Computing

Through our computing curriculum at Fulfen, we aim to give our pupils the life-skills that will enable them to embrace and utilise new technology in a socially responsible and safe way in order to flourish in an ever-changing digital world.

"Computing is like glitter. It gets everywhere. It's in every part of life from our democracy to entertainment. Its sparkle lures us in. It's found in the places you'd least expect and it's almost impossible to get rid of."

Julia Adamson 2022

Through our computing lessons, pupils will develop creativity, resilience, problem-solving and critical thinking skills. Teachers provide pupils with a breadth of experiences and knowledge to support and enhance learning across the curriculum whilst developing skills to utilise different applications for a range of purposes and audiences. Our pupils will become autonomous, independent learners in this subject, gaining confidence to become creators of content who will increasingly be able to choose the best tool for a given challenge.

Our critical thinking, creative and responsible coders and users of technology will acquire the skills to have:

- Competence in coding of a variety of practical and inventive purposes, including the application of ideas within other subjects.
- The ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity.
- An understanding of the connected nature of devices.
- The ability to communicate ideas well in a variety of ways by using applications and devices throughout the curriculum.
- The ability to collect, organise and manipulate data effectively.

The three strands of the Computing curriculum are:

Computer Science – programming, coding, networking and understanding how computers and computer systems work.

Information Technology – create, manipulate, store and retrieve a range of digital content (including text, video, images, data) to communicate and present to audiences.

Digital Literacy – Evaluating digital content and becoming responsible, respectful, competent and confident users of technology in a wide variety of contexts. The inter-related components of digital literacy is developed alongside subject specific knowledge and understanding.

During the Autumn term, each year group focuses on understanding computers and computer systems whilst embedding new skills in information technology, which will be utilized in other lessons and built upon throughout the year. In each year group, two half terms are spent on coding and programming lessons.

Expectations, Evidence & Monitoring:

All computing evidence will be recorded on Seesaw each half term. There is a minimum expectation of 30 minutes per week of discrete computing lesson time. Technology is also utilised across the curriculum when it can best impact upon learning.

Online Safety

Online safety will be taught in a stand-alone one lesson per half term (once per term in KS1) using Common Sense Education materials. It is important to note that online safety, using Project Evolve resources tailored to the needs of each class, is also taught within PSHE lessons and online safety is also embedded in our school culture.

CURRICULUM MAP

	Autumn	Spring	Summer
Year 1	**Technology Around Us & Seesaw** • To notice similarities and differences between a laptop and a tablet (e.g. mouse/keyboard/ touchscreen). • To use a keyboard to type (including shift key, space bar, backspace, enter key). • To be able to dictate short, clear sentences into a digital device. • To be able to use the Seesaw drawing canvas tools: text, shapes, voice, images and video, pen and highlighting tools – changing brush sizes and colour. • To be able to navigate between pages of a Seesaw activity. • To take photographs with an iPad and put the photos into a Seesaw activity. • To identify technology, how it helps us and locate examples of technology in the classroom. • To create rules for using technology responsibly. *Outcome: Create a seesaw page including text and media to show rules for using technology.*	**Data and Information** • To label objects • To identify that objects can be counted • To describe objects in different ways • To count objects with the same properties • To compare groups of objects • To answer questions about groups of objects. *Outcome: Group, count and describe objects – link to maths* **Digital Painting** • To describe what different freehand tools do • To use the shape and line tools • To make careful choices when painting a digital picture • To explain why I chose the tools I used • To paint my own digital picture • To compare painting a picture on a computer and on paper. *Outcome: Create digital art and compare with paper version. (maybe liaise with Jo Ashcroft?)*	**Programming and Coding** • To understand what an algorithm is. • To write and use algorithms. • To understand and follow directions • To understand that a computer doesn't have a brain. • To combine forwards and backwards commands to make a sequence • To combine four direction commands to make sequences • To plan a simple program to make a robot move. • To find more than one solution to a problem • To use different inputs for control • To write simple programs • To debug simple programs • To predict the outcome of a simple program.
Online Safety	**Media Balance is Important**	**Pause for People**	**Safety in My Online Neighbourhood**
Main Apps	Seesaw, Camera app, Photos, Chatterpix		
Suggestions for Digital Artefacts across the Curriculum	• Anything on Seesaw! E.g Matching activities in science. Taking own photos as evidence and uploading. Using text and voice tools to annotate. • Chatterpix – Florence Nightingale, Mary Seacole, Edith Cavell.	• Digital Artwork • Chatterpix – character from a book • Seesaw – sorting materials, own images of concrete work in maths – annotated;	• Green screen (adult led. Photo, not video) – children in space or stood in front of a weather map. Children type/voice over to describe the image. • Chatterpix – Neil Armstrong

	Autumn	Spring	Summer

Year 2	**Desktop Publishing - Keynote**
	• To recognise how text and images convey information
	• To recognise that text and layout can be edited and in keynote:
	  ○ Add and format text;
	  ○ Add shapes/images and format background;
	  ○ Resize and crop images.
	  (NB. Can also introduce animations later in the year or when ch are confident.)
	• To consider how different layouts can suit different purposes.
	• Design with Shapes in Keynote
	IT around us
	• To recognise the uses and features of information technology
	• To identify information technology in the home
	• To identify information technology beyond school
	• To explain how information technology benefits us
	• To show how to use information technology safely
	• To recognise that choices are made when using information technology
	Outcome: To create a one page Keynote to include text, shapes and images about Computing Systems and Networks.
		Programming and Coding 1
		• Understand that an algorithm is a set of instructions.
		• Create and test algorithms
		• To know that computers need to be programmed.
		• To follow simple algorithms.
		• To predict the outcome of an algorithm
		Pictograms
		• To recognise that we can count and compare objects using tally charts
		• To recognise that objects can be represented as pictures
		• To create a pictogram
		• To select objects by attribute and make comparisons
		• To recognise that people can be described by attributes
		• To explain that we can present information using a computer
		(link to statistics in Maths)
			Digital Photography
			• To take photos in a variety of lighting conditions
			• Straighten, rotate and crop photos
			• Adjust focus and exposure before taking a photo
			• Use albums to organise photos
			• Use mark-up tools to edit photos
			Outcome: To create a personified picture to tell an imaginary story.
			Programming and Coding 2
			• To understand that computers control things
			• To read and write simple code
			• To create a program with multiple steps
			• To debug a program
			• To write and debug simple programs for computers to follow.

Online Safety	**Pause & Think Online**	**How Technology Makes You Feel**	**Internet Traffic Light & That's Private**
Main Apps	Seesaw, Camera app, Keynote, Safari, Pic Collage, Chatterpix, Puppet Edu		
Suggestions for Digital Artefacts across the Curriculum	• Anything on Seesaw! E.g Matching activities in science. Taking own photos as evidence and uploading. Using text and voice tools to annotate. • Chatterpix – Florence Nightingale, Mary Seacole, Edith Cavell.	• Digital Artwork • Chatterpix – character from a book • Seesaw – sorting materials, own images of concrete work in maths – annotated;	• Green screen (adult led. Photo, not video) – children in space or stood in front of a weather map. Children type/voice over to describe the image. • Chatterpix – Neil Armstrong

	Autumn	Spring	Summer
Year 3	**Presenting Information** • To understand placeholders • To format text • To add photographs and shapes • To add images, text and soundtracks to iMovie. • To trim clips and format text in iMovie and utilise Ken Burns. • To add voice over to an iMovie **Connecting Computers** • To explain how digital devices function • To identify input and output devices • To recognise how digital devices can change the way we work • To explain how a computer network can be used to share information • To explore how digital devices can be connected • To recognise the physical components of a network *Outcome: To create a poster on Pages and/or a video on iMovie about digital devices and networks (or other curriculum content) and compare the two, drawing out the benefits/limitations of both pages and iMovie.*	**Everyday Objects & Collage Composition** • *To take photos in a variety of lighting conditions* • *To straighten, rotate and crop photos* • *To adjust focus and exposure before taking a photo* • *To build a single composition with multiple photos and other graphic elements* • *To hide parts of a photo using Instant Alpha* • *To crop, mask, edit and layer photos.* **Programming and Coding** • To understand decomposition • To identify and use the repeat function • To write, test and debug algorithms • To begin to build and use a simple procedure • To create an algorithm to include count-controlled loops. **AI Machine Learning** • To understand that computers can be trained to perform tasks using Quick, draw!	**Stop Frame Animation** • To explain that animation is a sequence of drawings or photographs • To relate animated movement with a sequence of drawings or photographs • To plan an animation • To identify the need to work consistently and carefully • To review and improve animation • To evaluate the impact of adding other media to an animation *https://education.apple.com/#/home/rp/T045473A?backTo=%23%2Fhome%2Frp%2FT044895A-en_EMEIA%3FbackTo%3D%2523%252Fhome%252Fresources – on keynote – compare with app.* *Outcome: To create a stop-motion animation including other media (can link to Roman topic)* **Programming and Coding** • To create an algorithm to include count-controlled loops. • To write a program with different outputs (light/sound/text) • To utilize different inputs when creating a program.
Online Safety	**We, The Digital Citizens** **Device-Free Moments**	**Digital Trails** **Who is in Your Online Community?**	**Putting a STOP to Online Meanness** **Let's Give Credit**
Main Apps	Seesaw, Camera app, Keynote, Safari, Pic Collage, Chatterpix, Puppet Edu, iMovie, Pages		
Suggestions for Digital Artefacts across the Curriculum	• Anything on Seesaw! E.g Matching activities in science. Taking own photos as evidence and uploading. Using text and voice tools to annotate.	• Digital Artwork • Chatterpix – historical figures, scientific concepts etc • iMovies – natural disasters, explaining scientific phenomena or historic info.	• Chatterpix – character from a book • Seesaw – sorting, own images of concrete work in maths – annotated; • Pop Art in photos: https://education.apple.com/#/home/rp/T050623A?backTo=%23%2Fhome%2Frp%2FT044895A

	Autumn	Spring	Summer
Year 4	**Video Creation 1** • To explore using green screen in iMovie • To learn the basics of the "Clips" app (importing photos and videos – muting when necessary; using the pink button to record video of self, talking (– possibly exploring live-titles – ensure editing takes place!) • To add posters as an introduction and soundtracks. **The Internet** • To describe how networks physically connect to other networks • To recognise how networked devices make up the internet • To outline how websites can be shared via the World Wide Web • To describe how content can be added and accessed on the World Wide Web • To recognise how the content of the WWW is created by people • To evaluate the consequences of unreliable content *Outcome: Create a video in clips using images, greenscreen video and appropriate effects about the Internet (linked to first unit). NB – change to a lady STEM*	**Introduction to Branching Databases** • To create questions with yes/no answers • To identify the attributes needed to collect data about an object • To create a branching database and explain why it is helpful for it to be well structured. • To create an identification tool. *Outcome: To create an identification tool.* **Write Your First Song** *https://education.apple.com/#/home/rp/T045539A?backTo=%23%2Fhome%2Frp%2FT044895A-en_EMEIA%3FbackTo%3D%2523%252Fhome%252Fresources* **Video Creation 2** • Return to Clips app: • exploring effects; adding text/labels; adding stickers – including a discussion on suitable use) • exploring zooming in and zooming out on an image whilst recording voiceover with the pink button • To trim and split clips to add other media in between. *Outcome: To create videos linked to their local geography study which can be incorporated into their class project.*	**Programming and Coding** • To write a program and debug it • To develop the use count-controlled loops • To use different inputs. • To understand infinite loops • To develop a design to include two or more loops that run at the same time **Podcast** • To record a story and change voice using effects • To preview and select audio loops to enhance the mood of the story • To edit audio recordings to create polished interviews/stories. https://education.apple.com/#/home/rp/T050475A?backTo=%23%2Fhome%2Frp%2FT044895A **AI Machine Learning** *AI for Oceans:* *https://studio.code.org/s/oceans/lessons/1/levels/1* • *To understand how machines can be trained to help solve environmental issues.*
Online Safety	**Your Rings of Responsibility** **Password Power-Up**	**This is Me** **Our Digital Citizenship Pledge**	**The Power of Words** **Is Seeing Believing?**
Main Apps	Seesaw, Camera app, Keynote, Safari, Pic Collage, Chatterpix, iMovie, Pages, Clips		
Suggestions for Digital Artefacts across the Curriculum	• Anything on Seesaw! E.g Matching activities in science. Taking own photos as evidence and uploading. Using text and voice tools to annotate. • Chatterpix – historical figures, scientific concepts etc	• Digital Artwork • Chatterpix – character from a book • Seesaw – sorting, own images of concrete work in maths – annotated; • Jump Cuts in iMovie/Clips https://education.apple.com/#/home/rp/T045466A?backTo=%23%2Fhome%2Frp%2FT044895A	• Green screen – children in space or stood in front of a weather map. Children type/voice over to describe the image. • Podcasts linked to any area of the curriculum • Videos in Clips: historical info, scientific phenomena, geographic understanding, grammar or spelling rules etc.

	Autumn	Spring	Summer
Year 5	**Website/App Creation** • To plan and create a simple website or app using Keynote with hyperlinks between pages (title pages with contents and 2-3 pages to visit with back buttons, link to external websites, images and text). • To create simple animations using the animation tool and ordering and timing. **Systems and Searching** • To explain that computers can be connected together to form systems • To recognise the role of computer systems in our lives • To identify how to use a search engine • To recognise how search results are ranked Outcome: to do a web search on females in computing and create a website about (collaboratively) and create websites or apps linked to wider curriculum.	**Programming and Coding - Hopscotch** • To explore the repeat function • To write a program with different inputs and outputs • To design, write and debug a program for a game. **Augmented Reality ARMakr / Reality Composer** • To be able to add objects to my surroundings using AR • To allocate behaviours to AR objects • To create an AR experience using objects I have created to explain a concept.	**Spreadsheets Introduction** • To create a set of data in a spreadsheet • To build a data set in a spreadsheet (use temple run app for data to manipulate) • To create graphs and charts from data **AI Machine Learning** • To understand how AI can be used in the world • To understand what AI can and can't do • To understand the advantages and disadvantages of AI **Programming and Coding - Scratch** • To understand how selection is used in computer programs • To understand conditional statements • To explain how selection directs the flow of a program • To design and create a program using selection
Online Safety	**My Media Choices** **Private and Personal Information**	**Our Online Tracks** **Keeping Games Fun and Friendly**	**Be a Super Digital Citizen** **A Creator's Rights and Responsibilities**
Main Apps	Seesaw, Camera app, Keynote, Safari, Pic Collage, Chatterpix, iMovie, Pages, Clips, AR Makr		
Suggestions for Digital Artefacts across the Curriculum	• Anything on Seesaw! E.g Matching activities in science. Taking own photos as evidence and uploading. Using text and voice tools to annotate, sorting, annotated photographs.	• Digital Artwork • Chatterpix – historical figures, scientific concepts, character from a book etc • Simple spreadsheets to organise data for maths/science • Keynotes for animations, presentations, apps, websites	• Green screen – children in space or stood in front of a weather map. Children type/voice over to describe the image. • Creation of augmented reality experiences for others

	Autumn	Spring	Summer
Year 6	**Communication and Collaboration** • To recognise how we communicate using technology • To evaluate different methods of online communication • To recognise how information is transferred over the internet • To explain how sharing information online lets people in different places work together • To contribute to a shared project online • To evaluate different ways of working together online **Spreadsheets** • To create a set of data in a spreadsheet • To build a data set in a spreadsheet • To explain that formulas can be used to produce calculated data • To apply formulas to data • To create a spreadsheet to plan an event • To choose suitable ways to present data	**Coding and Programming** • To understand using commands and functions in Swift • To create loops and conditional loops • To use variables and conditionals • To use functions with parameters "Everyone can code – Swift Puzzles" • To work collaboratively to design, program and debug a program for a sphero dance team. **AI Machine Learning** • To recognise examples of AI • To identify beneficial uses of AI • To identify the human motivation behind AI-powered solutions • Develop.a problem statement that could be addressed with the use of AI.	**Augmented Reality - Reality Composer** • To create and animate objects and place them in my surroundings with an appropriate anchor. • To add behaviours and triggers to assets in Reality Composer • To add physics properties to assets. **Co-Spaces – (Virtual Reality)** • To develop 3D creation skills • To practice spatial thinking • To create a virtual environment. **3D Modelling** • To recognise that you can work in three dimensions on a computer • To identify that digital 3D objects can be modified • To recognise that objects can be combined in a 3D model • To create a 3D model for a purpose • To plan own 3D model • To create own 3D model
Online Safety	**Finding My Media Balance** **You Won't Believe This!**	**Beyond Gender Stereotypes** **Digital Friendships**	**Is it Cyberbullying?** **Reading News Online**
Main Apps	Seesaw, Camera app, Keynote, Safari, Pic Collage, Chatterpix, iMovie, Pages, Clips, AR Makr, Numbers, Reality Composer, TinkerCad		
Suggestions for Digital Artefacts across the Curriculum	• Anything on Seesaw! E.g Matching activities in science. Taking own photos as evidence and uploading. Using text and voice tools to annotate, sorting, annotating photographs. • Chatterpix – historical figures, scientific concepts etc	• Digital Artwork • Videos, animations, presentations, apps, websites etc using a variety of apps • Choosing the best 'tool' for a given purpose to share and embed learning.	• Green screen – children in space or stood in front of a weather map. Children type/voice over to describe the image. • Creation of augmented and virtual reality experiences for others

Progression in Computing

Year	Computing Systems and Networks	Programming and Coding	Information Technology – Creating Media	Digital Literacy	Online Safety	Technical Vocabulary
Year 1	Pupils can identify technology and explain how it helps us. Pupils can identify rules to keep them safe and healthy when they are using technology at home and beyond. Pupils can discuss how they benefit from rules and give examples of rules that use technology responsibly.	Pupils create, debug and implement instruction (simple algorithms) as programs on a range of digital devices. Pupils understand that digital devices follow precise and unambiguous instructions. Pupils understand that digital devices simulate real situations.	Pupils learn to use a keyboard to type (including shift key, space bar, backspace, enter key). Pupils learn to be able to dictate short, clear sentences into a digital device. Pupils learn to be able to use the Seesaw drawing canvas tools: text, shapes, voice, images and video, pen and highlighting tools – changing brush sizes and colour. Pupils learn to be able to navigate between pages of a Seesaw activity. Pupils learn to take photographs with an iPad and put the photos into a Seesaw activity.	Pupils increasingly use a range of technology to enquire with purpose, accessing and creating digital content such as still and moving images, video, audio and text. With appropriate levels of support, pupils collect data (e.g. numerical, research facts etc.) which they are able to retrieve, store and manipulate. They can present and communicate their learning to others in a variety of ways. With support, pupils are beginning to access and retrieve online content, making appropriate choices to achieve specific goals.	Pupils understand how to find a balance between online and offline activities. Pupils realise the importance of self-regulation as a user of technology. Pupils learn how to go places safely online.	Space bar Delete Return/Enter Rules technology Instruction Program Control Rule Up Down Underneath Centre (anti)clockwise Position Direction Above Below Algorithm
Year 2	Pupils can identify examples of information technology and recognise that it can be used in a variety of ways and talk about these uses. Pupils demonstrate how IT devices work together. Pupils can discuss different rules for information technology	Pupils understand that algorithms are implemented as programs on digital devices. Pupils create and debug programs to achieve specific goals. Pupils use the principles of logical reasoning to plan and	Pupils recognise how text and images convey information. Pupils consider different layouts for different purposes. Pupils experiment with the layout of text and images on screen.		Pupils begin to learn how to be safe, responsible and respectful online. Pupils consider how technology makes them feel. Pupils learn how to stay safe when visiting a website or app. Pupils learn what kinds of information they	Digital devices (de)bug Data Information Process Left Right Devise Application Tool Control Code

	and how rules keep them safe. When using technology, pupils can identify the choices they make.	predict the behaviour of simple programs. Pupils solve real and imaginary problems on and off screen.			should keep to themselves when using the internet.	Debug Attribute Block coding program
Year 3	Pupils understand that digital devices accept inputs and produce outputs. Pupils can identify and classify input and output devices. Pupils can appreciate the similarities and differences in using digital devices and non-digital tools. Pupils understand how computer networks can share information and can explain the role of a switch, server and wireless access point in a network. Pupils can recognise devices connected on a network and can identify the benefits of computer networks.	Pupils create programs to accomplish specific goals: - using an increasing range of digital devices and applications. - exploring and understanding the impact of changing instructions. - using sequence and repetition - decomposing problems both on and off screen - using the principles of logical reasoning in order to resolve problems.	**Desktop publishing**: Pupils can create a document utilizing a page layout and adding content. **Video**: Pupils will create videos to include images, text, soundtracks and voice-overs. **Images:** Pupils can capture and edit digital still images to produce a stop-frame animation that tells a story. Pupils learn to take and edit still images and the effect this can have.	Pupils are confident and creative users of technology. They are beginning to make informed choices about the appropriateness of digital content they access and create, using an increasing range of digital resources and devices. Pupils identify, collect and manipulate different types of data (e.g. numerical data from science experiments, words, still and moving images etc.) which they present as information, showing a greater awareness of purpose and audience. Pupils become more discerning in their choice of search technology to accomplish specific goals. They understand the need for efficiency when conducting searches, choosing keywords carefully. Pupils become aware that computers can be trained to perform tasks.	Pupils recognise how to be good digital citizens. Pupils understand why they should have device-free moments. Pupils consider their digital footprint. Pupils realise they are part of an online community. Pupils understand what to do if someone is mean online. Pupils understand the need to give credit for other people's work.	Switch Server Wireless access point Network Loop Count-Controlled Loop Input Output Process Wireless Access Point (WAP)
Year 4	Pupils can understand how information is shared across the internet and why a network needs protecting. Pupils understand that the World Wide Web	Pupils create and debug programs: - using sequence and repetition. - refining algorithms to improve efficiency	**Video**: Pupils are able to create videos including green-screen images. Pupils can experiment with effects in videos by adding stickers, animations, filters and other special effects.		Pupils recognise their responsibilities as digital citizens. Pupils understand the need for a strong password.	Internet Router Network

	contains websites and web pages and can explain the types of media that can be shared on the WWW. Pupils recognise there are rules to protect content on the WWW and can suggest who owns the content on websites. Pupils understand that not everything on the WWW is true and realise the need to think carefully before sharing content. Pupils can explain why some information online may not be honest, accurate or legal.	- controlling or simulating physical systems. - Using infinite loops and count-controlled loops. Pupils begin to explore and notice the similarities and differences between programming languages and use this knowledge to help them create and debug programs efficiently.	Pupils become increasingly competent in editing video clips for a desired effect. They are starting to add suitable audio and introductions to their videos. **Audio**: Pupils will capture and edit audio to produce a podcast. **Data:** Pupils will build and use branching databases to group objects using yes/no questions		Pupils understand what makes a strong online community. Pupils understand what to do if someone uses mean or hurtful language online. Pupils understand why people alter digital photos and videos.	Network security World wide web Website Ownership Permission Browser Count controlled loop Artificial intelligence Decompose
Year 5	Pupils can understand what computer systems are and can explain the benefits. Pupils can compare results from different search engines and can make use of a refined web search to find specific information. Pupils understand how search engines select results and how results are ranked. Pupils realise that search results can be influenced and can recognise some	Pupils create, deconstruct and refine programs to accomplish specific goals. They can: - improve efficiency - use selection within programs - use a range of simple inputs and outputs to control or simulate physical systems. Pupils use logical reasoning to explain how some algorithms work and to detect and correct errors in programs.	**Video**: Pupils will continue to develop skills in editing video clips for a desired effect. They can add suitable audio and introductions to their videos. **Data**: Pupils will use a spreadsheet to organise data and create charts to answer questions. **Webpage**: Pupils will be able to create a simple website or app with hyperlinks for others to navigate around to find out information. **Augmented Reality:**	Pupils are confident, capable and creative users of technology, selecting and making effective use of digital resources and devices for purpose and effect. They create programs, systems and digital content, thinking carefully about aesthetics, functionality and impact on the user. They identify, collect and analyse different types of data (e.g. Numerical, words, images, video etc.)	Pupils understand what makes a healthy media choice and what they can safely share online. Pupils understand how online activity can affect the digital footprints of themselves and others. Pupils recognise the importance of being positive when playing games online. Pupils understand the importance of their actions when they see cyberbullying.	Search engine Index System Connection Digital Conditional statements Selection Data Repeat Augmented Reality

	of the limitations of search engines.	They independently employ strategies to solve problems.	Pupils understand how to place and animate objects in their surroundings to create their own AR experience.	which they manipulate and re-present as information for a variety of audiences and purposes. Pupils are discerning in evaluating digital content. They use search technologies effectively to respond to enquiries and support their learning. Pupils understand how artificial intelligence can be used in the world around them and start to realise the advantages and disadvantages associated with the use of AI.	Pupils understand their rights and responsibilities as a creator of content.	
Year 6	Pupils can explain the importance of internet addresses and understand that data is transferred in packets. Pupils can explain how the internet enables data sharing and collaboration. Pupils can select methods of communication to suit purpose and understand that there are a variety of ways to communicate over the internet. Pupils can evaluate different methods of online communication.	Pupils deconstruct, improve and create programs including: - using selection and working with variables. - using the principles of logical reasoning - challenging themselves by making simple programs increasingly complex and employ a variety of strategies to solve problems. Pupils can explain why they have structured algorithms as they have and describe the effect this has on a program.	Mixed Media Pupils can produce a range of videos, presentations and animations to share their understanding. Pupils can independently select appropriate tools to use for a given purpose and are articulate 'app smashers'. Data: Pupils can use spreadsheets to build data sets and apply formulas to them. They can choose suitable ways to present their data. AR & VR Pupils experiment with animating and placing objects with a range of triggers in AR. Pupils learn to create a digital environment. They are able to understand how to plan and create a 3D model.		Pupils recognise what media balance means for them. Pupils understand what 'clickbait' is and how to avoid it. Pupils understand how gender stereotypes shape our experiences online. Pupils understand how to keep online friendships safe. Pupils recognise cyberbullying and know what they can do about it. Pupils understand the important parts of news online.	Formula Variable Improve Evaluate Procedure Conditional loops Virtual Reality