Ringway Primary School Computing Progression Grid

At Ringway Primary School, our Computing Curriculum aims to equip children with the knowledge and skills to navigate the ever-changing world of technology.

Technology plays a big part in today's world. At Ringway Primary School we aim to provide a high-quality computing curriculum which equips children to use computational thinking and creativity to understand this ever-changing world. We also recognise and promote the importance of educating children on how to stay safe online, showing respect for ourselves and others, and this thread runs through our whole computing curriculum.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Programming	• Begin to understand an algorithm is a set of instructions to achieve a specific purpose • Combine forwards and backwards commands to make a sequence • Combine four direction commands to make sequences • Understand that the order of instructions in an algorithm is important • Give a sequence of instructions to a floor robot. The length of programs increasing over the	• Describe a series of instructions as a sequence • Explain that a sequence of commands has an outcome • Combine four directions commands to make increasingly more complex sequences • Understand that we control computers by giving them instructions • Choose a command for a given purpose • Show a series of commands can be joined together	• Create a sequence of commands using a block language to produce a given outcome • Debug errors to accomplish specific goal • Work with others to decompose a problem into smaller steps in planning a project • Explain the order (sequence) of commands can effect the outcome (same commands, different order -> same or different outcome) • Identify different sequences can achieve the same outcome • Explain simple,	• Plan a program using a block language which includes appropriate loops to produce a given outcome • Debug errors in increasingly complex programs to accomplish specific goal • Independently decompose a problem into smaller steps in planning a project • Identify patterns (repetition) in a sequence • Understand repetition in programming is also called looping • Identify a loop in a program	• Plan a program which includes selection to produce a given outcome • Debug errors in increasingly complex programs to accomplish specific goal • Plan a solution to a problem using decomposition • Define that conditional statements (selection) are used in computer programs • Explain a loop can stop when a condition is met (number of times or event) • Explain a that	• Plan a program which includes variables to produce a given outcome • Debug errors in increasingly complex programs to accomplish specific goal • Solve problems using decomposition, tackling each part separately • Define 'variable' as something that is changeable • Explain that a variable has a name and a value • Identify a variable in an existing program

	course of the year • Begin to debug instructions when floor robot does not reach the intended destination • Begin to predict what will happen for a short sequence of instructions in a program • Understand that we control computers by giving them instructions	• Understand that the order of instructions in an algorithm is important • Give a sequence of instructions to a floor robot. The length of programs increasing over the course of the year • Begin to debug instructions when floor robot does not reach the intended destination • Begin to predict what will happen for a short sequence of instructions in a program • Understand that we control computers by giving them instructions	sequence-based algorithm independently • Use logical reasoning to detect errors in programs	• Understand, identify and justify when to use 'infinite' or 'count- controlled' loops • Explain the importance in instruction order in a loop • Explain an algorithm using sequence and repetition independently • Use logical reasoning to detect and correct errors in programs	program flow can branch according to a condition • Use a condition in an *if…then…* statement to produce a given outcome • Explain an algorithm using sequence, repetition and selection independently • Use logical reasoning to detect errors in increasingly complex programs	• Use a variable in a conditional statement to control the flow of a program • Clearly and concisely explain algorithms using sequence, repetition, selection and variables independently • Use logical reasoning to detect errors in increasingly complex programs

Information Technology						
	• Identify and find keys on a keyboard • Add and remove text using basic typing skills (including use of space bar, backspace to delete and basic, age- appropriate punctuation) • Save work to the appropriate location (hard drive and Google Drive) • Begin to print, retrieve and edit work, with support • Create/edit a drawing using a range of 'tools' such as brushes, pens, eraser, stamps and shapes, and set the size, colour and shape; • Explain why tools were chosen and used • Label objects • Identify that objects can be counted • Count objects with same properties • Compare groups of objects Describe objects in different ways	• Identify and find keys on a keyboard with increased confidence and speed • Type capital letters • Change font, style (bold, italic and underline) and size of text • Save, print, retrieve and edit work from appropriate location (hard drive and Google Drive) independently • Upload images or movies to appropriate place (hard drive and Google Drive), with support • Add and resize images (including insert clip art/copy & paste an image) • Capture/edit photograph • using a range of 'tools' • Use software to create and edit digital music for a purpose • Explain and begin to justify why tools were chosen and used • Recognise that objects can be counted and compared using tally	• Combine text and images to share a message • Consider how different layouts can suit different purposes • Type with increased confidence and speed using age-appropriate punctuation • Use return to create paragraphs • Change orientation of text • Wrap text around an image • Recognise a document can be formatted with placeholders • Change orientation of images • Understand animation is a sequence of drawings or photographs • Relate animated movement with a sequence of images • Plan an animation • Review and improve an animation • Evaluate the impact of adding • other media to an animation	• Use a standard search engine to find information • Understand that search engines rank pages according to relevance. • Use a computer to (further) manipulate images • Recognise images can be changed for different purposes • Use the most appropriate tool for a particular purpose • Consider the impact of changes made on the quality of the image • Press/tap buttons to start and stop recordings • Recognise recorded audio is stored as a file • Edit and alter recorded audio • Layer sounds • Save/export an audio file • Consider the results of editing choices made	• Use filters to make more effective use of a standard search engine • Understand that search engines use a cached copy of the crawled web to select and rank results • Recognise an image is comprised of separate objects • Add, remove, modify and combine objects to create graphical drawing on a computer • Recognise objects are layered • Recognise that objects can be modified in groups • Consider the impact of choices made • Identify the features of a good video • Plan a video production using a story board • Use a computer to make a video • Recognise a video can be improved through editing • Consider the impact of changes made on the quality of the video • Use a form to collect information • Navigate a flat-file database • Apply knowledge of	• Use of a range of search engines appropriate to finding information that is required • Understand that search engines rank pages based on the number and quality of in- bound links • Recognise components of a webpage layout • Create a webpage including text, images, hyperlinks and embedded content • Understand the need for a navigation path • Create 3D graphical objects on a computer • Alter the view of a 3D space • Modify 3D objects • Combine 3D objects to create desired effect • Apply blank 3D objects as placeholders to create holes • Identify questions that can be answered using data • Create a spreadsheet for a purpose • Apply a formula that can be used to

		charts • Select objects by attribute and make comparisons • Recognise objects can be represented as pictures • Create a pictogram • Explain that information can be presented using a computer	• Identify object attributes needed to collect relevant data • Create a branching database • Identify objects using a branching database • Compare information shown in a pictogram with a branching database • Explain that data can be used to answer questions		a database to ask and answer real-world questions • Design a structure for a flat-file database • Choose tools to select and analyse data to answer questions • Select an appropriate graph to visually compare data • Choose suitable ways to present information	produce calculated data • Recognise data can be calculated using different operations • Evaluate results in comparison to the question asked • Choose suitable • ways to presents data

Digital Literacy – Online Safety	• To recognise that there may be people online who could make someone feel sad, embarrassed or upset. • To know that 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 and how they can help • I can describe how to behave online in ways that do not upset others and can give examples.	• explain how other people may look and act differently online and offline. • give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened; I can give examples of how they might get help • what bullying is, how people may bully others and how bullying can make someone feel.	• Explain how people can represent themselves in different ways online. • explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why. • describe appropriate ways to behave towards other people online and why this is important. • give examples of how bullying behaviour could appear online and how someone can get support.	• explain how my online identity can be different to my offline identity. • describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them • Learn how scams work, why they're a threat, and how to avoid them. • Determine the validity of information and messages online and be wary of manipulation, unsubstantiated claims, fake offers or prizes and other online scams. • explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this. • describe ways people can be bullied through a range of media (e.g. image, video, text, chat).	• explain how identity online can be copied, modified or altered. • demonstrate how to make responsible choices about having an online identity, depending on context. • Understand why privacy and security matter and how they relate to each other. • to practise how to create strong passwords and keep them to yourself (and the adults who watch out for you). • To review the tools and settings that protect against scams, hackers and other threats. • recognise online bullying can be different to bullying in the physical world and can describe some of those differences.	• identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online. • describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline. • explain the importance of asking until I get the help needed. • describe how to capture bullying content as evidence (e.g

						screen-grab, URL, profile) to share with others who can help me.
Digital Literacy – Computer Systems and Networks	• Identify technology • Identify a computer and its main parts • Use a mouse in different ways	• Identify information technology in the home • Identify information technology beyond school • Explain how information technology benefits us • Recognise the uses and features of information technology • Continue to practice mouse skills independently	• Explain how a computer network can be used to share information • Explore how digital devices can be connected • Recognise the physical components of a network • Explain how digital devices function • Identify input and output devices	• Describe how networks physically connect to other networks • Recognise how networked devices make up the internet • describe how content can be added and accessed on the World Wide Web • Recognise how the content of the WWW is created and shared by people • Describe the current limitations of World Wide Web media	• Explain that computers can be connected together to form systems • Recognise the role of computer systems in our lives • Recognise how information is transferred over the internet • Explain how sharing information online lets people in different places work together • Contribute to a shared project online • Evaluate different ways of working together online	• Continue to develop online searching skills to enhance online communication and collaboration