



**Winwick CE Primary School: Key Knowledge and Progression Map**

**Subject:** Computing

Computing	Long Term Planning Overview					
	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
<b>Reception</b>	Exploring Purple Mash Creating Pictures	Simple City Coding Bee Bots	E-Safety 2 sequence/2explore	Purple Mash Photos and digital media	Purple Mash Creating pictures (2paint)	Making Music 2beat
<b>Year 1</b>	Online Safety (1.1)	Grouping and Sorting (1.2) 2DIY	Pictograms (1.3) 2Count	Lego builders (1.4) 2DIY Maze explorers (1.5) 2Go	Animated Story Books (1.6)  2Create A Story	Technology Outside of school (1.9)
<b>Year 2</b>	Online Safety (2.2) Making Music (2.7) 2Sequence	Coding (crash course) (2.1) 2Code	Questioning (2.4) 2Question 2Investigate	Effective Searching (2.5) Browser	Creating Pictures (2.6) 2PaintAPicture	Presenting Ideas (2.8) Various
<b>Year 3</b>	Online Safety (3.2) Spreadsheets (crash course) (3.3) 2Calculate	Coding (3.1) 2Code	Email (3.5) 2Email	Branching Databases (3.6) 2Question	Simulations (3.7) 2simulate	Presenting (3.9) Google
<b>Year 4</b>	Online Safety (4.2)	Coding (4.1) 2Code	Spreadsheets (4.3) 2Calculate	Logo (4.5) 2Logo	Animation (4.6) 2Animate	Effective Search (4.7) Browser
<b>Year 5</b>	Online Safety (5.2)	Coding (5.1) 2Code	Spreadsheets (5.3) 2Calculate	Databases (5.4) 2Question 2Investigate	3D Modelling (5.6) 2Design and Make	Word Processing (5.8) Word
<b>Year 6</b>	Online Safety (6.2)	Coding (6.1) 2Code	Blogging (6.4) 2Blog	Networks (6.6) 2Connect, 2DIY	Understanding Binary (6.8) 2Connect 2Question	Spreadsheets (6.9) Excel



**COMPUTING**

**EYFS**

**LEARNING AREA -Technology (non statutory)**

**The EYFS Computing Curriculum is planned to enhance and support the following outcomes at the end of Reception**

**Expressive Arts and Design**

Being Imaginative and Expressive - Children at the expected level of development will: Invent, adapt and recount narratives and stories with peers and their teacher. Sing a range of well-known nursery rhymes and songs. Perform songs, rhymes, poems and stories with others, and – when appropriate – try to move in time with music.

Creating with materials - Children at the expected level of development will: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used. Make use of props and materials when role playing characters in narratives and stories.

**Number**

Numerical Patterns - Children at the expected level of development will: Verbally count beyond 20, recognising the pattern of the counting system. Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Number - Children at the expected level of development will: Have a deep understanding of number to 10, including the composition of each number. Subitise (recognise quantities without counting) up to 5. Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

**Understanding the World**

The Natural World - Children at the expected level of development will: Explore the natural world around them, making observations and drawing pictures of animals and plants. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Past and Present - Children at the expected level of development will: Talk about the lives of the people around them and their roles in society. Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class. Understand the past through settings, characters and events encountered in books read in class and storytelling.

People, Culture and Communities - Children at the expected level of development will: Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps. Know some similarities and differences between different religious and cultural communities in this country, drawing on their experiences and what has been read in class. Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and – when appropriate – maps.



**Winwick CE Primary School: Key Knowledge and Progression Map**

**Subject:** Computing

AUTUMN		SPRING		SUMMER	
<b>Unit Focus: Mini Mash</b>	<b>Unit Focus: Simple City/Coding</b>	<b>Unit Focus: 2 Sequence</b>	<b>Unit Focus: Photos and Digital Media</b>	<b>Unit Focus: 2paint</b>	<b>Unit Focus: 2 Beat</b>
<b>Domain: Information Technology</b>	<b>Domain: Information Technology/ Computer Science</b>	<b>Domain: Information Technology</b>	<b>Domain: Information Technology</b>	<b>Domain: Information Technology</b>	<b>Domain: Information Technology</b>
Areas of Learning					
<b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>All apps are the same</li> <li>How to turn a computer on</li> <li>Every device connects to the internet</li> <li>Work automatically saves</li> </ul>	<b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>How to access Purple Mash</li> <li>Order instructions are input</li> </ul>	<b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>Music can only be made by musical instruments</li> <li>Confusion over symbols</li> </ul>	<b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>Pictures can only be taken with a camera</li> <li>All photos are digital</li> </ul>	<b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>How to access purple mash</li> <li>Art cannot be created digitally</li> </ul>	<b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>Music can only be made with instruments</li> </ul>
Key Questions					
<ul style="list-style-type: none"> <li>What understanding what learning online looks like?</li> <li>Identify adults who can help online?</li> <li>How to log in to Purple Mash?</li> <li>How to play games on Purple Mash?</li> <li>How to play games on Purple Mash?</li> <li>How to colour in a picture on Purple Mash?</li> <li>How to paint a picture on Purple Mash?</li> </ul>	<ul style="list-style-type: none"> <li>What is simple city?</li> <li>How do I access simple city?</li> <li>What can I do on Simple City?</li> <li>What can I do on Maths City?</li> <li>What is a Bee Bot?</li> <li>How do I code a Bee Bot?</li> </ul>	<ul style="list-style-type: none"> <li>How do I use 2explore?</li> <li>How do I save on 2explore?</li> <li>How do I use 2sequence?</li> <li>How do I add layers of sound?</li> <li>How do I change the speed of the sounds?</li> </ul>	<ul style="list-style-type: none"> <li>How can I take a picture?</li> <li>How do I find a picture?</li> <li>How do I take a portrait a picture?</li> <li>How do I take a landscape picture?</li> <li>How do I change the filter?</li> <li>How do I stay safe online when taking pictures?</li> </ul>	<ul style="list-style-type: none"> <li>Can paint a picture using Purple Mash?</li> <li>How do I change the colour?</li> <li>How can I change the media?</li> <li>Can I create my own picture?</li> <li>Can I paint a project?</li> </ul>	<ul style="list-style-type: none"> <li>How is 2Beat accessed? What does it do?</li> <li>How can 2beat create different sounds?</li> <li>Can I change the speed and sound?</li> <li>How can I use 2Beat to make sound effects?</li> <li>How can I save work?</li> <li>How can I play work?</li> </ul>



**Winwick CE Primary School: Key Knowledge and Progression Map**

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**SCIENTIFIC VOCABULARY**

App, Purple Mash, login, e-safety, technology, help, game, mouse, curser, internet explorer, online, software.	App, Purple Mash, login, e-safety, technology, help, game, mouse, curser, internet explorer, online, software, coding, bee bot, programme, exit, direction, left, right, forwards, backwards	App, 2explore, 2sequence, pitch, tempo, sound, manipulate, change, instrument, sequence, beat, play, pause, record, save.	photo, edit, delete, capture, filter, safety, online, upload, portrait, landscape, mode, record, save.	photo, edit, delete, capture, create, draw, paint, tool, app, save, delete, media, effect	App, technology, beat, volume, speed, instrument, rhythm, pitch, tempo, play, save, appraise, sound
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**OTHER**

Mini Mash  
iPad  
Purple Mash  
Bee Bots



**Winwick CE Primary School: Key Knowledge and Progression Map**

**Subject:** Computing

**COMPUTING**

**YEAR 1**

**National Curriculum**

- 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.
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.
- 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.

AUTUMN		SPRING			SUMMER	
<b>Unit Focus: Online Safety</b> (Approximately 4 hours)	<b>Unit Focus: Grouping and Sorting</b> (Approximately 2 hours)	<b>Unit Focus: Pictograms</b> (Approximately 3 hours)	<b>Unit Focus: Lego Builders</b> (Approximately 3 hours)	<b>Unit Focus: Maze Explorers</b> (Approximately 3 hours)	<b>Unit Focus: Animated Stories</b> (Approximately 5 hours)	<b>Unit Focus: Technology outside of school</b> (Approximately 2 hours)
<b>Domain: Digital Literacy</b>	<b>Domain: Computer Science</b>	<b>Domain: Information Technology</b>	<b>Domain: Computer Science</b>	<b>Domain: Computer Science</b>	<b>Domain: Information Technology</b>	<b>Domain: Digital Literacy</b>
Areas of Learning						
<b>Prior Learning:</b> <ul style="list-style-type: none"> <li>● Online safety in EYFS</li> <li>● Creating avatars</li> <li>● Sharing information</li> <li>● How to use a 2do</li> <li>● Mouse, keyboard and device skills</li> <li>● Mini mash</li> </ul> <b>Common Misconceptions:</b>	<b>Prior Learning:</b> <ul style="list-style-type: none"> <li>● How to use a 2do</li> <li>● How to save and retrieve work</li> </ul> <b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>● Unsure of how items can be grouped</li> <li>● Items cannot be grouped online</li> <li>● Understanding of the word criteria</li> </ul>	<b>Prior Learning:</b> <ul style="list-style-type: none"> <li>● Grouping and sorting – sorting data using different criteria</li> <li>● Use of Purple Mash</li> </ul> <b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>● Understanding of data</li> <li>● Numerical representation</li> </ul>	<b>Prior Learning:</b> <ul style="list-style-type: none"> <li>● Concept of computers following instructions</li> <li>● Mini Mash</li> </ul> <b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>● What an algorithm is.</li> <li>● Following instructions in order</li> </ul>	<b>Prior Learning:</b> <ul style="list-style-type: none"> <li>● Lego builders – logical decision making.</li> <li>● Sequencing instructions</li> <li>● Following instructions</li> </ul> <b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>● Following instructions</li> </ul>	<b>Prior Learning:</b> <ul style="list-style-type: none"> <li>● Making music of 2beat</li> <li>● 2sequence</li> <li>● Paint projects</li> <li>● Creating avatars</li> </ul> <b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>● Books can only be physical and not online</li> </ul>	<b>Prior Learning:</b> <ul style="list-style-type: none"> <li>● Development of technology (EYFS)</li> <li>● Mini Mash</li> <li>●</li> </ul> <b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>● Technology has always been around.</li> <li>● Unsure of what technology is.</li> </ul>



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**Subject:** Computing

<ul style="list-style-type: none"> <li>information can't be accessed by others</li> <li>passwords are fool proof.</li> </ul>		<ul style="list-style-type: none"> <li>Halves and quarters</li> </ul>				
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**Key Questions**

<ul style="list-style-type: none"> <li>What is a password and why should we keep them safe?</li> <li>What is a digital avatar?</li> <li>Where is my work stored on Purple Mash?</li> </ul>	<ul style="list-style-type: none"> <li>In what ways can we sort objects?</li> <li>Can I sort sound, pictures and text?</li> </ul>	<ul style="list-style-type: none"> <li>What data can be represented in picture format?</li> <li>Can I contribute to a class pictogram?</li> <li>Can I create my own pictogram?</li> </ul>	<ul style="list-style-type: none"> <li>Can I compare the effects of adhering strictly to instructions to completing tasks without complete instructions?</li> <li>Can I follow and create simple instructions on the computer?</li> <li>Can I consider how the order of instructions affects the result?</li> </ul>	<ul style="list-style-type: none"> <li>What is the function of direction keys?</li> <li>How do you create a debug a set of instructions (algorithm)?</li> <li>Can I use additional direction keys as part of an algorithm?</li> <li>How do you change and extend an algorithm list?</li> <li>How do you create a longer algorithm?</li> </ul>	<ul style="list-style-type: none"> <li>What is 2create?</li> <li>How do I add animations to a story?</li> <li>Can I add sound and music to a story?</li> <li>Can I add backgrounds to a story?</li> <li>How do I share a story to a class display board?</li> </ul>	<ul style="list-style-type: none"> <li>What is technology?</li> <li>What examples of technology are in school?</li> <li>What examples of technology are at home?</li> </ul>
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**COMPUTING VOCABULARY**

Log in, username, Log out, password, avatar, tools, save, notifications, topics, computer, retrieve	Sort, criteria, describe, more than, less than, equal	Pictogram, data, collate	Instruction, algorithm, computer, programme, debug	instruction, algorithm, computer, program, debug, direction, turn, left, right	animation, e-book, font, file, display board, design, scale, object, commands, sound effect	Technology
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**KEY LINKS/RESOURCES**

Knowledge organisers, planning and assessment tools can all be found at - [https://www.purplemash.com/#tab/teachers/computing\\_sow/computing\\_sow\\_y1](https://www.purplemash.com/#tab/teachers/computing_sow/computing_sow_y1)



**Winwick CE Primary School: Key Knowledge and Progression Map**

**Subject:** Computing

**COMPUTING**

**YEAR 2**

**National Curriculum**

- 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.
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.
- 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.

	AUTUMN		SPRING		SUMMER	
<b>Unit Focus: Online Safety</b> (Approximately 3 hours)	<b>Unit Focus: Making Music</b> (Approximately 3 hours)	<b>Unit Focus: Coding (crash course)</b> (Approximately 6 hours)	<b>Unit Focus: Questioning</b> (Approximately 5 hours)	<b>Unit Focus: Effective Searching</b> (Approximately 3 hours)	<b>Unit Focus: Creating Pictures</b> (Approximately 5 hours)	<b>Unit Focus: Presenting Ideas</b> (Approximately 4 hours)
<b>Domain: Digital Literacy</b>	<b>Domain: Information Technology</b>	<b>Domain: Computer Science</b>	<b>Domain: Information Technology</b>	<b>Domain: Digital Literacy</b>	<b>Domain: Information Technology</b>	<b>Domain: Information Technology</b>

**Areas of Learning**

<p><b>Prior Learning:</b> Safe logins. Concept of privacy. Concept of ownership. The need to logout. Developing ideas about the concept of technology that we are surrounded by and its purpose.</p> <p><b>Common Misconceptions:</b></p> <ul style="list-style-type: none"> <li>• What a digital footprint is?</li> </ul>	<p><b>Prior Learning:</b> Adding simple sound effects to stories in 2Create a Story. Use of 2beat and 2sequence (EYFS).</p>	<p><b>Prior Learning:</b> Algorithms. Logical decision making Sequencing instructions. Following instructions Coding a 'turtle'. Creating programs using sequencing and repeat. Visual use of the Logo programming language Program logic and structure.</p>	<p><b>Prior Learning:</b> Sorting data according to criteria.</p>	<p><b>Prior Learning:</b> Safe logins. Using Purple Mash search functionality. Developing ideas about the concept of technology that we are surrounded by and its Purpose.</p>	<p><b>Prior Learning:</b> General use of Purple Mash. Design: avatar creation. Paint Projects: use of the simple paint tools. 2Create a Story: Painting tool. Animating images using built in effects. Concept of background (static) and foreground (can move).</p>	<p><b>Prior Learning:</b> Creating text and the use of illustrations. Genre: animated picture book.</p>
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Key Questions

- Why is a search bar useful?
- What is an email?
- What is meant by a digital footprint?

- Can I make music digitally using 2Sequence?
- Can I explore, edit and combine sounds using 2Sequence?
- How do you edit and refine composed music?
- How is music uploaded a sound from a bank of sounds into the Sounds section?
- Can I record and upload environmental sounds into Purple Mash?

- What is an algorithm?
- Can I create a computer programme using an algorithm?
- Can I create a program using a given design?
- What is the collision detection event?
- Do I understand that algorithms follow a sequence?
- Can I design an algorithm that follows a timed sequence?
- Do I understand that different objects have different properties?
- What do different events do in code?
- What is the function of buttons in a program?
- How can I debug simple programs?

- What data handling tools can give more information than pictograms?
- Can I separate information using yes/no questions?
- Can I construct a Binary Tree to identify items?
- Can I use 2Questions (Binary Tree) to answer questions?
- How do I use a database to answer more complex search questions (Key Resources 2Count)?
- How do I use the Search tool to find information?

- What is the terminology associated with searching?
- How can I search on the internet?
- Can I create a leaflet to help someone else for information on the internet using 2Publih?

- What are the functions of the 2Paint a Picture tool?
- Can I learn about and recreate the impressionist style of art?
- Can I use 2Piant to recreate Pointillist art?
- Can I learn about the work of Piet Mondrian and recreate the style using the lines template?
- Can I recreate the work of William Morris and recreate the style using the patterns template?

- How can a story be presented in different ways?
- Can I make a quiz about a story or topic?
- Can I make a fact file on a non-fiction topic?
- How do you create a presentation that cab be shared with the class?





## Winwick CE Primary School: Key Knowledge and Progression Map

**Subject:** Computing

Search, display, internet, sharing, email, attachment, digital footprint	BPM, composition, digitally, instrument, music, sound effect, sound track, tempo, volume	Action, algorithm background, button, collision detection, debug/debugging, design mode, event, key pressed, nesting, object, predict, properties, run, scale, scene, sequence, sound, test, text, timer, when clicked/swiped	Pictogram, question, data, Binary Tree, collate, avatar, database, 2Count	Internet, search engine, search, google.	Impressionism, palette, Pointillism, share, surrealism, template, pattern, lines	Concept map, quiz, Node, animated, non-fiction, presentation, narrative, audience
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### KEY LINKS/RESOURCES

Planning, Knowledge Organisers, assessment and resources can be found at - [https://www.purplemash.com/#tab/teachers/computing\\_sow/computing\\_sow\\_y2](https://www.purplemash.com/#tab/teachers/computing_sow/computing_sow_y2)



**Winwick CE Primary School: Key Knowledge and Progression Map**

**Subject:** Computing

**COMPUTING**

**YEAR 3**

**National Curriculum**

- 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 Computer Science.
- 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.
- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.
- 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.
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

AUTUMN		SPRING			SUMMER	
<b>Unit Focus: Online Safety</b> (Approximately 3 hours)	<b>Unit Focus: Spreadsheets</b> (crash 4 course) (Approximately hours)	<b>Unit Focus: Coding</b> (Approximately 6 hours)	<b>Unit Focus: Email</b> (Approximately 6 hours)	<b>Unit Focus: Branching Databases</b> (Approximately 4 hours)	<b>Unit Focus: Simulations</b> (Approximately 3 hours)	<b>Unit Focus: Presenting</b> (Approximately 5 hours)
<b>Domain: Digital Literacy</b>	<b>Domain: Information Technology</b>	<b>Domain: Computer Science</b>	<b>Domain: Digital Literacy</b>	<b>Domain: Information Technology</b>	<b>Domain: Information Technology</b>	<b>Domain: Information Technology</b>
Areas of Learning						
<b>Prior Learning:</b> Online Safety - Share to a display board. Approval process. Sharing online. Email simulations. Emotional impact of communications. Digital footprint. Effective Searching - Search engines. Privacy.	<b>Prior Learning:</b> Spread Sheets - Copying and pasting. Totalling tools. Addition. Table layout. Block graph. Questioning - Ways to represent Data - Pictograms (2Count) - Binary trees (2Question)	<b>Prior Learning:</b> Coding - Algorithms. Collision detection. Timers. Object types. Buttons. Debugging. Questioning – Logical decision processing. Forward planning to achieve a solution.	<b>Prior Learning:</b> Online Safety - Share to a display board. Approval process. Sharing online. Email simulations. Emotional impact of communications. Digital footprint. Good Passwords and password privacy. Communication methods.	<b>Prior Learning:</b> Spreadsheets – Use of 2Calculate to collect data and produce a graph.  Questioning – Enquiry into different data handling tools. Use of questioning to separate and group data.	<b>Prior Learning:</b> Coding - Algorithms. Collision detection. Object types Debugging. Flowcharts Timers and sequence simulation of lightning strike. Code, test, debug process.  <b>Common Misconceptions:</b>	<b>Prior Learning:</b> Creating Pictures - Presenting ideas in art form 2Paint a Picture: art effects, collage effects Presenting Ideas – Creating work for a variety of purposes and different genres Presenting the same information in different styles: animated story, quiz based on a story,



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<p><b>Common Misconceptions:</b></p> <ul style="list-style-type: none"> <li>No understanding of purpose of search engine</li> </ul>	<p>- Databases (2Investigate)</p> <p><b>Common Misconceptions:</b></p> <ul style="list-style-type: none"> <li>Lack of understanding around data and its uses</li> </ul>	<p><b>Common Misconceptions:</b></p> <ul style="list-style-type: none"> <li>Lack of understanding of what coding means</li> </ul>	<p>Cyberbullying and reporting problems. Effective Searching - Search engines. Privacy.</p> <p><b>Common Misconceptions:</b></p> <ul style="list-style-type: none"> <li>Surrounding sharing of passwords</li> </ul>	<p><b>Common Misconceptions:</b></p> <ul style="list-style-type: none"> <li>Lack of understanding about data collection</li> </ul>	<ul style="list-style-type: none"> <li>Lack of understanding of simulation</li> </ul>	<p>concept map of a story, writing template.</p> <p><b>Common Misconceptions:</b></p> <ul style="list-style-type: none"> <li>Unsure of purpose of presentation and audience</li> </ul>
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**Key Questions**

<ul style="list-style-type: none"> <li>What makes a safe password? What methods keep passwords safe? How is the internet used in effective communication? How are blogs used to communicate with wider audiences? Do website tell the truth? What is the meaning of age restrictions symbols on digital media and devices?</li> </ul>	<ul style="list-style-type: none"> <li>How do I use the symbols more than, less than and equal to, to compare values?</li> <li>Can I use 2Calculate to collect data and produce a variety of graphs?</li> <li>What is the advanced mode of 2Calculate and what are cell references?</li> </ul>	<ul style="list-style-type: none"> <li>What a flowchart is and how flowcharts are used in computer programming?</li> <li>What are different types of timers and how do I select the right type for purpose?</li> <li>How do I use the repeat command?</li> <li>What is the importance of nesting?</li> <li>Can I design and create an interactive scene?</li> </ul>	<ul style="list-style-type: none"> <li>What are some different methods of communication?</li> <li>How do you use an address book?</li> <li>How can I use email safely?</li> <li>How do you add an attachment?</li> <li>Can I explore an email scenario?</li> </ul>	<ul style="list-style-type: none"> <li>How do I sort data using 'yes' or 'no' questions?</li> <li>How do you use 2Question?</li> <li>Can I create a branching database?</li> </ul>	<ul style="list-style-type: none"> <li>What are simulations?</li> <li>How do I explore a simulation?</li> <li>Can I analyse and evaluate a simulation?</li> </ul>	<ul style="list-style-type: none"> <li>What is the slides tool?</li> <li>How do I add slides to a presentation?</li> <li>How is media added to a prestatation?</li> <li>What is formatting a text?</li> <li>Can I add shapes and lines to enhance a presentation?</li> <li>Can I create my own presentation?</li> </ul>
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**Subject:** Computing

**COMPUTING VOCABULARY**

Password, internet, blog, concept map, username, website, webpage, spoof website, PEGI rating.	Symbols < > =, advanced mode, copy and paste, columns, cells, delete key, equals tool, move cell tool, rows, spin tool, spreadsheet	Action, alert, algorithm, background, blocks of command, button, collision detection, command, debug/debugging, develop, event, execute, flowchart, nesting, object, output, plan, predict, procedure, properties, repeat, sequence, scene, sound, test, timer, values	Communication, email, compose, send, report to teacher, attachment, address book, save to draft, password, CC, formatting	Branching database, data, data base, question	Simulation	Animation, design themes, font, media, presentation, presentation programme, slide, slideshow, text box, text formatting, transition, WordArt.
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**KEY LINKS/RESOURCES**

Key resources including planning and assessment - [https://www.purplemash.com/#tab/teachers/computing\\_sow/computing\\_sow\\_y3](https://www.purplemash.com/#tab/teachers/computing_sow/computing_sow_y3)



**Winwick CE Primary School: Key Knowledge and Progression Map**

**Subject:** Computing

**COMPUTING**

**YEAR 4**

**National Curriculum**

- 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; and the opportunities they offer for communication and collaboration.
- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.
- 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.
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

AUTUMN		SPRING		SUMMER	
<b>Unit Focus: Online Safety (Approximately 4 hours)</b>	<b>Unit Focus: Coding (Approximately 6 hours)</b>	<b>Unit Focus: Spreadsheets (Approximately 6 hours)</b>	<b>Unit Focus: Logo (Approximately 4 hours)</b>	<b>Unit Focus: Animation (Approximately 3 hours)</b>	<b>Unit Focus: Effective Searching (Approximately 3 hours)</b>
<b>Domain: Digital Literacy</b>	<b>Domain: Computer Science</b>	<b>Domain: Information Technology</b>	<b>Domain: Computer Science</b>	<b>Domain: Information Technology</b>	<b>Domain: Information Technology</b>
Areas of Learning					
<b>Prior Learning:</b> Online Safety – Good Passwords and password privacy Communication methods Shared blog Reliability of information and spoof websites Appropriate ratings Emotional effects Cyberbullying Reporting problems  Email – Evaluating communications Email safety Sharing images – safety	<b>Prior Learning:</b> Coding – Flowcharts Timers Repeat Code, test, debug process  Branching Databases - Logical decision processing Modelling selection on a binary model	<b>Prior Learning:</b> Spreadsheets- Pie charts and Bar graphs Boolean comparison tools (<=>) Spin tool Advanced mode Cell references	<b>Prior Learning:</b> Coding – Familiarity with a code environment Logical planning of sequences Debugging skills  Branching Databases - Logical decision processing. Modelling selection on a binary model	<b>Prior Learning:</b> Creating Pictures - 2Paint a Picture: art effects, collage effects  Animated Stories – 2Create A Story tool What animation is Animating images using built in effects Concept of background (static) and foreground (can move)	<b>Prior Learning:</b> Online Safety – Phishing Digital footprint Malware and viruses Plagiarism Reliability of information and spoof websites Appropriate ratings Emotional effects Cyberbullying



**Winwick CE Primary School: Key Knowledge and Progression Map**

**Subject:** Computing

Not meeting Attachments	Key Questions				
<ul style="list-style-type: none"> <li>• How can children protect themselves from online identity theft?</li> <li>• Does all information put online leave a digital footprint or trail?</li> <li>• What are the risks and benefits of installing software including apps?</li> <li>• What is plagiarism?</li> <li>• What is appropriate behaviour when participating or contributing to collaborative online projects for learning?</li> <li>• What are the positive and negative influences of technology on health and the environment?</li> <li>• Why should I understand the importance of balancing game and screen time with other parts of my life?</li> </ul>	<ul style="list-style-type: none"> <li>• How to make a selection in computer programming?</li> <li>• How does an IF statement work?</li> <li>• How do co-ordinates work in computer programming?</li> <li>• What is the 'repeat until' command?</li> <li>• How does an IF/ELSE statement work?</li> <li>• What is a variable</li> <li>• How do you use a number variable?</li> <li>• Can I create a playable game?</li> </ul>	<ul style="list-style-type: none"> <li>• How to format cells as currency, percentage, decimal to different decimal places or fraction?</li> <li>• How to use the formula wizard to calculate averages?</li> <li>• How do I combine tools to make spreadsheet activities such as timed times tables tests?</li> <li>• Can a spreadsheet model a real-life scenario?</li> <li>• How to add a formula to a cell to automatically make a calculation in that cell?</li> </ul>	<ul style="list-style-type: none"> <li>• What is the structure of the coding language of Logo?</li> <li>• How do you put simple instructions into Logo?</li> <li>• Can I use Logo to create shapes?</li> <li>• What does the repeat function do?</li> <li>• How do I use and build procedures in Logo?</li> </ul>	<ul style="list-style-type: none"> <li>• What makes a good animation?</li> <li>• How are animations created by hand?</li> <li>• How can animations be created in a similar way using a computer?</li> <li>• What is onion skinning in animation?</li> <li>• How do you add backgrounds and sounds to animations?</li> <li>• How to share animation on the class display board and by blogging?</li> </ul>	<ul style="list-style-type: none"> <li>• How do you locate information on the search results page?</li> <li>• How do you use search effectively to find out information?</li> <li>• How do I assess whether an information source is true and reliable?</li> </ul>



**Winwick CE Primary School: Key Knowledge and Progression Map**

**Subject:** Computing

**COMPUTING VOCABULARY**

Computer virus, cookies, copyright, digital footprint, email, identity theft, malware, phishing, plagiarism, spam	Action, alert, background, button, code block, command, co-ordinate, debug/debugging, execute, flowchart, if, if/else, nesting, number variable, object types, prompt, prompt for input, properties, repeat, repeat until, selection, timer, variable, variable value	Average function, advance mode, copy and paste, columns, cells, charts, equals tool, formula, formula wizard, move cell tool, random tool, rows, spin tool, spreadsheet, timer	Logo, BK, FD, RT, LT, repeat, SETPC, SETPS, PU, PD	Animation, flipbook, frame, onion skinning, background, play, sound, stop motion, video clip	Easter egg internet, internet browser, search, search engine, spoof website, website
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**KEY LINKS/RESOURCES**

Planning, assessment and teaching resources can be found at - [https://www.purplemash.com/#tab/teachers/computing\\_sow/computing\\_sow\\_y4](https://www.purplemash.com/#tab/teachers/computing_sow/computing_sow_y4)



**Winwick CE Primary School: Key Knowledge and Progression Map**

**Subject:** Computing

**COMPUTING**

**YEAR 5**

**National Curriculum**

- 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; and the opportunities they offer for communication and collaboration.
- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Information Technology Various Search technologies are taught more specifically in unit 4.7. Children will utilize this knowledge in many Internet based sessions in all areas of the curriculum. 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.
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

AUTUMN		SPRING		SUMMER	
<b>Unit Focus: Online Safety (Approximately 3 hours)</b>	<b>Unit Focus: Coding (Approximately 6 hours)</b>	<b>Unit Focus: Spreadsheets (Approximately 6 hours)</b>	<b>Unit Focus: Databases (Approximately 4 hours)</b>	<b>Unit Focus: 3D Modelling (Approximately 4 hours)</b>	<b>Unit Focus: Word Processing (Approximately 8 hours)</b>
<b>Domain: Digital Literacy</b>	<b>Domain: Computer Science</b>	<b>Domain: Information Technology</b>	<b>Domain: Information Technology</b>	<b>Domain: Information Technology</b>	<b>Domain: Information Technology</b>
Areas of Learning					
<b>Prior Learning:</b> Online Safety – Phishing Digital footprint Malware and viruses Plagiarism Screen time  Effective Searching – Reliable sources Search algorithms - impact on what you see	<b>Prior Learning:</b> Coding – Code, test, debug process IF statements Repeat Until and IF/ ELSE Statements Number Variables  Logo – Text-based coding Utilize understanding of coding structures  Animation – Sequencing and animation in logical steps	<b>Prior Learning:</b> Spreadsheets – Formula wizard Cell formatting Timer, random number and spin buttons Budget planner sheet Line graphs	<b>Prior Learning:</b> Spread sheets – Inputting and interrogating data Presenting data through line graphs	<b>Prior Learning:</b> Animation – Create a stop motion animation using 2Animate Use art tools to create backgrounds and effects	<b>Prior Learning:</b> Email Effective searching Use of Google Docs Creating and presenting information





Key Questions

- What is the impact of sharing digital content?
- Who can support and help me manage my online behaviour?
- How to make a password secure?
- What are the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this?
- What are appropriate and inappropriate text, photographs and videos and what is impact of sharing these online?
- Who do I tell if I see anything online that makes me upset or scared?
- How to reference sources in their work?
- How to Internet with a consideration for the reliability of the results of sources to check validity and understand the impact

- How to simplify a code?
- Can I create a playable game?
- What is a simulation?
- What does decomposition and abstraction mean in computer science?
- Can I carry out decomposition and abstraction?
- How do you use friction in code?
- What is a function and how does it work in code?
- What are different variable types and how are these used differently?
- How is a string created?
- What is concentration and how does it work?

- What formulae can be used to covert measurements of length and distance?
- How is count tool to answer hypotheses about common letters in use.?
- Can a spreadsheet model be applied to a real-life problem?
- How do I use formulae to calculate area and perimeter of shapes?
- Can I create formulae that use text variables?
- Can I plan a school cake sale?

- How is a database searched for information?
- Can I contribute to a class database?
- Can I create my own database around a topic?

- What is 2Design and make?
- What are the skills needed for computer aided design?
- What are the moving points when designing?
- Can I design a 3D model to fit a criteria?
- How is a model refined and printed?

- What is a word processing tool used for?
- How are images added and edited in a word document?
- How is word wrap used with images and texts?
- What features can be used to enhance look and usability?
- What are the sharing capabilities in Google Docs?
- How are tables used and added?
- What are templates?



**Winwick CE Primary School: Key Knowledge and Progression Map**

**Subject:** Computing

<p>of incorrect information?</p> <ul style="list-style-type: none"> <li>• How reliable are different sources of communication?</li> </ul>					
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**COMPUTING VOCABULARY**

<p>Online safety, encryption, smart rules, password, reputable, encryption, identity theft, shared image, plagiarism, citations, references, bibliography</p>	<p>Action, abstraction, algorithm, button, called, co-ordinate, decomposition, event, function, if, nesting, object, physical system, properties, run, repeat, score, sequence, simplify/simplified, tab, timer, variable</p>	<p>Average function, advance mode, copy and paste, columns, charts, equals tool, formula, random tool, rows, spin tool, spreadsheet, cells, formula wizard, move cell tool, timer</p>	<p>Avatar, binary tree, charts, collaboration, data, database, find, record, sort, group, arrange, statistics and reports, table</p>	<p>CAD – computer aided design, modelling, 3D, viewpoint, polygon, 2D, net, 3D printing, points, template</p>	<p>Copyright, cursor, document, font, in-built styles, merge cells, paragraph formatting, readability, template, text formatting, text wrapping, textbox, word processing tool</p>
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**KEY LINKS/RESOURCES**

All resources can be found at - [https://www.purplemash.com/#tab/teachers/computing\\_sow/computing\\_sow\\_y5](https://www.purplemash.com/#tab/teachers/computing_sow/computing_sow_y5)



**Winwick CE Primary School: Key Knowledge and Progression Map**

**Subject:** Computing

**COMPUTING**

**YEAR 6**

**National Curriculum**

- 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.
- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.
- 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.
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact\*

AUTUMN		SPRING		SUMMER	
<b>Unit Focus: Online Safety (Approximately 2 hours)</b>	<b>Unit Focus: Coding (Approximately 6 hours)</b>	<b>Unit Focus: Blogging (Approximately 4 hours)</b>	<b>Unit Focus: Networks (Approximately 3 hours)</b>	<b>Unit Focus: Understanding Binary (Approximately 4 hours)</b>	<b>Unit Focus: Spreadsheets (Approximately 8 hours)</b>
<b>Domain: Digital Literacy</b>	<b>Domain: Computer Science</b>	<b>Domain: Information Technology</b>	<b>Domain: Computer Science</b>	<b>Domain: Computer Science</b>	<b>Domain: information Technology</b>
Areas of Learning					
<b>Prior Learning:</b> Online Safety – Image manipulation Citing sources Searching Reliability Responsibility to others when sharing Sources of support SMART rules Sharing passwords  Word Processing – Use of images Plagiarism Citations	<b>Prior Learning:</b> Coding – Efficient Coding Simulating a Physical System Decomposition and Abstraction Friction and Functions Introducing Strings Text Variables and Concatenation	<b>Prior Learning:</b> Online safety – Responsibility to others when sharing Sources of support Screen time Being a bystander	<b>Prior Learning:</b> Blogging – Using device functions for 2way communication via the World Wide Web	<b>Prior Learning:</b> Coding – Complex programs Using Functions Flowcharts and Control Simulations User Input	<b>Prior Learning:</b> Spreadsheets – Converting measures Count tool Formulae Variables in formulae Event planning



**Key Questions**

<ul style="list-style-type: none"> <li>• What are the benefits and risks of mobile devices broadcasting the location of the user/device?</li> <li>• How to identify secure sites by looking for privacy seals of approval?</li> <li>• What are the benefits and risks of giving personal information?</li> <li>• What does Digital Footprint mean?</li> <li>• What is appropriate online behaviour?</li> <li>• How can information online persist?</li> <li>• Why is it important to balance game and screen time with other parts of their lives?</li> <li>• What are the positive and negative influences of technology on health and the environment?</li> </ul>	<ul style="list-style-type: none"> <li>• How is playable game designed with a timer a score?</li> <li>• How are variables planned and used?</li> <li>• How does the launch command work?</li> <li>• How to use functions and why are they useful?</li> <li>• How are flowcharts used to create and debug code?</li> <li>• Can IC create a simulation of a room in which devices can be controlled?</li> <li>• How can user input can be used in a program?</li> <li>• How can 2Code be used to make a text-adventure game?</li> </ul>	<ul style="list-style-type: none"> <li>• What are blogs?</li> <li>• What makes a blog successful?</li> <li>• Can I plan theme and content for a blog?</li> <li>• How do I write a blog post?</li> <li>• Why do blogs have different visual properties?</li> <li>• How are existing blogs contributed to?</li> <li>• Why does a teacher need to approve a blog?</li> <li>• What comments should we post on a blog?</li> </ul>	<ul style="list-style-type: none"> <li>• What does the internet consist of?</li> <li>• What are LAN and WAN?</li> <li>• How is the Internet is accessed in school?</li> <li>• How old is the internet?</li> <li>• Who is Tim Burners-Lee?</li> <li>• What does the future of the internet hold?</li> </ul>	<ul style="list-style-type: none"> <li>• How is data represented in digital systems?</li> <li>• Can I recognise that digital systems represent all types of data using number codes that ultimately are patterns of 1s and 0s (called binary digits, which is why they are called digital systems)?             <ul style="list-style-type: none"> <li>• Do I understand that binary represents numbers using 1s and 0s and these represent the on and off electrical states respectively in hardware and robotics?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• What does a spreadsheet look like?</li> <li>• How are cells navigated and data inputted?</li> <li>• What are the basic data formulae (percentages/averages)?</li> <li>• How can the use of spreadsheets save time and effort when performing calculations?</li> <li>• Can I use a spreadsheet to model a situation?</li> <li>• How does a spreadsheet make complex data clear by manipulating the way it is presented?</li> <li>• How are different graphs created in sheets?</li> <li>• Can I apply spreadsheet skills to solving problems?</li> </ul>
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**COMPUTING VOCABULARY**

Digital footprint, password, PEGI Rating, phishing, screen time, spoof website	Action, alert, algorithm, background, button, called, command, co-ordinates, debug/debugging, decomposition, developer,	audience, blog page, blog post, blog, collaborative, icon	Internet, router, world wide web, network, Local Area Network (LAN), Wide Area Network (WAN), network cables, wireless	Base 10, base 2, bit, digit, binary, byte, decimal, denary, gigabyte (GB) integer, kilobyte (KB)	Alignment, calculate, cell, cell reference, chart, formula, formulae, function, range, row, style, sum, text
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## Winwick CE Primary School: Key Knowledge and Progression Map

**Subject:** Computing

	event, flowchart, function, get input, If/else, launch command, number variable, nested, object, predict, procedure, prompt, properties, repeat, run, scene, selection, simulation, string, tab, timer, user input, variable				wrapping, value, workbook, spreadsheet, column
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### KEY LINKS/RESOURCES

All resources can be found at - [https://www.purplemash.com/#tab/teachers/computing\\_sow/computing\\_sow\\_y6](https://www.purplemash.com/#tab/teachers/computing_sow/computing_sow_y6)