

HEAP BRIDGE VILLAGE PRIMARY SCHOOL



Computing

Long Term Curriculum Planning

&

Assessment Arrangements

Computing – In Early Years

Early Years and Computing in depth

Despite computing not being explicitly mentioned within the Early Years Foundation Stage (EYFS) statutory framework (2021), which focuses on the learning and development of children from birth to age five, there are many opportunities for young children to use technology to solve problems and produce creative outcomes. In particular, many areas of the framework provide opportunities for pupils to develop their ability to use computational thinking effectively, such as through undertaking projects involving the concepts and approaches suggested by TEACH Computing scheme of work.

As such, we have a section dedicated to the Early years, that is, full of ideas on how we incorporate and develop early computational thinking and computing skills across our Reception class. As young children take part in a variety of tasks with digital devices, such as moving a Bee Bot around a classroom, they will already be familiar with the device before being asked to undertake tasks related to our key stage one (KS1 - ages 5 - 7 years) computing curriculum, such as writing and testing a simple program. Not only will children be keen to again use a device they had previously enjoyed using, their cognitive load will also be reduced, meaning they are more likely to succeed when undertaking activities linked to the next stage in their learning.

Within the revised EYFS statutory framework, the Technology strand within Understanding the World has been removed. However, there are opportunities within each area of the framework to enable practitioners to effectively prepare children for studying the computing curriculum.

Computing in all areas of the EYFS

The September 2020 release of Development Matters (pg. 9) outlines how effective teaching and learning gives children the opportunity to play and explore, participate in active learning and create and think critically. The activities outlined below have therefore been included to meet these criteria where feasible. Tasks are outlined for each area of the EYFS framework, although many other opportunities exist to use technology with younger children; particularly when linked to a topic studied within class.

Understanding the World	Personal, social and emotional development
<ul style="list-style-type: none"> • Computer and keyboard in the home corner for the children to access • Phones in the home corner • iPads for children to take photos of learning • Beebots • Interactive games with sound • Researching information together on the internet 	<ul style="list-style-type: none"> • Recording/taking pictures together using an iPad • Voice recorders • Interactive games on the whiteboard • Programming a Beebot together • Exploring technology in the home corner together • SCARF time: discussing keeping safe online • Sharing Tapestry postcards from home on the board – circle time
Literacy	Expressive arts and design
<ul style="list-style-type: none"> • Beebots – writing journey • Phonics games on interactive whiteboard during continuous provision. • Listening to phonics songs 	<ul style="list-style-type: none"> • Designing a map for the Beebot • Researching information together on the internet. For example, searching ‘world’s largest buildings’ • Research famous artists
Physical development	Mathematics
<ul style="list-style-type: none"> • Use of computer and keyboard in the home corner – fine motor skills • Use of phones in the home corner – fine motor skills • Beebots • Games on the interactive whiteboard during continuous provision 	<ul style="list-style-type: none"> • Directional language – Beebot • Maths games on the interactive whiteboard during continuous provision • Listening to maths songs
Communication and language	Other areas of coverage
<ul style="list-style-type: none"> • To be able to give precise instructions, following a step by step guide. For example, instructions to make a bowl of porridge for Goldilocks. • To be able to explain the beebot’s journey. • Sharing Tapestry postcards from home on the board – circle time 	<ul style="list-style-type: none"> • Summer term: to introduce the children to a working laptop and keyboard, ready for year 1. To be able to explore laptops. • Safer internet day activities. • ‘I wonder’ researching. When the children wonder about something or have a question, research on the interactive whiteboard together to find out more.

Computing – National Curriculum Implementation Plan & Knowledge Organiser

Purpose of study

A high-quality computing education equips pupils to use **computational thinking** and **creativity** to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. **The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content.** Computing also ensures that pupils become **digitally literate** – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

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.

Attainment targets

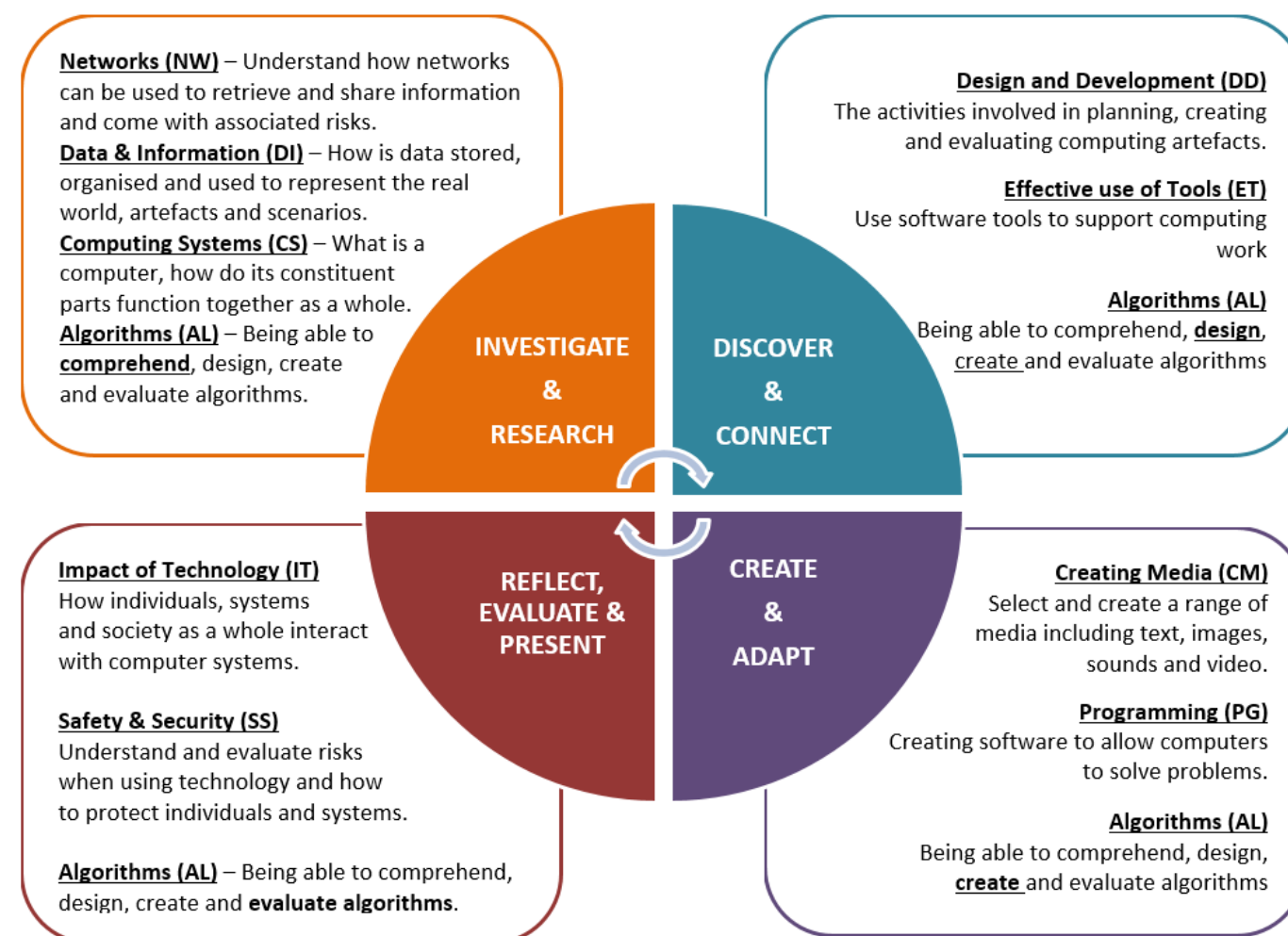
By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the below programme of study.

Subject content

Key stage 1

Pupils should be taught to:

- 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 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.



Long Term Planning Overview for KS1

	Autumn Term	Spring Term	Summer Term
Year 1	Computing systems and networks – Technology around us Creating Media – Digital painting	Programming A – Moving a robot Data and information – Grouping data	Creating media – Digital Writing Programming B – Programming animations
Year 2	Computing systems and networks – IT around us Creating media – Digital photography	Programming A – Robot algorithms Data and information – Pictograms	Creating media - Digital music Programming B - Programming quizzes

Computing Curriculum – Overview: Key Stage 1

YEAR 1		Declarative: Knowledge Organiser		Procedural: Skills
National curriculum links/coverage	Vocab	Developing subject knowledge <i>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</i>		Application of knowledge and key skills <i>Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of context. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.</i>
1.1: Computing Systems and Networks Technology around us <i>recognise common uses of information technology beyond school</i> <i>use technology purposefully to create, organise, store, manipulate and retrieve digital content</i> <i>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.</i>	Technology, computer, mouse, trackpad, keyboard, screen, double-click, typing	Lesson Objectives: 1. To identify technology (CS/IT) 2. To identify a computer and its main parts (CS) 3. To use a mouse in different ways (CS/ET) 4. <i>To use a keyboard to type on a computer (CS/ET)</i> 5. <i>To use the keyboard to edit text (CS/ET)</i> 6. <i>To create rules for using technology responsibly (CS/ET/SS)</i>	INVESTIGATE & RESEARCH / DISCOVER & CONNECT 1.1 I can explain how these technology examples help us 1.3 I can explain technology as something that helps us 2.1 I can name the main parts of a computer 4.1 I can say what a keyboard is for 4.3 I can save my work to a file 6.2 I can give examples of some of these rules	CREATE & ADAPT / REFLECT & EVALUATE 1.2 I can locate examples of technology in the classroom 2.2 I can switch on and log into a computer 2.3 I can use a mouse to click and drag 3.1 I can use a mouse to open a program 3.2 I can click and drag to make objects on a screen 3.3 I can use a mouse to create a picture. 4.2 I can type my name on a computer 5.1 I can open my work from a file 5.2 I can use the arrow keys to move the cursor 5.3 I can delete letters 6.1 I can identify rules to keep us safe and healthy when we are using technology in and beyond the home 6.3 I can discuss how we benefit from these rules
Software/hardware: Word		Assessment Evidence: School Blog		Blog links:
1.2: Creating Media Digital Painting <i>- Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</i> KS1 Art and Design <i>Pupils should be taught:</i> <i>-To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form, and space</i> <i>-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</i>	Paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool, Henri Matisse, Wassily Kandinsky, feelings, brush style, Georges Seurat, pointillism, brush size, pictures, painting, computers, like, prefer, dislike.	Lesson Objectives: 1. To describe what different freehand tools do. (CM/ET) 2. To use the shape tool and the line tools. (CM/ET) 3. To make careful choices when painting a digital picture. (CM/ET) 4. To explain why I chose the tools I used. (CM/ET/DD) 5. To use a computer on my own to paint a picture. (CM/ET) 6. To compare painting a picture on a computer and on paper. (CM/ET/DD)	INVESTIGATE & RESEARCH / DISCOVER & CONNECT 3.2 I can make appropriate colour choices 4.1 I can explain that different paint tools do different jobs 4.2 I can choose appropriate paint tools and colours to recreate the work of an artist 4.3 I can say which tools were helpful and why 6.1 I can explain that pictures can be made in lots of different ways 6.2 I can spot the differences between painting on a computer and on paper 6.3 I can say whether I prefer painting using a computer or using paper	CREATE & ADAPT / REFLECT & EVALUATE 1.1 I can make marks on a screen and explain which tools I used 1.2 I can draw lines on a screen and explain which tools I used 1.3 I can use the paint tools to draw a picture 2.1 I can make marks with the square and line tools 2.2 I can use the shape and line tools effectively 2.3 I can use the shape and line tools to recreate the work of an artist 3.1 I can choose appropriate shapes 3.3 I can create a picture in the style of an artist 5.1 I can make dots of colour on the page 5.2 I can change the colour and brush sizes 5.3 I can use dots of colour to create a picture in the style of an artist on my own
Software/hardware: 2 Simple		Assessment Evidence: Class Big Book		Blog links:
1.3: Programming 1 Moving a Robot <i>Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions</i> <i>Create and debug simple programs</i> <i>Use logical reasoning to predict the behaviour of simple programs</i> <i>Recognise common uses of information technology beyond school</i>	Forwards, backwards, turn, clear, go, commands, Instructions, directions, left, right, Plan, algorithm, program, route.	Lesson Objectives: 1. To explain what a given command will do (AL) 2. To act out a given word. (AL/IT) 3. To combine forwards and backwards commands to make a sequence. (PG) 4. To combine four direction commands to make sequences. (PG) 5. To plan a simple program. (AL/DD) 6. To find more than one solution to a problem. (AL)	INVESTIGATE & RESEARCH / DISCOVER & CONNECT 1.1 I can predict the outcome of a command on a device 2.2 I can recall words that can be acted out 3.1 I can compare forwards and backwards movements 3.3 I can predict the outcome of a sequence involving forwards and backwards commands 4.1 I can compare left and right turns 4.3 I can predict the outcome of a sequence involving up to four commands 5.1 I can explain what my program should do 6.1 I can identify several possible solutions	CREATE & ADAPT / REFLECT & EVALUATE 1.2 I can match a command to an outcome 1.3 I can run a command on a device 2.1 I can follow an instruction 2.3 I can give directions 3.2 I can start a sequence from the same place 4.2 I can experiment with turn and move commands to move a robot 5.2 I can choose the order of commands in a sequence 5.3 I can debug my program 6.2 I can plan two programs 6.3 I can use two different programs to get to the same place
Software/hardware: Bee-Bots		Assessment Evidence: Class Big Book		Blog links:

Computing Curriculum – Overview: Key Stage 1

YEAR 1		Declarative: Knowledge Organiser		Procedural: Skills
National curriculum <i>links/coverage</i>	Vocab	Developing subject knowledge <i>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</i>		Application of knowledge and key skills <i>Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of context. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.</i>
1.4: Data and information – Grouping Data Use technology purposefully to create, organise, store, manipulate, and retrieve digital content Use technology safely and respectfully	Object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, the same	Lesson Objectives: 1. To label objects. (DI) 2. To identify that objects can be counted. (DI) 3. To describe objects in different ways. (DI) 4. To count objects with the same properties. (DI) 5. To compare groups of objects. (DI) 6. To answer questions about groups of objects. (DI)	INVESTIGATE & RESEARCH / DISCOVER & CONNECT 1.1 I can describe objects using labels 1.3 I can identify the label for a group of objects 3.1 I can describe an object 3.2 I can describe a property of an object 5.1 I can choose how to group objects 5.2 I can describe groups of objects 5.3 I can decide how to group objects to answer a question	CREATE & ADAPT / REFLECT & EVALUATE 1.2 I can match objects to groups 2.1 I can count objects 2.2 I can group objects 2.3 I can count a group of objects 3.3 I can find objects with similar properties 4.1 I can group similar objects 4.2 I can group objects in more than one way 4.3 I can count how many objects share a property 6.1 I can record how many objects are in a group 6.2 I can compare groups of objects 6.3 I can record and share what I have found
Software/hardware:		Assessment Evidence: Class Big Book		Blog links:
1.5: Creating Media – Digital Writing Use technology purposefully to create, organise, store, manipulate, and retrieve digital content Use technology safely and respectfully, keeping personal information private <i>English</i> Write sentences by: 1. saying out loud what they are going to write about 2. composing a sentence orally before writing it 3. sequencing sentences to form short narratives 4. re-reading what they have written to check that it makes sense	Word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, format, compare, typing, writing	Lesson Objectives: 1. To use a computer to write. (ET/CM) 2. To add and remove text on a computer. (ET/CM) 3. To identify that the look of a text can be changed on a computer. (ET/CM) 4. To make careful choices when changing text. (ET/CM) 5. To explain why I used the tools that I chose. (ET/CM/DD) 6. To compare typing on a computer to writing on paper. (ET/CM)	INVESTIGATE & RESEARCH / DISCOVER & CONNECT 1.2 I can recognise keys on a keyboard 1.3 I can identify and find keys on a keyboard 3.2 I can explain what the keys that I have learnt about already do 3.3 I can identify the toolbar and use bold, italic, and underline 5.1 I can say what tool I used to change the text 5.2 I can decide if my changes have improved my writing 6.2 I can explain the differences between typing and writing 6.3 I can say why I prefer typing or writing	CREATE & ADAPT / REFLECT & EVALUATE 1.1 I can open a word processor 2.1 I can enter text into a computer 2.2 I can use letter, number, and space keys 2.3 I can use backspace to remove text 3.1 I can type capital letters 4.1 I can select a word by double-clicking 4.2 I can select all of the text by clicking and dragging 4.3 I can change the font 5.3 I can use 'undo' to remove changes 6.1 I can make changes to text on a computer
Software/hardware:		Assessment Evidence: Class Big Book		Blog links:
1.6: Programming B – Programming Animations 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	Scratch Jr, Bee-Bot, command, sprite, compare, programming, programming area, block, joining, Start block, run, program, background, delete, reset, algorithm, predict, effect, change, value, sprite, instructions, appropriate, design	Lesson Objectives: 1. To choose a command for a given purpose. (PG) 2. To show that a series of commands can be joined together. (PG) 3. To identify the effect of changing a value. (PG) 4. To explain that each sprite has its own instructions. (PG) 5. To design the parts of a project. (DD/PG) 6. To use my algorithm to create a program. (AL/DD/PG)	INVESTIGATE & RESEARCH / DISCOVER & CONNECT 1.3 I can compare different programming tools 3.3 I can say what happens when I change a value 4.1 I can show that a project can include more than one sprite 5.1 I can choose appropriate artwork for my project 5.2 I can decide how each sprite will move	CREATE & ADAPT / REFLECT & EVALUATE 1.1 I can find which commands to move a sprite 1.2 I can use commands to move a sprite 2.1 I can use more than one block by joining them together 2.2 I can use a Start block in a program 2.3 I can run my program 3.1 I can find blocks that have numbers 3.2 I can change the value 4.2 I can delete a sprite 4.3 I can add blocks to each of my sprites 5.3 I can create an algorithm for each sprite 6.1 I can use sprites that match my design 6.2 I can add programming blocks based on my algorithm 6.3 I can test the programs I have created
Software/hardware: Scratch Jr		Assessment Evidence: Class Big Book		Blog links:

Computing Curriculum – Overview: Key Stage 1

YEAR 2		Declarative: Knowledge Organiser		Procedural: Skills
National curriculum links/coverage	Vocab	Developing subject knowledge <i>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</i>		Application of knowledge and key skills <i>Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of context. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.</i>
2.1: Computing systems and networks – IT around us <ul style="list-style-type: none"> 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. <p><i>How is information technology (IT) being used for good in our lives? With an initial focus on IT in the home, learners explore how IT benefits society in places such as shops, libraries, and hospitals. Whilst discussing the responsible use of technology, and how to make smart choices when using it.</i></p>	Information technology (IT), computer, barcode, scanner/scan.	Lesson Objectives: <ol style="list-style-type: none"> To recognise the uses and features of information technology. (CS/NW/SS) To identify the uses of information technology in the school. (CS/IT/NW) To identify information technology beyond school. (CS/IT/NW) To explain how information technology helps us. (CS/IT/NW) To explain how to use information technology safely. (CS/NW/SS) To recognise that choices are made when using information technology. (CS/IT/NW/SS) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can describe some uses of computers. I can identify examples of computers. I can identify examples of IT. I can find examples of information technology. I can demonstrate how IT devices work together. I can recognise common types of technology. I can list different uses of information technology. I can talk about different rules for using IT. I can explain the need to use IT in different ways. 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can identify that a computer is a part of IT. I can identify that some IT can be used in more than one way. I can sort school IT by what it's used for. I can sort IT by where it is found. I can talk about uses of information technology. I can say why we use IT. I can say how rules can help keep me safe. I can identify the choices that I make when using IT. I can use IT for different types of activities.
Software/hardware: IT around school, laptops		Assessment Evidence: Big Book		Blog links:
2.2: Creating media – Digital photography <ul style="list-style-type: none"> 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. <p><i>Learners will learn to recognise that different devices can be used to capture photographs and will gain experience capturing, editing, and improving photos. Finally, they will use this knowledge to recognise that images they see may not be real.</i></p>	Device, camera, photograph, capture, image, digital, Landscape, portrait, Framing, subject, compose, Light sources, flash, focus, background, Editing, filter, format, lighting	Lesson Objectives: <ol style="list-style-type: none"> To use a digital device to take a photograph. (CM/CS) To make choices when taking a photograph. (CM/CS/ET) To describe what makes a good photograph. (CM/DD) To decide how photographs can be improved. (CM/DD/ET) To use tools to change an image. (CM/ET) To recognise that photos can be changed. (CM/ET) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can recognise what devices can be used to take photographs. I can experiment with different light sources. I can explore the effect that light has on a photo. I can use a tool to achieve a desired effect. 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can explain what I did to capture a digital photo. I can talk about how to take a photograph. I can explain the process of taking a good photograph. I can explain why a photo looks better in portrait or landscape format. I can take photos in both landscape and portrait format. I can discuss how to take a good photograph. I can identify what is wrong with a photograph. I can improve a photograph by retaking it. I can explain why a picture may be unclear. I can explain my choices. I can recognise that images can be changed. I can apply a range of photography skills to capture a photo. I can identify which photos are real and which have been changed. I can recognise which photos have been changed.
Software/hardware: Digital camera		Assessment Evidence: Blog		Blog links:
2.3: Programming A – Robot algorithms <ul style="list-style-type: none"> 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 <p><i>This unit develops learners' understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Learners will use given commands in different orders to investigate how the order affects the outcome. They will also learn about design in programming. They will develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them.</i></p>	Instruction, sequence, clear, unambiguous, algorithm, program, order, prediction, Artwork, design, route, mat, debugging, decomposition	Lesson Objectives: <ol style="list-style-type: none"> To describe a series of instructions as a sequence. (AL) To explain what happens when we change the order of instructions. (AL) To use logical reasoning to predict the outcome of a program. (AL/PG) To explain that programming projects can have code and artwork. (AL/DD/PG) To design an algorithm. (AL/DD) To create and debug a program that I have written. (AL/DD/PG) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can choose a series of words that can be enacted as a sequence. I can follow instructions given by someone else. I can give clear instructions. I can use an algorithm to program a sequence on a floor robot. I can use the same instructions to create different algorithms. I can compare my prediction to the program outcome. I can follow a sequence. I can test my mat to make sure that it is usable. I can plan algorithms for different parts of a task. 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can show the difference in outcomes between two sequences that consist of the same commands. I can predict the outcome of a sequence. I can explain the choices I made for my mat design. I can identify different routes around my mat. I can create an algorithm to meet my goal. I can explain what my algorithm should achieve. I can use my algorithm to create a program. I can put together the different parts of my program. I can test and debug each part of the program.
Software/hardware: Bee-Bots		Assessment Evidence: Blog		Blog links:

Computing Curriculum – Overview: Key Stage 1

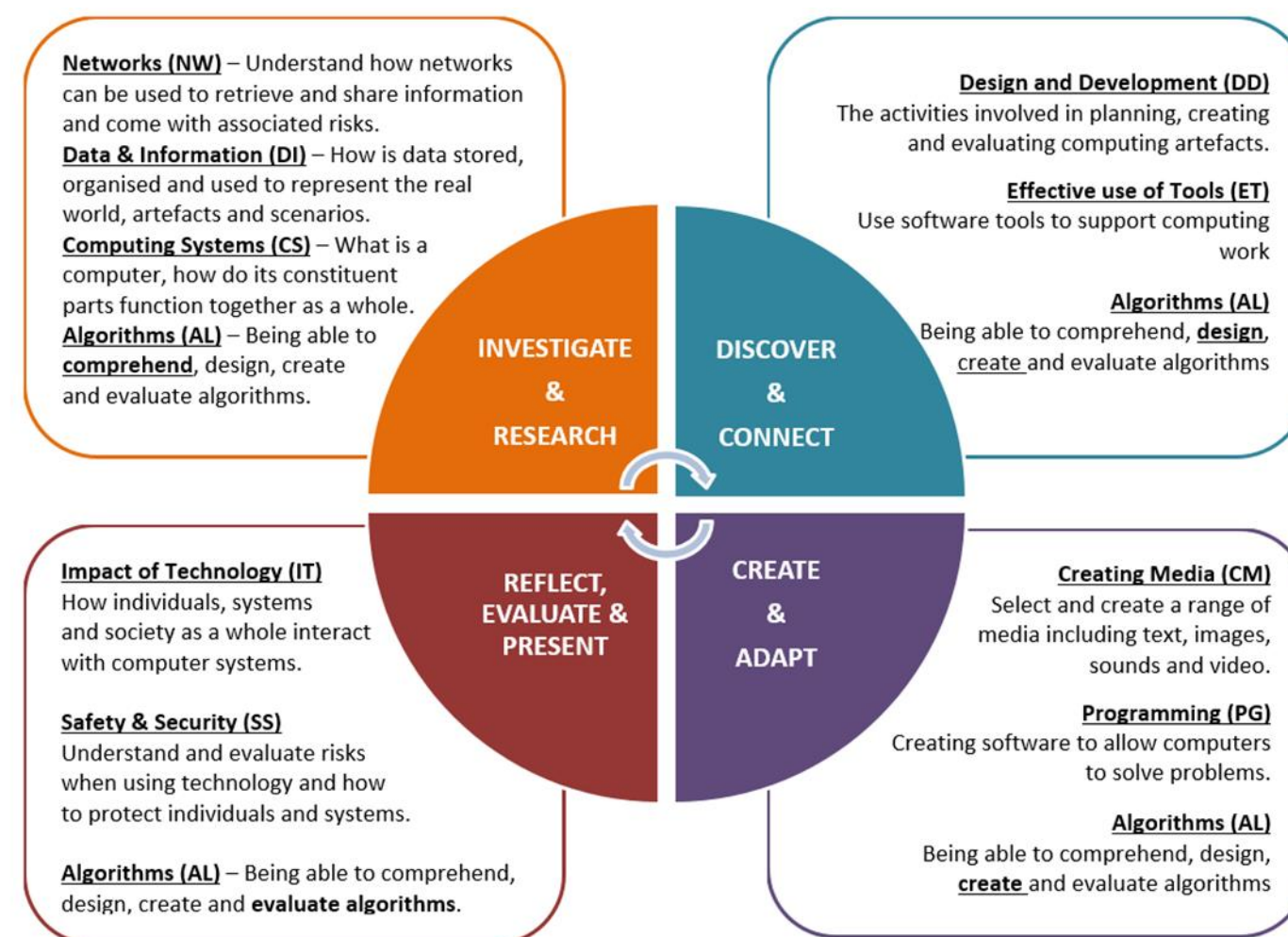
YEAR 2		Declarative: Knowledge Organiser		Procedural: Skills
National curriculum <i>links/coverage</i>	Vocab	Developing subject knowledge <i>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</i>		Application of knowledge and key skills <i>Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of context. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.</i>
<p>2.4: Data and information – Pictograms use technology purposefully to create, organise, store, manipulate and retrieve digital content</p> <p>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</p> <p>Maths</p> <p>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’, ‘more than’, ‘less than’ (‘fewer’), ‘most’, ‘least’</p> <p>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</p>	<p>More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, data, compare, count, more common, least common, attribute, group, same, different, most popular, least popular, conclusion, block diagram, sharing, data</p>	<p>Lesson Objectives:</p> <ol style="list-style-type: none"> To recognise that we can count and compare objects using tally charts. (DI) To recognise that objects can be represented as pictures. (DI/ET) To create a pictogram. (DI/ET) To select objects by attribute and make comparisons. (DI/ET) To recognise that people can be described by attributes. (DI/ET) To explain that we can present information using a computer. (DI/ET/SS) 	<p>INVESTIGATE & RESEARCH / DISCOVER & CONNECT</p> <ol style="list-style-type: none"> 1.1 I can compare totals in a tally chart. 1.2 I can record data in a tally chart. 3.1 I can explain what the pictogram shows. 4.3 I can tally objects using a common attribute. 5.1 I can choose a suitable attribute to compare people. 5.2 I can collect the data I need. 6.1 I can give simple examples of why information should not be shared. 	<p>CREATE & ADAPT / REFLECT & EVALUATE</p> <ol style="list-style-type: none"> 1.3 I can represent a tally count as a total. 2.1 I can enter data onto a computer. 2.2 I can use a computer to view data in a different format. 2.3 I can use pictograms to answer simple questions about objects. 3.2 I can organise data in a tally chart. 3.3 I can use a tally chart to create a pictogram. 4.1 I can answer ‘more than’/‘less than’ and ‘most/least’ questions about an attribute. 4.2 I can create a pictogram to arrange objects by an attribute. 5.3 I can create a pictogram and draw conclusions from it. 6.2 I can share what I have found out using a computer. 6.3 I can use a computer program to present information in different ways.
Software/hardware: IT around school, laptops		Assessment Evidence: Big Book		Blog links:
<p>2.5: Creating media- Digital music Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</p> <p>Music Play tuned and untuned instruments musically</p> <p>Listen with concentration and understanding to a range of high-quality live and recorded music</p> <p>Experiment with, create, select, and combine sounds using the interrelated dimensions of music</p>	<p>Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, pattern, rhythm, pulse, Neptune, pitch, tempo, rhythm, notes, instrument, create, beat, open, edit</p>	<p>Lesson Objectives:</p> <ol style="list-style-type: none"> To say how music can make us feel. (CM) To identify that there are patterns in music. (CM) To experiment with sound using a computer. (CM/DI) To use a computer to create a musical pattern. (CM/DI) To create music for a purpose. (CM/DD/ET) To review and refine our computer work. (CM/ET) 	<p>INVESTIGATE & RESEARCH / DISCOVER & CONNECT</p> <ol style="list-style-type: none"> 1.1 I can describe music using adjectives. 1.2 I can identify simple differences in pieces of music. 2.2 I can explain that music is created and played by humans. 3.1 I can connect images with sounds. 3.2 I can relate an idea to a piece of music. 4.1 I can explain how my music can be played in different ways. 4.2 I can identify that music is a sequence of notes. 6.1 I can explain how I changed my work. 	<p>CREATE & ADAPT / REFLECT & EVALUATE</p> <ol style="list-style-type: none"> 1.3 I can say what I do and don’t like about a piece of music. 2.1 I can create a rhythm pattern. 2.3 I can play an instrument following a rhythm pattern. 3.3 I can use a computer to experiment with pitch. 4.3 I can refine my musical pattern on a computer. 5.1 I can add a sequence of notes to my rhythm. 5.2 I can create a rhythm which represents an animal I’ve chosen. 5.3 I can create my animal’s rhythm on a computer. 6.2 I can listen to music and describe how it makes me feel. 6.3 I can review my work.
Software/hardware: Digital camera		Assessment Evidence: Blog		Blog links:
<p>2.6: Programming B - Programming quizzes</p> <p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</p> <p>Create and debug simple programs</p> <p>Use logical reasoning to predict the behaviour of simple programs</p> <p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</p>	<p>Sequence, command, program, run, start, outcome, predict, blocks, sprite, algorithm, design, actions, modify, change, match, compare, debug, features, evaluate</p>	<p>Lesson Objectives:</p> <ol style="list-style-type: none"> To explain that a sequence of commands has a start. (PG) To explain that a sequence of commands has an outcome. (PG) To create a program using a given design. (DD/PG) To change a given design. (DD/PG) To create a program using my own design. (DD/PG) To decide how my project can be improved. (DD/PG) 	<p>INVESTIGATE & RESEARCH / DISCOVER & CONNECT</p> <ol style="list-style-type: none"> 1.1 I can identify that a program needs to be started. 1.2 I can identify the start of a sequence. 1.3 I can predict the outcome of a sequence of commands. 3.2 I can decide which blocks to use to meet the design. 	<p>CREATE & ADAPT / REFLECT & EVALUATE</p> <ol style="list-style-type: none"> 1.3 I can show how to run my program. 2.1 I can change the outcome of a sequence of commands. 2.2 I can match two sequences with the same outcome. 3.1 I can build the sequences of blocks I need. 3.3 I can work out the actions of a sprite in an algorithm. 4.1 I can choose backgrounds for the design. 4.2 I can choose characters for the design. 4.3 I can create a program based on the new design. 5.1 I can build sequences of blocks to match my design. 5.2 I can choose the images for my own design. 5.3 I can create an algorithm. 6.1 I can compare my project to my design. 6.2 I can debug my program. 6.3 I can improve my project by adding features.
Software/hardware: Bee-Bots		Assessment Evidence: Blog		Blog links:

Subject content

Key stage 2

Pupils should be taught to:

1. design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
2. use sequence, selection, and repetition in programs; work with variables and various forms of input and output
3. use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
4. 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
5. use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
6. 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
7. use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.



Long Term Planning Overview for KS2

	Autumn Term	Spring Term	Summer Term
Year 3	Computing systems and networks – Connecting computers Creating media – Stop-frame animation	Programming A - Sequencing sounds Data and information – Branching databases	Creating media – Desktop publishing Programming B - Events and actions in programs
Year 4	Computing Systems and Networks – The Internet Creating Media – Audio Production	Programming A - Repetition in Shapes Data information – Data logging	Creating Media – Photo Editing Programming B – Repetition in Games
Year 5	Computing Systems and networks – Systems and searching Creating media - Video production	Programming A - Selection in physical computing Data and Information - Flat-file databases	Creating Media - Intro to vector graphics Programming B - Selection in quizzes
Year 6	Computing systems and networks – Communication and collaboration Creating media – Web page creation	Programming A – Variable in games Data and information – Spreadsheets	Creating media – 3D Modelling Programming B – Sensing movements

Computing Curriculum – Overview: Key Stage 2

YEAR 3		Declarative: Knowledge Organiser		Procedural: Skills
National curriculum links/coverage	Vocab	Developing subject knowledge <i>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</i>		Application of knowledge and key skills <i>Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of context. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.</i>
3.1: Computing systems and networks – Connecting computers <ul style="list-style-type: none"> 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 presenting data and information 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] 	Digital device, input, process, output Program, digital, non-digital Connection, network, network switch Server, wireless access point Network cables, network sockets	Lesson Objectives: 1 To explain how digital devices function (CS) 2 To identify input and output devices (CS) 3 To recognise how digital devices can change the way we work (CS / IT) 4 To explain how a computer network can be used to share information (CS / NW) 5 To explore how digital devices can be connected (CS / NW) 6 To recognise the physical components of a network (CS / NW)	INVESTIGATE & RESEARCH / DISCOVER & CONNECT 1.1 I can explain that digital devices accept inputs 1.2 I can explain that digital devices produce outputs 2.1 I can classify input and output devices 2.2 I can describe a simple process 3.2 I can recognise similarities between using digital devices and non-digital tools 3.3 I can suggest differences between using digital devices and non-digital tools 4.1 I can discuss why we need a network switch 4.2 I can explain how messages are passed through multiple connections 4.3 I can recognise different connections 5.1 I can demonstrate how information can be passed between devices 5.2 I can explain the role of a switch, server, and wireless access point in a network 5.3 I can recognise that a computer network is made up of a number of devices 6.1 I can identify how devices in a network are connected together 6.2 I can identify networked devices around me	CREATE & ADAPT / REFLECT & EVALUATE 1.3 I can follow a process 2.3 - I can design a digital device 3.1 I can explain how I use digital devices for different activities 6.3 I can identify the benefits of computer networks
Software/hardware: painting program (any)		Assessment Evidence: Child portfolio and summative assessment. Quiz scores		Blog links:
3.2: Creating media - Stop-frame animation <ul style="list-style-type: none"> 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. 	Animation, flip book Stop-frame animation, frame, sequence, image, photograph Setting, character, events, onion skinning consistency Evaluation, delete, frame media, import, transition	Lesson Objectives: 1 To explain that animation is a sequence of drawings or photographs (CM / ET) 2 To relate animated movement with a sequence of images (CM / ET) 3 To plan an animation (CM / DD) 4 To identify the need to work consistently and carefully (CM / DD / ET) 5 To review and improve an animation (CM / DD / ET) 6 To evaluate the impact of adding other media to an animation (CM / DD / ET)	INVESTIGATE & RESEARCH / DISCOVER & CONNECT 1.1 I can explain how an animation/flip book works 2.1 I can explain why little changes are needed for each frame 2.2 I can predict what an animation will look like 3.3 I can describe an animation that is achievable on screen	CREATE & ADAPT / REFLECT & EVALUATE 1.2 I can create an effective flip book—style animation 1.3 I can draw a sequence of pictures 2.3 I can create an effective stop-frame animation 3.1 I can break down a story into settings, characters and events 3.2 I can create a storyboard 4.1 I can evaluate the quality of my animation 4.2 I can review a sequence of frames to check my work 4.3 I can use onion skinning to help me make small changes between frames 5.1 I can evaluate another learner’s animation 5.2 I can explain ways to make my animation better 5.3 I can improve my animation based on feedback 6.1 I can add other media to my animation 6.2 I can evaluate my final film 6.3 I can explain why I added other media to my animation
Software/hardware: Imotion (app for IOS)		Assessment Evidence: class folder on w drive plus summative assessment		Blog links:
3.3: Programming A - Sequencing sounds <ul style="list-style-type: none"> 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 	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop motion, turn, point in direction, go to, glide Sequence, event, task, design, code, run the code order, note, chord	Lesson Objectives: 1 To explore a new programming environment (ET / PG) 2 To identify that commands have an outcome (PG) 3 To explain that a program has a start(PG) 4 To recognise that a sequence of commands can have an order (PG) 5 To change the appearance of my project (DD / PG) 6 To create a project from a task description (AL / CM / DD / PG)	INVESTIGATE & RESEARCH / DISCOVER & CONNECT 1.1 I can explain that objects in Scratch have attributes (linked to) 1.2 I can identify the objects in a Scratch project (sprites, backdrops) 1.3 I can recognise that commands in Scratch are represented as blocks 3.2 I can explain that the objects in my project will respond exactly to the code 4.2 I can explain what a sequence is 6.1 I can identify and name the objects I will need for a project	CREATE & ADAPT / REFLECT & EVALUATE 2.1 I can choose a word which describes an on-screen action for my plan 2.2 I can create a program following a design 2.3 I can identify that each sprite is controlled by the commands I choose 3.1 I can create a sequence of connected commands 3.3 I can start a program in different ways 4.1 I can combine sound commands 4.3 I can order notes into a sequence 5.1 I can build a sequence of commands 5.2 I can decide the actions for each sprite in a program 5.3 I can make design choices for my artwork 6.2 I can implement my algorithm as code 6.3 I can relate a task description to a design
Software/hardware: Scratch		Assessment Evidence: class folder on w drive plus summative assessment		Blog links:

Computing Curriculum – Overview: Key Stage 2

YEAR 3		Declarative: Knowledge Organiser		Procedural: Skills
National curriculum links/coverage	Vocab	Developing subject knowledge <i>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</i>		Application of knowledge and key skills <i>Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of context. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.</i>
3.4: Data and information – Branching databases <ul style="list-style-type: none"> 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 	Attribute, value, questions, table, objects Branching database, equal, even, separate structure, compare, order, organise Selecting Decision tree	Lesson Objectives: 1 To create questions with yes/no answers (DI) 2 -To identify the attributes needed to collect data about an object (DI) 3 -To create a branching data -(DI / ET) 4 To explain why it is helpful for a database to be well structured base (DD / DI/ ET) 5 -To plan the structure of a branching database (DI / ET) 6 -To independently create an identification tool (DD / DI)	INVESTIGATE & RESEARCH / DISCOVER & CONNECT 1.1 I can create two groups of objects separated by one attribute 1.2 I can investigate questions with yes/no answers 1.3 I can make up a yes/no question about a collection of objects 2.1 I can arrange objects into a tree structure 2.2 I can create a group of objects within an existing group 2.3 I can select an attribute to separate objects into groups 4.1 I can compare two branching database structure	CREATE & ADAPT / REFLECT & EVALUATE 3.1 I can group objects using my own yes/no questions 3.2 I can select objects to arrange in a branching database 3.3 I can test my branching database to see if it works 4.2 I can create yes/no questions using given attributes 4.3 I can explain that questions need to be ordered carefully to split objects into similarly sized groups 5.1 I can create a physical version of a branching database 5.2 I can create questions that will enable objects to be uniquely identified 5.3 I can independently create questions to use in a branching database 6.1 I can create a branching database that reflects my plan 6.2 I can suggest real-world uses for branching databases 6.3 I can work with a partner to test my identification tool
Software/hardware: J2data branch and pictogram		Assessment Evidence: class folder on w drive child portfolio and summative assessment		Blog links:
3.5: Creating media – Desktop publishing <ul style="list-style-type: none"> 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 	Text, images, advantages, disadvantages, communicate Font, font style, communicate, template Landscape, portrait, orientation, placeholder, template, layout, content Desktop publishing, copy, paste, purpose	Lesson Objectives: 1 To recognise how text and images convey information (CM) 2 -To recognise that text and layout can be edited (CM / ET) 3 -To choose appropriate page settings (CM / ET) 4 -To add content to a desktop publishing publication (CM / ET) 5 -To consider how different layouts can suit different purposes (CM / DD / ET) 6 -To consider the benefits of desktop publishing (CM / DD/ ET/ IT)	INVESTIGATE & RESEARCH / DISCOVER & CONNECT 1.1 I can explain the difference between text and images 1.2 I can identify the advantages and disadvantages of using text and images 1.3 I can recognise that text and images can communicate messages clearly 2.1 I can change font style, size, and colours for a given purpose 2.3 I can explain that text can be changed to communicate more clearly 3.2 I can define the term 'page orientation' 3.3 I can recognise placeholders and say why they are important	CREATE & ADAPT / REFLECT & EVALUATE 2.2 I can edit text 3.1 I can create a template for a particular purpose 4.1 I can choose the best locations for my content 4.2 I can make changes to content after I've added it 4.3 I can paste text and images to create a magazine cover 5.1 I can choose a suitable layout for a given purpose 5.2 I can identify different layouts 5.3 I can match a layout to a purpose 6.1 I can compare work made on desktop publishing to work created by hand 6.2 I can identify the uses of desktop publishing in the real world 6.3 I can say why desktop publishing might be helpful
Software/hardware: Adobe Spark		Assessment Evidence:		Blog links:
3.6: Programming B - Events and actions in programs <ul style="list-style-type: none"> 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 	Motion, event, sprite, algorithm, logic Move, resize, Extension block, pen up, set up design, event, action Debugging, errors, setup	Lesson Objectives: 1 To explain how a sprite moves in an existing project (ET / PG) 2 -To create a program to move a sprite in four directions(ET / PG) 3 -To adapt a program to a new context (PG) 4 -To develop my program by adding features (PG) 5 -To identify and fix bugs in a program (DD / PG) 6 -To design and create a maze-based challenge (DD / PG)	INVESTIGATE & RESEARCH / DISCOVER & CONNECT 1.1 I can choose which keys to use for actions and explain my choices 1.2 I can explain the relationship between an event and an action 1.3 I can identify a way to improve a program	CREATE & ADAPT / REFLECT & EVALUATE 2.1 I can choose a character for my project 2.2 I can choose a suitable size for a character in a maze 2.3 I can program movement 3.1 I can choose blocks to set up my program 3.2 I can consider the real world when making design choices 3.3 I can use a programming extension 4.1 I can build more sequences of commands to make my design work 4.2 I can choose suitable keys to turn on additional features 4.3 I can identify additional features (from a given set of blocks) 5.1 I can match a piece of code to an outcome 5.2 I can modify a program using a design 5.3 I can test a program against a given design 6.1 I can evaluate my project 6.2 I can implement my design 6.3 I can make design choices and justify them
Software/hardware: Scratch		Assessment Evidence:		Blog links:

Computing Curriculum – Overview: Key Stage 2

YEAR 4		Declarative: Knowledge Organiser		Procedural: Skills
National curriculum links/coverage	Vocab	Developing subject knowledge <i>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</i>		Application of knowledge and key skills <i>Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of context. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.</i>
4.1: Computing systems and networks - The Internet <ul style="list-style-type: none"> 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 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. 	Internet, network, router, network security, network switch, server, wireless access point (WAP), website, web page, web address, routing, web browser, World Wide Web, content, links, files, use, download, sharing, permission, ownership, information, sharing, accurate, honest, adverts	Lesson Objectives: <ol style="list-style-type: none"> To describe how networks physically connect to other networks (NW/SS) To recognise how networked devices make up the internet (NW) To outline how websites can be shared via the World Wide Web (WWW) (NW) To describe how content can be added and accessed on the World Wide Web (WWW) (CM/NW) To recognise how the content of the WWW is created by people (NW) To evaluate the consequences of unreliable content (IT/NW/SS) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can demonstrate how information is shared across the internet. I can describe the internet as a network of networks I can describe networked devices and how they connect I can explain that the internet is used to provide many services I can describe how to access websites on the WWW I can describe where websites are stored when uploaded to the WWW I can explain the types of media that can be shared on the WWW I can explain that internet services can be used to create content online I can explain what media can be found on websites I can explain that websites and their content are created by people I can suggest who owns the content on websites 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can discuss why a network needs protecting I can recognise that the World Wide Web contains websites and web pages I can recognise that I can add content to the WWW I can explain that there are rules to protect content (SS?) I can explain that not everything on the World Wide Web is true I can explain why I need to think carefully before I share or reshare content I can explain why some information I find online may not be honest, accurate, or legal
Software/hardware: Internet/Google Chrome		Assessment Evidence: Computing Paper Portfolio		Blog links:
4.2: Creating media - Audio production <ul style="list-style-type: none"> 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. 	Audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim, align, layer, import, record, playback, edit, selection, load, import, save, export, MP3, evaluate, feedback	Lesson Objectives: <ol style="list-style-type: none"> To identify that sound can be recorded (CS/DI) To explain that audio recordings can be edited ((CM/CS/DD/ET) To recognise the different parts of creating a podcast project (CM/DD/DI/ET) To apply audio editing skills independently (CM/ET) To combine audio to enhance my podcast project (CM/ET) To evaluate the effective use of audio (CM/DD) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can explain that the person who records the sound can say who is allowed to use it I can identify the input and output devices used to record and play sound I can discuss what sounds can be added to a podcast I can explain how sounds can be combined to make a podcast more engaging I can explain the difference between saving a project and exporting an audio file 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can use a computer to record audio I can inspect the soundwave view to know where to trim my recording I can re-record my voice to improve my recording I can plan appropriate content for a podcast I can save my project so the different parts remain editable I can improve my voice recordings I can record content following my plan I can review the quality of my recordings I can arrange multiple sounds to create the effect I want I can open my project to continue working on it I can choose appropriate edits to improve my podcast I can listen to an audio recording to identify its strengths I can suggest improvements to an audio recording
Software/hardware: Audacity https://audacityteam.org/download		Assessment Evidence: Google Classroom (Unit 2)		Blog links:
4.3: Programming A – Repetition in Shape <ul style="list-style-type: none"> 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 	Program, turtle, commands, code snippet, algorithm, design, debug, logo commands, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure	Lesson Objectives: <ol style="list-style-type: none"> To identify that accuracy in programming is important (AL/PG) To create a program in a text-based language (ET/PG) To explain what 'repeat' means (AL/PG) To modify a count-controlled loop to produce a given outcome (PG) To decompose a task into small steps (AL/PG) To create a program that uses count-controlled loops to produce a given outcome (PG) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can explain the effect of changing a value of a command I can identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves I can identify patterns in a sequence I can identify the effect of changing the number of times a task is repeated I can predict the outcome of a program containing a count-controlled loop I can explain that a computer can repeatedly call a procedure I can identify 'chunks' of actions in the real world 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can create a code snippet for a given purpose I can program a computer by typing commands I can test my algorithm in a text-based language I can use a template to create a design for my program I can write an algorithm to produce a given outcome I can use a count-controlled loop to produce a given outcome I can choose which values to change in a loop I can use a procedure in a program I can design a program that includes count-controlled loops I can develop my program by debugging it I can make use of my design to write a program
Software/hardware: Turtle Academy		Assessment Evidence: Google Classroom (Unit 3)		Blog links:

Computing Curriculum – Overview: Key Stage 2

YEAR 4		Declarative: Knowledge Organiser		Procedural: Skills
National curriculum links/coverage	Vocab	Developing subject knowledge <i>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</i>		Application of knowledge and key skills <i>Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of context. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.</i>
4.4: Data and information – Data logging <ul style="list-style-type: none"> use sequence, selection, and repetition in programs; work with variables and various forms of input and output 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 	Data, table, layout, input device, sensor, data logger, logging, data point, interval, analyse, data set, import, export, logged, collection, review, conclusion	Lesson Objectives: <ol style="list-style-type: none"> To explain that data gathered over time can be used to answer questions (DI) To use a digital device to collect data automatically (CS/DI/ET) To explain that a data logger collects 'data points' from sensors over time (CS/DI/ET) To recognise how a computer can help us analyse data (DI/ET) To identify the data needed to answer questions (CS/DI/ET) To use data from sensors to answer questions (CI/DI) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can choose a data set to answer a given question I can identify data that can be gathered over time I can suggest questions that can be answered using a given data set <ol style="list-style-type: none"> I can explain what data can be collected using sensors I can identify that data from sensors can be recorded I can identify the intervals used to collect data I can recognise that a data logger collects data at given points I can explain that there are different ways to view data I can explain the benefits of using a data logger 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can use data from a sensor to answer a given question I can talk about the data that I have captured I can sort data to find information I can view data at different levels of detail I can plan how to collect data using a data logger I can propose a question that can be answered using logged data I can use a data logger to collect data I can draw conclusions from the data that I have collected I can interpret data that has been collected using a data logger
Software/hardware:		Assessment Evidence:		Blog links:
4.5: Creating media – Photo editing <ul style="list-style-type: none"> 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 <ol style="list-style-type: none"> use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	Image, edit, digital, crop, rotate, undo, save, adjustments, effects, colours, hue, saturation, sepia, vignette, retouch, clone, select, copy, paste, combine, made up, composite, cut, alter, background, foreground, rotate, crop, zoom, undo, font	Lesson Objectives: <ol style="list-style-type: none"> To explain that the composition of digital images can be changed (CM/ET) To explain that colours can be changed in digital images (CM/ET/IT) To explain how cloning can be used in photo editing (CM/DD/ET) To explain that images can be combined (CM/ET) To combine images for a purpose (CM/ET/SS) To evaluate how changes can improve an image (CM/DD/ET) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can explain why I might crop an image I can experiment with different colour effects <ol style="list-style-type: none"> I can explain that different colour effects make you think and feel different things I can experiment with tools to select and copy part of an image I can explain why photos might be edited 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can use photo editing software to crop an image I can improve an image by rotating it I can explain why I chose certain colour effects <ol style="list-style-type: none"> I can add to the composition of an image by cloning I can identify how a photo edit can be improved I can remove parts of an image using cloning I can use a range of tools to copy between images I can choose suitable images for my project I can create a project that is a combination of other images I can describe the image I want to create I can combine text and my image to complete the project I can review images against a given criteria I can use feedback to guide making changes
Software/hardware:		Assessment Evidence:		Blog links:
4.6: Programming B – Repetition in games <ul style="list-style-type: none"> 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 	Scratch, programming, sprite, blocks, code, loop, repeat, value, block, forever, infinite loop, count-controlled loop, costume, repetition, animate, costume, event block, duplicate, modify, design, algorithm, debug, refine, evaluate	Lesson Objectives: <ol style="list-style-type: none"> To develop the use of count-controlled loops in a different programming environment (DD/PG) To explain that in programming there are infinite loops and count controlled loops (AL/PG) To develop a design that includes two or more loops which run at the same time (DD/PG) To modify an infinite loop in a given program (PG) To design a project that includes repetition (DD/PG) To create a project that includes repetition (DG/PG) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can list an everyday task as a set of instructions including repetition <ol style="list-style-type: none"> I can predict the outcome of a snippet of code I can choose when to use a count-controlled and an infinite loop I can recognise that some programming languages enable more than one process to be run at once I can explain what the outcome of the repeated action should be I can identify which parts of a loop can be changed 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can modify a snippet of code to create a given outcome I can modify loops to produce a given outcome <ol style="list-style-type: none"> I can choose which action will be repeated for each object I can evaluate the effectiveness of the repeated sequences used in my program I can explain the effect of my changes I can re-use existing code snippets on new sprites I can develop my own design explaining what my project will do I can evaluate the use of repetition in a project I can select key parts of a given project to use in my own design I can build a program that follows my design I can evaluate the steps I followed when building my project I can refine the algorithm in my design
Software/hardware:		Assessment Evidence:		Blog links:

Computing Curriculum – Overview: Key Stage 2

YEAR 5		Declarative: Knowledge Organiser		Procedural: Skills	
National curriculum links/coverage	Vocab	Developing subject knowledge <i>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</i>		Application of knowledge and key skills <i>Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of context. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.</i>	
5.1: Systems and searching <ul style="list-style-type: none"> 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 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 	System, connection, digital, input, process, output, search, search engine, refine, index, crawler, bot, ordering, ranking, search engine, links, algorithm, search engine optimisation (SEO), content creator, selection	Lesson Objectives: <ol style="list-style-type: none"> To explain that computers can be connected together to form systems (CS) To use a digital device to record video (CS/IT) To capture video using a range of techniques (NW) To create a storyboard (IT/NW) To identify that video can be improved through reshooting and editing (ET/NW) To consider the impact of the choices made when making and sharing a video (DD/ET/NW) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> 1.1 I can describe that a computer system features inputs, processes, and outputs 1.2 I can explain that computer systems communicate with other devices 1.3 I can explain that systems are built using a number of parts 2.1 I can explain the benefits of a given computer system 4.1 I can explain why we need tools to find things online 4.3 I can relate a search term to the search engine's index 5.1 I can explain that a search engine follows rules to rank results 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> 2.2 I can identify tasks that are managed by computer systems 2.3 I can identify the human elements of a computer system 3.1 I can compare results from different search engines 3.2 I can make use of a web search to find specific information 3.3 I can refine my web search 4.2 I can recognise the role of web crawlers in creating an index 5.2 I can give examples of criteria used by search engines to rank results 5.3 I can order a list by rank 6.1 I can describe some of the ways that search results can be influenced 6.2 I can explain how search engines make money 6.3 I can recognise some of the limitations of search engine 	
Software/hardware: Internet			Assessment Evidence: Google Classroom, Summative Assessment		Blog links:
5.2: Creating media: Video production <ul style="list-style-type: none"> 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. 	Video, audio, camera, talking head, panning, close up, video camera, microphone, lens, close up, mid-range, long shot, moving subject, side by side, high angle, low angle, normal angle, static camera, zoom, pan, tilt, storyboard, filming, review, import, split, trim, clip, edit, reshoot, delete, trim, reorder, export, evaluate, share	Lesson Objectives: <ol style="list-style-type: none"> To explain what makes a video effective (CM/DD) To use a digital device to record video (CM/CS) To capture video using a range of techniques (CM/SS) To create a storyboard (CM/DD/ET) To identify that video can be improved through reshooting and editing (CM/ET) To consider the impact of the choices made when making and sharing a video (CM/DD/ET) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> 1.1 I can explain that video is a visual media format 1.2 I can identify features of videos 2.1 I can identify and find features on a digital video recording device 4.1 I can outline the scenes of my video 5.1 I can store, retrieve, and export my recording to a computer 5.3 I can select the correct tools to make edits to my video 6.2 I can recognise that my choices when making a video will impact the quality of the final outcome 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> 1.3 I can compare features in different videos 2.2 I can experiment with different camera angles 2.3 I can make use of a microphone 3.1 I can suggest filming techniques for a given purpose 3.2 I can capture video using a range of filming techniques 3.3 I can review how effective my video is 4.2 I can decide which filming techniques I will use 4.3 I can create and save video content 5.2 I can explain how to improve a video by reshooting and editing 6.1 I can make edits to my video and improve the final outcome 6.3 I can evaluate my video and share my opinions 	
Software/hardware: Microsoft Video Editor			Assessment Evidence: Google Classroom, Edited videos		Blog links:
5.3: Programming A – Selection in physical computing <ul style="list-style-type: none"> 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 	Microcontroller, components, connection, infinite loop, output component, motor, repetition, count-controlled loop, Crumble controller, components, switch, motor, LED, Sparkle, crocodile clips, connect, battery box, program, condition, input, output, selection, condition, action, repetition, debug	Lesson Objectives: <ol style="list-style-type: none"> To control a simple circuit connected to a computer (CS/PG) To write a program that includes count-controlled loops (CS/PG) To explain that a loop can stop when a condition is met (CS/PG) To explain that a loop can be used to repeatedly check whether a condition has been met (PG) To design a physical project that includes selection (CS/DD/PG) To create a program that controls a physical computing project (CS/DD/PG) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> 1.3 I can explain what an infinite loop does 2.3 I can design sequences that use count-controlled loops 3.1 I can explain that a condition is either true or false 3.2 I can design a conditional loop 5.1 I can identify a real-world example of a condition starting an action 5.2 I can describe what my project will do 6.1 I can write an algorithm that describes what my model will do 6.2 I can use selection to produce an intended outcome 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> 1.1 I can create a simple circuit and connect it to a microcontroller 1.2 I can program a microcontroller to make an LED switch on 2.1 I can connect more than one output component to a microcontroller 2.2 I can use a count-controlled loop to control outputs 3.3 I can program a microcontroller to respond to an input 4.1 I can explain that a condition being met can start an action 4.2 I can identify a condition and an action in my project 4.3 I can use selection (an 'if...then...' statement) to direct the flow of a program 5.3 I can create a detailed drawing of my project 6.3 I can test and debug my project 	
Software/hardware: Crumble Controller			Assessment Evidence: Assessment rubric		Blog links:

Computing Curriculum – Overview: Key Stage 2

YEAR 5		Declarative: Knowledge Organiser		Procedural: Skills	
National curriculum links/coverage	Vocab	Developing subject knowledge <i>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</i>		Application of knowledge and key skills <i>Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of context. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.</i>	
5.4: Data information – Flat-file databases <ul style="list-style-type: none"> 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 	Database, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation	Lesson Objectives: <ol style="list-style-type: none"> To use a form to record information (DI/ET) To compare paper and computer-based databases (DD/DI) To outline how you can answer questions by grouping and then sorting data (DI) To explain that tools can be used to select specific data (DI/ET) To explain that computer programs can be used to compare data visually (DI/ET) To use a real-world database to answer questions (DI/ET) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can create a database using cards I can explain how information can be recorded I can order, sort, and group my data cards I can explain what a field and a record is in a database I can navigate a flat-file database to compare different views of information I can choose which field to sort data by to answer a given question I can explain that data can be grouped using chosen values I can group information using a database I can combine grouping and sorting to answer specific questions I can choose which field and value are required to answer a given question I can outline how 'AND' and 'OR' can be used to refine data selection I can choose multiple criteria to answer a given question I can select an appropriate chart to visually compare data I can refine a chart by selecting a particular filter I can ask questions that will need more than one field to answer I can refine a search in a real-world context 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can explain the benefits of using a computer to create charts I can present my findings to a group 	
Software/hardware: Google sheets/Excel		Assessment Evidence: Summative assessment		Blog links:	
5.5: Creating Media: Intro to vector graphics <ul style="list-style-type: none"> 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. 	Vector, drawing tools, object, toolbar, move, resize, colour, rotate, duplicate/copy, zoom, select, rotate, align, resize, modify, layers, order, copy, paste, group, ungroup, duplicate, reuse, reflection	Lesson Objectives: <ol style="list-style-type: none"> To identify that drawing tools can be used to produce different outcomes (CM/DI/ET) To create a vector drawing by combining shapes (CM/ET) To use tools to achieve a desired effect (CM/ET) To recognise that vector drawings consist of layers (CM/ET) To group objects to make them easier to work with (CM/ET) To apply what I have learned about vector drawings (CM/DD) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can recognise that vector drawings are made using shapes I can discuss how vector drawings are different from paper-based drawings I can identify the shapes used to make a vector drawing I can explain that each element added to a vector drawing is an object I can explain how alignment grids and resize handles can be used to improve consistency I can identify that each added object creates a new layer in the drawing I can recognise when I need to group and ungroup objects I can reflect on the skills I have used and why I have used them 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can experiment with the shape and line tools I can move, resize, and rotate objects I have duplicated I can use the zoom tool to help me add detail to my drawings I can modify objects to create a new image I can change the order of layers in a vector drawing I can use layering to create an image I can copy part of a drawing by duplicating several objects I can reuse a group of objects to further develop my vector drawing I can create a vector drawing for a specific purpose I can compare vector drawings to freehand paint drawings 	
Software/hardware: Google Slides		Assessment Evidence: Google Slides, Google Classroom, Assessment rubric		Blog links:	
5.6: Programming B: Selection in quizzes <ul style="list-style-type: none"> 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 	Selection, condition, true, false, count-controlled loop, selection, condition, true, false, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input, implement, test, run, set up	Lesson Objectives: <ol style="list-style-type: none"> To explain how selection is used in computer programs (AL/PG) To relate that a conditional statement connects a condition to an outcome (AL/PG) To explain how selection directs the flow of a program (AL/PG) To design a program that uses selection (DD/PG) To create a program that uses selection (DD/PG) To evaluate my program (DD/PG) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can recall how conditions are used in selection I can identify conditions in a program I can modify a condition in a program I can use selection in an infinite loop to check a condition I can identify the condition and outcomes in an 'if... then... else...' statement I can create a program that uses selection to produce different outcomes I can explain that program flow can branch according to a condition I can design the flow of a program that contains 'if... then... else...' I can show that a condition can direct program flow in one of two ways I can identify the outcome of user input in an algorithm I can share my program with others I can identify the setup code I need in my program 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can outline a given task I can use a design format to outline my project I can implement my algorithm to create the first section of my program I can test my program I can identify ways the program could be improved I can extend my program further 	
Software/hardware: Scratch		Assessment Evidence: Summative Assessment		Blog links:	

Computing Curriculum – Overview: Key Stage 2

YEAR 6		Declarative: Knowledge Organiser		Procedural: Skills
National curriculum <i>links/coverage</i>	Vocab	Developing subject knowledge <i>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</i>		Application of knowledge and key skills <i>Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of context. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.</i>
6.1: Computing systems and networks - Communication and collaboration <ul style="list-style-type: none"> 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 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. 	Protocols IP address Domain name serve (DNS) Data packet Shared files Public Private	Lesson Objectives: <ol style="list-style-type: none"> To explain the importance of internet addresses (ET/NW) To recognise how data is transferred across the internet. (ET/NW) To explain how sharing information online can help people work together (ET/NW) To evaluate different ways of working together online (ET/NW/IT) To recognise how we communicate using different technology (ET/NW) To evaluate different methods (ET/NW/DD) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can describe how computers use addresses to access websites I can explain that internet devices have addresses I can recognise that data is transferred using agreed methods I can explain that all data transferred over the internet is in packets I can explain that data is transferred over networks in packets I can explain that the internet allows different media to be shared I can explain how the internet enables effective collaboration I can explain the different ways in which people communicate I can explain that communication on the internet may not be private 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can identify and explain the main parts of a data packet I can recognise how to access shared files stored online I can send information over the internet in different ways I can identify different ways of working together online I can recognise that working together on the internet can be public or private I can choose methods of communication to suit particular purposes I can identify that there are a variety of ways to communicate over the internet I can compare different methods of communicating on the internet I can decide when I should and should not share information online
		Software/hardware: google classroom		Assessment Evidence: Assessing against lesson objectives, formal assement, written test
6.2: Creating media – Web page creation <ul style="list-style-type: none"> 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 	Website Copyright HTML Webpage Hyperlink	Lesson Objectives: <ol style="list-style-type: none"> To review an existing website and consider its structure (CM/DD/NW) To plan the features of a web page (CM/DD) To consider the ownership and use of images (CM/DD/SS) To recognise the need to preview pages (CM/DD/ET) To outline the need for a navigation path (CM/DD/ET/NW) To recognise the implications of linking to content owned by other people (CM/DD/ET/IT/NW) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can discuss the different types of media used on websites I know that websites are written in HTML I can recognise the common features of a web page I can describe what is meant by the term ‘fair use’ I can explain what a navigation path is I can explain the implication of linking to content owned by others 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can explore a website I can draw a web page layout that suits my purpose I can suggest media to include on my page I can find copyright-free images I can say why I should use copyright-free images I can add content to my own web page I can evaluate what my web page looks like on different devices ad suggest/make edits I can preview what my web page looks like I can describe why navigation paths are useful I can make multiple web pages and link them using hyperlinks I can create hyperlinks to link to other people’s work I can evaluate the user experience of a website
		Software/hardware: Google sites, google classroom		Assessment Evidence: Assessing against lesson objectives, Final weboage these create on google sites – uploaded to google classroom
6.3: Programming A – Variables in games <ul style="list-style-type: none"> 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 	Variables Programming Code Input output	Lesson Objectives: <ol style="list-style-type: none"> To define a ‘variable’ as something that is changeable (PG) To explain why a variable is used in a program (PG) To choose how to improve a game by using variables (PG/DD) To design a project that builds on a given example (PG/DD) To use my design to create a project (PG/DD) To evaluate my project (PG/DD) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can explain that the way a variable change can be defined I can identify examples of information that is a variable I can identify that variables can hold numbers or letters I can explain that a variable has a name and value I can recognise that the value of a variable can be used by a program 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can identify a program variable as a placeholder in memory for a single value I can recognise that the value of a variable can be changed I can decide where in a program to change a variable I can make use of an event in a program to set a variable I can choose the artwork for my project I can create algorithms for my project I can explain my design choices I can choose a name that identifies the role of a variable I can create the artwork for my project I can test the code that I have written I can identify ways that my game could be improved I can share my game with others I can use variables to extend my game
		Software/hardware: Scratch		Assessment Evidence: Assessing against lesson objectives, Summative assessment

Computing Curriculum – Overview: Key Stage 2

YEAR 6		Declarative: Knowledge Organiser		Procedural: Skills
National curriculum <i>links/coverage</i>	Vocab	Developing subject knowledge <i>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</i>		Application of knowledge and key skills <i>Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of context. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.</i>
6.4: Data and Information - Spreadsheets <ul style="list-style-type: none"> 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>Curriculum links: Maths</p>	Spreadsheet Data Formulas	Lesson Objectives: <ol style="list-style-type: none"> To create a data set in a spreadsheet(DI) To build a data set in a spreadsheet (DI) To explain that formulas can be used to produce calculated data (DI/ET/PG) To apply formulas to data (DI/ET/PG) To create a spreadsheet to plan an event (DI/ET) To choose suitable ways to present data (CM/DI/ET) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can suggest how to structure my data I can explain what an item of data is I can explain which data types can be used in calculations I can identify that changing inputs changes outputs I can calculate data using different operations I can use a spreadsheet to answer questions I can explain why data should be organised 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can collect data I can enter data into a spreadsheet I can choose an appropriate format for a cell I can apply an appropriate format to a cell I can construct a simple formula in a spreadsheet I can create a formula which includes a range of cells I can apply a formula to multiple cells by duplicating it I can apply a formula to calculate the data I need to answer questions I can produce a chart I can use a chart to show the answer to questions I can suggest when to use a table or chart
Software/hardware: Google sheets		Assessment Evidence: Assessing against lesson objectives, summative assessment		Blog links:
6.5: Creating media – 3D Modelling <ul style="list-style-type: none"> 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. <p>Curriculum links: Art, DT and maths</p>	Modelling CAD 3D 2D Net Polygon Template Dimensions	Lesson Objectives: <ol style="list-style-type: none"> To recognise that you can work in three dimensions on a computer (CM/ET) To identify that digital 3D objects can be modified (CM/ET) To recognise that objects can be combined in a 3D model (CM/ET) To create a 3D model for a given purpose (CM/ET) To plan my own 3D model (CM/DD/ET) To create my own 3D model (CM/DD/ET) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can add 3D shaped to a project I can move 3D shapes relative to one another I can view 3D shapes from different perspectives I can lift/lower 3D shapes I can recolour a 3D object I can resize an object in three dimensions I can duplicate 3D objects I can group 3D objects I can rotate objects in three dimensions I can accurately size 3D objects I can combine a number of 3D objects I can show that placeholders cancreate holes in 3D objects 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can analyse a 3D model I can choose objects to use in 3D model I can combine objects in a design I can construct a 3D model based on a design I can explain how my 3D model could be improved I can modify my 3D model to improve it
Software/hardware: Tinkercad		Assessment Evidence: Assessing against lesson objectives, final 3D model		Blog links:
6.6: Programming B – Sensing movement <ul style="list-style-type: none"> 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 	Input Output Programming Conditions Variables Flow Bugs Emulator Controllable operand	Lesson Objectives: <ol style="list-style-type: none"> To create a program to run on a controllable device (CS/PG) To explain that selection can control the flow of a program (CS/PG) To update a variable with a user input (CS/PG) To use a conditional statement to compare a variable to a value (CS/PG) To design a project that uses inputs and outputs on a controllable device (CS/DD/PG) To develop a program to use inputs and outputs on a controllable device (CS/DD/PG) 	INVESTIGATE & RESEARCH / DISCOVER & CONNECT <ol style="list-style-type: none"> I can apply my knowledge of programming to a new environment I can determine the flow of a program using selection I can identify examples of conditions in the real world I can experiment with different physical inputs I can explain that cheching a variable doesn't change its value I can explain the important of the order of conditions in else, if statements I can decide what variables to include in a project 	CREATE & ADAPT / REFLECT & EVALUATE <ol style="list-style-type: none"> I can test my program on an emulator I can transfer my program to a controllable device I can use variables in an if, then, else statement to select the flow of a program I can use a condition to change a variable I can modify a program to achieve a different outcome I can use an operand in an if, then statement I can design the algorithm for my project I can design the program flow for my project I can create a program based on a design I can text my program against my design I can use a range of approaches to find and fix bugs
Software/hardware: laptops, micro:bit, MakeCode		Assessment Evidence: Assessing against lesson objectives, final lesson design		Blog links: