

Computing Curriculum Overview

‘Computing...ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.’ DFE 2014

We want to prepare all our children to contribute positively to our rapidly changing and increasingly digital world. By highlighting and exposing children to the breadth of technology around them, we aim for them to understand how it has shaped the modern world and begin to inspire children to imagine what they could do in the future.

Our academy follows the programmes of study from the national curriculum which specifies what to teach in each key stage. From this, our engaging curriculum map promotes a cross-curricular and creative approach to teaching computing. Our topics and other subjects provide meaningful and relevant contexts and opportunities for regular application of technology.

<p><u>Intent</u> With these aspirations, our INTENT for the computing curriculum is:</p>	<p>We strive to ensure that every pupil will access computing, regardless of their background, needs or abilities.</p>					
	<p>To know how to use technology safely, respectfully and responsibly; including keeping personal information private, recognising acceptable / unacceptable behaviour and how to report concerns about content or contact.</p>	<p>To design, write, and debug programs to accomplish specific goals; working with variables and various forms of input and output.</p>	<p>To select use and combine a variety of software on a range of devices to design and create a range of content, including collecting, analysing, evaluating and presenting data and information.</p>	<p>To develop computational thinking; using logical reasoning to analyse a problem and plan out solutions; and decomposing them into smaller parts</p>	<p>To understand how computer networks operate and the opportunities they offer for communication and collaboration.</p>	<p>To use search technologies effectively and be discerning in evaluating digital content.</p>
<p><u>Implementation</u> Our in-depth approach to the teaching of computing develops confidence using and accessing the digital world!</p>						
<p>Planning</p>	<p>Recording</p>		<p>Assessment</p>			
<p>Lindfield Primary Academy follows the Purple Mash scheme of work which covers the whole primary curriculum with a clear structure of progression building on children’s previous knowledge. It uses resources embedded within the platform which allows pupils to save, combine and import content which can be</p>	<p>We record our fantastic computing learning in a variety of ways. These depend on the unit we are teaching, but may include:</p> <ul style="list-style-type: none"> • Individual pupil work is stored on the school system and on a personal folder on the PurpleMash online portal. 		<p>We assess computing in a variety of ways, however, our main assessment tool is Sonar.</p> <p>Computing assessment may include:</p> <ul style="list-style-type: none"> • Teachers assess against the Learning Objectives specified on our whole school Computing curriculum map (via Sonar) 			

shared across the school safely.

The scheme is supplemented by additional lessons on computer networks; and the use of Spheros, BeeBots and programmable Lego when creating computer programs.

In addition to the Purple Mash E-Safety lessons, further learning takes place as lesson 'starters' to maintain its profile. We have introduced a new character to help remind ourselves of the importance of e-safety – his name is E-Safety Salamander (you'll see him in most computing lessons)! We also use the Byte curriculum to help support this area of our curriculum



- Photographic evidence of practical work is stored in iPad Data.
- Depending on the unit of work, evidence is printed and presented in our learning journals
- Examples of pupil work is displayed around school.

- At the end of each unit of work, teachers assess pupils attainment, identifying pupils Working Towards ARE, Working at ARE and Working at Greater Depth.
- Marking adheres to the school's marking policy.
- Assessment for learning based on observations, key questioning and discussion, used to inform lesson planning and evaluate attainment at the end of each unit.
- Opportunities for children to evaluate their own work and that of other pupils through self and peer-assessment. For example through E-Safety Salamander's green pen questions.

EYFS

Our Computing curriculum for the EYFS is centred around play-based, unplugged (no computer) activities that focus on building children's listening skills, curiosity and creativity and problem solving.

Technology in the Early Years can mean:

- taking a photograph with a camera or tablet
- searching for information on the internet
- playing games on the interactive whiteboard
- exploring an old typewriter or other mechanical toys
- using a Beebot
- watching a video clip

SEN

Quality first teaching supports all children to achieve.

Lessons incorporate a range of teaching strategies from independent tasks, paired and group work as well as unplugged and digital activities. Differentiated guidance is available for every lesson to ensure lessons can be accessed by all pupils and opportunities to stretch pupils' learning are available when required. Knowledge Organisers for each unit support pupils in building a foundation of factual knowledge by encouraging recall of key facts and vocabulary

- listening to music

Allowing children the opportunity to explore technology in this carefree and often child-led way, means that not only will they develop a familiarity with equipment and vocabulary but they will have a strong start in key stage 1 Computing and all that it demands.

Impact

Our curriculum aims to develop ‘thinkers of the future’ through a modern, ambitious and relevant education in computing.

The programmes of study for computing at key stages 1 and 2:

KS1

Pupils should be taught to:

- 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.

KS2

Pupils should be taught to:

- 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.

Progression across year groups and our curriculum overview:

Computing 'Pillars' + additional 'e-safety' focus (KCSIE 2023)

Digital Literacy	Information Technology	Computer Science	E-Safety
Skills and knowledge required to be an effective, safe and discerning user of a range of computer systems: -using physical devices -knowledge of features	How computers are used in different sectors and creation of digital 'artefacts' such as spreadsheets, PowerPoints, 3D models and videos.	Covers concepts such as data, system architecture, algorithms and programming (coding).	Linked to 'Digital Literacy'

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
F*	<p>START WITH: E Safety: I can tell an adult if I see something that worries me online.</p> <p>*EYFS – Objectives are discussion based, as most fall under 'Knowledge and understanding of the world'.</p>	<p>START WITH: E Safety: I can ask an adult to be with me when I use the internet</p> <p>THEN: I recognises that a range of technology is used in places such as homes and schools (ELG)</p>	<p>START WITH: E Safety: I know I need to keep my personal information private.</p> <p>THEN: I can select and use technology for particular purposes (ELG) I am familiar with the keyboard.</p>	<p>START WITH: E Safety: I know how to stay safe when using a tablet.</p> <p>THEN: I can select and use technology for particular purposes (ELG)</p>	<p>START WITH: E Safety: I can use a safe part of the internet or app to play and learn.</p> <p>THEN: I can use ICT hardware to interact with age-appropriate computer software</p>	<p>START WITH: E Safety: I know I need to keep my personal information private.</p> <p>THEN: I can complete a simple program on a computer.</p>
1	<p>START WITH: E Safety: I know to tell an adult if I see something worrying online I can log in safely TASK: PM Unit 1.1 Online Safety</p> <p>THEN:</p>	<p>START WITH: E Safety: I always ask an adult before I go on the internet TASK: Refer to 'Byte'</p> <p>THEN: Coding: Predict the behaviour of simple programs</p>	<p>START WITH: E Safety: I can tell you what my personal information is. TASK: Refer to 'Byte'</p> <p>THEN: Digital Literacy: I can use a program to create a simple document</p>	<p>START WITH: E Safety: I say well done to my friends when I view their work. TASK: Refer to 'Byte'</p> <p>THEN: Digital Literacy: I can use a program to create a simple document</p>	<p>START WITH: E Safety: I know what these are: clipart, photograph, text, video, and sound. TASK: Refer to 'Byte'</p> <p>THEN: TASK: PM Unit 1.6 Animated Story Books</p>	<p>START WITH: E Safety: I know why it is important for trusted adults to know what I am doing online. TASK: Refer to 'Byte'</p> <p>THEN: TASK: PM Unit 1.6 Animated Story Books</p>

	<p>I can develop keyboard skills</p> <p>Digital Literacy: I can recognise how I use technology in my home and at school</p> <p>TASK: Refer to SONAR exemplar</p>	<p>Understand what algorithms are and how they are implemented on digital devices</p> <p>TASK: Beebots using bluetooth</p>	<p>TASK: Topic book cover – search function (in PM), camera on laptop</p> <p>I understand what an alert is.</p> <p>TASK: Unit 1.2 Grouping & Sorting - 2Quiz</p>	<p>TASK: clip art, click and drag, change font</p> <p>I understand that data can be represented in different ways.</p> <p>TASK: PM Unit 1.3 Pictograms – 2Count PM Unit 1.8 Spreadsheets – 2Calculate</p>	<p>Weeks – 5 Programs – 2Create A Story</p>	<p>Weeks – 5 Programs – 2Create A Story</p>
2	<p>START WITH:</p> <p>E Safety: I understand what a digital footprint is.</p> <p>TASK: Unit 2.2 Online Safety</p> <p>THEN:</p> <p>Digital Literacy: I can find, open, edit and save files I am working on</p> <p>TASK: PM Unit 2.6 Creating Pictures – 2PaintAPicture Unit 2.8 Presenting Ideas 4 Weeks Programs – Various</p>	<p>START WITH:</p> <p>E Safety: I know I need to keep my personal information private.</p> <p>TASK: Refer to SONAR exemplar</p> <p>THEN:</p> <p>Information Technology: I can recognise how others use technology outside of school</p> <p>How is technology used differently by others – entertainment / work / email / watching tv on devices / communicating with others</p> <p>TASK: Refer to SONAR exemplar</p>	<p>START WITH:</p> <p>E Safety: I understand I need to keep my password private</p> <p>TASK: Refer to 'Byte'</p> <p>THEN:</p> <p>Digital Literacy: I can use different software programs and discuss the benefits of their usage</p> <p>TASK: PM Unit 2.4 Questioning – 2Question, 2Investigate PM Unit 2.3 Spreadsheets – 2Calculate</p>	<p>START WITH:</p> <p>E Safety: I know that not everyone is who they say they are on the internet</p> <p>TASK: Refer to 'Byte'</p> <p>THEN:</p> <p>TASK: PM Unit 2.7 Making Music – 2Sequence</p>	<p>START WITH:</p> <p>E Safety: I know what an advert looks like on the Internet.</p> <p>TASK: Refer to 'Byte'</p> <p>THEN:</p> <p>Coding: I can predict the behaviour of a programmed toy, clearly relating each action to part of an algorithm</p> <p>I can create a simple program to perform a task</p> <p>TASK: PM Unit 2.1 Coding – 2Code / Beebots using bluetooth</p>	<p>START WITH:</p> <p>E Safety: I can talk about why I should only use the internet for a short amount of time.</p> <p>TASK: Refer to 'Byte'</p> <p>THEN:</p> <p>Coding: I can create and debug simple programs</p> <p>I can find and fix simple bugs in programs</p> <p>I can understand that programs run by following clear instructions</p> <p>TASK: Refer to SONAR exemplar</p>
3	<p>START WITH:</p> <p>E Safety: I know I need to keep my password and</p>	<p>START WITH:</p> <p>E Safety: I can make good choices about how long I</p>	<p>START WITH:</p> <p>E Safety: I know I must check who it belongs to</p>	<p>START WITH:</p> <p>E Safety: I ask an adult before downloading files</p>	<p>START WITH:</p> <p>E Safety: I can recognise acceptable and</p>	<p>START WITH:</p> <p>E Safety: I know that some information on</p>

	<p>personal information secure TASK: Refer to SONAR exemplar</p> <p>THEN: Searching: Use simple search technologies SONAR: Use of keywords TASK: Refer to SONAR exemplar</p>	<p>spend online. TASK: PM: Unit 3.2 Online safety</p> <p>THEN: Searching: Use simple search technologies and recognise that some sources are more reliable than others SONAR: ranking, known organisations, asking for personal information, cookies, URL TASK: Refer to SONAR exemplar</p> <p>Digital Literacy: I know what input and output devices are and how they are used TASK: Label a photo of a desktop computer workstation</p>	<p>before I copy images or text. TASK: Refer to 'Byte'</p> <p>THEN: Digital Literacy: I can use a range of input and output devices efficiently SONAR: use mouse, change speakers / printer etc TASK: Refer to SONAR exemplar</p> <p>Networks: I understand that the internet is a large network that enables computers to share information SONAR: IP address, URL, Hyperlink TASK: Refer to SONAR exemplar</p> <p>I can understand, analyse and evaluate a computer simulation TASK: PM: Unit 3.7 Simulations 2Simulate, 2Publish</p>	<p>and games from the internet. TASK: Refer to 'Byte'</p> <p>THEN: Networks: I understand that computer networks allow data to be transferred and shared SONAR: Central location / servers TASK: Refer to SONAR exemplar</p> <p>Digital Literacy: I can make choices on which program is best for a given task TASK: PM Unit 3.6 Branching Databases - 2Question PM Unit 3.3 Spreadsheets 2Calculate</p>	<p>unacceptable behaviour online. TASK: Refer to SONAR exemplar</p> <p>THEN: I can solve an investigation and present the results in graphic form TASK: Unit 3.8 Graphing 2Graph</p> <p>Coding: Design, write and debug programs that control or simulate virtual events Coding: Use logical reasoning to explain how some simple algorithms work TASK: Programmable Lego unit of work</p>	<p>the internet is not accurate. I must think carefully before I rely on it. TASK: Refer to 'Byte'</p> <p>THEN: I can use email safely I can attach files to email TASK: Unit 3.5 Email (including email safety) 2Email, 2Connect, 2DIY</p>
4	<p>START WITH: E Safety: Use technology responsibly and understand that communication online</p>	<p>START WITH: E Safety: Understand where to go for help and support when he/she has concerns about</p>	<p>START WITH: E Safety: I can use the safety features of websites as well as reporting concerns to an</p>	<p>START WITH: E Safety: I can make good choices about how long I spend online. TASK: Refer to 'Byte'</p>	<p>START WITH: E Safety: I can choose a secure password and appropriate screen name when I am using a</p>	<p>START WITH: E Safety: I know that anything I share on line can be seen and used by others.</p>

	<p>may be seen by others TASK: Refer to SONAR exemplar</p> <p>THEN:</p> <p>Networks: I understand that some computers on a network serve particular functions, such as controlling printers or sharing files Explain how the school network works TASK: Refer to SONAR exemplar</p>	<p>content or contact on the internet or other online technologies TASK: Refer to SONAR exemplar</p> <p>THEN: Coding: I can break programs up into smaller parts Coding: I can use logical thinking to identify and solve potential bugs during coding TASK: Programmable Lego unit of work</p> <p>I can use a spreadsheet for budgeting TASK: Unit 4.3 Spreadsheets 2Calculate</p>	<p>adult. TASK: Refer to 'Byte'</p> <p>THEN: Digital Literacy: I can use different software programs and different types of hardware TASK: Word - publish biographies. Select the most appropriate program eg spreadsheet, word, image editor</p>	<p>THEN: Digital Literacy: I can use more complicated input devices TASK: Data loggers</p> <p>Digital Literacy: I can use a range of programs to complete a task TASK: PM: Unit 4.6 Animation 2Animate – using a camera on one device and import photos into another program.</p>	<p>website TASK: Refer to 'Byte'</p> <p>THEN: Searching: I understand how search engines order their search results TASK: SONAR: Eg Google for Kids, Kid Splorer, Kiddle. Unit 4.7 Effective Search Browser</p> <p>I can explore stop motion animation I understand the different parts that make up a computer TASK: PM: Unit 4.8 Hardware Investigators</p>	<p>TASK: Refer to 'Byte'</p> <p>THEN: Coding: I can use other programs as I code Create a 'turtle' in paint projects, technology, robot. Save in work. Open in Logo as a turtle I can use Logo instructions to create a picture TASK: Unit 4.5 Logo</p>
5	<p>START WITH: E Safety: Understand the need to only select age appropriate content E Safety: I keep my password and personal information private. E Safety: I can discuss appropriate and inappropriate use of the internet. TASK: Refer to 'Byte'</p> <p>THEN: Networks: I can use the</p>	<p>START WITH: E Safety: I know that a website has an author who is targeting an audience. I know that some people publish inaccurate information on the internet. TASK: Refer to 'Byte'</p> <p>THEN: Digital Literacy: I can use different software programs and different types of hardware</p>	<p>START WITH: E Safety: I support my friends to protect themselves and make good choices online. TASK: Refer to 'Byte'</p> <p>THEN: Digital Literacy: I can use a range of programs to complete a task TASK: PM: Unit 5.4 Databases 2Question, 2Investigate</p>	<p>START WITH: E Safety: I can explain why I need to protect myself and my friends, and the best way to do this including reporting my concerns to a friend. TASK: Refer to 'Byte'</p> <p>THEN: Digital Literacy: I can use a range of programs to complete a task TASK: PM: Unit 5.3 Spreadsheets 2Calculate</p>	<p>START WITH: E Safety: I can explain why I need to protect my computer or device from harm. TASK: Refer to 'Byte'</p> <p>THEN: Coding: I can write increasingly complex programs I can control external hardware from within my programs I can use loops to repeat tasks within a program</p>	<p>START WITH: E Safety: I understand how to choose online content for my age group know which resources on the internet I can download and use. TASK: Refer to 'Byte'</p> <p>THEN: I can explore the possibilities of 3d modelling. TASK: Unit 5.6 3D Modelling</p>

	<p>internet to allow me to share data with another person</p> <p>TASK: SONAR: instant messaging, email etc</p> <p>PM: Unit 5.5 Game Creator</p>	<p>(SONAR video)</p> <p>TASK: Using word and publisher</p> <p>Searching: I can use more advanced features when searching online</p> <p>I can use a range of search tools to find exactly what I'm looking for</p> <p>TASK: Refer to SONAR exemplar</p>			<p>I can use IF statements to alter the way my programs run</p> <p>I can explain how increasingly complex algorithms solve a given problem</p> <p>TASK: Spheros unit of work</p>	<p>2Design and Make</p>
6	<p>START WITH:</p> <p>E Safety: Identify a range of ways to report concerns about content and contact in and out of school</p> <p>TASK: Refer to SONAR exemplar</p> <p>THEN:</p> <p>Coding: I can combine software and hardware to solve real life problems</p> <p>I can break code up into related instructions, making debugging easier and quicker</p> <p>I can store and retrieve variables in a program</p> <p>I can use loops, variables and IF statements to</p>	<p>START WITH:</p> <p>E Safety: Use technology respectfully and responsibly</p> <p>E Safety: I can choose a secure password for different purposes.</p> <p>E Safety: I can explain the consequences of spending too much time online or on a game.</p> <p>TASK: Refer to SONAR exemplar</p> <p>THEN:</p> <p>Digital Literacy: I can use more than one piece of software to complete a task</p> <p>TASK: Refer to SONAR exemplar</p>	<p>START WITH:</p> <p>E Safety: I know which resources on the internet I can download and use (copyright).</p> <p>E Safety: I can check information that I find online.</p> <p>TASK: Refer to 'Byte'</p> <p>THEN:</p> <p>Digital Literacy: I can select appropriate software to use for a given task</p> <p>TASK: PM: Unit 6.4 Blogging</p> <p>2Blog</p>	<p>START WITH:</p> <p>E Safety: I can explain the consequences of sharing too much of myself online.</p> <p>E Safety: I can explain the consequences to myself and others for not communicating kindly and respectfully.</p> <p>TASK: Refer to 'Byte'</p> <p>THEN:</p> <p>Digital Literacy: I can use software to help me analyse and present data and information</p> <p>TASK: PM: Unit 6.3 Spreadsheets</p> <p>2Calculate</p>	<p>START WITH:</p> <p>E Safety: I know that using unreliable information will mislead people.</p> <p>E Safety: I know that websites can use my data to make money and target their advertising.</p> <p>TASK: Refer to 'Byte'</p> <p>THEN:</p> <p>Searching: I can recognise trustworthy sources of information on the internet</p> <p>Searching: I can use a broad range of resources online to find exactly what I'm looking for</p> <p>TASK: Refer to SONAR exemplar</p>	<p>START WITH:</p> <p>E Safety: I always acknowledge the source of materials I use in my work.</p> <p>E Safety: I ask my friends before I use things I created in my work.</p> <p>E Safety: I can identify the benefits and risks of mobile devices</p> <p>I understand the importance of balancing screen time</p> <p>TASK: Unit 6.2 Online safety</p>

<p>alter the way my programs run I can use logical thinking to identify and solve potential bugs during coding. TASK: Spheros unit of work</p> <p>Digital Literacy: I can design a program for a given audience TASK: Refer to SONAR exemplar</p>	<p>Networks: I understand how computers are able to communicate and share information TASK: Refer to SONAR exemplar</p> <p>Networks: I can use and combine services on the internet to share information TASK: Refer to SONAR exemplar</p>			<p>I can create a picture quiz for young children TASK: Unit 6.7 Quizzing 2Quiz, 2DIY, Text Toolkit, 2Investigate</p> <p>Digital Literacy: I can select appropriate software to use for a given task TASK: Unit 6.5 Text Adventures 2Code, 2Connect</p>	
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