LANGTOFT PRIMARY SCHOOL

Computing

OUR INTENT FOR COMPUTING

The Teach Computing Curriculum has been written to support all pupils. Each lesson is sequenced so that it builds on the learning from the previous lesson, and where appropriate, activities are scaffolded so that all pupils can succeed and thrive. Scaffolded activities provide pupils with extra resources, such as visual prompts, to reach the same learning goals as the rest of the class. Exploratory tasks foster a deeper understanding of a concept, encouraging pupils to apply their learning in different contexts and make connections with other learning experiences.

The curriculum aims to equip young people with the knowledge, skills and understanding they need to thrive in the digital world of today and the future.

Within our curriculum, The Teach Computing Curriculum uses the National Centre for Computing Education's computing taxonomy to ensure comprehensive coverage of the subject. **The units for key stages 1 and 2 are based on a spiral curriculum. This means that each of the themes is revisited regularly (at least once in each year group), and pupils revisit each theme through a new unit that consolidates and builds on prior learning within that theme. This style of curriculum design reduces the amount of knowledge lost through forgetting, as topics are revisited yearly. It also ensures that connections are made even if different teachers are teaching the units within a theme in consecutive years.**

The national curriculum for computing aims to ensure all pupils:

- **can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation (Computer science)**
- **can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems (Computer science)**
- **can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems (Information technology)**
- **are responsible, competent, confident and creative users of information and communication technology. (Digital literacy)**

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The Skills and Knowledge on which our Computing Curriculum is Built

All learning outcomes can be described through a high-level taxonomy of ten strands, ordered alphabetically as follows:

- **Algorithms** — Be able to comprehend, design, create, and evaluate algorithms
- **Computer networks** — Understand how networks can be used to retrieve and share information, and how they come with associated risks
- **Computer systems** — Understand what a computer is, and how its constituent parts function together as a whole
- **Creating media** — Select and create a range of media including text, images, sounds, and video
- **Data and information** — Understand how data is stored, organised, and used to represent real-world artefacts and scenarios
- **Design and development** — Understand the activities involved in planning, creating, and evaluating computing artefacts
- **Effective use of tools** — Use software tools to support computing work
- **Impact of technology** — Understand how individuals, systems, and society as a whole interact with computer systems
- **Programming** — Create software to allow computers to solve problems
- **Safety and security** — Understand risks when using technology, and how to protect individuals and systems

These topics include computing as one of the focus areas:

EYFS	Y1	Y2	Y3	Y4	Y5	Y6
• All About Me • Let's Celebrate • Traditional Tales / Chinese New Year • Superheroes / Spring • Growing • Minibeasts	• The UK (focus on London) • Australia • Toys • The Human Body • The Enchanted Woodland • Animals	• Local area- Langtoft looking at houses. • Explorers- Columbus & Armstrong • Great Fire of London • China / dragons • Plants • Animals- life cycles, habitats • Seaside & weather	• Stone Age • Bronze Age to Iron Age • Rainforest • Animals, skeletons & nutrition • Egyptians • Forces & magnets	• Ancient Greeks • North America • Electricity • Romans • Habitats – environment • The Tudors	• The Anglo-Saxons • The Vikings • Space • The Victorians • Coasts • The Mayans	• WWII • Mountains • Crime and punishment • Coasts (2002: Rivers) • Electricity • Evolution

Examples of Curriculum Intent

Dedicated STEM Week to explore computing, take part in enrichment experiences.

Planned STEM club for KS1 and KS2.

Children study a range of picture books throughout their time at school through visual Literacy often based on Online safety

Children are encouraged to read a selection of age-related non-fiction texts around the computing they are studying

Children take part in local and national competitions to inspire and encourage the use of computing.

Children use STEM ambassadors to engage with learning and improve their awareness of career opportunities in computing.

Daily Implementation of Computing

- Computing is taught on a weekly basis in each year group, but is also delivered through activities designed to further enrich their understanding of Computing and provide cultural capital, such as our planned STEM week and Computing clubs (CAD and Coding).
- Knowledge Organisers: Children use Teach Computing learning graphs and add vocabulary and key questions during their learning journey.
- Subject specific vocabulary: Identified through knowledge organisers (learning graphs) and highlighted to the children at the beginning of and during lessons.

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- EYFS: Reception children are given a secure grounding in the Prime Areas of Learning, ensuring they have a good foundation on which to build through the specific areas, including: Computational Thinking (Barefoot – Computing at School).
- Text: Children will have access to a growing variety of subject specific books, including non-fiction, as well as appreciating illustrations within their text-based learning.
- Teachers assess children's work in Computing by making formative and summative assessments throughout the school year. All pupils are encouraged to evaluate their own learning and to suggest ways to progress further.
- Teachers record the progress made by the children against the learning outcome for each unit: below expected for age, at expected. Teachers record this information on our bespoke assessment tracker against the learning objectives. These records also enable the teacher to make an annual assessment of progress for each child, and to pass this assessment information on to the child's next teacher at the end of the year.
- Progress in Computing is reported to parents.

Impact

- Children will learn the skills they need to use at the beginning of a topic and are able to refer back to it.
- All children use technical vocabulary accurately and pupils are expected to know, apply and understand the matters, skills and processes specified.
- Children improve their enquiry skills and inquisitiveness about the world around them, and their impact through computing on the world.
- Children will become more confident in analysing their work and giving their opinion on their own and other projects.
- Children show competences in improving their resilience and perseverance by continually evaluating and improving their work.
- All children in school can speak confidently about their computing work and their skills
- Children are able to express their individuality and unique abilities with confidence.
- Children are respectful of their peers, communities and cultures.
- Children have a global awareness of computing within the lives of individuals, communities and cultures.

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	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
COMPUTING SYSTEMS AND NETWORKS	https://www.barefootcomputing.org/concept-approaches/computational-thinking-concepts-and-approaches **Tinkering -** Playing and exploring **Making** Making things, checking and fixing things **Collaboration** Playing and working collaboratively **Persevering** Not giving up **Logic** Anticipating and explaining is logical reasoning **Pattern** Grouping things, comparing, spotting similarities and differences, working out rules **Abstraction** Naming and labelling, working out what is important, sticking to the main theme, ignoring what is not important, creating a summary **Algorithms and Decomposition** Responding to instructions, ordering things, sequencing things, introducing storylines, working out different ways to do things, breaking problems down into steps	**Technology around us** To identify technology To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type To use the keyboard to edit text To create rules for using technology responsibly	**Information technology around us** To recognise the uses and features of information technology To identify information technology in the home To identify information technology beyond school To explain how information technology benefits us To show how to use information technology safely To recognise that choices are made when using information technology	**Connecting computers** To explain how digital devices function To identify input and output devices To recognise how digital devices can change the way we work To explain how a computer network can be used to share information To explore how digital devices can be connected To recognise the physical components of a network	**The internet** To describe how networks physically connect to other networks To recognise how networked devices make up the internet To outline how websites can be shared via the World Wide Web To describe how content can be added and accessed on the World Wide Web To recognise how the content of the WWW is created by people To evaluate the consequences of unreliable content	**Sharing information** To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To recognise how information is transferred over the internet To explain how sharing information online lets people in different places work together To contribute to a shared project online To evaluate different ways of working together online	**Communication** To identify how to use a search engine To describe how search engines select results To describe how search engines select results To explain how search results are ranked To recognise why the order of results is important, and to whom To recognise how we communicate using technology To evaluate different methods of online communication

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VOCABULARY	Website Internet Keyboard Mouse Monitor Touchscreen Button Swipe Tap/click Double tap/click Open/close Log in Password	Technology Computer, mouse/trackpad, keyboard, screen, click, drag Computer mouse/trackpad, draw, click, double-click, click and drag Input device, computer, keyboard, mouse Shift, space bar, capital letter, full stop Safely, responsibly, computer, technology	Information technology (IT), computer, barcode, scanner/scan	Digital device, input, output, process, Program, Connection, network, network switch, server, wireless access point (WAP)	Internet, network, router, network security Network switch, server, wireless access point (WAP), router Website, web page, web address, router, routing, route tracing, browser World Wide Web, internet, content, website, web page, links, files Website, use, content, download, sharing, ownership, permission Information, sharing, accurate, honest, content, adverts	System, connection, digital, input, process, output System, connection, digital, input, process, output Protocol, address, packet Chat, explore, slide deck Chat, explore Reuse, remix, collaboration	Search, search engine, Google, Bing, Yahoo!, Swisscows, DuckDuckGo, refine Index, crawler, bot, Ranking, search engine optimisation, links, web crawlers, web crawler, content creator, selection, ranking Communication, internet, public, private, one-way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround

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CREATING MEDIA

EYFS

Creating

https://www.barefootcomputing.org/concepts-and-approaches/creating

Year 1

Digital painting

To describe what different freehand tools do

To use the shape tool and the line tools

To make careful choices when painting a digital picture

To explain why I chose the tools I used

To use a computer on my own to paint a picture

To compare painting a picture on a computer and on paper

Digital writing

To use a computer to write

To add and remove text on a computer

To identify that the look of text can be changed on a computer

To make careful choices when changing text

To explain why I used the tools that I chose

To compare writing on a computer with writing on paper

Year 2

Digital photography

To know what devices can be used to take photographs

To use a digital device to take a photograph

To describe what makes a good photograph

To decide how photographs can be improved

To use tools to change an image

To recognise that images can be changed

Making music

To say how music can make us feel

To identify that there are patterns in music

To describe how music can be used in different ways

To show how music is made from a series of notes

To create music for a purpose

To review and refine our computer work

Year 3

Stop-frame animation

To explain that animation is a sequence of drawings or photographs

To relate animated movement with a sequence of images

To plan an animation

To identify the need to work consistently and carefully

To review and improve an animation

To evaluate the impact of adding other media to an animation

Desktop publishing

To recognise how text and images convey information

To recognise that text and layout can be edited

To choose appropriate page settings

To add content to a desktop publishing publication

To consider how different layouts can suit different purposes

To consider the benefits of desktop publishing

Year 4

Audio editing

To identify that sound can be digitally recorded

To use a digital device to record sound

To explain that a digital recording is stored as a file

To explain that audio can be changed through editing

To show that different types of audio can be combined and played together

To evaluate editing choices made

Photo editing

To explain that digital images can be changed

To change the composition of an image

To describe how images can be changed for different uses

To make good choices when selecting different tools

To recognise that not all images are real

To evaluate how changes can improve an image

Year 5

Video editing

To recognise video as moving pictures, which can include audio

To identify digital devices that can record video

To capture video using a digital device

To recognise the features of an effective video

To identify that video can be improved through reshooting and editing

To consider the impact of the choices made when making and sharing a video

Vector drawing

To identify that drawing tools can be used to produce different outcomes

To create a vector drawing by combining shapes

To use tools to achieve a desired effect

To recognise that vector drawings consist of layers

To group objects to make them easier to work with

To evaluate my vector drawing

Year 6

Web **page creation**

To review an existing website and consider its structure

To plan the features of a web page

To consider the ownership and use of images (copyright)

To recognise the need to preview pages

To outline the need for a navigation path

To recognise the implications of linking to content owned by other people

3D modelling

To use a computer to create and manipulate three-dimensional (3D) digital objects

To compare working digitally with 2D and 3D graphics

To construct a digital 3D model of a physical object

To identify that physical objects can be broken down into a collection of 3D shapes

To design a digital model by combining 3D objects

To develop and improve a digital 3D model

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VOCABULARY	EYFS Digital device Camera Photograph Microphone Speakers Music Centre Play Record Save paint program, tool, paintbrush, erase, fill, undo Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool Henri Matisse, shape tool, fill tool Wassily Kandinsky, tools, feelings, colour, brush style Georges Seurat, Pointillism, brush size Pictures, painting, computers, like, prefer, dislike Word processor, keyboard, keys, letters, Microsoft Word, Google Docs, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, cursor, select, font, toolbar, bold, italic, underline, keys, cursor, undo, font, toolbar, bold, italic, underline, keys, undo, backspace, toolbar, bold, italic, underline	Device, camera, photograph, capture, image, digital Landscape, portrait, horizontal, vertical, field of view, narrow, wide, format Framing, focal point, subject matter, field of view, format, compose Natural lighting, artificial lighting, flash, focus, background, foreground Editing, tools, colour, filter, images, Pixlr Format, framing, lighting, focus, filter, changed, real Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions Pattern, rhythm, pulse Neptune, pitch, tempo, rhythm, notes Pattern, notes, instrument, tempo Create, emotion, pitch, pulse/beat, tempo, instrument, rhythm, notes Open, edit	Animation, flip book Stop frame animation, frame, sequence, image, photograph, Setting, character, events, stop, onion skinning, consistency, Evaluation, animation, delete, frame, media, import, transition Text, images, advantages, disadvantages, communicate, Font, font style, communicate, template, Landscape, portrait, orientation, placeholder, template Desktop publishing, copy, paste, Layout, purpose Desktop publishing, benefits	Audio, record, playback, microphone, speaker, headphones, input, output, sound, start, pause, stop, podcast, start, pause, save, file, edit, selection, file, edit, selection, open, mixing, time shift Export, MP3, audio, editing, evaluate, feedback Image, edit, arrange, select, digital, crop, undo, save Image, search, save, copyright, composition, edit, save, pixels, crop, rotate, flip, adjustments, effects, colours, hue/saturation, sepia, save, version, illustrator, vignette, retouch, clone, recolour, magic wand, select, adjust, sharpen, brighten Image, fake, real, composite, cut, copy, paste, alter, background, foreground, publication, elements, original, font style, shapes, border, layer	Video, audio, recording, storyboard, script, soundtrack, dialogue Video, audio, recording, capture, zoom, storage, digital, tape "Video, audio, AV (audiovisual), recording, save, videographer Video techniques: Zoom, pan, tilt, angle " Video, lighting, setting, YouTuber, content, light, audio/sound, camera angle, colour Export, computer, Microsoft Movie Maker, split, trim/clip, edit, titles, end credits, timeline, transitions, audio, soundtrack, content, retake/reshoot (choose agreed language) Video, special effects, title screen, end credits, export, constructive feedback Vector, drawing tools, shapes, object, icons, toolbar Vector drawing, object, move, resize, colour, rotate, duplicate/copy Organise, zoom, select, rotate, object, alignment grid, resize, handles, consistency, modify Layers, object, front, back, order Copy, paste, group, ungroup, duplicate, object, vector drawing, reuse Improvement, evaluate, alternatives, vector drawing	Website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, media, purpose Copyright, fair use, home page, preview, evaluate, device, Google Sites, breadcrumb trail, navigation, hyperlink, subpage Hyperlink, evaluate, website, web page, implication, external link, embed 2D, 3D, 3D object, 3D space, view, resize, colour, lift Rotate, position, select, duplicate Dimensions, placeholder, hole, group, ungroup , group, design Modify, evaluate, improve

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	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
DATA AND INFORMATION	https://www.barefootcomputing.org/concepts-and-approaches/persevering https://www.barefootcomputing.org/concepts-and-approaches/collaborating	**Grouping data** To label objects To identify that objects can be counted To describe objects in different ways To count objects with the same properties To compare groups of objects To answer questions about groups of objects	**Pictograms** To recognise that we can count and compare objects using tally charts To recognise that objects can be represented as pictures To create a pictogram To select objects by attribute and make comparisons To recognise that people can be described by attributes To explain that we can present information using a computer	**Branching databases** To create questions with yes/no answers To identify the object attributes needed to collect relevant data To create a branching database To identify objects using a branching database To explain why it is helpful for a database to be well structured To compare the information shown in a pictogram with a branching database	**Data logging** To explain that data gathered over time can be used to answer questions To use a digital device to collect data automatically To explain that a data logger collects 'data points' from sensors over time To use data collected over a long duration to find information To identify the data needed to answer questions To use collected data to answer questions	**Flat-file databases** To use a form to record information To compare paper and computer-based databases To outline how grouping and then sorting data allows us to answer questions To explain that tools can be used to select specific data To explain that computer programs can be used to compare data visually To apply my knowledge of a database to ask and answer real-world questions	**Spreadsheets** To identify questions which can be answered using data To explain that objects can be described using data To explain that formula can be used to produce calculated data To apply formulas to data, including duplicating To create a spreadsheet to plan an event To choose suitable ways to present data
VOCABULARY	Sort Group Pictogram Numerals 1 to 20 Same Different Total More than Less than	Object, label, group, search, image Group, object, label, image, property, label, colour, size, shape, value, label, colour, data set, more, less, most, fewest, data set, more, less, most, least, fewest, the same	More than, less than, most, least, organise, data, object, tally chart, votes, total Pictogram, enter, data, tally chart, compare, more than, less than, objects, count Tally chart, data, pictogram, explain, more, less, most, least, more common, least common Attribute, group, same, different, object, more than/less than, most/least Attribute, compare, tally chart, pictogram, more than, less than, most popular, least popular, conclusion, block diagram, most, least, common, sharing, data	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, sequence, event, task, design, code, run the code, order, note, chord, design, algorithm, bug, debug	Data, table (layout) Input device, sensor, data logger Data logger, logging, data point, interval Analyse, data set, import, export, logged, collection Analyse, review, conclusion	Database, data, information, record, field, sort, order, group, field, record, sort, order, group, search, sort, order, value, search, criteria, record, field, graph, chart, axis, compare, filter, graph, chart, presentation	Spreadsheet, data, data heading, data set, cells, columns and rows Data, data item, data set, object, spreadsheet application, format, common attribute Formula, calculation, data, spreadsheet, input, output. cells, cell reference Data, calculate, operation, formula, cell, range, duplicate, sigma Propose, question, data set, data, organised, formula Graph, chart, evaluate, results, comparison, questions, software, tools, data

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	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
PROGRAMMING	Tinkering https://www.barefootcomputing.org/concepts-and-approaches/tinkering https://www.barefootcomputing.org/concepts-and-approaches/debugging https://www.barefootcomputing.org/concepts-and-approaches/persevering https://www.barefootcomputing.org/concepts-and-approaches/collaborating	**Moving a robot** To explain what a given command will do To act out a given word To combine forwards and backwards commands to make a sequence To combine four direction commands to make sequences To plan a simple program To find more than one solution to a problem **Introduction to animation** To choose a command for a given purpose To show that a series of commands can be joined together To identify the effect of changing a value To explain that each sprite has its own instructions To design the parts of a project To use my algorithm to create a program	**Robot algorithms** To describe a series of instructions as a sequence To explain what happens when we change the order of instructions To use logical reasoning to predict the outcome of a program (series of commands) To explain that programming projects can have code and artwork To design an algorithm To create and debug a program that I have written **Introduction to quizzes** To explain that a sequence of commands has a start To explain that a sequence of commands has an outcome To create a program using a given design To change a given design To create a program using my own design To decide how my project can be improved	**Sequence in music** To explore a new programming environment I can identify that each sprite is controlled by the commands I choose To explain that a program has a start To recognise that a sequence of commands can have an order To change the appearance of my project To create a project from a task description **Events and actions** To explain how a sprite moves in an existing project To create a program to move a sprite in four directions To adapt a program to a new context To develop my program by adding features To identify and fix bugs in a program To design and create a maze-based challenge	**Repetition in shapes** To identify that accuracy in programming is important To create a program in a text-based language To explain what 'repeat' means To modify a count-controlled loop to produce a given outcome To decompose a program into parts To create a program that uses count-controlled loops to produce a given outcome **Repetition in games** To develop the use of count-controlled loops in a different programming environment To explain that in programming there are infinite loops and count controlled loops To develop a design which includes two or more loops which run at the same time To modify an infinite loop in a given program To design a project that includes repetition To create a project that includes repetition	**Selection in physical computing** To control a simple circuit connected to a computer To write a program that includes count-controlled loops To explain that a loop can stop when a condition is met, eg number of times To conclude that a loop can be used to repeatedly check whether a condition has been met To design a physical project that includes selection To create a controllable system that includes selection **Selection in games** To explain how selection is used in computer programs To relate that a conditional statement connects a condition to an outcome To explain how selection directs the flow of a program To design a program which uses selection To create a program which uses selection To evaluate my program	**Variables in games** To define a 'variable' as something that is changeable To explain why a variable is used in a program To choose how to improve a game by using variables To design a project that builds on a given example To use my design to create a project To evaluate my project **Sensing** To create a program to run on a controllable device To explain that selection can control the flow of a program To update a variable with a user input To use a conditional statement to compare a variable to a value To design a project that uses inputs and outputs on a controllable device To develop a program to use inputs and outputs on a controllable device

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VOCABULARY	Instructions Algorithm Debug Code Program Forward Backward Left turn Right turn Stop Robot	Forwards, backwards, turn, clear, go, commands Instructions, directions Forwards, backwards, commands Left, right, turn, commands Plan, algorithm, program Route, plan, program ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area Block, joining, command, start block, run, program, programming area, background, delete, reset, algorithm, predict Effect, change, value, block Instructions, sprite, delete, program, algorithm Sprite, background, appropriate, algorithm Sprite, design, programming blocks, algorithm, programs	Instruction, sequence, clear, unambiguous, algorithm, program Sequence, order, algorithm, commands Sequence, prediction, program Artwork, design, route, mat Algorithm Debugging, algorithm, program Sequence, command, program, run, program, start Sequence, command, outcome, predict, program, blocks Sprite, algorithm, blocks, design, sequence, predict Actions, sprite, project, blocks, design, sequence, modify, change Design, algorithm, build, sequence, blocks, match Compare, design, debug, program, features, evaluate	Attribute, value, questions, table, objects, branching database, database, equal, even, separate, questions, objects, structure, compare, order, organise, j2data, selecting, questions, pictogram, compare, information, decision tree Motion, event, sprite, algorithm, logic Move, resize, algorithm Extension block, pen up, set up Pen, design, event, action, algorithm Debugging, errors, setup Design, code, setup, test, debug, actions, events	Program, turtle, commands, code snippet Algorithm, design, debug, Logo commands (see Glossary handout) Pattern, repeat, repetition, count-controlled loop, algorithm, value Repeat, repetition, count-controlled loop, trace, value Repeat, count-controlled loop, decompose, procedure Count-controlled loop, procedure, debug, program Scratch, programming, sprite, blocks, code, loop, repeat, value Block, repeat, forever, infinite loop, count-controlled loop, costume Repetition, forever, infinite loop, count-controlled loop, animate, costume, event block, duplicate Block, repeat, forever, infinite loop, modify, design Infinite loop, count-controlled loop, repetition, design, sprite, algorithm Repetition, design, algorithm, duplicate, debug, refine, evaluate	Microcontroller, Crumble controller, components, LED, Sparkle, crocodile clips, connect, battery box, program, repetition, infinite loop, output devices, motor, connect, battery box, program, repetition, count-controlled loop, switch, motor, LED, Sparkle, crocodile clips, connect, battery box, program, condition, true, false, input, output devices, selection, condition, action Task, design, selection, repetition, condition, action, microcontroller, Crumble controller, output devices, motor, switch, battery box, algorithm, program, debug, evaluate Selection, condition, true, false, count controlled loop, outcomes, conditional statement - the linking together of a condition and outcomes- algorithm, program, debug, question, answer, algorithm, program, debug Task, design, algorithm, input, program, selection, condition, outcomes Implement, design, algorithm, program, selection, condition, outcome, test, run, debug, test, setup, outcome, share, evaluate, constructive	Variable, change, name, value, set, design, event, algorithm, code Task, design, artwork, program, project, code, test, debug Improve, evaluate, share Micro:bit, MakeCode, input, process, output, flashing, USB Selection, condition, if… then… else, variable, random Input, selection, condition, variable, sensing, accelerometer Compass, direction, variable, navigation Micro:bit, design, task, algorithm, variable, step counter Plan, create, code, test, debug

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	Digital Literacy – Online Safety						
Self-image and Identity	I can recognise that I can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' to somebody who asks me to do something that makes me feel sad, embarrassed or upset. I can explain how this could be either in real life or online.	I can recognise that there may be people online who could make me feel sad, embarrassed or upset. If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust.	I can explain how other people's identity online can be different to their identity in real life. I can describe ways in which people might make themselves look different online. I can give examples of issues online that might make me feel sad, worried, uncomfortable or frightened; I can give examples of how I might get help.	I can explain what is meant by the term 'identity'. I can explain how I can represent myself in different ways online. I can explain ways in which and why I might change my identity depending on what I am doing online (e.g. gaming; using an avatar; social media).	I can explain how my online identity can be different to the identity I present in 'real life' Knowing this, I can describe the right decisions about how I interact with others and how others perceive me.	I can explain how identity online can be copied, modified or altered. I can demonstrate responsible choices about my online identity, depending on context.	I can describe ways in which media can shape ideas about gender. I can identify messages about gender roles and make judgements based on them. I can challenge and explain why it is important to reject inappropriate messages about gender online. I can describe issues online that might make me or others feel sad, worried, uncomfortable or frightened. I know and can give examples of how I might get help, both on and offline. I can explain why I should keep asking until I get the help I need.

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Online relationships	I can recognise some ways in which the internet can be used to communicate. I can give examples of how I (might) use technology to communicate with people I know.	I can use the internet with adult support to communicate with people I know. I can explain why it is important to be considerate and kind to people online.	I can use the internet to communicate with people I don't know well (e.g. email a penpal in another school/ country). I can give examples of how I might use technology to communicate with others I don't know well.	I can describe ways people who have similar likes and interests can get together online. • I can give examples of technology-specific forms of communication (e.g. emojis, acronyms, text speak). • I can explain some risks of communicating online with others I don't know well. • I can explain how my and other people's feelings can be hurt by what is said or written online. • I can explain why I should be careful who I trust online and what information I can trust them with. I can explain why I can take back my trust in someone or something if I feel nervous, uncomfortable or worried. • I can explain what it means to 'know someone' online and why this might be different from knowing someone in real life. I can explain what is meant by 'trusting someone online'. I can explain why this is different from 'liking someone online'.	I can describe strategies for safe and fun experiences in a range of online social environments. I can give examples of how to be respectful to others online.	I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my/our fault. I can make positive contributions and be part of online communities. I can describe some of the communities in which I am involved and describe how I collaborate with others positively.	I can show I understand my responsibilities for the well-being of others in my online social group. I can explain how impulsive and rash communications online may cause problems (e.g. flaming, content produced in live streaming). I can demonstrate how I would support others (including those who are having difficulties) online. I can demonstrate ways of reporting problems online for both myself and my friends.

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Online reputation	I can identify ways that I can put information on the internet.	I can recognise that information can stay online and could be copied. I can describe what information I should not put online without asking a trusted adult first.	I can explain how information put online about me can last for a long time. I know who to talk to if I think someone has made a mistake about putting something online.	I can search for information about myself online. I can recognise I need to be careful before I share anything about myself or others online. I know who I should ask if I am not sure if I should put something online.	I can describe how others can find out information about me by looking online. I can explain ways that some of the information about me online could have been created, copied or shared by others.	I can search for information about an individual online and create a summary report of the information I find. I can describe ways that information about people online can be used by others to make judgments about an individual.	I can explain how I am developing an online reputation which will allow other people to form an opinion of me. I can describe some simple ways that help build a positive online reputation
Online bullying	I can describe ways that some people can be unkind online. I can offer examples of how this can make others feel.	I can describe how to behave online in ways that do not upset others and can give examples.	I can give examples of bullying behaviour and how it could look online. I understand how bullying can make someone feel. I can talk about how someone can/would get help about being bullied online or offline.	I can explain what bullying is and can describe how people may bully others. I can describe rules about how to behave online and how I follow them.	I can identify some online technologies where bullying might take place. I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). I can explain why I need to think carefully about how content I post might affect others, their feelings and how it may affect how others feel about them (their reputation).	I can recognise when someone is upset, hurt or angry online. • I can describe how to get help for someone that is being bullied online and assess when I need to do or say something or tell someone. • I can explain how to block abusive users. • I can explain how I would report online bullying on the apps and platforms that I use. • I can describe the helpline services who can support me and what I would say and do if I needed their help (e.g. Childline).	I can describe how to capture bullying content as evidence (e.g screen-grab, URL, profile) to share with others who can help me. I can identify a range of ways to report concerns both in school and at home about online bullying.

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Managing Online Information	I can talk about how I can use the internet to find things out. I can identify devices I could use to access information on the internet. I can give simple examples of how to find information (e.g. search engine, voice activated searching).	I can use the internet to find things out. I can use simple keywords in search engines I can describe and demonstrate how to get help from a trusted adult or helpline if I find content that makes me feel sad, uncomfortable worried or frightened.	I can use keywords in search engines. I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections). I can explain what voice activated searching is and how it might be used (e.g. Alexa, Google Now, Siri). I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real'. I can explain why some information I find online may not be true.	I can use key phrases in search engines. I can explain what autocomplete is and how to choose the best suggestion. I can explain how the internet can be used to sell and buy things I can explain the difference between a 'belief', an 'opinion' and a 'fact'.	I can analyse information and differentiate between 'opinions', 'beliefs' and 'facts'. I understand what criteria have to be met before something is a 'fact'. • I can describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites). • I can describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online. • I can explain that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people. • can explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true.	I can use different search technologies. • I can evaluate digital content and can explain how I make choices from search results. • I can explain key concepts including: data, information, fact, opinion belief, true, false, valid, reliable and evidence. • I understand the difference between online mis-information (inaccurate information distributed by accident) and dis-information (inaccurate information deliberately distributed and intended to mislead). I can explain what is meant by 'being sceptical'. • I can give examples of when and why it is important to be 'sceptical'. I can explain what is meant by a 'hoax'. • I can explain why I need to think carefully before I forward anything online. • I can explain why some information I find online may not be honest, accurate or legal. • I can explain why information that is on a large number of sites may still be inaccurate	I can use search technologies effectively. • I can explain how search engines work and how results are selected and ranked. • I can demonstrate the strategies I would apply to be discerning in evaluating digital content. • I can describe how some online information can be opinion and can offer examples. • I can explain how and why some people may present 'opinions' as 'facts'. I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how I might encounter these online (e.g. advertising and 'ad targeting'). • I can demonstrate strategies to enable me to analyse and evaluate the validity of 'facts' and I can explain why using these strategies are important. • I can identify, flag and report inappropriate content.

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						or untrue. I can assess how this might happen (e.g. the sharing of misinformation either by accident or on purpose).	
Health, Wellbeing and Lifestyle	I can identify rules that help keep us safe and healthy in and beyond the home when using technology. I can give some simple examples.	I can explain rules to keep us safe when we are using technology both in and beyond the home. I can give examples of some of these rules.	I can explain simple guidance for using technology in different environments and settings. I can say how those rules/guides can help me.	I can explain why spending too much time using technology can sometimes have a negative impact on me; I can give some examples of activities where it is easy to spend a lot of time engaged (e.g. games, films, videos).	I can explain how using technology can distract me from other things I might do or should be doing. I can identify times or situations when I might need to limit the amount of time I use technology. I can suggest strategies to help me limit this time.	I can describe ways technology can affect healthy sleep and can describe some of the issues. I can describe some strategies, tips or advice to promote healthy sleep with regards to technology	I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose. • I can assess and action different strategies to limit the impact of technology on my health (e.g. nightshift mode, regular breaks, correct posture, sleep, diet and exercise). • I can explain the importance of self-regulating my use of technology; I can demonstrate the strategies I use to do this (e.g. monitoring my time online, avoiding accidents).

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Privacy and security	I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location). I can describe the people I can trust and can share this with; I can explain why I can trust them.	I can recognise more detailed examples of information that is personal to me (e.g. where I live, my family's names, where I go to school). I can explain why I should always ask a trusted adult before I share any information about myself online. I can explain how passwords can be used to protect information and devices.	I can describe why other people's work belongs to them. I can recognise that content on the internet may belong to other people.	I can give reasons why I should only share information with people I choose to and can trust. I can explain that if I am not sure or I feel pressured, I should ask a trusted adult. I understand and can give reasons why passwords are important. I can describe simple strategies for creating and keeping passwords private. I can describe how connected devices can collect and share my information with others.	I can explain what a strong password is. I can describe strategies for keeping my personal information private, depending on context. I can explain that others online can pretend to be me or other people, including my friends I can suggest reasons why they might do this I can explain how internet use can be monitored.	I can create and use strong and secure passwords. I can explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others. I can explain how and why some apps may request or take payment for additional content (e.g. in-app purchases) and explain why I should seek permission from a trusted adult before purchasing.	I use different passwords for a range of online services. • I can describe effective strategies for managing those passwords (e.g. password managers, acronyms, stories). • I know what to do if my password is lost or stolen. • I can explain what app permissions are and can give some examples from the technology or services I use. • I can describe simple ways to increase privacy on apps and services that provide privacy settings. I can describe ways in which some online content targets people to gain money or information illegally; • I can describe strategies to help me identify such content (e.g. scams, phishing).

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Copyright and Ownership	I know that work I create belongs to me. I can name my work so that others know it belongs to me.	I can explain why work I create using technology belongs to me. I can say why it belongs to me (e.g. 'it is my idea' or 'I designed it'). I can save my work so that others know it belongs to me (e.g. filename, name on content).	I can describe why other people's work belongs to them. I can recognise that content on the internet may belong to other people.	I can explain why copying someone else's work from the internet without permission can cause problems. I can give examples of what those problems might be.	When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it. I can give some simple examples.	I can assess and justify when it is acceptable to use the work of others. I can give examples of content that is permitted to be reused.	I can demonstrate the use of search tools to find and access online content which can be reused by others. I can demonstrate how to make references to and acknowledge sources I have used from the internet.