



Year Group	Skills	Essential Coverage
<p style="font-size: 2em; font-weight: bold; color: blue;">Reception</p>	<p><u>Internet safety</u></p> <ul style="list-style-type: none"> • Talk about good & bad choices in real life e.g. taking turns, saying kind things, helping others, telling an adult if something upsets you • Play appropriate games on the Internet • Talk about good and bad choices when using websites – being kind, telling a grown up if something upsets us & keeping ourselves safe by keeping information private <p><u>Programming</u></p> <ul style="list-style-type: none"> • Help adults operate equipment around the school, independently operating simple equipment • Use simple software to make things happen • Press buttons on a floor robot and talk about the movements • Explore options and make choices with toys, software and websites <p><u>Multimedia</u></p> <ul style="list-style-type: none"> • Use a mouse to rearrange objects and pictures on a screen • Recognise text, images and sound when using ICT • Use a camera or sound recorder to collect photos or sound • Use paint programs to create pictures • Begin to use a keyboard (see programming) • Develop an interest in ICT by using age appropriate websites, apps or programs <p><u>Technology in our lives</u></p> <ul style="list-style-type: none"> • Recognise purposes for using technology in school and at home • Understand that things they create belong to them and can be shared with others using technology • Recognise that they can use the Internet to play and learn <p><u>Data Handling</u></p> <ul style="list-style-type: none"> • Collect information as photos or sound files • Use a simple pictogram or set of photos to count and organise information 	<p>Programming toys (BeeBots) Online safety linked to apps used by children</p> <p>Key vocabulary: Computational thinking</p>



Subject Skills Ladder	Computing	CAT: STEM
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Year 1	<p><u>Information technology</u> Recognise digital content in different forms. Create, organise, store, edit and manipulate data in different digital formats. Obtain content from the world wide web using a web browser Develop basic mouse and keyboard skills</p> <p><u>Computer science</u> Understand computers use 'code' and programmers use 'programming language' Begin to understand algorithms and write their own simple instructions as symbols Use algorithms to program Beebots Begin to use logical reasoning to predict behavior of a program with a given set of instructions Work together to notice errors and correct mistakes (debugging). Begin to know how the world wide web works and that we are connected via the internet</p> <p><u>Digital literacy</u> Know some common uses of the information technology in and outside school – where technology is used throughout their day. Understand the importance of communicating safely and respectfully online Know what personal information is and that it should be kept private Know what to do when worried about content or contact Begin to understand the school's acceptable use policy</p>	<p>Teach computing curriculum: Technology around us Digital painting Moving a robot Grouping data Digital writing Programming animations</p> <p>Key vocabulary: Decomposition Tinkering Abstraction Debugging Evaluation Persevering Patterns Creating Logic Algorithms Collaborating Computational thinking</p>
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Year 2

Information technology

- Recognise different types of data
- Create, organize and store data in a range of digital formats
- Edit and manipulate digital content (eg photographs)
- Begin to combine different media
- Know how to find digital content (finding files on drive)
- Independently conduct simple web searches
- Know that a range of digital devices can be considered a computer

Computer science

- Understand what algorithms are
- Know computers follow simple and precise instructions and computers can only follow the instructions it understands
- Create simple programs and express simple linear algorithms as symbols using software like Scratch Jnr
- Use logical reasoning to predict what will happen with a set of instructions and why
- Debug code with increasing independence

Digital literacy

- Recognise the use of technology in and outside school – where technology is used throughout their day.
- Demonstrate use of computers safely and responsibly
- Know what personal information is and that it should be kept private
- Know a range of ways to report unacceptable content and contact
- Begin to understand the school's acceptable use policy
- Begin to know how to safely communicate with one another through email/online messages

Teach computing curriculum:

- IT around us
- Digital photography
- Robot algorithms
- Pictograms
- Digital music
- Programming quizzes

Key vocabulary:

- Decomposition
- Tinkering
- Abstraction
- Debugging
- Evaluation
- Persevering
- Patterns
- Creating
- Logic
- Algorithms
- Collaborating
- Computational thinking



Year 3

Information technology

Know the difference between computer hardware and application software
 Understand and explain the difference between data and information
 Use devices, software and apps under direction of a teacher.
 Confidently collect, organize and present data and information in digital content
 Create digital content to achieve a given goal
 Experience working with data generated by themselves
 Know to use the correct key words when using search engines. Distinguish between main and sponsored results

Computer science

Design and write algorithms using repetition and selection
 Use logical reasoning to predict outputs
 Independently identify and correct bugs in simple algorithms using trial and error
 Know the difference between input and output to recognise the two.
 Understand the difference between the internet and internet services

Digital literacy

Recognise acceptable and unacceptable behavior online
 Know to keep passwords and personal information safe
 Know their responsibilities according to the school's acceptable use policy
 Know a range of ways to report concerns
 know how to effectively communicate with one another through email/online messaging

Teach computing curriculum:

Connecting computers
 Stop frame animation
 Sequencing sound
 Branching databases
 Desktop publishing
 Events and actions in programs

Key vocabulary:

Decomposition
 Tinkering
 Abstraction
 Debugging
 Evaluation
 Persevering
 Patterns
 Creating
 Logic
 Algorithms
 Collaborating
 Computational thinking



Year 4	<p><u>Information technology</u> Clearly explain the difference between data and information Understand the main functions of an operating system Identify the difference between physical, wireless and mobile networks and look at different examples Understand how to use key words or phrases when using search engines. Begin to know to scan results to find appropriate information Make judgements about digital content Use devices, software and apps with increasing independence Recognise the audience when creating digital content Gain experience working with data generated by themselves Know why and when computers are used</p> <p><u>Computer science</u> Use variable and relational operators within a loop to control endings to programs Explain the thinking behind algorithms Use logical reasoning to predict outputs Independently identify and correct bugs in simple algorithms using trial and error Know the difference between input and output to use various inputs</p> <p><u>Digital literacy</u> Demonstrate responsible use of technologies and online services and know a range of ways to report concerns Begin to show awareness of their digital footprint Know their responsibilities according to the school's acceptable use policy</p>	<p>Teach computing curriculum: The internet Audio production Repetition in shapes Data logging Photo editing Repetition in games</p> <p>Key vocabulary: Decomposition Tinkering Abstraction Debugging Evaluation Persevering Patterns Creating Logic Algorithms Collaborating Computational thinking</p>
Year 5	<p><u>Information technology</u> Know and explain which tasks are best completed by human or computers Begin to understand that computers use binary to represent data Know there is a range of operating systems and application software for the same hardware Select devices, software and applications to achieve given goals Use data generated by themselves to create datasets Analyse and evaluate data and information and recognise that poor quality data leads to unreliable results and inaccurate conclusions Explore how trustworthy information is Understand how search engines rank results</p> <p><u>Computer science</u></p>	<p>Teach computing curriculum: Systems and sequences Video production Selection in physical computing Flat-file data bases Vector graphs Selection in quizzes</p> <p>Key vocabulary: Decomposition Tinkering Abstraction</p>



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	<p>Plan and execute debugging of code rather than trial and error. Recognise that there may be more than one solution. Begin to spot patterns in algorithms and use these to solve problems Understand that different algorithms exist for different functions.</p> <p>Digital literacy Explain why the school has an acceptable use policy Consider how online actions affect others Show awareness of their digital footprint Begin to be aware of their legal and ethical responsibilities (intellectual property rights etc) Know web services have terms and conditions including age restrictions Know a range of ways to report concerns</p>	<p>Debugging Evaluation Persevering Patterns Creating Logic Algorithms Collaborating Computational thinking</p>
<p>Year 6</p>	<p>Information technology Know that computers use binary to represent all data Understand that computers transfer data in binary. Recognise the relationship between binary and file size Independently select devices, software and apps based on outcome. Justify opinion and combine digital devices and application software to achieve given goals Use data generated by themselves to create datasets Use limiting searches when using search engines. Evaluate the search results to find appropriate information Understand how search engines rank results and clearly evaluate these systems Construct static web pages for a purpose Explain data transmission between computers and networks</p> <p>Computer science Recognise that different algorithms exist for the same problem Independently plan debugging of code Rewrite and test own tests and sequences Identify similarities and differences in situations and use these to solve problems Use scripting language</p> <p>Digital literacy Evaluate the trustworthiness of digital content Know how the use of technology can impact on society Show awareness of their legal and ethical responsibilities (intellectual property rights etc)</p>	<p>Teach computing curriculum: Communication and collaboration Web page creation Variables in game Spreadsheets 3D modelling Sensing movement</p> <p>Key vocabulary: Decomposition Tinkering Abstraction Debugging Evaluation Persevering Patterns Creating Logic Algorithms Collaborating Computational thinking</p>



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	Know the importance of observing terms and conditions for web service (including age restrictions) Know a range of ways to report their concerns.	
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References:
National Curriculum in England: computing programs of study
Teach computing curriculum (NCCE)
Pitmaston Primary School
Barefoot computing at school
www.st-annes-lancs.co.uk
www.sspeterandpaulprimary.co.uk