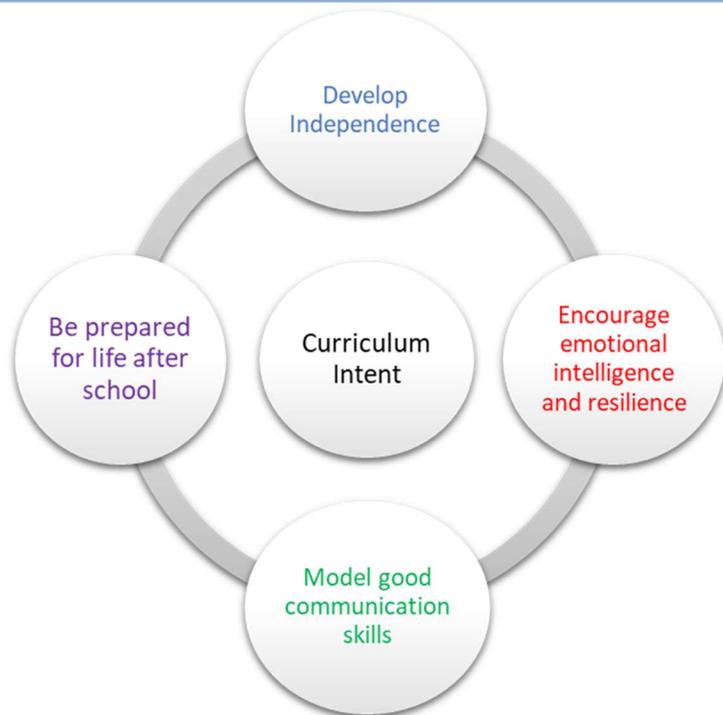


## Key Stage 3 and ICT Long Term Plan



### School Pedagogy:

Penkford School has a child centred pedagogy. The school adopts an inclusive, transformative pedagogy as we believe that a child's 'capacity to learn can change and be changed for the better as a result of what happens and what people do in the present' (*Hart et al. 2004, P166*). Learning is about shared communication between staff and pupils. Implementation of our curriculum intent is underpinned by Rosenshine's 10 Principles of Instruction (*Rosenshine, 2012*). All learning sessions include the following elements; reference to curriculum intent, recap of knowledge and skills, assessment for learning and pupil voice.

### Subject Specific Pedagogy:

We believe that the majority of ICT skills development should be embedded across the curriculum. Key stage three classes have one timetabled ICT Skills/Computing session each week. The timetabled computing session will focus on one of two elements: an explicit computer science lesson or a 'tinkering session'.

The computer science part of the ICT/computing curriculum will often, but not always, need a more explicit approach. A tinkering session looks at introducing a new app or tool and giving children opportunity to experiment and familiarise themselves with the different elements and tools before it can be applied in a more focused approach across the curriculum.

During standalone ICT lessons, ICT skills and computing knowledge will be delivered to all children through a bespoke Penkford ICT skills curriculum with a

focus on digital literacy and functional application which will best prepare our learners for their post-16 pathways.

The curriculum is progressive and builds on skills learnt in prior years, where there are gaps in learning provision is adapted accordingly. Key component skills from previous curriculum stages form the underlying basis of each topic to ensure pupils have a strong foundation of learning to build on, taking into consideration pupils' individual starting points.

Sequencing of topics provides the opportunity to revisit, reinforce and apply knowledge, understanding and skills learned whilst making connections across the curriculum. The curriculum is designed to promote progress, challenge and achievement for all

#### Subject Intent:

KS3: At our school we want pupils to be Master of Technology and not slaves to it. Technology is everywhere and will play a pivotal part in students' lives. Therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We want our pupils to be creators not consumers and our ICT curriculum encompassing some computer science, information technology and digital literacy skills reflects this.

We want our pupils to understand that there is always a choice with using technology and as a school we utilise technology to model positive use. We recognise that the best prevention for a lot of issues we currently see with technology/social media is through education. We recognise that technology can allow pupils to share their learning in creative ways. We also understand the accessibility opportunities technology can provide for our pupils. We

encourage staff to try and embed functional ICT skills across the whole curriculum to make learning creative and accessible.

We want our pupils to be fluent with a range of tools to best express their understanding and hope by KS4, children have the independence and confidence to choose the best tool to fulfil tasks they will encounter throughout their adult life.

Key Stage 3 ICT Long Term Plan	Topic/Learning Pathway	Key Vocabulary	Links to previous learning (Component Skills)	Links to wider curriculum
Autumn 1	<b><u>Networking- E- Safety, Using computers and the Internet</u></b>	Internet Internet service World wide web Online Search engines Networks Web navigation Digital content Web browser Content Microsoft	<p>Understand what HTML is and recognize HTML tags (KS2)</p> <p>Use search technology effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content (KS2)</p> <p>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 (KS2)</p> <p>Use of technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour online (KS2)</p>	<p>MH 2.1/2.2/2.3/2.4 - E-safety and Cyberbullying looking at people's feelings and human emotions in IT.</p> <p>MH 2.6/2.7 – Looking at websites and support systems that are available to pupils through workshops and special guests, ICT weeks</p> <p>MH 2.10 – Development of problem-solving strategies through coding of games such as Scratch.</p> <p>C3.3/C3.4 – looking at the different careers in IT, talking to visitors and personal research on the internet.</p> <p>C3.7 – Analyse local job vacancies using job vacancy websites/apps/newspapers and other sources</p> <p>C3.10 – Looking at digital career's information, advice and guidance services, provide pupils with a guide to support them when thinking and decision making on careers in IT.</p> <p>C3.11 – recognise the qualities and skills that help to make you employable, using skill logs,</p>
	The School System			
	E-Safety			
	Internet and Web browsers			
	Searching the Web			
	Microsoft Word			
	Microsoft Office			

Key Stage 3 ICT Long Term Plan	Topic/Learning Pathway	Key Vocabulary	Links to previous learning (Component Skills)	Links to wider curriculum
				<p>recordings of their own skills that are needed for employability in IT.</p> <p>PSD- Online safety</p>
Autumn 2	<p><b><u>Computers- Inputs/Outputs and Memory</u></b></p> <p>Types of Computer</p> <p>Input- Process- Output Model</p> <p>Computer Hardware</p> <p>Memory and Secondary Storage</p> <p>Software</p>	<p>Software</p> <p>Utility</p> <p>Application software</p> <p>Hardware</p> <p>Computer system</p> <p>Data storage</p> <p>Internal parts</p> <p>Computer architecture</p> <p>Input cycle</p> <p>Output cycle</p> <p>Digital devices</p> <p>Programmes</p>	<p>Describe common systems and their purposes (KS2)</p> <p>Action different strategies to limit the impact of technology on everyday life (KS2)</p> <p>Awareness of the different software products and apps available on a computer (KS2)</p> <p>Use search technology effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content (KS2)</p>	<p>English – Vocabulary, reading of instructions, writing guides</p> <p>Mathematics – Use of calculations, draw graphs, and word and number problems</p> <p>History – Famous people in the history of computing</p> <p>Geography – Use of google maps, country fact files, country research</p>
	<p><b><u>Networking- Networking Basics</u></b></p> <p>Introduction to Networks</p> <p>Internet and the World Wide Web</p> <p>Domains and IP</p> <p>Email</p>	<p>Network</p> <p>World wide web</p> <p>Domains</p> <p>IP addresses</p> <p>Email</p> <p>Communication</p> <p>Protocols</p> <p>Structures</p> <p>Security</p> <p>Safety online</p>	<p>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 (KS2)</p>	<p>Physical Education – Use of technology in sport, performance analysis</p> <p>Science – factual research around topics</p> <p>English- The correct format and writing of an email technique. Looking at communication skills through written English.</p>

Key Stage 3 ICT Long Term Plan	Topic/Learning Pathway	Key Vocabulary	Links to previous learning (Component Skills)	Links to wider curriculum
	Network Protocols Network Security	Domains Firewalls		PSD- Online safety
Spring 1	<b><u>Data Representation -Excel (Database Introduction)</u></b> How to use Excel Summarising Data Charting Introduction to databases Validation, Searching and Sorting	Binary code Text Number Filters Single criteria searches Data Information Flat files Digital content Excel	Create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information (KS2)  Use spreadsheet formula and data to solve challenging maths problems etc. (KS2)	C3.10 – Looking at digital career’s information, advice and guidance services, provide pupils with a guide to support them when thinking and decision making on careers in IT.  Mathematics – Use of calculations, draw graphs, and word and number problems  Physical Education – Use of data in sports, tracking a sports person’s development or performance.
	<b><u>Data Representation- How data is represented in computers</u></b> Binary and Memory Representing Text and Numbers Image Representation Sound Representation	Memory Low- level instructions Bit patterns Numbers Images Sound Data quality	Select, use and combine a variety of software on a digital devices (KS2)  Use of pictures/images tools on computer systems; add animated subtitles and range of media to enhance creation (KS2)  Use of voice over and edit sound clips (volume, pitch, fade and effect) (KS2)	Art – Looking at images as designs and pieces of work.  Music- Sounds and the representations of sounds and composing a piece of music through IT.  Mathematics- Use of text and numbers in Binary code.

Key Stage 3 ICT Long Term Plan	Topic/Learning Pathway	Key Vocabulary	Links to previous learning (Component Skills)	Links to wider curriculum
Spring 2	<p><b><u>IT- Graphic Design and Copyright</u></b></p> <p>Copyright and magazine covers</p> <p>Using programs to create a wireframe</p> <p>Using Photoshop to adapt an image</p> <p>Finalising a design and evaluating</p>	<p>Manipulate and present digital content</p> <p>Software packages</p> <p>Internet services</p> <p>Communication to a wider audience</p> <p>Photoshop</p> <p>Copyright</p> <p>Solution based feedback</p> <p>Store/edit digital content</p> <p>Files</p> <p>File names</p> <p>Reporting content</p> <p>Contact online</p>	<p>Edit picture to remove items, add backgrounds, merge of photos (KS2)</p> <p>Evaluate and discuss images, explaining effects and filters that have been used to enhance the media (KS2)</p>	<p>Art- Looking at different forms of media and images. Uses of colour and pictures to catch a certain audience.</p> <p>English- Use of words and titles in magazines and media. How to design and write a magazine front cover.</p> <p>Correct layout and design.</p> <p>Physical Education – Marketing in sports and the possible careers in sports marketing.</p>
Summer 1	<p><b><u>Computational Thinking – Algorithms and Decomposition</u></b></p> <p>Introduction to Algorithms</p> <p>Computational Thinking</p> <p>Problem Decomposition and Scratch overview</p> <p>Starting the games</p> <p>Continuing with game development</p>	<p>Algorithms</p> <p>Constructs solutions</p> <p>Repetition</p> <p>Two-way selection</p> <p>Problem solving</p> <p>Decomposition</p> <p>Loops</p> <p>Selection</p> <p>Detects</p> <p>Corrects</p> <p>Errors</p> <p>Debugging</p> <p>Scratch</p>	<p>Knowledge around algorithms for use in programming (KS2)</p> <p>Can recognise and make use of patterns in my design and code (KS2)</p>	<p>MH 2.10 – Development of problem-solving strategies through coding of games such as Scratch.</p> <p>Mathematics – Use of formulas and number patterns.</p> <p>Problem solving skills with numbers and formulas.</p> <p>Use of numerical data and other forms of data.</p>

Key Stage 3 ICT Long Term Plan	Topic/Learning Pathway	Key Vocabulary	Links to previous learning (Component Skills)	Links to wider curriculum
	<p><b><u>Computers – Software and Hardware</u></b></p> <p>Role of the Operating System</p> <p>Software</p> <p>Digital Footprint</p> <p>Appropriate Software use</p> <p>Data Collection and Analysis</p>	<p>Operating systems</p> <p>Advantages</p> <p>Disadvantages</p> <p>Application software</p> <p>Digital footprint</p> <p>Software</p> <p>Operating systems</p>	<p>Understanding of computer networks including the internet; how they provide multiple services; and the opportunities they offer for communication and collaboration (KS2)</p> <p>Use of search technologies effectively and how these results are selected, ranked and be discerning in evaluating the digital content you see (KS2)</p>	<p>Science – The computing aspect of IT through Computer Science.</p> <p>Developing the key skills of computer science for further education within IT and Computing.</p> <p>PSD – Use of the internet in a safe way and how you can use the internet correctly.</p> <p>Use of Apps on phones and tablets.</p>
Summer 2	<p><b><u>Programming – Basic Programming Techniques (Scratch)</u></b></p> <p>Continuing with game development</p> <p>Evaluation</p> <p>Performance Review</p>	<p>Scratch</p> <p>Game development</p> <p>Goals</p> <p>Programming</p> <p>Builds</p> <p>Implementing algorithms</p> <p>Assigned variables</p>	<p>Use sequence, selection and repetition in programs; work with variables and various forms of input and output (KS2)</p>	<p>MH 2.10 – Development of problem-solving strategies through coding of games such as Scratch.</p> <p>Mathematics – Use of formulas and number patterns.</p> <p>Problem solving skills with numbers and formulas.</p> <p>English- Creating a piece of writing that is reflective and can evaluate and review what they have learnt.</p> <p>Able to review their own performance within a written piece of work.</p>

