Vernon Park Primary School: Computing Progression of Knowledge and Skills

At Vernon Park Primary School, we aim to provide all children, parents and the wider school community with a safe, caring and inclusive environment where high-quality learning experiences enable all children to be the best that they can be.

Kindness and Empathy, Friendship and Respect, Honesty and Responsibility, Tolerance and Fairness, Support and Inclusion, Challenge and Resilience

Knowledge and Skills	EYFS	KS1	LKS2	UKS2
Technology in our lives	**<u>Early Learning Goal:</u>** **Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.** • Show an interest in technological toys with knobs or pulleys, or real objects such as cameras, tablets or computers. • Have an interest in pieces of ICT apparatus that they use with adult supervision. • Manipulate a range of equipment involving ICT, such as computers, BeeBots etc.	• Recognise ways in which technology is used in a range of work environments e.g. supermarkets, industry, police, hospitals etc. • Be able to describe the purpose of a range of household technologies. • Understand that different technologies are used for different purposes including entertainment, communicating, keeping us safe, productivity etc. • Begin to have an awareness of how technology affects our lives. • Recognise commonly used technologies. • Be able to identify and describe the technology they use at home. • Discuss how things were done before the invention of a range of common technologies e.g. communication technology. • Recognise the difference and similarities between desktop computers/laptops and mobile technologies.		
	Key vocabulary: On, Off, Button, Click, Computer, Mouse, Keyboard, Keys, Screen, Icon, Image, Equipment.	**Key vocabulary:** Sensors, Information, Technology, Purpose, Computer, Entertainment, Communication, Mobile		

Vernon Park Primary School: Computing Progression of Knowledge and Skills

At Vernon Park Primary School, we aim to provide all children, parents and the wider school community with a safe, caring and inclusive environment where high-quality learning experiences enable all children to be the best that they can be.

Kindness and Empathy, Friendship and Respect, Honesty and Responsibility, Tolerance and Fairness, Support and Inclusion, Challenge and Resilience

Knowledge and Skills	EYFS	KS1	LKS2	UKS2
Basic skills and the Internet	**<u>Early Learning Goal:</u>** **Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.** • Knows how to operate simple equipment, e.g. turns on CD player and uses remote control. • Show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movement or new images. • Knows that information can be retrieved from computers. • Develop a deeper understand of how to manipulate simple equipment, such as twisting or turning a knob. • Uses ICT hardware to interact with age appropriate computer software.	• Typing Skills – two hands, multiple fingers. • Switching on and shutting down. • Logging on/off. • Opening/closing programs. • How to hold the mouse. • Mouse control: left click, Right click, single click=select, click and drag, double click=execute a command. • Pointer (on screen arrow)/cursor (flashing line in text documents). • Keyboard layout: letters, numbers, backspace, delete. • Shift-key/caps lock. • Arrow keys, return/enter key. • Highlighting and formatting. • Cut/copy and paste. • Understanding the network system, saving, opening saved work and My Documents • Viewing open windows: minimise, maximise, close. • Go on the Internet. • Navigate around a page. • Select hyperlinks on a page or document to navigate to a different page. • Use the scroll bar to navigate around a page. • Be able to use the iPad correctly for a range of tasks. • Be able to use the mouse and keyboard to play on online game.		
	Key vocabulary: On, Off, Button, Click, Computer, Mouse, Keyboard, Keys, Screen, Icon, Image, Equipment.	**Key vocabulary:** Internet, Mouse, Navigate, Hyperlink, Log on, Log off, Program, Keyboard, Pointer, Copy, Paste, Cut, Keys		

Vernon Park Primary School: Computing Progression of Knowledge and Skills

At Vernon Park Primary School, we aim to provide all children, parents and the wider school community with a safe, caring and inclusive environment where high-quality learning experiences enable all children to be the best that they can be.
Kindness and Empathy, Friendship and Respect, Honesty and Responsibility, Tolerance and Fairness, Support and Inclusion, Challenge and Resilience

Knowledge and Skills	EYFS	KS1	LKS2	UKS2
Computing and coding	**<u>Early Learning Goal:</u>** **Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.** • Show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movement or new images. • Completes a simple program on a computer. • Uses ICT hardware to interact with age appropriate computer software. • To speculate on the reasons why things happen or how things work. • To click on different icons to cause things to happen in a computer program.	• Recognise that devices and on-screen objects can be controlled by sequences of actions or instructions. • Understand that a range of devices and software can be controlled by buttons. • Understand what an algorithm is and the need for precise instructions to implement it. • Recognise the actions that will result from a sequence of instructions. • Talk about sequencing activities across the curriculum as examples of algorithms. • Be able to physically follow and give instructions to move around/make something. • Plan and enter a sequence of instructions to achieve an algorithm, with a robot specifying distance and turn. • Predict what will happen for a sequence of instructions in a program and test results. • Use the word debug to correct any mistakes when programming on screen or a floor robot. • Be able to articulate an algorithm to achieve a purpose. • Explore outcomes when giving instructions in a simple program.	• Extend understanding and knowledge of programming by experiencing a variety of resources. • Begin to correct errors (debug) as they program devices and actions on screen. • Develop computational thinking by undertaking a variety of specific tasks. • Be able to use assisted programming software to plan, design and create characters and scenes, which interact with external controllers. Using the software control the movement and responses of different elements on screen. • Test and improve / debug programmed sequences. • Begin to type logo commands to achieve outcomes. • Recognise that 'repeat' and 'forever' can be used to achieve efficient solutions to tasks. • Create an algorithm and code it effectively. • Sequence pre-written lines of programming into order. • Be able to create, edit and refine more complex sequences of instructions for a variety of programmable devices. • Talk about algorithms planned by others and identify any problems and the expected outcome. • Evaluate the effectiveness of their algorithms and codes and suggest improvements.	• Recognise the need for an effective algorithm to achieve a specific outcome. • Understand that efficient procedures are important for effective outcomes. • Begin to recognise the need to break problems up into smaller parts to achieve a solution. • Recognise that sensing change can be used to begin an action. • Understand the need for logical reasoning to detect and correct errors in a program. • Recognise a variable in an algorithm or program and begin to understand why it is needed. • Recognise the uses of programming in the world around and its impact on society, including that of gaming. • Continue to develop an understanding of how technology works, with a focus on developing computational thinking.
	Key vocabulary: On, Off, Button, Click, Computer, Mouse, Keyboard, Keys, Screen, Icon, Image, Equipment.	**Key vocabulary:** Algorithm, Instructions, Program, Follow, Precise, Execute, Repeat, Debug, Run	**Key vocabulary:** Algorithm, Control, Instructions, Repeat, Selection, Sequence, Variables, Program, Decomposition, Loop, Execute, Computational Thinking, Forever, Run	**Key vocabulary:** Algorithm, Control, Instructions, Repeat, Selection, Variables, Program, Loop, Execute, Forever , Run

Vernon Park Primary School: Computing Progression of Knowledge and Skills

At Vernon Park Primary School, we aim to provide all children, parents and the wider school community with a safe, caring and inclusive environment where high-quality learning experiences enable all children to be the best that they can be.

Kindness and Empathy, Friendship and Respect, Honesty and Responsibility, Tolerance and Fairness, Support and Inclusion, Challenge and Resilience

Knowledge and Skills	EYFS	KS1	LKS2	UKS2
E-Safety and responsibility	**<u>Early Learning Goal:</u>** **Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.** • To identify technology that is used in places like homes and schools. • To understand how to use technology respectfully. • To seek guidance and support if made to feel uncomfortable when using technology.	• Begin to understand what personal information is and who you can share it with. • Know who to tell when they see something that makes them uncomfortable. • Recognise different ways to communicate online and understand the importance of always being kind and polite. • Know their password belongs to them. • Begin to recognise the need to know who it is they are sharing their learning with online and recognise the difference between real and imaginary online experiences. • Understand the need for a balance in how they spend their time. • Talk about the choices they make about the games and activities they play online and with different devices. • Recognise the importance of a secure password and keeping passwords private. • Recognise the different ways you can be online including the internet, console games, mobile technologies etc.	• Be able to follow e-safety rules for the school and personal use. • Know how to behave in order to protect themselves including thinking about the appropriateness of different online experiences and the amount of time they spend on computers or other devices. • Recognise excessive use of computers and other devices. • Create a secure password and keep it private. • Identify what is real and what is imaginary online. • Know they need to be careful about downloading files and games from the Internet. • Be able to identify risks when they are online. • Tell an adult if they see content that makes them uncomfortable or they make contact with people they don't know.	• Agree sensible e-safety rules for the classroom. • Discuss their own personal use of the Internet and choices they make including excessive use, personal information and password security. • Discuss appropriate use of digital media including images and video. • Discuss how to protect devices from virus threats. • Discuss the importance of keeping an adult informed about what you're doing online, and how to report concerns. • Explore using the safe and responsible use of online communication tools.
	Key vocabulary: On, Off, Button, Click, Computer, Mouse, Keyboard, Keys, Screen, Icon, Image, Equipment.	**Key vocabulary:** E-Safety, Reporting, Tell, Secure, Password, Protection, Cyber-bullying, Danger, Reliable	**Key vocabulary:** E-Safety, Responsibility, Filtering, Secure, Password, Protection, Cyber-Bullying, Social Networking	**Key vocabulary:** E-Safety, Responsibility, Filtering, Secure, Password, Protection, Cyber-Bullying, Social Networking

Vernon Park Primary School: Computing Progression of Knowledge and Skills

At Vernon Park Primary School, we aim to provide all children, parents and the wider school community with a safe, caring and inclusive environment where high-quality learning experiences enable all children to be the best that they can be.
Kindness and Empathy, Friendship and Respect, Honesty and Responsibility, Tolerance and Fairness, Support and Inclusion, Challenge and Resilience

Knowledge and Skills	EYFS	KS1	LKS2	UKS2
Working with data		• Develop data handling skills by sorting, classifying or grouping various objects progressing from practical activities to the use of ICT. • Use ICT to sort and sequence objects. • Understand and describe how ICT makes it quick and easy to add to and change data. • Use simple graphing programs to produce pictograms and other simple graphs. • Develop simple classification skills by carrying out simple sorting activities. • Use graphing software to change a graph type. • Interpret graphs, discuss information contained and answer simple questions. • Understand that ICT can be used to sort items and information. • Be able to interpret graphs, discuss information contained and answer simple questions.	• Recognise similarities and differences between ICT and paper-based systems. • Generate and compare different charts and graphs to answer questions (using graphing software, database or spreadsheet) and understand that different graphs are used for different purposes. • Determine the data needed to answer a specific question; organise, present, analyse and interpret the data in tables, diagrams, tally charts, pictograms and bar charts, using ICT where appropriate. • Begin to develop skills to identify clearly what data needs to be collected and design a questionnaire to aid its collection. • Use a pre-prepared spreadsheet to record data to answer questions, explore simple number patterns and produce graphs. • Change the contents of cells in a pre-prepared spreadsheet and explore the consequences. • Understand how spreadsheet models allow changes to be made quickly and easily in comparison with real life situations. • Generate and compare different charts and graphs (using graphing software, database or spreadsheets) and understand that different graphs are used for different purposes.	• Understand which searches and graph types are relevant to a specific problem and types of information. • Recognise the consequences of data not being accurate, relate to outside world. • Understand the need for data protection and some of the rights of individuals over stored data and how it affects use and storage of data in the real world. • Understand the need for accuracy and frequent checking when entering formulae. • Understand that spreadsheets can automate functions, making it easier to test variables. • Be able to use spreadsheets to make and test predictions. • Understand when and where it is appropriate to use a spreadsheet model to support an investigation and explain their choices. • Recognise how ICT enables you to search and sift through large amounts of data. • Recognise the need for accuracy when designing entering and interrogating data and how this will affect the quality of the information gained. • Understand which graph types are relevant to a specific problem and types of information.
		Key vocabulary: Data, Pictogram, Information, Graph, Reliability, Accuracy, Sort, Organise, Bar chart, Labels	**Key vocabulary:** Data, Filter, Field, Information, Graph, Reliability, Cell, Interpret, Accuracy, Analysis, Compare, Database, Relationship, Record, Accuracy	**Key vocabulary:** Data, Filter, Field, Information, Graph, Reliability, Cell, Interpret, Analysis, Compare, Record, Accuracy, Database, Relationship

Vernon Park Primary School: Computing Progression of Knowledge and Skills

At Vernon Park Primary School, we aim to provide all children, parents and the wider school community with a safe, caring and inclusive environment where high-quality learning experiences enable all children to be the best that they can be.

Kindness and Empathy, Friendship and Respect, Honesty and Responsibility, Tolerance and Fairness, Support and Inclusion, Challenge and Resilience

Knowledge and Skills	EYFS	KS1	LKS2	UKS2
Presenting information		• Be able to use a digital camera and iPad tools to capture images. • Learn how to resize and manipulate (pre-uploaded) images. • Create simple presentations for different purposes. • Choose appropriate graphics and sound within a piece of software to enhance their work. • Know that ICT can be used to communicate ideas in different ways e.g. text, images, and sound. • Talk about their use of text, graphics and sound. • Create linear presentations and documents for different purposes using a combination of text, graphics, images, recorded sound and sound from a library. • Save, retrieve and amend their work. • Be able to use their own edited images in a presentation or document. • Begin to understand that images, sounds and text can be subject to copyright. • Be able to edit images for a purpose by applying simple editing techniques using both software and iPad. • Learn a range of techniques and skills needed to produce presentations and on a computer and an iPad.	• Recognise the features of good page design and multimedia presentations and consider how these meet the needs of the audience. • Know how to take images appropriately and responsibly (See school's Acceptable Use Policy/AUP). • Understand that images, sounds and text can be subject to copyright and abide by copyright rules when creating a presentation. • Understand how sound can be used in presentations to create meaning and provide effects. • Be able to record sounds to add to work. • Select and import sounds from other sources e.g. own recordings, sound effects and music. • Recognise how to edit and combine sounds for a purpose. • Use a range of devices to capture still and moving images for a purpose. • Select and import graphics from digital cameras, and other sources e.g. the Internet. • Select suitable text, sounds and graphics to import into own work. • Be able to add simple titles, credits and special effects. • Understand that planning evaluation and improvement are vital parts of the design process and that ICT allows changes to be made quickly and efficiently. Demonstrate this through editing their work. • Use various tools in photo-manipulation software to edit/change an image. • Use various layouts, formatting, graphics and illustrations for different purposes or audiences.	• Independently select the most appropriate ICT tools for their intended purpose and audience. • Understand the potential of multimedia to inform or persuade and know how to integrate text, images and sounds imaginatively for different audiences and purposes. • Create an outline plan for a non-linear presentation; producing a diagram to demonstrate understanding how pages link and the need for clarity. • Acquire, store and combine images from different sources, then use to enhance a presentation. • Create images using a range of techniques to develop a particular style. • Understand that images, sounds, video and text can be subject to copyright and abide by copyright rules when creating a presentation. • Know that images (still and moving) can be used to enhance presentations or communicate ideas. • Know how to take images appropriately and responsibly (See school's Acceptable Use Policy/AUP). • Know when it is appropriate to use sound/music to communicate with an audience. • Develop consistency across a document, using the same styles of font, colour, size for headings, body text, etc. • Make effective use of transitions and animations in presentations. Consider their appropriateness and overall effect on the audience. • Use online tools and services to create, edit and store digital media and presentations. • Through peer and self-assessment, routinely evaluate presentations and make improvements.
		Key vocabulary: Edit, Save, Effects, Purpose, Layout, Fill, Colour, Font, Resize, Sound, Image, Crop, Manipulate, Camera, Brightness	**Key vocabulary:** Audience, Edit, Purpose, Layout, Media, Font, Manipulate	**Key vocabulary:** Audience, Edit, Purpose, Media, Digital, Web2

Vernon Park Primary School: Computing Progression of Knowledge and Skills

At Vernon Park Primary School, we aim to provide all children, parents and the wider school community with a safe, caring and inclusive environment where high-quality learning experiences enable all children to be the best that they can be.
Kindness and Empathy, Friendship and Respect, Honesty and Responsibility, Tolerance and Fairness, Support and Inclusion, Challenge and Resilience

Knowledge and Skills	EYFS	KS1	LKS2	UKS2
Network communication and collaboration			• Be able to use online tools such as blogs and forums to exchange information and collaborate with others within and beyond their school. • Recognise the advantages and consequences of online communication. • Record and share information electronically. • Check websites to see whether images, text, video and sound can be copied to use in their work. • Understand how e-mails work, and create and send e-mails including using the 'cc' and 'bcc' fields. • Use e-mail to e-mail work completed in school to their teachers and peers. • Contribute/edit/refine contributions to a shared document and understand that all changes are visible • Begin to understand what a network is and relate this to computer networks. • Recognise that the internet is a network of connected computers and the World Wide Web is a vast collection of websites that are stored on these computers.	• Recognise the appropriate online tools to collaborate and communicate with others. • Recognise the risks and rewards of using internet communication tools and understand how to protect themselves. • Recognise material on the internet which belongs to someone else and know what can be downloaded to use in their own work. • Recognise their own right to be protected from the inappropriate use of technology by others. • Recognise and use different forms of electronic communication and web 2.0 tools and recognise appropriateness of using different tools in different contexts and the advantages and disadvantages. • Able to work collaboratively to produce a document or presentation using cloud based tools. • Be able to work collaboratively and in real-time on documents and presentations using cloud based online tools and recognise the advantages of this. • Collaborate with peers on a project to produce a finished piece to support topic work using online collaboration tools. • Recognise the advantages, disadvantages and consequences of face to face online communication and collaboration. • Begin to understand how a computer network works. • Begin to understand the different aspects of the internet and how it works.
			Key vocabulary: Email , Packet, Blogging, Hub, Collaboration, Router, Contribution, Protocol, Forums, Data Centre, Wikis, Publish, Audience, Communication, Feedback	**Key vocabulary:** Email, Packet, Blogging, Hub, Collaboration, Router, Contribution, Protocol, Forums, Publish, Audience, Face To Face, Communication, Feedback, Wikis, Network

Vernon Park Primary School: Computing Progression of Knowledge and Skills

At Vernon Park Primary School, we aim to provide all children, parents and the wider school community with a safe, caring and inclusive environment where high-quality learning experiences enable all children to be the best that they can be.
Kindness and Empathy, Friendship and Respect, Honesty and Responsibility, Tolerance and Fairness, Support and Inclusion, Challenge and Resilience

Knowledge and Skills	EYFS	KS1	LKS2	UKS2
Finding and using data			• Select key words to include in web searches. • Analyse search engine result lists by looking at the web address and site summaries for clues. • Search for relevant text and images on the internet to import into a document. • Use internet research to help create a report or presentation that answers specific questions on a topic. • Recognise that the internet contains fact fiction and opinion. • Use a search engine to find a range of relevant websites. • Be able to copy and paste images from the internet into a document to illustrate it. • Be able to present internet research effectively in a document or presentation. • Use search tools on the computer to find files or programs.	• Begin to understand some of the ways that search engines select and rank results. • Be able to use advance search techniques to refine searches. • Compare websites and other sources to help verify and validate content. • Recognise that domain names and common website extensions can support the validation process. • Develop skills to question where web content might originate from and understand that this gives clues to its authenticity and reliability. • Evaluate the usefulness of websites. • Identify various aspects of a webpage that should be ignored, including: adverts, commercial toolbars, offsite links etc. • Recognise bias by looking at information on the internet from different viewpoints. • Use effective internet research to help create a report or presentation that answers specific questions on a topic.
			Key vocabulary: Research, Content, Information, Search engine, Results, Ranking, Unique Resource Locator (URL), Validity	**Key vocabulary:** Research, Content, Information, Search engine, Results, Ranking, Unique Resource Locator (URL), Validity