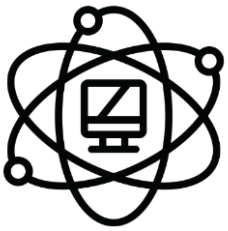
Computing Curriculum

Intent

At Sedgeberrow CE First School, we aim to prepare our learners for their future by giving them the opportunities to gain knowledge and develop skills that will equip them for an ever-changing digital world. We want all our pupils to be competent in the key areas of computing and able to apply their knowledge and understanding safely in real-life. Knowledge and understanding of ICT is of increasing importance for our children's future.

The new National Curriculum defines three areas of the Computing curriculum, which are taught explicitly within computing lessons and across other areas of the broader curriculum:

Information Technology (IT)



Computer Science (CS)

Digital Literacy (DL)

From the Foundation Stage to Year 5, the children are given opportunities to develop their substantive and disciplinary knowledge and understanding in each of these areas. Our high-quality education enables pupils to use computational thinking and creativity to understand and change the world.

Our Computing Curriculum focuses on a progression of knowledge in digital literacy, computing, information technology and online safety to ensure that children become competent in safely using, as well as understanding, technology. In computing we will teach the principles of information and computation, how digital systems work and how to put this knowledge to use through programming information. In addition, we aim to ensure our children are equipped to use information technology to create programs. Computing also ensures that our pupils become digitally literate and able to explore, 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.

Computing Progression Map and Intent, Implementation and Impact

Implementation

At Sedgeberrow First School, we pride ourselves on planning an engaging curriculum that inspires pupils to develop their computing skills in school and at home. We have a dedicated computing lesson in each class for KS1 and KS2 each week, along with embedding skills within other lessons to apply their learning and give a purpose to the skills the pupils are learning.

The computing curriculum has been written with the three core areas of Computing in mind:

Information Technology

The range of skills required to operate and manipulate specific programs, systems, and content.

Computer Science

The understanding of coding and programming across a range of physical devices and digital resources.

Digital Literacy

The knowledge required to use technology safely and to evaluate and react to any potential risks of the online/digital world.

This will be taught through weekly explicit computing sessions, as well as being embedded across our curriculum in a cross-curricula approach to apply learning to a range of contexts.

We have split up computing into the following areas with a focus on teaching a lot of the areas from information technology embedded in other subjects.

Information Technology	Computer Science	Digital Literacy
Word Processing/Typing	Computational Thinking	Self-Image and Identity
Data Handling	Coding/Programming	Online Relationships
Presentations, Web Design and eBook Creation	Computer Networks	Online Reputation
Animation		Online Bullying
Video Creation		Managing Online Information
Photography and Digital Art		Health, Wellbeing and Lifestyle
Augmented Reality and Virtual Reality		Privacy and Security
Sound/Audio		Copyright and Ownership

Computing Progression Map and Intent, Implementation and Impact

We plan units of work that personalise lessons to the pupils and ensure that each lesson draws upon the interests of their class while teaching the pupils the skills they will need going forward. At Sedgeberrow First School, we aim to expose the pupils to a variety of software, programs and equipment to offer a range of exciting and appropriate experiences. We are very lucky to have a class set of iPads along with a class set of laptops that the pupils have access too, along with other devices such as Beebots, Micro:bits and crumble devices to support our programming lessons.

Each lesson contains elements of revision, analysis and problem-solving which supports the pupils to develop their recall of substantive knowledge. Through a carefully planned sequence of lessons, we intend to inspire pupils to develop a love of the digital world and see its place in their future. We believe that cross-curricular links are important in supporting other areas of learning and to ensure Computing is not just seen as a standalone subject.

In KS1, the focus of our computing lessons is mainly on developing the use of algorithms, programming and how technology can be used safely and purposefully. In KS2, lessons still focus on algorithms, programming and coding but in a more complex way and for different purposes. Pupils will also develop their knowledge of computer networks, internet services and the safe and purposeful use of the internet and technology. Data Handling is featured more heavily in UKS2, yet skills learnt through KS1 and LKS2 are used to support data presentation.

In order to achieve our intentions, Computing is monitored through subject monitoring by the Computing Coordinator along with the Senior Leadership Team.

Computing Progression Map and Intent, Implementation and Impact

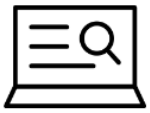
Impact

We encourage our children to enjoy and value the curriculum we deliver. We will constantly ask the WHY behind their learning and not just the HOW. We want learners to discuss, reflect and appreciate the impact computing has on their learning, development and wellbeing. We encourage regular discussions between staff and pupils to best embed and understand this. The way pupils display, share, celebrate and publish their work will best show the impact of our curriculum.

We also look for evidence through reviewing pupil's knowledge and skills, assessment and observations. Progress of our computing curriculum is demonstrated through outcomes and the record of coverage in the process of achieving these outcomes.

By the end of the curriculum, the children:

Develop essential skills including folder structures, formatting, Email, printing and the use of cloud computing.



Will be better able to work across all subjects through skills learned in computing for example, Internet searching skills, various formats for presenting information

Develop understanding that will make better and safer use of Smartphones and technology in general.

Will understand the basics of computers and computing systems and how they work.

Are able to extend their vocabulary through using computing related terminology.

Will have an improved knowledge of career options that relate to Computing.

Will learn how Computing can be useful in any career option.

Computing Progression Map and Intent, Implementation and Impact

Long Term Map 2023-24

	Online Safety (Digital Literacy)	Data and Information (Computer Science)	Creating Media (Information Technology)	Programming (Computer Science)	Information Technology	Programming (Computer Science)	Data and Information/ Information Technology (Digital Literacy)
Year 1	Online Safety	Computer Skills	Painting	Programming Toys	Word Processing Skills	Scratch Jr Programming	
Year 2	Online Safety	Technology Around Us	Computer Art	Preparing for Turtle Logo	Presentation Skills	Programming Turtle Logo and Scratch	Using the Internet
Year 3	Online Safety	Online Searchers and Surfers	Drawing and Desktop Publishing	Coding with Scratch: Learning Loops	Presentation Skills	Programming Turtle Logo and Scratch	Word processing
Year 4	Online Safety	Communicati on and collaboration	Animation	Programming Turtle Logo	Word Processing	Scratch Questions and Quizzes	Using and Applying Skills
Year 5	Online Safety	Know Your Network	Modelling: Sketch Up	Controlling devices with Crumble coding	Spreadsheets	Scratch 3.0 Developing Games	Strategic Online Searching

Information Technology - Cross Curricula

The following units are designed to be taught with a cross curricula approach. Computing lessons can be used when needed as tinkering lessons to teach the children the skills they need to use the programs effectively. Following that, the children can apply their learning to create a range of digital content linked to their learning across other subjects. This will provide out pupils with real life context for the programs that they are taught to use.

Computing Progression Map and Intent, Implementation and Impact

Word Processing/Typing			
Year Group	**NC Objectives**	**Skills/Knowledge**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools.They select and use technology for particular purposes.	• I can play on a touch screen game and use computers/keyboards/mouse in role play • I can type letters with increasing confidence using a keyboard and tablet. • I can dictate short, clear sentences into a digital device.	Seesaw, Word, Pages Google Docs Pic Collage,
1	Co2/1.4 use technology purposefully to create, organise, store, manipulate and retrieve digital content	• I can confidently type words quickly and correctly on a digital device. • I can use the space bar to make space and delete to delete letters/words • I can make a new line using enter/return • I can dictate into a digital device more accurately and with punctuation.	Seesaw, Word, Pages, Google Docs Pic Collage, Book Creator,
2		• I can use the space bar only once between words and use touch to navigate to words letter to edit • I can copy and paste images and text • Use caps locks for capital letters. • I can add images alongside text in a word-processed document. • I can dictate longer passages into a digital device with accurate punctuation.	Seesaw, Word, Pages, Google Docs Pic Collage, Keynote Book Creator, Popplet
3	Co2/1.6 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.	• I can use index fingers on keyboard home keys (f/j), use left fingers for a/s/ d/f/g, and use right fingers for h/j/k/l • I can edit the style and effect of my text and images to make my document more engaging and eye-catching. For example, borders and shadows. • I can use cut, copy and paste to quickly duplicate and organise text.	Seesaw, Word, Pages, Google Docs Keynote, Book Creator, Popplet
4		• I can combine digital images from different sources, objects, and text to make a final piece of a variety of tasks: posters, documents, eBooks, scripts, leaflets. • I can confidently and regularly use text shortcuts such as cut, copy and paste and delete to organise text • I can use font sizes appropriately for audience and purpose. • I can use spell check and thesaurus including through Siri and other AI technology	Seesaw, Word, Pages Google Docs Keynote Book Creator, Popplet
5		• I can start to apply other useful effects to my documents such as hyperlinks. • I can import sounds to accompany and enhance the text in my document. • I can organise and reorganise text on screen to suit a purpose • I can publish my documents online regularly and discuss the audience and purpose of my content.	Seesaw, Word, Pages Google Docs Keynote Book Creator, Popplet

Computing Progression Map and Intent, Implementation and Impact

Data Handling			
Year Group	**NC Objectives**	**Skills/Knowledge**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes	• I can identify a chart. • I can sort physical objects, take a picture and discuss what I have done. • I can present simple data on a digital device.	Seesaw,
1	Co2/1.4 use technology purposefully to create, organise, store, manipulate and retrieve digital content.	• I can sort images or text into two or more categories on a digital device. • I can collect data on a topic. • I can create a tally chart and pictogram. • I can record myself explaining what I have done and what it shows me.	Seesaw, Pic Collage,
2		• I can sort digital objects into a range of charts such as Venn diagrams, carroll diagrams and bar charts using different apps and software. • I can orally record myself explaining what the data shows me. • I can create a branching database using questions	Seesaw, Pic Collage, Plickers Google Sheets, Google Forms, Excel, Numbers
3	Co2/1.6 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.	• I can create my own sorting diagram and complete a data handling activity with it using images and text. • I can start to input simple data into a spreadsheet. • I can create a feelings chart exploring a story or character's feelings.	Google Sheets, Google Forms, Excel, Numbers,
4		• I can create my own online multiple-choice questionnaire. • I can input data into a spreadsheet and export the data in a variety of ways: charts, bar charts, pie charts. • I understand how data is collected.	Google Sheets, Google Forms, Excel, Numbers, Kahoot
5		• I can use simple formulae to solve calculations including =sum and other statistical functions • I can edit and format difference cells in a spreadsheet.	Google Sheets, Google Forms, Excel, Numbers, Mentimeter

Computing Progression Map and Intent, Implementation and Impact

Presentations, Web design and eBook Creation			
Year Group	**NC Objectives**	**Skills/Knowledge**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can record my voice over a picture. • I can create a simple digital collage. • I can move and resize images with my fingers or mouse.	Seesaw, Pic collage
1	Co2/1.4 use technology purposefully to create, organise, store, manipulate and retrieve digital content.	• I can add labels to an image • I can order images to create a simple storyboard. • I can create a simple spider diagram. • I can sequence a series of pictures to explain my understanding of a topic.	Seesaw Pic Collage,
2		• I can add voice labels to an image. • I can add a voice recording to a storyboard. • I can add speech bubbles to an image to show what a character thinks. • I can import images to a project from the web and camera roll	Seesaw, Pic Collage, Balloon Stickies +, Thinglink, Book Creator,
3	Co2/1.6 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	• I can create an interactive comic with sounds, formatted text and video. • I can annotate an image with videos • I can create a simple web page. • I can create a simple digital timeline/mindmap	Balloon Stickies +, Google Sites, Book Creator, Keynote, Adobe Spark Page, Thinglink,
4		• I can create an interactive quiz eBook introducing hyperlinks. • I can create an eBook with text, images and sound. • I can create a presentation demonstrating my understanding with a range of • media. • I can create a digital timeline/mindmap and include different media - sound and video.	Google Sites, Book Creator, Keynote, Powerpoint, Adobe Spark Page, Thinglink,
5		• I can collaborate with peers using online tools, e.g. blogs, Google Drive, Office 365 • I can create and export an interactive presentation including a variety of • media, animations, transitions and other effects. • I can create an interactive guide to an image by embedding digital content and publishing it online. • I can create a webpage and embed video.	Google Sites, Book Creator, Keynote, Powerpoint, Wakelet, Adobe Spark Page, Thinglink,

Computing Progression Map and Intent, Implementation and Impact

Animation			
Year Group	**NC Objectives**	**Skills/Knowledge**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can animate a simple image to speak in role • I can create a simple animation to tell a story including more than one character.	Puppetpals, ChatterPix Kids,
1	Co2/1.4 use technology purposefully to create, organise, store, manipulate and retrieve digital content.	• I can add filters and stickers to enhance an animation of a character. • I can create an animation to tell a story with more than one scene. • I can add my own pictures to my story animation.	Puppetpals, ChatterPix Kids, I Can Animate, Seesaw,
2		• I can create multiple animations of an image and edit these together. • I can create a simple stop motion animation. • I can explain how an animation/flip book works	Puppetpals, ChatterPix Kids, I Can Animate, Seesaw,
3	Co2/1.6 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.	• I can create animations of faces to speak in role with more life-like realistic outcomes. • I can improve stop motion animation clips with techniques like onion skinning. • I can use animation tools in presenting software to create simple animations.	Puppetpals, ChatterPix Kids, Animate Anything, I Can Animate, iFunFace, Seesaw, Plotagon, Puppetmaster, Toontastic,
4		• I can take multiple animations of a character I have created and edit them together for a longer video. • I can use software to create a 3D animated story. • I can use line draw tool to create animations.	Puppetpals, ChatterPix Kids, Animate Anything, I Can Animate, iFunFace, Seesaw, Plotagon, Puppetmaster, Toontastic,
5		• I can record animations of different characters and edit them together to create an interview. • I can add green screen effects to a stop motion animation. • I can create flip book animation using digital drawings and export as a Gif or video	Puppetpals, ChatterPix Kids, Animate Anything, I Can Animate, iFunFace, Seesaw, Plotagon, Puppetmaster, Toontastic,

Computing Progression Map and Intent, Implementation and Impact

Video Creation			
Year Group	**NC Objectives**	**Skills/Knowledge**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I know the difference between a photography and video. • I can record a short film using the camera • I can record and play a film • I can watch films back	Seesaw, Word, Pages Google Docs Pic Collage,
1	Co2/1.4 use technology purposefully to create, organise, store, manipulate and retrieve digital content	• I can record a film using the camera app. • I can select images and record a voiceover. • I can highlight and zoom into images as I record.	Seesaw, Word, Pages, Google Docs Pic Collage, Book Creator,
2		• I can write and record a script using a teleprompter tool. • I can use tools to add effects to a video • I can begin to use green screen techniques with support	Seesaw, Word, Pages, Google Docs Pic Collage, Keynote Book Creator, Popplet
3	Co2/1.6 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.	• I can sequence clips of mixed media in a timeline and record a voiceover • I can trim and cut film clips and add titles and transitions • I can independently create a green screen clip. • I can create my own movie trailer.	Doink Greenscreen, iMovie, Shadow Puppets Edu, Adobe Spark Video,Videorama, Apple Clips Explain Everything
4		• I can add music and sound effects to my films • I can add animated titles and transitions • I can add simple subtitles to a video clip. • I can use confidently use green screen adding animated backgrounds.	Doink Greenscreen, iMovie, Shadow Puppets Edu, Adobe Spark Video,Videorama, Apple Clips Explain Everything
5		• I can use cutaway and split screen tools in iMovie. • I can evaluate and improve the best video tools to best explain my understanding. • I can further improve green screen clips using crop and resize and explore more creative ways to use the tool - wearing green clothes and the masking tool.	Doink Greenscreen, iMovie, Shadow Puppets Edu, Adobe Spark Video,Videorama, Apple Clips Explain Everything

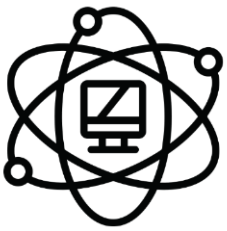
Photography and Digital Art

Year Group	NC Objectives	Skills/Knowledge	Apps and Links
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can take a photograph • I can take a photograph and use it in an app • I can use a painting app and explore the paint and brush tools	Camera Mark up Photo booth Seesaw Draw & Tell
1	Co2/1.4 use technology purposefully to create, organise, store, manipulate and retrieve digital content.	• I can edit a photo with simple tools • I can use a paint/drawing app to create a digital image • I can begin to cut out an image to layer on another image.	Camera Mark up Photobooth Seesaw Keynote Pic Collage Notes
2		• I can edit a photo (crop, filters, mark up etc) • I can select and use tools to create digital imagery - controlling the pen and using the fill tool • I can cut images with accuracy to layer on other images.	Camera Mark up Photobooth Seesaw Keynote Pic Collage Notes
3	Co2/1.6 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.	• I can confidently take and manipulate photos • I can create a digital image using a range of tools, pens, brushes and effects	Camera and Mark up, Notes Seesaw Pic Collage, Keynote, Sketches Pro Paper
4		• I can enhance digital images and photographs using crop, brightness, contrast & resize • I can manipulate shapes to create digital art.	Camera and Mark up, Notes Seesaw Pic Collage, Keynote, Sketches Pro Paper
5		• I can make a digital photo using camera settings • I can enhance digital photos and images using crop, brightness and resize tools • I can link and explain how to photoshop images and how this is used in the media	Camera and Mark up, Notes Seesaw Pic Collage, Keynote, Sketches Pro Paper

Augmented Reality and Virtual Reality			
Year Group	**NC Objectives**	**Skills/Knowledge**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can scan a QR code. • I can explore a 360 image. • I can talk about AR objects in my class	AR Makr, Google Expeditions Figment AR LEO AR Camera
1	Co2/1.4 use technology purposefully to create, organise, store, manipulate and retrieve digital content.	• I can explore an interactive 360 image. • I can scan a trigger image to begin an AR experience. • I can pretend to interact with AR objects.	AR Makr, Google Expeditions Figment AR
2		• I can draw my own 360 image and explore it in VR. • I can bring objects into my surroundings using Augmented Reality. • I can create my own QR code.	AR Makr, Thinglink, Keynote, Google Expeditions Figment AR
3	Co2/1.6 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.	• I can create my own digital 360 image and explore it in VR • I can create my own images and bring it into my surroundings through AR.	AR Makr, Thinglink, Keynote, Google Tour Creator, Google Expeditions EyeJack, Figment AR
4		• I can create my own 360 video. • I can use the camera to create a 360 image. • I can add multiple objects into my surroundings through AR to explain a concept.	AR Makr, Thinglink, Keynote, Google Tour Creator, Google Expeditions EyeJack, Figment AR
5		• I can create an interactive VR experience. • I can create an animated object and bring it into my surroundings through AR • I can create an AR experience using objects I have created to explain a concept.	AR Makr, Adobe Aero, Thinglink, Keynote, Google Tour Creator, Google Expeditions EyeJack, Merge Cube, Figment AR

Computing Progression Map and Intent, Implementation and Impact

Sound/Audio			
Year Group	**NC Objectives**	**Skills/Knowledge**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can record sounds with different resources • I can find ways to change your voice (tube, tin can, shouting to create an echo) • I can record sounds/voices in storytelling and explanations	Seesaw, Voice Memos, Keezy,
1	Co2/1.4 use technology purposefully to create, organise, store, manipulate and retrieve digital content.	• I can create a sequence of sounds (instruments, apps/software) • I can explore short and long sounds. • I can record my voice and add different effects.	Seesaw, Voice Memos, Keezy,
2		• I can create a musical composition using software • I can record my own sound effects. • I can record my voice over a compositions to perform a song.	Seesaw, Voice Memos, Garageband, Anchor, Keezy,
3	Co2/1.6 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.	• I can create and edit purposeful compositions using music software to create mood or a certain style • I can experiment with live loops to create a song.	Seesaw, Voice Memos, Garageband, Anchor, Keezy,
4		• Edit sound effects for a purpose. • Create a simple four chord song following the correct rhythm. • I can record a radio broadcast or audiobook.	Seesaw, Voice Memos, Garageband, Anchor, Keezy,
5		• Add voice over and edit sound clips (volume, pitch, fade, effect) to create a podcast. • Create a remix of a popular song.	Seesaw, Voice Memos, Garageband, Anchor, Keezy,



Computer Science

Computer science has been broken down into three strands: Computational Thinking, Programming and Computer Networks.

Computational Thinking is all about solving problems effectively with or without a computer. Computational thinking is about looking at a problem in a way in which a computer can help us to solve it. This is a two-step process:

First, we think about the sequence of steps (an algorithm) needed to solve a problem.

Then, we use our technical skills to get the computer working on the problem as we implement our algorithm as code. As demonstrated with Dr Chips' support videos, a lot of these objectives can be applied across the curriculum.

Programming is one application of computational thinking. Learners will write algorithms and implement these as code. They also need to be able to find mistakes and fix them (debugging.) Once learners have created a program they need to learn to evaluate and look at different ways to achieve the same goal and which method is most appropriate.

As learners get older the programs, they write will become more complex using a range of constructs such as sequence, selection, repetition and variables in their programs.

KS2 pupils also require knowledge of networks, such as the Internet.

Computing Progression Map and Intent, Implementation and Impact

Computational Thinking			
Year Group	**NC Objectives**	**Skills/Knowledge**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can follow simple oral algorithms • I can spot simple patterns • I can sequence simple familiar tasks	Beebots
1	Co2/1.1 understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions Co2/1.2 create and debug simple programs Co2/1.3 use logical reasoning to predict the behaviour of simple programs	• I understand what algorithms are • I can write simple algorithms • I understand the sequence of algorithms is important • I can debug simple algorithms • I understand that algorithms are implemented as programs on digital devices	Beebots, Scratch Jr
2		• I can write algorithms for everyday tasks • I can use logical reasoning to predict the outcome of algorithms • I understand decomposition is breaking objects/processes down • I can implement simple algorithms on digital devices (Bee Bots, Apps: Daisy the Dino) • I can debug algorithms	Turtle Logo, Scratch
3	Co2/1.1 design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Co2/1.2 use sequence, selection, and repetition in programs; work with variables and various forms of input and output Co2/1.3 use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Co2/1.4 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	• I can create algorithms for use when programming • I can decompose tasks (such as animations) into separate steps to • create an algorithm • I understand abstraction is focusing on important information • I can identify patterns in an algorithm I can use repetition in algorithms	Turtle Logo, Scratch, Hour of Code
4		• I can use abstraction to focus on what's important in my design • I can write increasingly more precise algorithms for use when • programming. • I can use simple selection in algorithms • I can use logical reasoning to detect and correct errors in programs	Turtle Logo, Scratch
5		• I can solve problems by decomposing them into smaller parts • I can use selection in algorithms • I can recognise the need for conditions in repetition within algorithms • I can use logical reasoning to explain how a variety of algorithms work • I can use logical reasoning to detect and correct errors in algorithms • I can evaluate my work and identify errors	Crumbles, Scratch, Mirco:bit

Computing Progression Map and Intent, Implementation and Impact

Coding/Programming

Year Group	NC Objectives	Skills/Knowledge	Apps and Links
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can use a mouse, touch screen or appropriate access device to target and select options on screen • I can input a simple sequence of commands to control a digital device with support (Bee Bot)	Beebot, Daisy the Dinosaur
1	Co2/1.1 understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions Co2/1.2 create and debug simple programs Co2/1.3 use logical reasoning to predict the behaviour of simple programs	• I can create a simple program e.g. sequence of instructions for a Bee Bot • I can use sequence in programs I can locate and fix bugs in my program	Beebots, Scratch Jr
2		• I understand programs execute by following precise and unambiguous instructions • I can create programs on a variety of digital devices • I can debug programs of increasing complexity • I can use logical reasoning to predict the outcome of simple programs	Turtle Logo, Scratch
3	Co2/1.1 design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Co2/1.2 use sequence, selection, and repetition in programs; work with variables and various forms of input and output Co2/1.3 use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Co2/1.4 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	• I can design and create programs • I can write programs that accomplish specific goals • I can use repetition in programs I can work with various forms of input	Turtle Logo, Scratch, Hour of Code
4		• I can use simple selection in programs • I can work with various forms of output • I can use logical reasoning to systematically detect and correct errors • in programs • I can work with various forms of output	Turtle Logo, Scratch
5		• I can create programs by decomposing them into smaller parts • I can use selection in programs • I can use conditions in repetition commands • I can work with variables • I can create programs that control or simulate physical systems • I can evaluate my work and identify errors	Crumbles, Scratch, Mirco:bit

Computer Networks – KS2 Only			
Year Group	**NC Objectives**	**Skills/Knowledge**	**Apps and Links**
3	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	• I understand that computers in a school are connected together in a network • I understand why computers are networked • I understand the difference between the Internet and the World Wide Web (WWW)	Twinkl
4		• I understand that servers on the Internet are located across the planet • I understand how email is sent across the Internet • I understand how the Internet enables us to collaborate	Twinkl
5		• I understand how we view web pages on the Internet • I use search technologies effectively • I understand that web spiders index the web for search engines • I appreciate how pages are ranked in a search engine	Twinkl

Digital Literacy

Today's children and young people are growing up in a digital world. As they grow older, it is crucial that they learn to balance the benefits offered by technology with a critical awareness of their own and other's online behaviour, and develop effective strategies for staying safe and making a positive contribution online.This framework describes the skills and understanding that children and young people should have the opportunity to develop at different ages and stages. It highlights what a child should know in terms of current online technology, its influence on behaviour and development, and what skills they need to be able to navigate it safely.

All the statements below have been taken from the 'Education for a Connected World' framework, 2020 along with the eSafety units within our long term plan.

Computing Progression Map and Intent, Implementation and Impact

Digital Literacy/eSafety			
Year Group	**NC Objectives**	**Self-Image and Identity**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can recognise that I can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' to somebody who asks me to do something that makes me feel sad, embarrassed or upset. • I can explain how this could be either in real life or online.	Project evolve Twinkl
1	Co2/1.5 recognise common uses of information technology beyond school Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies	• I can recognise that there may be people online who could make me feel sad, embarrassed or upset. • If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust.	Project evolve Twinkl
2		• I can explain how other people's identity online can be different to their identity in real life. • I can describe ways in which people might make themselves look different online. • I can give examples of issues online that might make me feel sad, worried, uncomfortable or frightened; I can give examples of how I might get help.	Project evolve Twinkl
3	Co2/1.4 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 Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	• I can explain what is meant by the term 'identity'. • I can explain how I can represent myself in different ways online. • I can explain ways in which and why I might change my identity depending on • what I am doing online (e.g. gaming; using an avatar; social media).	Project evolve Twinkl
4		• I can explain how my online identity can be different to the identity I present in 'real life' • Knowing this, I can describe the right decisions about how I interact with others and how others perceive me.	Project evolve Twinkl
5		• I can explain how identity online can be copied, modified or altered. • I can demonstrate responsible choices about my online identity, depending on • context.	Project evolve Twinkl

Computing Progression Map and Intent, Implementation and Impact

Digital Literacy/eSafety			
Year Group	**NC Objectives**	**Online Relationships**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can recognise some ways in which the internet can be used to communicate. • I can give examples of how I (might) use technology to communicate with people I know.	Project evolve Twinkl
1	Co2/1.5 recognise common uses of information technology beyond school Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies	• I can use the internet with adult support to communicate with people I know. • I can explain why it is important to be considerate and kind to people online.	Project evolve Twinkl
2		• I can use the internet to communicate with people I don't know well (e.g. email a penpal in another school/ country). • I can give examples of how I might use technology to communicate with others I don't know well.	Project evolve Twinkl
3	Co2/1.4 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 Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	• I can describe ways people who have similar likes and interests can get together online. • I can give examples of technology-specific forms of communication (e.g. • emojis, acronyms, text speak). • I can explain some risks of communicating online with others I don't know well. • I can explain how my and other people's feelings can be hurt by what is said • or written online. • I can explain why I should be careful who I trust online and what information I can trust them with. I can explain why I can take back my • trust in someone or something if I feel nervous, uncomfortable or worried. • I can explain what it means to 'know someone' online and why this might be different from knowing someone in real life. I can explain what is meant • by 'trusting someone online'. I can explain why this is different from 'liking someone online'.	Project evolve Twinkl
4		• I can describe strategies for safe and fun experiences in a range of online social environments • I can give examples of how to be respectful to others online.	Project evolve Twinkl
5		• I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my/our fault. • I can make positive contributions and be part of online communities. • I can describe some of the communities in which I am involved and • describe how I collaborate with others positively.	Project evolve Twinkl

Digital Literacy/eSafety			
Year Group	**NC Objectives**	**Online Reputation**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can identify ways that I can put information on the internet.	Project evolve Twinkl
1	Co2/1.5 recognise common uses of information technology beyond school Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies	• I can recognise that information can stay online and could be copied. • I can describe what information I should not put online without asking a • trusted adult first	Project evolve Twinkl
2		• I can explain how information put online about me can last for a long time. • I know who to talk to if I think someone has made a mistake about putting something online.	Project evolve Twinkl
3	Co2/1.4 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 Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	• I can search for information about myself online. • I can recognise I need to be careful before I share anything about myself • or others online. • I know who I should ask if I am not sure if I should put something online.	Project evolve Twinkl
4		• I can describe how others can find out information about me by looking online. • I can explain ways that some of the information about me online could have been created, copied or shared by others.	Project evolve Twinkl
5		• I can search for information about an individual online and create a summary report of the information I find. • I can describe ways that information about people online can be used by others to make judgments about an individual.	Project evolve Twinkl

Computing Progression Map and Intent, Implementation and Impact

Digital Literacy/eSafety			
Year Group	**NC Objectives**	**Online Bullying**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can describe ways that some people can be unkind online. • I can offer examples of how this can make others feel.	Project evolve Twinkl
1	Co2/1.5 recognise common uses of information technology beyond school Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies	• I can describe how to behave online in ways that do not upset others and can give examples.	Project evolve Twinkl
2		• I can give examples of bullying behaviour and how it could look online. • I understand how bullying can make someone feel. • I can talk about how someone can/would get help about being bullied online or offline.	Project evolve Twinkl
3	Co2/1.4 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 Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	• I can explain what bullying is and can describe how people may bully others. • I can describe rules about how to behave online and how I follow them.	Project evolve Twinkl
4		• I can identify some online technologies where bullying might take place. • I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). • I can explain why I need to think carefully about how content I post might affect others, their feelings and how it may affect how others feel about them (their reputation).	Project evolve Twinkl
5		• I can recognise when someone is upset, hurt or angry online. • I can describe how to get help for someone that is being bullied online and assess when I need to do or say something or tell someone. • I can explain how to block abusive users. • I can explain how I would report online bullying on the apps and platforms that I use. • I can describe the helpline services who can support me and what I would say and do if I needed their help (e.g. Childline).	Project evolve Twinkl

Computing Progression Map and Intent, Implementation and Impact

Digital Literacy/eSafety			
Year Group	**NC Objectives**	**Managing Online Information**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can talk about how I can use the internet to find things out. • I can identify devices I could use to access information on the internet. • I can give simple examples of how to find information (e.g. search engine, voice activated searching).	Project evolve Twinkl
1	Co2/1.5 recognise common uses of information technology beyond school Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies	• I can use the internet to find things out. • I can use simple keywords in search engines • I can describe and demonstrate how to get help from a trusted adult or helpline if I find content that makes me feel sad, uncomfortable worried or frightened.	Project evolve Twinkl
2		• I can use keywords in search engines. • I can demonstrate how to navigate a simple webpage to get to information • I need (e.g. home, forward, back buttons; links, tabs and sections). • I can explain what voice activated searching is and how it might be used (e.g. Alexa, Google Now, Siri). • I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real'. • I can explain why some information I find online may not be true.	Project evolve Twinkl
3	Co2/1.4 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 Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	• I can use key phrases in search engines. • I can explain what autocomplete is and how to choose the best suggestion. • I can explain how the internet can be used to sell and buy things • I can explain the difference between a 'belief', an 'opinion' and a 'fact'.	Project evolve Twinkl
4		• I can analyse information and differentiate between 'opinions', 'beliefs' and 'facts'. I understand what criteria have to be met before something is a 'fact'. • I can describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites). • I can describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online. • I can explain that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people. • I can explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true.	Project evolve Twinkl
5		• I can use different search technologies. • I can evaluate digital content and can explain how I make choices from search results. • I can explain key concepts including: data, information, fact, opinion belief, true, false, valid, reliable and evidence. • I understand the difference between online mis-information (inaccurate information distributed by accident) and dis-information (inaccurate information deliberately distributed and intended to mislead). I can explain what is meant by 'being sceptical'. • I can give examples of when and why it is important to be 'sceptical'. I can explain what is meant by a 'hoax'. • I can explain why I need to think carefully before I forward anything online. • I can explain why some information I find online may not be honest, accurate or legal. • I can explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen (e.g. the sharing of misinformation either by accident or on purpose).	Project evolve Twinkl

Computing Progression Map and Intent, Implementation and Impact

Digital Literacy/eSafety			
Year Group	**NC Objectives**	**Health, Well-being and Lifestyle**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can identify rules that help keep us safe and healthy in and beyond the home when using technology. • I can give some simple examples.	Project evolve Twinkl
1	Co2/1.5 recognise common uses of information technology beyond school Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies	• I can explain rules to keep us safe when we are using technology both in and beyond the home. • I can give examples of some of these rules.	Project evolve Twinkl
2		• I can explain simple guidance for using technology in different environments and settings. • I can say how those rules/guides can help me	Project evolve Twinkl
3	Co2/1.4 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 Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	• I can explain why spending too much time using technology can sometimes have a negative impact on me; I can give some examples of activities where it is easy to spend a lot of time engaged (e.g. games, films, • videos).	Project evolve Twinkl
4		• I can explain how using technology can distract me from other things I might do or should be doing. • I can identify times or situations when I might need to limit the amount of time I use technology. • I can suggest strategies to help me limit this time.	Project evolve Twinkl
5		• I can describe ways technology can affect healthy sleep and can describe some of the issues. • I can describe some strategies, tips or advice to promote healthy sleep with regards to technology • I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose	Project evolve Twinkl

Computing Progression Map and Intent, Implementation and Impact

Digital Literacy/eSafety			
Year Group	**NC Objectives**	**Privacy and Security**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location). • I can describe the people I can trust and can share this with; I can explain why I can trust them.	Project evolve Twinkl
1	Co2/1.5 recognise common uses of information technology beyond school Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies	• I can recognise more detailed examples of information that is personal to me (e.g. where I live, my family's names, where I go to school). • I can explain why I should always ask a trusted adult before I share any information about myself online. • I can explain how passwords can be used to protect information and devices.	Project evolve Twinkl
2		• I can describe why other people's work belongs to them. • I can recognise that content on the internet may belong to other people.	Project evolve Twinkl
3	Co2/1.4 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 Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	• I can give reasons why I should only share information with people I choose to and can trust. I can explain that if I am not sure or I feel pressured, I should ask a trusted adult. • I understand and can give reasons why passwords are important. • I can describe simple strategies for creating and keeping passwords • private. • I can describe how connected devices can collect and share my information with others.	Project evolve Twinkl
4		• I can explain what a strong password is. • I can describe strategies for keeping my personal information private, depending on context. • I can explain that others online can pretend to be me or other people, including my friends • I can suggest reasons why they might do this • I can explain how internet use can be monitored.	Project evolve Twinkl
5		• I can create and use strong and secure passwords. • I can explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others. • I can explain how and why some apps may request or take payment for additional content (e.g. in-app purchases) and explain why I should seek permission from a trusted adult before purchasing.	Project evolve Twinkl

Computing Progression Map and Intent, Implementation and Impact

Digital Literacy/eSafety			
Year Group	**NC Objectives**	**Copyright and Ownership**	**Apps and Links**
EYFS	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I know that work I create belongs to me. • I can name my work so that others know it belongs to me.	Project evolve Twinkl
1	Co2/1.5 recognise common uses of information technology beyond school Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies	• I can explain why work I create using technology belongs to me. • I can say why it belongs to me (e.g. 'it is my idea' or 'I designed it'). • I can save my work so that others know it belongs to me (e.g. filename, name on content).	Project evolve Twinkl
2		• I can describe why other people's work belongs to them. • I can recognise that content on the internet may belong to other people.	Project evolve Twinkl
3	Co2/1.4 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 Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	• I can explain why copying someone else's work from the internet without permission can cause problems. • I can give examples of what those problems might be.	Project evolve Twinkl
4		• When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it. • I can give some simple examples.	Project evolve Twinkl
5		• I can assess and justify when it is acceptable to use the work of others. • I can give examples of content that is permitted to be reused.	Project evolve Twinkl

National Curriculum

Level Expected at the End of EYFS

Below are the most relevant statements from Development Matters age ranges for Three and Four-Year-Olds and Reception as well as highlighting the statements within the ELGs which feed into our programme of study for computing.

Computing			
Three and Four-Year-Olds	Personal, Social and Emotional Development		• Remember rules without needing an adult to remind them.
	Physical Development		• Match their developing physical skills to tasks and activities in the setting.
	Understanding the World		• Explore how things work.
Reception	Personal, Social and Emotional Development		• Show resilience and perseverance in the face of a challenge. • Know and talk about the different factors that support their overall healthand wellbeing: -sensible amounts of 'screen time'.
	Physical Development		• Develop their small motor skills so that they can use a range of tools competently,safely and confidently.
	Expressive Arts and Design		• Explore, use and refine a variety of artistic effects to express their ideasand feelings.
ELG	Personal, Social and Emotional Development	Managing Self	• Be confident to try new activities and show independence, resilience andperseverance in the face of challenge. • Explain the reasons for rules, know right from wrong and try to behave accordingly.
	Expressive Arts and Design	Creating with Materials	• Safely use and explore a variety of materials, tools and techniques, experimentingwith colour, design, texture, form and function.

Key Stage 1 National Curriculum Expectations	Key Stage 2 National Curriculum Expectations
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.	Pupils should be taught to: • 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; • 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.

	KS1	LKS2	UKS2
Multimedia Text and Images	Children begin to understand the particular purposes technology can be used for and that by adding text and images you can communicate with technology. Children develop their skills in typing, selecting tools and organising information. **KS1 Computing National Curriculum** Children use technology purposefully to create, organise, store, manipulate and retrieve digital content. Children can: a add text strings, text boxes and show and hide objects and images, manipulating the features; b use various tools, such as brushes, pens, eraser, stamps and shapes, and set the size, colour and shape; c use applications and devices in order to communicate ideas, work, messages and demonstrate control; d save, retrieve and organise work; e use key vocabulary to demonstrate knowledge and understanding in this strand: paint, colour, brush, tools, settings, undo, redo, text, image, size, poster, launch, application, software, window, minimise, restore, size, move, screen, close, click, drag, log on, log off, keyboards, keys, mouse, click, button, double click, drag, present.	Children develop their skills of formatting using keyboard commands, organising their work to demonstrate effect. In LKS2, they will have the opportunity to express themselves more through digital technology, art, PowerPoint and posters. Children should continue to demonstrate control when operating tools as in KS1. **KS2 Computing National Curriculum** Children 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. They 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. Children can: a create different effects with different technological tools, demonstrating control; b use appropriate keyboard commands to amend text on a device; c use applications and devices in order to communicate ideas, work, and messages; d save, retrieve and evaluate work, making amendments; e insert a picture/text/graph/hyperlink from the internet or a personal file; f use key vocabulary to demonstrate knowledge and understanding in this strand: draw, object, shape, line, line colour, fill colour, group, ungroup, font, size, text box, format, image, wrap text, plan, link, image, object, link, hyperlink, minimise, restore, size, move, screen, split, create, organise, file, folder, close, exit, search, print, password, screenshot, snipping tool, shift, undo, redo, menu, dictionary, highlight, cursor, toolbar, spellcheck.	Children begin to look at new software, creating 3D models and learning how to orbit, zoom and develop their editing skills further. They become more confident in inserting links, images and formatting text to create effect. **KS2 Computing National Curriculum** Children 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. Children can: a use the skills already developed to create content using unfamiliar technology; b select, use and combine the appropriate technology tools to create effect; c review and improve their own work and support others to improve their work; d save, retrieve and evaluate their work, making amendments; e insert a picture/text/graph/hyperlink from the internet or personal file; f use key vocabulary to demonstrate knowledge and understanding in this strand: window, layout, text, font, colour, format, heading, hyperlink, 2D shape, 3D shape, orbit, pan, zoom, eraser, dimension, measurement, guide.

Multimedia Sound and Motion	Children begin to develop their creativity using technology through recording sound. Children will also begin to develop their editing skills and control of the tools. **KS1 Computing National Curriculum** Children use technology purposefully to create, organise, store, manipulate and retrieve digital content. Children can: a use software to record sounds; b change sounds recorded; c save, retrieve and organise work; d use key vocabulary to demonstrate knowledge and understanding in this strand: commands, add sound.	Children develop their editing skills further by cropping, organising and arranging film clips. They are able to share work and offer feedback and ideas for improvement with animation and film, giving their opinion on which software to use. In LKS2, children also look at the history of animation and reflect upon the changes over time. **KS2 Computing National Curriculum** Children 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. Children can: a use software to record, create and edit sounds and capture still images; b change recorded sounds, volume, duration and pauses; c use software to capture video for a purpose; d crop and arrange clips to create a short film; e plan an animation and move items within each animation for playback; f use key vocabulary to demonstrate knowledge and understanding in this strand: audio, sound, video, movie, embed, link, file format, animate, animation, still image, thaumatrope, zoetrope, zoopraxiscope, stereoscope, flip book, frame, onion skinning, loop, frame rate, record, stop, play, stop motion, stop frame.	Children begin to look more into multimedia broadcasting, learning new skills including recording jingles, podcasts and narration. They become more confident in post-production with editing, trimming and refining their work based on plans they have made. **KS2 Computing National Curriculum** Children 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. Children can: a collect audio from a variety of resources including own recordings and internet clips; b use a digital device to record sounds and present audio; c trim, arrange and edit audio levels to improve quality; d publish their animation and use a movie editing package to edit/refine and add titles; e use key vocabulary to demonstrate knowledge and understanding in this strand: audio, record, edit, play stop, skip, waveform, input, output, record, edit, play podcast, digital content, downloadable, backing track, voiceover, mute, gain, production, post-production, documentary, project, evaluation, screening, ceremony, upload.

Handling Data		Children begin to explore expressing information in tables, sorting and organising information for others to be able to understand. **KS2 Computing National Curriculum** Children 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. Children can: a talk about the different ways data can be organised; b sort and organize information to use in other ways; c search a ready-made database to answer questions; d use key vocabulary to demonstrate knowledge and understanding in this strand: Google Docs, insert, table.	Data Handling in UKS2 focuses on selecting the correct method to display data and using software such as spreadsheets. Children also learn how to check the accuracy of data and compare data for a specific purpose. **KS2 Computing National Curriculum** Children 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. Children can: e construct data on the most appropriate application; f know how to interpret data, including spotting inaccurate data and comparing data; g use keyboard shortcuts and functions to input data on spreadsheets and create formulas for spreadsheets; h add data to an existing database; i use key vocabulary to demonstrate knowledge and understanding in this strand: Google Docs, insert, table, spreadsheet, cell, row, column, formula/formulas, calculate, format, edit, insert, ascending, descending.

Technology in Our Lives	Children begin to make links to how they use technology outside of the classroom. They begin to think about the benefits of using technology in their lives, making links to learning about online safety. **KS1 Computing National Curriculum** Children recognise common uses of technology beyond school. They use technology safely and respectfully, keeping personal information private; they identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. Children can: a recognise ways that technology is used in the home and community, e.g. taking photos, blogs, shopping; b use links to websites to find information; c recognise age-appropriate websites; d use safe search filters; e use key vocabulary to demonstrate knowledge and understanding in this strand: filter, Google, search engine, image, keyboard, email, internet, subject, address, communicate, sender, safe, secure.	Children refer to online safety rules when discussing technology in their lives. They are able to navigate between websites and use safe search terms on trusted search engines. They become more confident in using email for communication, including attaching and saving files from emails. **KS2 Computing National Curriculum** Children 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. They use search technologies effectively, appreciate how results are selected and ranked, and are discerning in evaluating digital content. Children can: a explain ways to communicate with others online; b describe the world wide web as the part of the internet that contains websites; c add websites to a favourites list; d use search tools to find and use an appropriate website and content; e use strategies to improve results when searching online; f use key vocabulary to demonstrate knowledge and understanding in this strand: filter, Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media.	Children can use safe search terms on trusted search engines, and evaluate websites based on layout and information. They become more confident in understanding Google rankings, adverts and the reliability of websites. **KS2 Computing National Curriculum** Children 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. They use search technologies effectively, appreciate how results are selected and ranked, and are discerning in evaluating digital content. Children can: a search for information using appropriate websites and advanced search functions within Google; b use strategies to check the reliability of information (cross-check with another source such as books); c talk about the way search results are selected and ranked; d check the reliability of a website, including the photos on site; e tell you about copyright and acknowledge the sources of information; f use key vocabulary to demonstrate knowledge and understanding in this strand: world wide web, search, search engine, advanced search, results, Google, browser, terms of use, bias, authority, citation, plagiarism, source, website, secure, https, site, domain, website, browser, address bar.

Coding and Programming	Children begin to understand their influence on technology by developing their programming skills to determine output. They begin to understand that an algorithm is a series of steps for solving problems and a code is a series of steps that machines can execute. They begin to explore debugging, predicting when codes may not work and changing them. **KS1 Computing National Curriculum** Children understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions. They create, debug and use logical reasoning to predict the behaviour of simple programs. Children can: a give commands one at a time to control direction and movement, including straight, forwards, backwards, turn; b control the nature of events: repeat, loops, single events and add and delete features; c give a set of instructions to follow and predict what will happen; d improve/change their sequence of commands by debugging; e use key vocabulary to demonstrate knowledge and understanding in this strand: algorithm, instruction, order, debug, program, turn, left, right, clockwise, anticlockwise, blocks, sequence, project, repeat, repeat forever, invisible, grow, shrink.	Children build on their programming skills by solving problems and programming commands to achieve a specific outcome. They begin to write programs, explain algorithms and identify errors in their work. **KS2 Computing National Curriculum** Children design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; they solve problems by decomposing them into smaller parts. They use sequence, selection, and repetition in programs and work with variables and various forms of input and output. They use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Children can: a use logical thinking to solve an open-ended problem by breaking it up into smaller parts; b write a program, putting commands into a sequence to achieve a specific outcome; c give a set of instructions to follow and predict what will happen; d keep testing a program and recognise when it needs to be debugged; e use variables to create an effect, e.g. repetition, if, when, loop; f use key vocabulary to demonstrate knowledge and understanding in this strand: decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable.	Children build on their programming skills by using new systems such as a flowchart. They continue to break down problems and create algorithms to solve them. They are able to explain the outcome of an algorithm with confidence and accuracy. **KS2 Computing National Curriculum** Children design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; they solve problems by decomposing them into smaller parts. They use sequence, selection, and repetition in programs and work with variables and various forms of input and output. They use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Children can: a use external triggers and infinite loops to demonstrate control; b follow a sequence of instructions, e.g. in a flowchart and modify a flowchart using symbols; c use conditional statements and edit variables; d decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program; e keep testing a program and recognise when it needs to be debugged; f use key vocabulary to demonstrate knowledge and understanding in this strand: flowchart, algorithm, control, output, symbol, start, stop, delay, process, decision, loop, backdrop, script, block, repeat, commentary, sequence, consequence, debug, program, Kodu, world, object, tool palette, program environment, smooth, flatten, raise.

Online Safety	Children begin to consider their activity on the internet and learn about ways to keep themselves safe and why it is important to do so. They also compare appropriate and inappropriate activity on the internet and decide what to do next. **KS1 Computing National Curriculum** Children can use technology safely and respectfully, keeping personal information private; they identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. Children can: a identify what things count as personal information; b identify what is appropriate and inappropriate behaviour on the internet; c agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords; d seek help from an adult when they see something that is unexpected or worrying; e demonstrate how to safely open and close applications and log on and log off from websites; f use key vocabulary to demonstrate knowledge and understanding in this strand: safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, key, question, tell, safe, share, stranger, danger, internet.	Children become more aware of their digital footprint by reflecting on their experience on the internet. They are able to understand more about age-appropriate websites and adverts and how adverts are used by companies. Children are also introduced to the concept of plagiarism and citation. **KS2 Computing National Curriculum** Children use technology safely, respectfully and responsibly. They recognise acceptable/unacceptable behaviour and identify a range of ways to report concerns about content and contact. Children can: a reflect on their own digital footprint and behaviour online; b identify what is appropriate and inappropriate behaviour on the internet, recognising the term cyberbullying; c agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords; d seek help from an adult when they see something that is unexpected or worrying; e demonstrate understanding of age-appropriate websites and adverts; f use key vocabulary to demonstrate knowledge and understanding in this strand: safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying/bullying, plagiarism, profiles, account, private, public.	Children are encouraged to identify online risks and share their knowledge of the risks and consequences for people online. They begin to think more critically about what they see online and look at the concept of fake news and false photographs. **KS2 Computing National Curriculum** Children use technology safely, respectfully and responsibly. They recognise acceptable/unacceptable behaviour and identify a range of ways to report concerns about content and contact. Children can: a protect their password and other personal information; b be a good online citizen and friend; c judge what sort of privacy settings might be relevant to reducing different risks; d seek help from an adult when they see something that is unexpected or worrying; e discuss scenarios involving online risk; f use key vocabulary to demonstrate knowledge and understanding in this strand: spam, link, privacy, virus, scam, phishing, inbox, junk, sender, subject, secure, safe, account, online, private, social media, adverts, cyberbullying, reporting, anonymous, victim, fraud/fraudulent, policy, private/personal.