

Walkeringham Primary School Computing Substantive Knowledge



EYFS

See the EYFS Curriculum overview for content against the 7 Areas of Learning relevant to the computing curriculum

The EYFS Computing Curriculum is taught through adult and child led provision throughout the year

KS1

2023-2024

Autumn		Spring		Summer	
Online Safety <ul style="list-style-type: none"> Type their name and date on a piece of work they have created Open a web browser Recall some SMART rules for internet safety Know who to tell if someone online asks for personal information 	Computer Skills <ul style="list-style-type: none"> Click and drag with a mouse or track pad Switch on and shutdown a computer independently Launch an application by double clicking it Log on and log off a computer independently Manipulate an application 	Word Processing Skills <ul style="list-style-type: none"> Begin to type with two hands Use shift, space and enter correctly Use undo and redo Make text bold, italic or underline Save their work to a folder Edit text using backspace, delete and arrow keys Format the font Select single words Have some knowledge of the 	Painting <ul style="list-style-type: none"> Paint with different colours Paint with different brushes Create shapes Save their painting in their folder Fill and area with a colour Undo and redo Add text Format text Resize text and images 	Programming Toys <ul style="list-style-type: none"> Create step-by-step instructions using pictures Write and follow detailed instructions using pictures Direct a Bee-Bot Program a Bee-Bot Say what an algorithm is Say why it is important to be precise when writing an algorithm Check their work for mistakes (debug) 	Using and Applying <ul style="list-style-type: none"> Turn on a computer and open an application Type letters and symbols Format text in different ways (bold, italic, underline) Draw different shapes using paint software Use a brush in a paint application and change the size and colour

<ul style="list-style-type: none"> • Understand why email is a good way to communicate • Make links between the online and offline world • Recognise which personal information they should keep from strangers • Help construct an email • Save images to a folder - Covered in PSHE 	<p>window by moving and resizing it</p> <ul style="list-style-type: none"> • Confidently double click with a mouse or trackpad • Save their work independently to a folder 	<p>location of letters and symbols on the keyboard</p> <ul style="list-style-type: none"> • Select text in different ways 		<ul style="list-style-type: none"> • Start their programming sequence again if they need to • See how a product changes when they change instructions 	<ul style="list-style-type: none"> • Click, double-click and drag objects • Save and open files • Make shapes they desire • Position shapes correctly • Select and compare different brush types • Move, resize, minimise and restore windows • Use Microsoft PowerPoint with support • Select text and changes the size, type and colour • Undo and redo effectively • Edit text using the arrow keys and delete or backspace buttons
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2024-2025

Autumn		Spring		Summer	
<p>Online Safety</p> <ul style="list-style-type: none"> • Know what a 'digital footprint' means • Know that people can use the information they put online 	<p>Using the Internet</p> <ul style="list-style-type: none"> • Search using the words 'for kids' • Follow a weblink • Locate the school website and class dojo 	<p>Preparing for Turtle Logo</p> <ul style="list-style-type: none"> • Walk forward a number of steps • Turn accurately 90 degrees (a quarter turn) • Give and follow instructions 	<p>Programming Turtle Logo and Scratch</p> <ul style="list-style-type: none"> • Draw lines of different lengths using the fd command • Move blocks into the Scripts Area 	<p>Computer Art</p> <ul style="list-style-type: none"> • Access an appropriate program for achieving a specific task • Switch between program tools to 	<p>Using and Applying</p> <ul style="list-style-type: none"> • Find and open software for creating computer art • Retrieve/open a file from a saved location

<ul style="list-style-type: none"> Identify keywords that will give good search results Use a website to search information Begin to identify websites suitable for their age Know when to ask an adult for advice Give their opinion about a website Say what they like about a website Begin to consider who a website could be aimed at Identify unkind behaviour online Know how to safely search for information online Choose appropriate websites for their age <p>- Covered in PSHE</p>	<ul style="list-style-type: none"> Understand how to write online safely Identify search results that will give some useful information Know where to find the address of a link Log in to class dojo and post or comment 	<ul style="list-style-type: none"> Write an algorithm for a shape or a route Debug errors in an algorithm 	<ul style="list-style-type: none"> Snap blocks together to combine commands Turn the turtle using rt 90 and lt 90 Draw squares and rectangles Create simple algorithms using a number of different blocks Use the repeat and green flag blocks to control algorithms 	<p>produce different techniques</p> <ul style="list-style-type: none"> Alter the formatting of a tool to adjust the colour or size Recreate a piece of art using a computer program Manipulate shapes and objects to recreate an art style 	<ul style="list-style-type: none"> Select a relevant backdrop and character within scratch Add a second character and position on the backdrop within scratch Control the cursor to produce different effects (dots/lines on paint) Make characters move within scratch Reproduce an image using a particular artistic style Compare different styles of computer art Use Microsoft PowerPoint with support
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LKS2

2023-2024

Autumn		Spring		Summer	
<p>Online Safety</p> <ul style="list-style-type: none"> Recognise cyberbullying Identify a safe person to tell if 	<p>Internet Research and Communication</p> <ul style="list-style-type: none"> Identify what the intent is and how it works 	<p>Word Processing</p> <ul style="list-style-type: none"> Use undo and redo Make text bold, italic and underline 	<p>Programming Turtle Logo and Scratch</p> <ul style="list-style-type: none"> Create and debug algorithms to draw regular polygons 	<p>Drawing and Desktop Publishing</p> <ul style="list-style-type: none"> Draw objects Insert text boxes 	<p>Using and Applying</p> <ul style="list-style-type: none"> Draw and design images and import them to other software such as

<p>they encounter cyberbullying</p> <ul style="list-style-type: none"> • Know that cyberbullying can happen via a range of devices • Identify adverts online • Identify targeted adverts • Create a strong password • Explain why a strong password is important • Explain what privacy settings are • Discuss email as a form of communication • Identify an email they should not open • Write an email with an address and subject • Know how to safely send an email • Know how to safely receive an email • Identify online communities they are part of • Identify different forms of online communication 	<ul style="list-style-type: none"> • Identify how packets of data move along routes and the different connections that can be used • Use a search engine to find information and implement strategies to improve results when searching online, including key words • Know how to cross-reference using tabs and can identify reliable links through looking for a secured padlock in the URL address bar • Know how to bookmark or favourite appropriate web pages • Use a search engine to copy and paste images across a blank document 	<ul style="list-style-type: none"> • Select text in different ways • Change case • Align text • Select single words • Cut, copy and paste • Format the font • Insert images • Copy a screenshot into another application use a secure password • Use <ctrl> keyboard shortcuts • Use an effective layout • Use the snipping tool 	<p>using the repeat command/ block (Turtle Logo and Scratch)</p> <ul style="list-style-type: none"> • Draw shapes with spaces between using penup and pendown (Turtle Logo) • Change and later the pen settings (Scratch) • Draw regular polygons using Logo to calculate the angle (Turtle Logo) • Create and debug algorithms to draw patterns by repeating regular polygons (Scratch) 	<ul style="list-style-type: none"> • Order and group objects • Move, resize and arrange text boxes and images effectively • Manipulate objects • Create a layout of objects with no unnecessary space using colour and font effectively 	<p>word processing, desktop publishing and paint</p> <ul style="list-style-type: none"> • Research and use appropriate information and images using the internet • Use effective design and layout in a Microsoft PowerPoint presentation • Present information on a particular subject including accompanying materials
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<ul style="list-style-type: none"> Discuss positives and negative of online communities 					
2024-2025					
Autumn		Spring		Summer	
Online Safety <ul style="list-style-type: none"> Define cyberbullying Know how to respond to a hurtful message or comment online Access a trusted search engine Understand that different search terms give different results Know what plagiarism is Identify which information to keep private online Explain what digital citizenship is Identify comments or message that may be harmful to others Edit their own messages and comments to make sure they are kind 	Word Processing <ul style="list-style-type: none"> Select, edit and manipulate text in different ways Insert an image into a document Format an image Use formatting tools to improve the layout Use the spellcheck tool Insert a simple table Change the size of the page Change the layout by using the column tool Change the orientation of the page Copy the URL that they need Use some of the main keyboard shortcuts 	Animation <ul style="list-style-type: none"> Explain what is meant by animation Create a series of linked frames that can be played as a short animation Control and adjust a time slider to locate a different point in a film clip Insert images to create a simple stop motion animation short film clip Evaluate the advantages and disadvantages of some animation software Describe one or more traditional methods of animation Make slight changes to an image using onion skinning, understanding the term 	Programming Turtle Logo <ul style="list-style-type: none"> Write procedures using simple algorithms Change the colour of the pen Write text using the label command Draw shapes using applications Fill shapes in different colours Draw arcs of different sizes as required Create sophisticated algorithms and procedures Include procedures with variables 	Scratch: Questions and Quizzes <ul style="list-style-type: none"> Write a program which accomplishes a specific goal Create a program that includes a logical sequence Debug a program they have written Use repetition and selection Work with variables and adjust these depending on the effect they wish to create Understand and use the duplicate function Demonstrate that they understand how to combine a range of different effects to create their own quiz 	Using and Applying <ul style="list-style-type: none"> Design and create an original character using appropriate software Use appropriate software to tell a story involving their new cartoon character Use other software to create an additional description or other material linked to their character Combine software to present information about their character

<ul style="list-style-type: none"> Understand that search results are ranked Choose an appropriate number of words for a search term Explain how to use other people's work respectfully 	<ul style="list-style-type: none"> Apply specific effects to an image Add a spelling to the spelling dictionary Add or delete rows or columns in a table 	<ul style="list-style-type: none"> Edit and refine images in a stop motion animation short film clip 			
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UKS2

2023-2024

Autumn		Spring		Summer	
<p>Online Safety</p> <ul style="list-style-type: none"> Say what bullying and cyberbullying are Say how people should deal with cyberbullying Understand why they should ask an adult if they are unsure Identify the warning signs that a website might not be secure Identify personal information 	<p>Scratch: Animated Stories</p> <ul style="list-style-type: none"> Select appropriate sprites to fit within a scene and use costume changes for motion effect Use the broadcast message and receive block to structure and control the timing of events Insert the show and hide block 	<p>Spreadsheets</p> <ul style="list-style-type: none"> Enter text and numbers into a spreadsheet Identify and refer to cells by row and column Begin to enter formulae with the SUM function Edit data and discuss the effect on results Use further functions including AVERAGE, MIN and MAX 	<p>Kodu Programming</p> <ul style="list-style-type: none"> Open Kodu and navigate the programming environment using keyboard or mouse Add objects to a word and program them using When and Do instructions Plan and design the features of an original virtual environment Program a character to 	<p>Film Making</p> <ul style="list-style-type: none"> Plan and write a script using appropriate software Search for relevant information using appropriate websites Use a device to record Plan suitable questions to ask an interviewee Import video files into video editing software 	<p>Using and Applying</p> <ul style="list-style-type: none"> Present research on game types to inform planning Use Scratch or Kodu to create a simple game Design appropriate materials to launch or promote a product using spreadsheets, film-making, Microsoft PowerPoint and Word

<ul style="list-style-type: none"> • Explain what to do if they are asked or told something online that makes them uncomfortable • Explain some of the dangers of revealing personal information to an online friend • Choose an appropriate action online to stay safe • Identify a situation they should be careful in online • Understand how a stereotype can be harmful • Look in the address bar of a website to check for security • Explain why someone might have an online friendship 	<p>into a algorithm and locate the correct place to make a sprite appear visible</p> <ul style="list-style-type: none"> • Select appropriate sprites and backdrops and plan a sequence of an animated story using timings • Order a series of backdrops to create a story narrative and narrate events required timings • Record a sound to enhance an animated story and insert blocks to play the recorded sound 	<ul style="list-style-type: none"> • Create graphs • Design their own spreadsheet for a specific purpose 	<p>move around a tract</p> <ul style="list-style-type: none"> • Create a path for a character to follow • Follow instructions • Describe the actions of a sequence • Use tools to change the size of the ground and raise or lower the landscape • Decompose code into smaller parts and explain it in their own words 	<ul style="list-style-type: none"> • Plan additional elements for film-making such as locations and props • Evaluate whether information is reliable or not • Speak clearly into the camera when being recorded • Frame an appropriate filming shot when interviewing • Arrange video files to form a complete film 	
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<ul style="list-style-type: none"> • Explain what the SMART acronym means • Explain what a stereotype is • Compare gender stereotypes 					
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2024-2025

Autumn		Spring		Summer	
Online Safety <ul style="list-style-type: none"> • Identify a spam email • Explain what to do with spam email • Understand why they should cite a source • Explain the rules for creating a strong password • Create a strong password using a set of rules • Know that not everything they seen online is true • Explain how to stay safe online 	Radio Station <ul style="list-style-type: none"> • Record and play their own sounds in recording software • Import an existing sound file into recording software to play • Choose appropriate software for sound recording • Plan and record a radio advert • Listen to and improve their own recordings by re-recording 	Flowol <ul style="list-style-type: none"> • Follow written instructions to draw a simple flowchart • Insert symbols into a flowchart • Add inputs into a flowchart • Identify conventional symbols, understanding the process of each stage • Create a program to control a simple sequence • Modify symbols in a flowchart for effect 	Scratch: Developing Games <ul style="list-style-type: none"> • Move and edit blocks as part of an algorithm • Program an algorithm as a sequence of game instructions with actions and consequences • Add additional effects and features, such as sound or point scoring, to enhance the 	3D Modelling: Sketch Up <ul style="list-style-type: none"> • Draw 2D shapes or lines • Draw simple 3D models • Manipulate 2D shapes into 3D shapes • Import 3D models from the 3D warehouse • Use a range of SketchUp tools including shape, push, pull, orbit, pan, zoom, erase and fill • Draw and manipulate 3D models independently 	Using and Applying <ul style="list-style-type: none"> • Use search engines safely to research a new bedroom design • Use appropriate software to create and present plans for a new bedroom

<ul style="list-style-type: none"> • Identify unsafe online behaviour • Identify a dangerous spam email • Create multiple strong passwords for use across different platforms • Sport citations online • Alter photographs • Cite a website 	<ul style="list-style-type: none"> • Locate and download existing sound files to be imported into recording software • Combine two or more tracks to make a new, original recording • Plan and record appropriate audio content for a podcast • Evaluate what features makes good quality audio content 	<ul style="list-style-type: none"> • Create flowcharts for multiple inputs and outputs • Use decisions and subroutines • Program inputs and outputs 	<p>appeal of the game they make</p>	<ul style="list-style-type: none"> • Use inference points to draw lines and shapes • Use a wide range of SketchUp tools and concepts including: the dimensions toolbar and guides, tape measure, zoom extents and the 3D warehouse 	
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