



Hemswell Cliff Primary School - Computing Progression

**Our School Values – RESPONSIBILITY, PATIENCE, QUALITY, CO-OPERATION, TOLERANCE, ASPIRATION - are threaded through our curriculum.
Links are made explicitly in short-term plans and our Values Progression grid.**

EYFS

Relevant statements from Development Matters age ranges for Reception and statements within the ELGs which feed into the programme of study for computing:

- Show resilience and perseverance in the face of a challenge.
- Know and talk about the different factors that support their overall health and wellbeing:
-sensible amounts of ‘screen time’.
- Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
- Explore, use and refine a variety of artistic effects to express their ideas and feelings.
- Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.
- Explain the reasons for rules, know right from wrong and try to behave accordingly.
- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

Aims

The national curriculum for computing aims to ensure that all pupils:

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

| Concept | EYFS | KS1 | LKS2 | UKS2 |
|-----------------------------------|--|--|---|--|
| Multimedia Text and Images | Mouse control Typing name Take photos/videos/animations Record sounds | <p>.KS1 Computing National Curriculum Children use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p>Children can:</p> <ul style="list-style-type: none"> a add text strings, text boxes and show and hide objects and images, manipulating the features; b use various tools, such as brushes, pens, eraser, stamps and shapes, and set the size, colour and shape; c use applications and devices in order to communicate ideas, work, messages and demonstrate control; d save, retrieve and organise work; | <p>KS2 Computing National Curriculum Children 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. They 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.</p> <p>Children can:</p> <ul style="list-style-type: none"> a create different effects with different technological tools, demonstrating control; b use appropriate keyboard commands to amend text on a device; c use applications and devices in order to communicate ideas, work, and messages; d save, retrieve and evaluate work, making amendments; e insert a picture/text/graph/hyperlink from the internet or a personal file; | <p>KS2 Computing National Curriculum Children 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.</p> <p>Children can:</p> <ul style="list-style-type: none"> a use the skills already developed to create content using unfamiliar technology; b select, use and combine the appropriate technology tools to create effect; c review and improve their own work and support others to improve their work; d save, retrieve and evaluate their work, making amendments; e insert a picture/text/graph/hyperlink from the internet or personal file; |
| Key Vocab | | paint, colour, brush, tools, settings, undo, redo, text, image, size, poster, launch, application, software, window, minimise, restore, size, move, screen, close, click, drag, log on, log off, keyboards, keys, mouse, click, button, double click, drag, present. | draw, object, shape, line, line colour, fill colour, group, ungroup, font, size, text box, format, image, wrap text, plan, link, image, object, link, hyperlink, minimise, restore, size, move, screen, split, create, organise, file, folder, close, exit, search, print, password, screenshot, snipping tool, shift, undo, redo, menu, dictionary, highlight, cursor, toolbar, spellcheck. | window, layout, text, font, colour, format, heading, hyperlink, 2D shape, 3D shape, orbit, pan, zoom, eraser, dimension, measurement, guide. |

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| Multimedia sound and motion | Operate equipment in and out of school (CD player etc) | KS1 | LKS2 | UKS2 |
| | | <p>KS1 Computing National Curriculum Children use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p>Children can:</p> <ul style="list-style-type: none"> a use software to record sounds; b change sounds recorded; c save, retrieve and organise work; <p>use key vocabulary to demonstrate knowledge and understanding in this strand: commands, add sound.</p> | <p>KS2 Computing National Curriculum Children 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.</p> <p>Children can:</p> <ul style="list-style-type: none"> a use software to record, create and edit sounds and capture still images; b change recorded sounds, volume, duration and pauses; c use software to capture video for a purpose; d crop and arrange clips to create a short film; e plan an animation and move items within each animation for playback; | <p>KS2 Computing National Curriculum Children 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.</p> <p>Children can:</p> <ul style="list-style-type: none"> a collect audio from a variety of resources including own recordings and internet clips; b use a digital device to record sounds and present audio; c trim, arrange and edit audio levels to improve quality; d publish their animation and use a movie editing package to edit/refine and add titles; |
| Key Vocabulary | | use key vocabulary to demonstrate knowledge and understanding in this strand: commands, add sound. | audio, sound, video, movie, embed, link, file format, animate, animation, still image, thaumatrope, zoetrope, zoopraxiscope, stereoscope, flip book, frame, onion skinning, loop, frame rate, record, stop, play, stop motion, stop frame. | audio, record, edit, play stop, skip, waveform, input, output, record, edit, play podcast, digital content, downloadable, backing track, voiceover, mute, gain, production, post-production, documentary, project, evaluation, screening, ceremony, upload |

| | EYFS | KS1 | LKS2 | UKS2 |
|-----------------------|-------------|------------|--|--|
| Using Data | | | <p>KS2 Computing National Curriculum Children 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.</p> <p>Children can:</p> <ul style="list-style-type: none"> a talk about the different ways data can be organised; b sort and organize information to use in other ways; c search a ready-made database to answer questions; | <p>KS2 Computing National Curriculum Children 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.</p> <p>Children can:</p> <ul style="list-style-type: none"> d construct data on the most appropriate application; e know how to interpret data, including spotting inaccurate data and comparing data; f use keyboard shortcuts and functions to input data on spreadsheets and create formulas for spreadsheets; g add data to an existing database; |
| Key Vocabulary | | | Google Docs, insert, table | Google Docs, insert, table, spreadsheet, cell, row, column, formula/formulas, calculate, format, edit, insert, ascending, descending |

| | EYFS | KS1 | LKS2 | UKS2 |
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| Technology around us | <p>Knows how to operate simple equipment e.g. cd player, interactive whiteboard, tablet.</p> <p>Uses a remote control to turn on some equipment and control a toy.</p> <p>Shows an interest in Technological toys and real objects such as cameras, touch screen devices.</p> | <p>KS1 Computing National Curriculum Children recognise common uses of technology beyond school. They use technology safely and respectfully, keeping personal information private; they identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</p> <p>Children can:</p> <ul style="list-style-type: none"> a recognise ways that technology is used in the home and community, e.g. taking photos, blogs, shopping; b use links to websites to find information; c recognise age-appropriate websites; d use safe search filters; | <p>KS2 Computing National Curriculum Children 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. They use search technologies effectively, appreciate how results are selected and ranked, and are discerning in evaluating digital content.</p> <p>Children can:</p> <ul style="list-style-type: none"> a explain ways to communicate with others online; b describe the world wide web as the part of the internet that contains websites; c add websites to a favourites list; d use search tools to find and use an appropriate website and content; e use strategies to improve results when searching online; | <p>KS2 Computing National Curriculum Children 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. They use search technologies effectively, appreciate how results are selected and ranked, and are discerning in evaluating digital content.</p> <p>Children can:</p> <ul style="list-style-type: none"> a search for information using appropriate websites and advanced search functions within Google; b use strategies to check the reliability of information (cross-check with another source such as books); c talk about the way search results are selected and ranked; d check the reliability of a website, including the photos on site; e tell you about copyright and acknowledge the sources of information; |
| Key Vocabulary | | filter, Google, search engine, image, keyboard, email, internet, subject, address, communicate, sender, safe, secure | filter, Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media. | world wide web, search, search engine, advanced search, results, Google, browser, terms of use, bias, authority, citation, plagiarism, source, website, secure, https, site, domain, website, browser, address bar. |

| | EYFS | KS1 | LKS2 | UKS2 |
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| Coding and Programming | <p>Completes a simple programme on an electronic device.</p> <p>Use the beebots in free play as well as have access to coding apps such as kodable, turtle, beebot, tynker and scratch</p> | <p>KS1 Computing National Curriculum Children understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions. They create, debug and use logical reasoning to predict the behaviour of simple programs.</p> <p>Children can:</p> <ul style="list-style-type: none"> a give commands one at a time to control direction and movement, including straight, forwards, backwards, turn; b control the nature of events: repeat, loops, single events and add and delete features; c give a set of instructions to follow and predict what will happen; d improve/change their sequence of commands by debugging; | <p>KS2 Computing National Curriculum Children design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; they solve problems by decomposing them into smaller parts. They use sequence, selection, and repetition in programs and work with variables and various forms of input and output. They use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p> <p>Children can:</p> <ul style="list-style-type: none"> a use logical thinking to solve an open-ended problem by breaking it up into smaller parts; b write a program, putting commands into a sequence to achieve a specific outcome; c give a set of instructions to follow and predict what will happen; d keep testing a program and recognise when it needs to be debugged; e use variables to create an effect, e.g. repetition, if, when, loop; | <p>KS2 Computing National Curriculum Children design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; they solve problems by decomposing them into smaller parts. They use sequence, selection, and repetition in programs and work with variables and various forms of input and output. They use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p> <p>Children can:</p> <ul style="list-style-type: none"> a use external triggers and infinite loops to demonstrate control; b follow a sequence of instructions, e.g. in a flowchart and modify a flowchart using symbols; c use conditional statements and edit variables; d decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program; e keep testing a program and recognise when it needs to be debugged; <p>use key vocabulary to demonstrate knowledge and understanding in this strand:</p> |
| | | | algorithm, instruction, order, debug, program, turn, left, right, clockwise, anticlockwise, blocks, sequence, project, repeat, repeat forever, invisible, grow, shrink. | decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable. |

| | EYFS | KS1 | LKS2 | UKS2 |
|----------------------|---|--|--|--|
| Online safety | <p>Knows that information can be retrieved from computers</p> <p>Use websites to play games and complete tasks, such as choosing sounds</p> <p>Talk about using the internet in and out of school</p> | <p>KS1 Computing National Curriculum Children can use technology safely and respectfully, keeping personal information private; they identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</p> <p>Children can:</p> <ul style="list-style-type: none"> a identify what things count as personal information; b identify what is appropriate and inappropriate behaviour on the internet; c agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords; d seek help from an adult when they see something that is unexpected or worrying; e demonstrate how to safely open and close applications and log on and log off from websites; | <p>the concept of plagiarism and citation.</p> <p>KS2 Computing National Curriculum Children use technology safely, respectfully and responsibly. They recognise acceptable/unacceptable behaviour and identify a range of ways to report concerns about content and contact.</p> <p>Children can:</p> <ul style="list-style-type: none"> a reflect on their own digital footprint and behaviour online; b identify what is appropriate and inappropriate behaviour on the internet, recognising the term cyberbullying; c agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords; d seek help from an adult when they see something that is unexpected or worrying; e demonstrate understanding of age-appropriate websites and adverts; | <p>KS2 Computing National Curriculum Children use technology safely, respectfully and responsibly. They recognise acceptable/unacceptable behaviour and identify a range of ways to report concerns about content and contact.</p> <p>Children can:</p> <ul style="list-style-type: none"> a protect their password and other personal information; b be a good online citizen and friend; c judge what sort of privacy settings might be relevant to reducing different risks; d seek help from an adult when they see something that is unexpected or worrying; e discuss scenarios involving online risk; |
| | | safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, key, question, tell, safe, share, stranger, danger, internet. | safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying/bullying, plagiarism, profiles, account, private, public. | spam, link, privacy, virus, scam, phishing, inbox, junk, sender, subject, secure, safe, account, online, private, social media, adverts, cyberbullying, reporting, anonymous, victim, fraud/fraudulent, policy, private/personal. |
| Assessment | <ul style="list-style-type: none"> • Questioning • Mind mapping of key knowledge • Peer to peer discussion • Peer and self-assessment • Observations of pupil's learning • Photographs and videos of pupil's learning • Quizzes/low stake testing • Pupil interviews • Target Tracker statements | | <ul style="list-style-type: none"> • Questioning • Mind mapping of key knowledge • Visual representations of knowledge • Peer to peer discussion • Peer and self-assessment • Observations of pupil's learning • Photographs and videos of pupil's learning • Quizzes/low stake testing • Pupil interviews • Target Tracker statements | |