

NPS Long Term Plan for Computing 2026

	KS1	KS2
CS	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions Create and debug simple programs Use logical reasoning to predict the behaviour of simple programs	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 Appreciate how [search] results are selected and ranked
IT	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Use search technologies effectively 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
DL	Recognise common uses of information technology beyond school Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	Understand the opportunities [networks] offer for communication and collaboration Be discerning in evaluating digital content Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

The Computing Curriculum can be divided into 3 strands:

CS - Computer Science

IT - Information Technology

DL - Digital Literacy

This long term plan maps out the provision and progression in the **CS** and **IT** strands of the curriculum. The units are from Kapow.

DL will be taught every half term following the Kapow online safety planning. It is aligned to the SMSC units where appropriate. **DL** concepts will be reinforced during Computing lessons.



Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
R/1		<u>Computing systems and networks -</u> Using a computer Investigating the main parts of a computer and learning how the keyboard and mouse are used to control it. Pupils also practise how to log in, log out and navigate simple digital tasks independently.	<u>Programming 1</u> All about instructions Developing an understanding of how to receive and give instructions while learning why instructions need to be clear and precise.	<u>Computing Systems and Networks 2: Exploring hardware</u> Investigating different computer hardware parts and learning how to operate a camera.	<u>Programming 2: Programming Bee-Bots</u> Exploring simple programming by experimenting with a Bee-Bot or Blue-Bot and investigating how hardware responds to commands.	<u>Data Handling:</u> Introduction to Data Learning how to sort and categorise data and an introduction to branching databases and pictograms.
Online Safety Unit	<u>Online safety: Year R/1 (see Year 1 Section)</u> Exploring online safety, including how to stay safe online, manage emotions when something causes upset and understand responsibilities as a digital user. Pupils investigate how online actions create a digital footprint and apply their understanding to make safe and responsible choices online.					
2	<u>Computing systems and networks 1: What is a computer?</u> Exploring what a computer is by identifying different inputs and outputs and understanding how computers process information. Pupils investigate how computers are used in the wider world before designing their own computerised invention.	<u>Programming 1: Algorithms and debugging</u> Developing an understanding of what algorithms are, how to program them and how they can be developed to be more efficient through a range of unplugged and plugged-in activities.	<u>Computing systems and networks 2: Word processing</u> Developing word processing skills by learning touch typing, using keyboard shortcuts and exploring how to stay safe online. Pupils apply formatting and editing tools, including bold, italics and font colour, before importing images to create and improve their own digital documents.	<u>Programming 2: Option 1: Make Code</u> Exploring how to use 'MakeCode' by investigating what different programming blocks do and how they control outcomes. Pupils apply their understanding by planning, building and testing their own program.	<u>Creating media: Stop motion: Using tablets</u> Creating simple animations, storyboarding creative ideas and decomposing a story into small action steps.	<u>Data handling: International Space Station</u> Exploring how astronauts survive on the International Space Station, including how data is collected, used and displayed through sensor systems and monitoring equipment. Pupils also consider habitable planets, how people live and work in space and how space exploration can benefit life on Earth.

Online Safety Unit	<u>Online safety: Year 2</u> Investigating online safety, including what happens to information posted online, how to keep personal information private and how permission is given or denied in online spaces. Pupils apply their understanding by identifying safe online behaviours and making responsible choices about sharing information online.
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3/4	<u>Microsoft Office 365: Computing systems and Networks 2: Emailing</u> Learning how to send emails with attachments and understanding the importance of using them safely and responsibly. Pupils also reflect on the content of digital communications and recognise the importance of making responsible decisions as digital citizens.	<u>Scratch:</u> Investigating programming through Scratch by creating animations and learning key coding concepts. Pupils apply their understanding by testing, debugging and evaluating their work to improve and refine digital projects.	<u>Video trailers - Option 1: Using devices other than iPads</u> Developing digital video skills through creating trailers that use special effects, transitions and editing techniques. Pupils apply their understanding by planning, producing and refining video content for a book trailer.	<u>Google: Creating media: Website design</u> Exploring the features of Google Sites and learning how websites are planned, created and organised for different audiences and purposes. Pupils collaborate to design web pages, create their own websites and evaluate how effectively their content communicates information.	<u>Programming 1: Further coding with Scratch</u> Designing and programming a game using variables, sensors and 'if' statements to control outcomes and interactions. Pupils debug and evaluate their projects to improve functionality, refine gameplay and develop more effective game designs.	<u>Programming 1: Further coding with Scratch</u>
Online Safety Unit	<u>Online Safety Year 3/ 4 (see Year 3 Section)</u> Further exploring online safety, including the difference between beliefs, opinions and facts, privacy settings, protecting personal information and responding to upsetting online content. Pupils identify safe online behaviours and learn how to make responsible choices when using social media and digital platforms.					
5	<u>Computing systems and networks: Search engines</u> Investigating how search engines work	<u>Programming 1: Music</u> Developing programming and music skills through creating digital sounds, beats and melodies using coding techniques. Pupils apply their	<u>Data handling: Mars Rover 1</u> Exploring how the Mars Rover collects, stores and transmits data	<u>Programming 2: BBC micro:bit</u> Investigating how to program the BBC micro:bit by creating interactive projects	<u>Stop-motion animation - Option 1: Using Stop Motion Studio</u> Developing an understanding of animation by exploring stop-motion techniques and how	<u>Skills showcase: Mars Rover 2</u> Investigating how computers represent and process digital images through pixels,

	and developing effective searching skills to find relevant and accurate information online. Pupils evaluate the reliability of online content, explore how web crawlers organise information and apply their understanding by creating an informative poster.	understanding by using nested loops to create rhythms and compose a soundtrack with layered musical patterns.	back to Earth using binary code and computer systems. Pupils investigate computer architecture, learn how binary represents different types of data and apply their understanding to read and interpret binary numbers and text.	using sensors, variables and conditional statements. Pupils experiment with variables, apply conditional statements and develop an understanding of how coding brings digital devices to life.	moving images are created. Pupils plan, create and edit their own stop-motion project, applying digital skills to produce a finished animation.	binary code and image compression. Pupils apply their understanding by creating pixel artwork, experimenting with 3D design tools and designing a functional Mars Rover tyre using Tinkercad.
Online Safety Unit	<u>Online safety: Year 5</u> Investigating online communication, personal privacy and the impact technology can have on health and wellbeing. Pupils explore how apps access information, develop strategies to stay safe online and learn how to manage their online reputation and address bullying.					

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6	<u>Computing systems and networks: Bletchley Park and the history of computers</u> Investigating secret codes, secure passwords	<u>Computing systems and networks: Exploring AI</u> Exploring what AI is and how it generates text, images and code. Pupils learn about creating and refining prompts to improve AI responses while also considering the ethical implications of AI and its	<u>Data handling 1: Big Data 1</u> Exploring how data is transmitted and used in everyday technology through barcodes, QR codes, infrared communication and RFID systems. Pupils investigate real-world applications of digital data before	<u>Programming: Exploring Python</u> Exploring text-based programming with Python, pupils learn how syntax and nested loops control program outcomes and develop their ability to identify and fix syntax and	<u>Data handling 2: Big Data 2</u> Investigating how data is transferred, collected and used in connected technologies, including the Internet of Things and smart systems. Pupils explore how data can improve everyday life, then design and present ideas for transforming a school into a smart school.	<u>Skills showcase: Inventing a product</u> Designing an electronic product using coding, debugging and computer-aided design to understand how digital

	and the history of computers to understand how technology and cybersecurity have developed over time. Pupils research past computers before designing a computer of the future and creating an audio advert to present their ideas.	potential to replace human roles.	collecting, analysing and evaluating transport and tracking information.	logic errors through careful debugging.		technologies support product development. Pupils also create a website and video advert to present and promote their product ideas.
Online Safety Unit	<u>Online safety: Year 6</u> Examining online safety and wellbeing, including how online interactions, sharing content and digital behaviour can affect emotions and reputation. Pupils learn how to manage passwords, report online bullying and make responsible decisions about what they click and share.					