

## Sheering C. of E. Primary School – Knowledge and Skill Progression for Computing

### Data and Information

#### KS1 Computing National Curriculum

- can 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 Computing National Curriculum

- pupils use technology safely, respectfully and responsibly
- recognise acceptable/unacceptable behaviour and identify a range of ways to report concerns about content and contact
- 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.

By the end of Key Stage One, children should be able to;	By the end of Lower Key Stage Two, children should be able to;	By the end of Upper Key Stage Two, children should be able to;
<ul style="list-style-type: none"> <li>• identify what things count as personal information</li> <li>• identify what is appropriate and inappropriate behaviour on the internet</li> <li>• agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords</li> <li>• seek help from an adult when they see something that is unexpected or worrying</li> <li>• demonstrate how to safely open and close applications and log on and log off from websites</li> </ul> <p>use key vocabulary to demonstrate knowledge and understanding in this strand: safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, key, question, tell, safe, share, stranger, danger, internet.</p>	<ul style="list-style-type: none"> <li>• protect their password and other personal information</li> <li>• reflect on their own digital footprint and behaviour online</li> <li>• identify what is appropriate and inappropriate behaviour on the internet, recognising the term cyberbullying</li> <li>• agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords</li> <li>• seek help from an adult when they see something that is unexpected or worrying</li> <li>• demonstrate understanding of age-appropriate websites and adverts</li> <li>• talk about the different ways data can be organised</li> <li>• search a ready-made database to answer questions</li> <li>• sort and organise information to use in other ways</li> </ul> <p>use key vocabulary to demonstrate knowledge and understanding in this strand: 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, Google Docs, insert, table, spreadsheet, graph, ascending, descending, formula, Google forms, Microsoft Excel</p>	<ul style="list-style-type: none"> <li>• protect their password and other personal information</li> <li>• be a good online citizen and friend; judge what sort of privacy settings might be relevant to reducing different risks</li> <li>• seek help from an adult when they see something that is unexpected or worrying</li> <li>• discuss scenarios involving online risk</li> <li>• construct data on the most appropriate application</li> <li>• interpret data</li> <li>• use keyboard shortcuts and functions to input data on spreadsheets and create formulae</li> <li>• interpret data, including spotting inaccurate data and comparing data</li> <li>• add data to an existing database</li> </ul> <p>use key vocabulary to demonstrate knowledge and understanding in this strand: 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, Google Docs, insert, table, spreadsheet, cell, row, column, formula, formulas, calculate, format, edit, insert, ascending, descending, Google forms, Microsoft Excel</p>

## Programming

### KS1 Computing 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, debug and use logical reasoning to predict the behaviour of simple programs

### KS2 Computing 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 and 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

<b>By the end of Key Stage One, children should be able to;</b>	<b>By the end of Lower Key Stage Two, children should be able to;</b>	<b>By the end of Upper Key Stage Two, children should be able to;</b>
<ul style="list-style-type: none"><li>• give commands one at a time to control direction and movement, including straight, forwards, backwards, turn</li><li>• give a set of instructions to follow and predict what will happen</li><li>• control the nature of events: repeat, loops, single events and add and delete features</li><li>• improve/change their sequence of commands by debugging</li></ul> <p>use key vocabulary to demonstrate knowledge and understanding in this strand: algorithm, instruction, order, debug, program, turn, left, right, clockwise, anticlockwise, blocks, sequence, project, repeat, repeat forever, invisible, grow, shrink</p>	<ul style="list-style-type: none"><li>• use logical thinking to solve an open-ended problem by breaking it up into smaller parts</li><li>• write a program, putting commands into a sequence to achieve a specific outcome</li><li>• give a set of instructions to follow and predict what will happen</li><li>• keep testing a program and recognise when it needs to be debugged</li><li>• use variables to create an effect, e.g. repetition, if, when, loop</li><li>• keep and adjust scoring system to a game</li></ul> <p>use key vocabulary to demonstrate knowledge and understanding in this strand: decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, Scratch, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable</p>	<ul style="list-style-type: none"><li>• compose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program</li><li>• follow a sequence of instructions, e.g. in a flowchart and modify a flowchart using symbols</li><li>• use external triggers and infinite loops to demonstrate control (e.g. Broadcast in Scratch)</li><li>• use conditional statements and edit variables (e.g. Multilevel games)</li></ul> <p>use key vocabulary to demonstrate knowledge and understanding in this strand: flowchart, algorithm, control, output, symbol, start, stop, delay, process, decision, loop, backdrop, script, block, repeat, commentary, sequence, consequence, debug, program, Scratch, Crumbles,</p>

## Computer System and Networks

### KS1 Computing National Curriculum

- recognise common uses of 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 Computing National Curriculum

- 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 are discerning in evaluating digital content

By the end of Key Stage One, children should be able to;	By the end of Lower Key Stage Two, children should be able to;	By the end of Upper Key Stage Two, children should be able to;
<ul style="list-style-type: none"> <li>• recognise ways that technology is used in the home and community, e.g. taking photos, blogs, shopping</li> <li>• use links to websites to find information</li> <li>• recognise age-appropriate websites</li> <li>• use safe search filters</li> </ul> <p>use key vocabulary to demonstrate knowledge and understanding in this strand: filter, Google, search engine, image, keyboard, email, internet, subject, address, communicate, sender, safe, secure</p>	<ul style="list-style-type: none"> <li>• explain ways to communicate with others online</li> <li>• describe the world wide web as the part of the internet that contains websites</li> <li>• add websites to a favourites list</li> <li>• use search tools to find and use an appropriate website and content</li> <li>• show an understanding of the school network and how it links computers to resources in school and beyond. Then compare this with other networks they may encounter at home or in the wider world (e.g. banks)</li> <li>• use strategies to improve results when searching online</li> </ul> <p>use key vocabulary to demonstrate knowledge and understanding in this strand: filter, Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media</p>	<ul style="list-style-type: none"> <li>• identify the difference between the internet and the World Wide Web search for information using appropriate websites</li> <li>• perform advanced search functions within Google; talk about the way search results are selected and ranked</li> <li>• check the reliability of a website, including the photos on site</li> <li>• show an understanding of how filtering and monitoring tools affect their use of the school network and Internet and compare this with their experience of access outside school</li> <li>• use strategies to check the reliability of information (crosscheck with another source such as books)</li> <li>• tell you about copyright and acknowledge the sources of information</li> </ul> <p>use key vocabulary to demonstrate knowledge and understanding in this strand: 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</p>

## Creating Media

### KS1 Computing National Curriculum

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

### KS2 Computing National 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

By the end of Key Stage One, children should be able to;	By the end of Lower Key Stage Two, children should be able to;	By the end of Upper Key Stage Two, children should be able to;
<b>Text and Images</b>		
<ul style="list-style-type: none"> <li>• use the mousepad to move the cursor to desired place</li> <li>• use left click /double click to control the cursor</li> <li>• add text strings having first selected colour and size</li> <li>• use various tools, such as brushes, pens, eraser, stamps and shapes, and set the size, colour and shape</li> <li>• add text boxes and images, show and hide objects and images</li> <li>• use the mouse to block text in order to change size, font, colour after typing</li> <li>• use applications and devices in order to communicate ideas, work, messages and demonstrate control save, retrieve and organise work</li> </ul> <p>use key vocabulary to demonstrate knowledge and understanding in this strand: 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</p>	<ul style="list-style-type: none"> <li>• use right click functions on mouse pad</li> <li>• create different effects with different technological tools, demonstrating control</li> <li>• use applications and devices in order to communicate ideas, work, and messages</li> <li>• save, retrieve and evaluate work, making amendments</li> <li>• insert a picture/text/graph/hyperlink from the internet or a personal file</li> <li>• use appropriate keyboard commands to amend text on a device (Ctrl + shortcuts)</li> </ul> <p>use key vocabulary to demonstrate knowledge and understanding in this strand: filter, Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media</p>	<ul style="list-style-type: none"> <li>• use the skills already developed to create content using unfamiliar technology</li> <li>• select, use and combine the appropriate technology tools to create effect</li> <li>• review and improve their own work and support others to improve their work</li> <li>• save, retrieve and evaluate their work, making amendments</li> <li>• insert a picture/text/graph/hyperlink from the internet or personal file</li> </ul> <p>use key vocabulary to demonstrate knowledge and understanding in this strand: window, layout, text, font, colour, format, heading, hyperlink, 2D shape, 3D shapes, orbit, pan, zoom, eraser, dimension, measurement, guide</p>
<b>Sound and video</b>		
<ul style="list-style-type: none"> <li>• use software to record sounds</li> <li>• change sounds recorded</li> <li>• save, retrieve and organise work</li> </ul> <p>use key vocabulary to demonstrate knowledge and understanding in this strand: record, playback, microphone, speaker, volume, edit, video, image, cut</p>	<ul style="list-style-type: none"> <li>• use software to record, create and edit sounds and capture still images</li> <li>• change recorded sounds, volume, duration and pauses</li> <li>• crop and arrange still images to create a short film</li> <li>• use software to capture video for a purpose</li> <li>• crop and arrange clips to create a short film</li> <li>• plan an animation and move items within each animation for playback</li> </ul>	<ul style="list-style-type: none"> <li>• collect audio from a variety of resources including own recordings and internet clips</li> <li>• use a digital device to record sounds and present audio</li> <li>• publish their animation and use a movie editing package to edit/refine and add titles</li> <li>• trim, arrange and edit audio levels to improve quality</li> <li>• publish their animation and use a movie editing package to edit/refine and add titles and narration</li> <li>• experiment with live audio and voice over audio</li> </ul>

use key vocabulary to demonstrate knowledge and understanding in this strand: audio, sound, video, still image, flip book, frame, onion skinning, loop, frame rate, record, stop, play, stop motion, stop frame

use key vocabulary to demonstrate knowledge and understanding in this strand: 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

