and other buildings. Powerpoint and Publisher - Deepening presentation and desktop publishing skills including using www.screencast-o-matic.com making a screencast / tutorial which can instruct others. MS Excel - Understanding how to create simple spreadsheets and control accounts as part of an enterprise project.