Computing Progression

Long Row Nursery and Primary School
Inspire, Respect, Belong

EYFS

By the end of reception, we expect pupils to be able to: demonstrate an understanding of how technology is used at home and at school, through real experiences and play; choose technology for a specific purpose and use it with increasing independence; begin to understand the importance of keeping themselves safe online through stories and songs.

In EYFS children will:

- Recognise that a range of technology is used in places such as homes and schools.
- Select and use technology for particular purposes.
- Find out about and use a range of technology.
- Select appropriate applications that support an identified need.

To achieve this, in EYFS children will:

- Use cameras, IPads, printers, PC's, games and programmable toys with increasing independence.
- Use a wide range of apps, games and programs for particular purposes e.g. drawing games, simple keyboard skill games, cameras and video apps.
- Use technology creatively to produce videos, edited pictures, music, and ebooks.

Key vocabulary:

- Apps
- Program
- Keyboard/type
- Mouse/ mouse pad
- Click
- Camera/ video/photograph
- Beebot/direction/move
- Print

Computing Systems and Network					
Year 1/2 2022-2023	Year 1/2 2023-2024	Year 3/4 2023-2024	Year 3/4 2023-24	Year 5/6 2022-23	Year 5/6 2023-24
IT around us Children become familiar with the term information technology and will be able to identify common features of IT. This unit also builds on the children' understanding of using technology safely and responsibly. **National Curriculum links:** • Use technology purposefully to create, organise, store, manipulate, and retrieve digital content • Recognise common uses of information 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 **PSHE**	**Technology all around us** Produce simple typed texts and presentations, including adding, deleting and spacing text using a keyboard and a mouse. Opening and saving work onto our network. **National Curriculum links:** • Recognise common uses of information technology beyond school • Use technology purposefully to create, organise, store, manipulate, and retrieve digital content • 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. **PSHE** • Identify rules that help keep us safe and healthy in and beyond the home when using technology	**The Internet** Children will build on their understanding of the World Wide Web (WWW), looking at content on websites and gain an appreciation about unreliable content. **National Curriculum links:** • opportunities they offer for communication and collaboration • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • 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	**Connecting computers** Children progress their knowledge and understanding of technology by focussing on digital and non-digital devices and introducing the concept of computers connected together as a network. **National Curriculum links:** • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • 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 • 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	**Communication** Children will build on their learning about the World Wide Web as a communication tool. First, they will learn how we find information on the World Wide Web, through learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines. They will then investigate different methods of communication, before focusing on internet-based communication. Finally, they will evaluate which methods of internet communication to use for particular purposes. **National Curriculum links:** • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • 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	**Sharing information** Children will develop their understanding of computer systems and how information is transferred between systems and devices. Children will consider small-scale systems as well as large-scale systems. They will explain the input, output, and process aspects of a variety of different real-world systems. Children will also take part in a collaborative online project with other class members and develop their skills in working together online. **National Curriculum links:** • 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; work with variables and various forms of input and output • 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

• Identify rules that help keep us safe and healthy in and beyond the home when using technology.	**Copyright and ownership** • Understand the work they create belongs to them through naming work.	• Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	presenting data and information **Maths** • **Number and place value:** solve number problems and practical problems involving these ideas. **Art** • to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]	• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • 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 • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; 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 • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
Key Vocabulary					
• Computers: PCs, laptops, tablets • Devices made to work with computers: scanners, barcode scanners, printers., smart speakers • Barcode scanner, till • Bank card, chip and PIN card reader, till • Traffic light, crossing button, crossing signal	• Type • Keyboard • Mouse • Space • Delete • Open • Save • File • Logon	• World Wide Web (WWW) • Audience • Appropriate • Unreliable • Website	• Input • Process • Output • Digital device • Connections • Network • Switch • Server • Wireless	• Search engine • Browser • Web crawler • Index • Page • Communication • Private	•System •Input •Output •Process •Data •Transfer •Addresses •Connected •Public •Private

Creating Media					
Year 1/2 2022-2023	Year 1/2 2023-2024	Year 3/4 2023-2024	Year 3/4 2023-24	Year 5/6 2022-23	Year 5/6 2023-24
Digital photography Develop children's understanding of how photos are captured and can be manipulated for different purposes. **National Curriculum links:** • Use technology purposefully to create, organise, store, manipulate, and retrieve digital content • Recognise common uses of information 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 **Art and design** • To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form, and space	**Digital printing** Understand how to use a simple paint/ drawing program. Identify different shapes using shape and line tools. Paint a picture using the computer, making choices over the tools used. **National Curriculum links:** • Use technology purposefully to create, organise, store, manipulate, and retrieve digital content **Art and Design** Pupils should be taught: • To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form, and space • About the work of a range of artists, craft makers, and designers, describing the differences and similarities between different practices and disciplines and making links to their own work.	**Photo editing** Children progress their skills through editing digital images and considering the impact that editing can have on an image. Children will also consider how editing can be used appropriately for different scenarios, and create and evaluate 'fake' images, combining all of their new skills. **National Curriculum links:** • Use search technologies effectively • 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 • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a	**Animation** Children progress their knowledge and understanding of using digital devices to create media, exploring how they can create stop-frame animations **National Curriculum links:** 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 • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **English links** • Draft and write by: in narratives, creating settings, characters and plot • Proof-read for spelling and punctuation errors	**Web page creation** Children will be introduced to creating websites for a chosen purpose. Children identify what makes a good web page and use this information to design and evaluate their own website using Google Sites. Throughout the process, children pay specific attention to copyright and fair use of media, the aesthetics of the site, and navigation paths. **National Curriculum links:** • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • 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. • use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour. English	**Vector drawing** Children will find out that vector images are made up of shapes. They will learn how to use the different drawing tools and how images are created in layers. They will explore the ways in which images can be grouped and duplicated to support them in creating more complex pieces of work. **National Curriculum links:** •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. **Copyright and ownership** • Explain why copying someone else's work from the internet without permission can cause problems.

PSHE - safety • To identify that some images are not real		range of ways to report concerns about content and contact. **PSHE** • describe ways in which people might make themselves look different online.		Writing composition: Identifying the audience for and purpose of the writing, selecting the appropriate form, and using other similar writing as models for their own.	
Key Vocabulary					
• Photograph • Image • Edit • Change • Tools • Filter • Effects • Text	• Draw • Paint • Select • Change	• Edit • Image • Changes • Retouching • Fake/real • Original	• Sequence • Storyboard • Animation • Frame • Settings • Characters • Events • Evaluate	• Website • Webpage • Copyright • Hyperlinks • Content	• Object • Resize • Rotate • Duplicate • Zoom • Alignment • Effects
Creating Media (2)					
Year 1/2 2022-2023	Year 1/2 2023-2024	Year 3/4 2023-2024	Year 3/4 2023-24	Year 5/6 2022-23	Year 5/6 2023-24
Making music Children will develop knowledge through listening to music and considering how music can affect how we think and feel. They will then purposefully create rhythm patterns and music. **National Curriculum links:** • Use technology purposefully to create, organise, store, manipulate and retrieve digital content	**Digital Writing** Children will develop their ability to find and use the keys on a keyboard in order to create digital content. They are then introduced to manipulating the resulting text, making cosmetic changes, and justifying their reason for making these changes. **National Curriculum links:** • Use technology purposefully to create,	**Audio editing** Children will progress their knowledge and understanding of creating media, by focusing on the recording and editing of sound to produce a podcast. **National Curriculum links:** • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in	**Desktop publishing** Children will build on their knowledge and understanding of using digital devices to combine text and images building on work from the following units; Digital Writing Year 1, Digital painting Year 1, and Digital Photography Year 2. **National Curriculum links:** • Use search technologies effectively, appreciate how results are selected and ranked, and be	**3D modelling** Children will develop their knowledge and understanding of using a computer to produce 3D models. Children will initially familiarise themselves with working in a 3D space, including combining 3D objects to make a house and examining the differences between working digitally with 2D and 3D graphics. Children will progress to making accurate 3D models of physical objects, such as a pencil holder, which include using 3D objects as placeholders.	**Video editing** Children learn how to create short videos by working in pairs or groups. As they progress through this unit, they will be exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. Children are guided with step-by-step support to take their idea from conception to completion. **National Curriculum links:** • Use search technologies effectively, appreciate how results are selected and

Music • Play tuned and untuned instruments musically • Listen with concentration and understanding to a range of high-quality live and recorded music • Experiment with, create, select and combine sounds using the inter-related dimensions of music	organise, store, manipulate, and retrieve digital content • Use technology safely and respectfully, keeping personal information private **English – writing (Y1)** Write sentences by: • saying out loud what they are going to write about • composing a sentence orally before writing it • sequencing sentences to form short narratives • re-reading what they have written to check that it makes sense **PSHE** • Only share information with trusted adults.	evaluating digital content • 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 • Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact **Science – Year 4** • **Sound:** Find patterns between the volume of a sound and the strength of the vibrations that produced it • **Sound:** Recognise that sounds get fainter as the distance from the sound source increases **English** • **Writing – composition:** Plan their writing by discussing and recording ideas • **Writing – draft and write by:** In non-	discerning in evaluating digital content • 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 **English** • Pupils should be taught to draft and write by: in non-narrative material, using simple organisational devices [for example, headings and subheadings] • Evaluate and edit by assessing the effectiveness of their own and others' writing and suggesting improvements • Proofread for spelling and punctuation errors **Copyright and ownership** • 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	**National Curriculum links:** • 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 • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact **Art and design – KS2** • To improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials **Design and technology** • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Mathematics (Y6)** • Recognise, describe and build simple 3D shapes, including making nets	ranked, and be discerning in evaluating digital content • 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 • Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

		narrative material, using simple organisational devices [for example, headings and subheadings] • **Writing:** Read aloud their own writing, to a group or the whole class, using appropriate intonation and controlling the tone and volume so that the meaning is clear **Music** • Improvise and compose music for a range of purposes using the interrelated dimensions of music	• I can demonstrate the use of search tools to find and access online content which can be reused by others		
Key Vocabulary					
• Rhythm • Patterns • Emotions • Sounds • Notes • Save	• Keys • Keyboard • Text • Type • Save	• Music composition • Compose • Create • Edit • Enhance • Repeat • Sequence	• Text • Images • Font • Templates • Orientation • Placeholders • Images • Layout	• 3D – three-dimensional • Modify • Rotate • Position • Duplicate • Modify	• Media • Recording • Camera angles • Microphone • Technique • Store • Retrieve • Reshoot • Edit
Programming A					
Year 1/2 2022-2023	Year 1/2 2023-2024	Year 3/4 2023-2024	Year 3/4 2023-24	Year 5/6 2022-23	Year 5/6 2023-24
Robot algorithms Children will spend time looking at how the order of commands affects outcomes. Children will use this knowledge	**Moving a robot** Understand how to program a simple programmable toy using directional language.	**Repetition in shape** Children will progress their knowledge and understanding of programming. It progresses from the sequence of commands	**Sequence in music** Children further explore the concept of sequencing in programming through Scratch. They will be introduced to a selection of motion, sound, and	**Variables in games** Children will explore the concept of variables in programming through games in Scratch. Children will learn what variables are, and relate them to real-world examples	**Selection in physical computing** Children will be introduced to a microcontroller (Crumble controller) and learn how to connect and program it to control components (including

and logical reasoning to trace programs and predict outcomes. **National Curriculum links:** • Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs • 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.	**National Curriculum links:** • Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs • Recognise common uses of information technology beyond school	in a program to using count-controlled loops. Children will create algorithms and then implement those algorithms as code. **National Curriculum links:** • 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; 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 • 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,	event blocks which they will use to create their own programs, featuring sequences. **National Curriculum links:** • 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; 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 • 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	of values that can be set and changed. Children will then use variables to create a simulation of a scoreboard and then experiment with variables in an existing project, modify them, and create their own project. **National Curriculum links:** • 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; 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 • 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	output devices — LEDs and motors). Children will be introduced to conditions as a means of controlling the flow of actions in a program. **National Curriculum links:** • 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; 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 • 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 **Science (year 4)** • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches, and buzzers

		evaluating and presenting data and information			**Design and Technology** • Generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces, and computer-aided design Make • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining, and finishing], accurately • Select from and use a wider range of materials and components, including construction materials, textiles, and ingredients, according to their functional properties and aesthetic qualities Evaluate • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Technical knowledge • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers, and motors] • Apply their understanding of computing to program, monitor, and control their products

Key Vocabulary					
• Program • Direct • Debug • Directions • Order	• Program • Direction • Order • Instructions • Debug • Backwards • Forwards	• Program • Code • Algorithm • Repetition • Patterns • Predict • Procedure • Debug	• Sequence • Commands • Code • Motion • Sound	• Variable • Event • Sprite • Algorithm • Processor	•Circuit •Microcontroller •LED •Infinite loop •Sequence •Algorithm
Programming B					
Year 1/2 2022-2023	Year 1/2 2023-2024	Year 3/4 2023-2024	Year 3/4 2023-24	Year 5/6 2022-23	Year 5/6 2023-24
Programming quizzes Knowledge and understanding of instructions in sequences is built on and the use of logical reasoning to predict outcomes. **National Curriculum links:** • Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs	**Introduction to animation** Learning builds from programming A Use the Scratch programme to be able to find and change blocks. **National Curriculum links:** • Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs	**Repetition in games** Children will explore the concept of repetition in programming using the Scratch environment. Their final project is to design and create a game which uses repetition, applying stages of programming design throughout. **National Curriculum links:** • 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; work with variables and various forms of input and output	**Events and actions** Children will explore the links between events and actions, while consolidating prior learning relating to sequencing. Children begin by moving a sprite in four directions (up, down, left, and right). They then explore movement within the context of a maze, using design to choose an appropriately sized sprite. This unit also introduces programming extensions, through the use of **Pen** blocks. **National Curriculum links:** • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	**Sensing** The unit begins with a simple program for children to build in and test in the programming environment, before transferring it to their micro:bit. Solid prior knowledge of sequence, repetition and selection within programming is needed. If children are not yet ready for this, children may revisit earlier programming units where these constructs are introduced. **National Curriculum links:** • 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; work with variables and various forms of input and output	**Selection in quizzes** Children develop their knowledge of 'selection' by revisiting how 'conditions' can be used in programming, and then learning how the 'if… then… else…' structure can be used to select different outcomes depending on whether a condition is 'true' or 'false'. They represent this understanding in algorithms, and then by constructing programs using the Scratch programming environment. **National Curriculum links:** • 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; 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 • 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	• Use sequence, selection, and repetition in programs; 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 • 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	• Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • 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	• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
Key Vocabulary					
• Program • Direct • Debug • Directions • Order • Task – what is needed • Design – what it should do • Code – how it is done • Running the code – what it does	• Program • Direction • Order • Instructions • Debug	• Program • Code • Algorithm • Block • Repetition • Procedure • Debug	• Events • Sprite • Blocks • Sequence • Test • Design • Implement • Evaluate	• Micro:bit • Input • Process • Output • Variable • Operand • Algorithm • Debug	•Selection •Infinite loop •Outcome •Condition •Algorithm

Data and Information					
Year 1/2 2022-2023	Year 1/2 2023-2024	Year 3/4 2023-2024	Year 3/4 2023-24	Year 5/6 2022-23	Year 5/6 2023-24
Pictograms Children enter data onto a computer and learn how to organise data by creating a pictogram. **National curriculum links:** • use technology purposefully to create, organise, store, manipulate and retrieve digital content • 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 **Maths** Building on Year 1 number and place value: • Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: 'equal to',	**Grouping data** Labelling and grouping objects based on their properties. Children will develop their understanding that objects can be given labels, which is fundamental to their future learning concerning databases and spreadsheets. In addition, children will begin to improve their ability to use dragging and dropping skills on a device. **National Curriculum links:** • Use technology purposefully to create, organise, store, manipulate, and retrieve digital content • Use technology safely and respectfully **Copyright and ownership** • Understand the work they create belongs to them through naming work.	**Data logging** Children progress their knowledge and understanding of data and how it can be collected over time to answer questions. The unit also introduces the idea of automatic data collection. **National Curriculum links:** • ..work with various forms of input • 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 **Science** • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including	**Branching databases** Children build on their knowledge and understanding of presenting information. It builds on their knowledge of data and information from key stage 1. They continue to develop their understanding of attributes and begin to construct and interrogate branching databases as a means of displaying and retrieving information. **National Curriculum links:** • 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 • Use technology safely, respectfully, and responsibly	**Spreadsheets** Children will progress their knowledge and understanding of data, and learn how to organise and modify data within spreadsheets. **National Curriculum links:** • 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 **Maths** • Solve problems involving addition, subtraction, multiplication, and division • Interpret and construct pie charts and line graphs, and use these to solve problems • Calculate and interpret the mean as an average	**Flat file databases** Children look at how a flat-file database can be used to organise data in records. Children use tools within a database to order and answer questions about data. They create graphs and charts from their data to help solve problems. They use a real-life database to answer a question, and present their work to others. **National Curriculum links:** • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • 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

'more than', 'less than' ('fewer'), 'most', 'least' Year 2 • interpret and construct simple pictograms, tally charts, block diagrams and simple tables • ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity • ask and answer questions about totalling and comparing categorical data		thermometers and data loggers • They should learn how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data.			
Key Vocabulary					
• Data • Collect • Collate • Present • Graphs • Findings • Information	• Count • Group • Object • Label • Input • Properties • Compare • Describe • Similar • Different • Drag and drop	• Data logging • Summarise • Interpret • Create • Present • Data • Charts	• Collect • Branching database • Attributes • Order • Pictogram • Compare	• Data heading • Organize • Analyse • Store • Database • Spreadsheet • Formula • Graph • Table	•Order •Sort •Group •Data •Field •Record •Database •Grouping •Chart