Computing - Whole School Overview

In Computing we build upon the learning in KS1 and by the end of year 6 we aim for all pupils to have studied a broad and progressive Computing curriculum, with deep links with mathematics, science and design and technology that inspires and motivates them, and provides insights into both natural and artificial systems. A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. […] Computing also ensures that pupils become digitally literate –able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Year 3					
	Autumn 1	**Autumn 2**	**Spring 2**	**Spring 1**	**Summer 1**
Topic	**Communicating: Text and Images**	**Communicating: Media**	**Understanding & Sharing Data**	**Programming A**	**Programming B**
Link to School Values	Together we do our best	Together we do our best	Together we are problem solvers	Together we are problem solvers	Together we are problem solvers
Key concepts and Vocabulary	Image Graphic Copyright Design	Audio Tempo Pitch Loop Export Track	Database Record Field Search	Input Event Code	Sequence Repetition Loop Command Count-controlled loop
Recall	Computer Technology Hardware Software Password Input / Output Save / Open Document File Folder Font Edit Apps Personal Information Acceptable use Screen / mouse / microphone / keyboard / printer / speakers	Copyright Sound Text Image Video File Record Play Stop Pause Media Frame Animation Effect Soundtrack	Data Information Branching database Chart Personal information Debug	program algorithm computer sequence instructions commands sprite to debug Plus directional language: forwards backwards left turn right turn	program to program algorithm computer sequence instructions commands to debug sprite evaluation decomposition Plus directional language if using Bee-Bot: forwards backwards left turn right turn repetition

					loops code
Sheffield Primary Computing Scheme Link	**What makes a good poster?**	**How do I use the computer as a musician?**	**How do we use databases to find out information?**	**How do I sequence events?**	**How do I use count controlled loops in programs?**
	PC *Powerpoint*	*PC or iPad* *Chrome Music Lab*	*Pc or iPad* *Excel/Google Sheets*	*PC or iPad* *Scratch*	*PC or iPad* *Scratch*

	Pupils use a variety of software to combine media in order to present information. They evaluate existing and their own digital content and edit their own content to improve it according to feedback. Look at existing advertising campaigns: compare posters with websites, TV adverts and leaflets – what are the differences (this could include looking at sentence forms)? Discuss the different formats of data used: sound, video, text and image. Why use different formats? (Could be focused on Change4Life) Together create a list of key features of successful posters: choices of size, colours, images, layout, fonts. Discuss why different features and effects are used and how they change the tone of a poster. Analyse examples as you would a text in literacy. Draft a poster on a theme linked to the wider curriculum (Again, could follow the Change4Life theme of heath) Develop skills using desktop publishing software: PowerPoint (see this video about simple ways to layer up images and	*Pupils edit existing digital content to make a new version with an awareness of copyright. They evaluate existing and their own digital content, and edit it to improve it according to feedback. They design and create digital content for a specific purpose.* Listen to different music. How does it make you feel and why? Show film clips with and without audio – what difference does it make? Discuss what types of computers and devices we use to listen to music, watch videos and view photos. Discuss the types of media, programs and apps that use music/jingles/sound effects to enhance the user experience, and why. (games, adverts, films, radio programs, message alerts) Explore music composition software: Song Maker in Chrome Music Lab https://musiclab.chromeexperiments.com/ Investigate how to: - add musical notes - add percussion -change the instrument Change the tempo and tempo - how to export or save as a music file	*Pupils understand the benefits of using a computer to create charts and databases. They can design a questionnaire and collect a range of data, enter data into a database package and test. Pupils draw conclusions from information stored in a database.* Discuss data versus information – show examples (https://docs.google.com/presentation/d/0B-uAhq272-6SX0F1MHhxdjQ4bXc/edit?resourcekey=0-PQmInIcm3JJpMIiCMwIYhg#slide=id.p7). Explain that specialist computer applications work with different kinds of data (text or numbers) to help us make sense of it. Investigate different ways of presenting information: bar charts, pie charts, pictograms. Why do we use different formats? What are the key features? Look at the BBC Bitesize resource (https://www.bbc.co.uk/bitesize/topics/zf2f9j6/articles/z8yk87h.) Introduce key database vocabulary and concepts (record, field, search) and how to use a database. Navigate a simple database using sort and search tools to find information and to answer questions – what kind of question can they answer?	*In this series of lessons, you will introduce Scratch to children – key parts of the interface, commands, and how to run and save projects. Pupils will learn about sequence and events in programs. They will have practise in reading, predicting the outcome of, and modifying code, before designing their own programs using a range of events and sounds.*	*In this series of lessons students will revise their knowledge of algorithms and plan out simple programs based on an algorithm. They will learn how to add the Pen extension in Scratch and use count-controlled loops to draw shapes. They will learn about repetition and how this is used to make programs more efficient.*

	WordArt to create posters in PowerPoint (Idea 1):00 – 4:11 https://www.youtube.com/watch?v=nVDSR_QIqs8): - Explore how to add and modify text and graphic features: Word Art, text boxes. - Select and add appropriate images from a given selection and explore image features: Image 'From File', text wrapping, crop, filters. Discuss copyright of images, and where to find copyright-free images to use (https://drive.google.com/file/d/0B-uAhq272-6SSnl3T2U0S08zclU/view?resourcekey=0-hTnsHSTNhz0pcGZ2Y-Vf2A). Explain you need to ask permission to use a photo of other people, as it is their own personal information, and they may not wish to share it. Discuss the different kind of software we might use to create a poster, and why word-processing packages, such as Word, are less appropriate (for example word-processing packages are primarily for text-based documents, and it is harder to place images where you want them). Create poster in a given package, Peer review	Discuss pitch and tempo, and how it affects the mood and melody. Change the tempo of a composition to change the mood. Experiment to create a variety of musical compositions:link to The Planets suite by Gustav Holst. Create a piece of music to represent an animal. Review and refine work. Peer review using key vocabulary. Discuss copyright with regard to music – who owns a piece of music? Can anyone use and remix it? Look at current examples of plagiarism https://docs.google.com/presentation/d/0B-uAhq272-6SWmlNMVd3bUdqUmc/edit?resourcekey=0-kWfh0V8GAecZ5jNpQy8uEg#slide=id.p4	Introduce flat-file databases (record-card database) – we use these to store and organise large amounts of data. Create a class database in the form of Top Trumps Cards – pick a topic and decide upon the field. Use Google to search for the information to complete the cards. Children then input their information on a shared database on Google Sheets. Demonstrate how to use graphs or tables to present the information that is found out. Navigate a simple database using sort and search tools to find information and to answer questions – what kind of question can they answer? Explain that search engines such as Google, Bing etc. use databases to store information Why do we use computers for this kind of task? Give one group of students topic books and and another group iPads with the search engine and compare speed of finding results. Work through the Personal Information Resource – discuss the information online games and applications ask	- Predict the outcome of a block or text-based program (Scratch/Logo). - Successfully modify an existing program, e.g. change background, number of times things happen. - Recognise that different inputs (events) can be used to control a program. - Create a program using a range of events/inputs to control what happens - Identify errors in a block or text-based program and correct them. - Identify repeated steps in a program or algorithm. - Create examples of algorithms containing count-controlled loops. - Use a count-controlled loop (e.g. repeat 3 times) to make a program more efficient. - Recognise that we can create an algorithm to help plan out a program.

	according to the list of features and edit according to feedback: choices of size, colours, images, layout, fonts.		for, and how this information can be used. Why it is valuable to companies? Always ask permission to use personal data in your own databases. (https://drive.google.com/file/d/1x24nYoThE5z_394Gu9cH1-L7UAtvcT-W/view).	

Key Skills	What makes a good password? **easy to remember, hard to guess** Password Rules: **remember it, don't write it down, never share it, don't steal someone else's.** Introduction to useful keys on the keyboard: **enter, shift, space, delete, backspace, arrows.** Print out a picture of a "QWERTY" (computer) keyboard onto paper. Say a letter and the children find the corresponding key. Pupils can open and save a file to a suitable folder, and use suitable file names when saving work. They understand that school computers can be connected and they may use a shared area for saving work. Pupils open up a document, saved by the teacher (an activity that enhances the term's topic or current literacy unit). They edit it and 'save as' – in the correct folder, changing the name of the file so that it is unique to them. They choose a suitable file name when saving work.			Children open key applications independently and save and open files to/from a given folder. Children recognise that spending a lot of time in front of a screen can be unhealthy.	Pupils recognise what a computer is (input > process > output), and recognise that a range of digital devices contain computers, e.g. phone, games console, smart speaker. Pupils identify and use input devices, e.g. mouse, keyboard; and output devices, e.g. speakers, screen

Year 4					
	Autumn 1	**Autumn 2**	**Spring 2**	**Spring 1**	**Summer 1**
Theme	**Communicating: Text and Images**	**Communicating: Media**	**Understanding & Sharing Data**	**Programming A**	**Programming B**
Link to School Values	Together we do our best	Together we do our best	Together we are safe	Together we are problem solvers	Together we are problem solvers
Key concepts and vocabulary	Analogue Digital Hardware Software Crop Resize Edit Layer Enhance Saturation Temperature Effects Focus	Sound Text Image Video File Transition Duplicate Frame Animation Effect Soundtrack Narration	Network Server Web browser Internet Satellite Chart Infographic Database Personal information	Co-ordinates Infinite loop Decomposition	Flow Condition operator
Recall	Image Graphic Copyright Design	Copyright Audio Tempo Pitch Loop Export Track Plagiarism	Database Record Field Search Infographic	Input Event Code	Sequence Repetition Loop Command Count-controlled loop
Sheffield Primary Computing Scheme Link	**How do I use the computer as an artist?**	**What makes an excellent multimedia story?**	**How is data shared online?**	**How do I decompose programs and create infinite loops?**	**How do I use selection in a program?**
	iPad *Camera App* *Paint.app website* *PC* *Lightning Cable*	*iPads* *PC* *Photostory 3*	*Dataloggers* *Google sheets*	*iPads* *BeeBots app* *Scratch*	*PC or iPad* *Scratch*

	Pupils design and create simple digital content by combining media for a purpose/audience, e.g. digital art. They edit digital content to improve it, e.g. crop images, and can identify the features of a good piece of digital content. Pupils can explain why we use technology to create digital content and recognise why we use different types of media to convey information, e.g. text, image, audio, video. They recognise that digital content belongs to the person who first created it, but we can give permission for others to use it. Why do we use computers to create art? Look at examples of digital and analogue art and discuss the differences. Discuss who owns a picture – is there a difference if it is online or hanging in an art gallery? Find images created by Keith Harring and explore what type of images he creates. • Themes in his work. • The colours he uses. • The digital tools he uses (Pen and Paintbrush) Discuss image files, e.g. most are in jpeg format. Image size affects quality – use the Size filter on Google images search	*Pupils design and create simple digital content by combining media for a purpose/audience, e.g. an animation. They edit digital content to improve it, e.g. delete frames with hands in, and can identify the features of a good piece of digital content. Pupils recognise why we use different types of media to convey information, e.g. text, image, audio, video. They recognise that digital content belongs to the person who first created it, but we can give permission for others to use it. They are aware that games and films have age ratings.* Look at some examples of a Photostory (basically a sequence of still images with music or narration to tell a story). or slideshow with sound. Discuss what is good about it. Create a success criteria checklist Open up Photostory 3 preloaded, e.g. a story covered in literacy. Investigate/revise how to use slideshow software using given images on a theme. Add images and change the order. Practise adding titles, motion effects, transitions and audio – adding a narration or music soundtrack.	*Pupils can name the key features of charts and databases, and draw conclusions about information in shown. They can name some benefits of using a computer to create charts and databases. They can design a questionnaire and collect data on a theme. Pupils recognise that school computers are connected (if using PCs). They recognise when to share personal information and when not to.* Discuss how computers are connected in school Understand that you can access the same information on any computer – using a shared drive. Undertake the Barefoot Network Hunt to discover the devices that make up the school network. Discuss how computers connect together on the Internet. Explain that it is made up of connections between all digital devices around the world via optic fibre, satellite and sub-sea cable (see Submarine Cable Map). View the BBC Bitesize resource. Explain that we use an Internet or Web Browser to access the information stored on the internet. Which browsers do	*In this series of lessons pupils will revisit how to use the Pen extension in* *Scratch, and create their own drawing programs. They will start to decompose* *projects to help with planning and debugging, and learn about infinite loops that can* *be used to keep things happening in a program. Finally they will create their own* *screensaver program using what they have learnt.*	*In this series of lessons pupils will consolidate their knowledge of infinite loops, and learn about selection, and how this changes the output of a program depending on whether a condition is met. They will create a simple quiz, using user input, and design their own simple 'choose your own adventure' stories.*

	to find different sizes of image, save and compare (e.g. paste thumbnails into Publisher and resize – what happens to the quality?) Large images take up a lot of memory on the computer but are better quality. We can save an image directly to our computer as a jpeg to use in another piece of software. Discuss who owns a photograph or image, copyright and how to credit the owner. Investigate your paintz.app What do the different tools do? How do you create different effects? Recreate a famous picture by Keith Harring Create a photo montage on the theme of nature, taking photos on an iPad. Use filters on iPad to edit photos: different filters, saturation, temperature, effects. Transfer the best to PupilShare using lightning cables. Save as an image file (jpeg)..* Use Publisher to organise the images into a photo montage using the skills of crop, resize, layer pictures. Revise ways of copying and pasting using right-click, menu and keyboard shortcuts To use Publisher to create different effects.	Discuss how these effects can enhance or distract from a story. Discuss whether effects enhance or distract from the story. • http://gallery.nen.gov.uk/ • http://bbcsfx.acropolis.org.uk/ Export/save as a video file and play back. How could the photostory be improved? If photographs contain people, discuss asking permission before using and posting online. Demonstrate how to storyboard a story and emphasise the importance of planning out a slideshow to tell a story. Children storyboard a photostory on a given theme, and produce or select images for the story. See Example background in Resources for how to create your own scenes from a number of images. https://docs.google.com/presentation/d/0B-uAhq272-6SeDg5dnhTc1loOEE/edit?resourcekey=0-FJ0EoYk54zSZ3iLusV5fAw#slide=id.p1	pupils use in school and at home (e.g. Internet Explorer, Firefox, Safari, Chrome)? Create your own modelled network in the classroom. How does information travel around the Internet, Focus upon an email. Discuss the importance of safe and responsible use of internet services – what data shouldn't we share online? Who can put information on the internet? How do we know that it is true? What do we do if we see content that upsets us? Investigate a website that shares data in a range of ways, for example the RSPB Big Garden Birdwatch website. How is the data presented? What media is used? Why present it like this? What does it show? Who provides the data? What information do they share? Investigate other positive examples of sharing data online (see Resources). Collect data on a topic related to another curriculum area: either sound or light using data logging equipment. Record and present using a table and a line graph in Google Sheets. How can we share the information gathered? Share	- Recognise a forever loop in a program or algorithm. - Use a forever loop in a program to keep something happening. - Pupils recognise that we can decompose projects to make them easier to plan and debug. - Explain when to use forever loops and count-controlled loops, and use them effectively in programs.	- Recognise selection in a program or algorithm. - Use simple selection in algorithms and programs to change what happens depending on if a condition is met, e.g. *if…then…* - Recognise common mistakes in programs and how to correct them.

	Discuss how images can be changed by other people, e.g. using Photoshop in magazines Present work via dojo, taking into account digital footprints, copyright, online safety and how pictures can be shared.		with the other Year 4 classes via Email and PupilShare. Compare data between the different classes.		

Key Skills ***use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content***	Discuss left-click, right-click and double-click on a mouse and what they are used for. You could simulate the actions with people and props, e.g. left-click to select and move; right-click to find out more information/open a menu; double-click to open a file. Save as: Children open a file, started by the teacher. They edit it as appropriate, and re-save it as a new file with an appropriate name. Make a new folder named Year 4 in their space on PupilShare (using right-click): Children organise their work using folders Copy and paste (using right-click): Share a series of images for the children to view on the network. They copy and paste them into a publishing package (Publisher). Arrange them, add text. Save the presentation in a specific folder, with an appropriate file name.	Search the internet: Use a search engine (try using Bing or Duck Duck Go instead of Google on occasion) to find a specific poem, related to the literacy topic. Copy and paste the poem (using right-click) into a word processing package. Format the document and save to a specific folder.		"Publish" a piece of written work from another area of the curriculum using a word processing package. Type up the work, correcting mistakes and following suggestions from the teacher's written or verbal feedback. Focus on typing accuracy, format and punctuation. Save to a folder on PupilShare, with an appropriate file name. Move files (cut and paste): Children move files to a new folder (for example, to a folder of completed work, or a folder for children who would like their work to be printed).	By the end of Year 4, type with all 10 digits: Use typing games and online courses to practise 10-digit typing.

Year 5					
	Autumn 1	**Autumn 2**	**Spring 2**	**Spring 1**	**Summer 1**
Theme	**Communicating: Text and Images**	**Communicating: Media**	**Understanding & Sharing Data**	**Programming A**	**Programming B**
Link to School Values	**Together we are safe**	**Together we do our best**	**Together we are safe**	**Together we are problem solvers**	**Together we are problem solvers**
Key concepts and vocabulary	World Wide Web Website Internet Browser URL Blog Wiki Copyright Hyperlink Digital footprint	Record Play Stop Pause Media Trim Podcast Clip Sound effect Loop	Search engine Algorithm Terms & Conditions	Variable Sensing flow	Output Physical System Sensor Simulation Flowchart
Recall	Computer Technology Hardware Software Copyright Crop Resize Edit Filter Layer	Sound Text Image Video File Transition Onion skinning Duplicate Frame Animation Effect Soundtrack Narration	Network Server Web browser Internet Satellite Chart Infographic Database Personal information	Co-ordinates Infinite loop Decomposition	Flow Condition operator
Sheffield Primary Computing Scheme Link	**How do we collaborate online?**	**How do I create a radio advert?**	**How do I find and share data safely and responsibly?**	**How do I include selection and variables in my programs?**	**How do I program physical systems?**
	iPads *Google Docs*	*PC* *Audacity*	*iPad* *Google/Web Browser*	*PC/iPad* *Scratch*	*PC/iPad* *Scratch*

	Pupils design and create digital content for a specific purpose, e.g. a website. They edit digital content to improve it according to feedback, and can identify the features of a good piece of digital content and apply these in own design. Pupils can explain the benefits of using technology to present information and know where to find copyright-free content, e.g. creative commons images. They collaborate with peers using online tools, e.g. blogs, Google Drive, if available. They recognise what kinds of websites are trustworthy sources of information. To know the difference between the Internet and the World Wide Web and how you access the latter using a web browser (Internet Explorer, Chrome, Firefox). To know what a URL is. Guess where a website is from, how reliable it is from a given URL.. To investigate Tim Berners-Lee. • His role in setting up the World Wide Web. • It was free • It was open to everyone to use from the beginning. Discuss safe and responsible	*Pupils design and create digital content for a specific purpose, e.g. a podcast. They edit digital content to improve it according to feedback, and can identify the features of a good piece of digital content and apply these in own design. Pupils can explain the benefits of using technology to present information and know where to find copyright-free content, e.g. creative commons images.* Listen to existing radio adverts or podcasts and identify key features – what makes a good one? Make a list of criteria for a successful advert/podcast. What other criteria do we have to take into account, e.g. audience, purpose? Explore audio editing software. Practise recording audio into the software, and moving and deleting clips. Practise trimming clips to remove unwanted audio, and add sound effects and music on new layers. Discuss where to find copyright free sound effects and music. (SWGfLAudio network and BBC sound effects). Review the quality of the audio – how could it be improved (e.g. speak clearly, slowly, make sure sound effects don't drown out	*Pupils recognise that school computers are connected together on a network, and that the Internet is made up of computers and other digital devices connected together all around the world. Pupils know that you use a web browser to access information stored on the internet, and use a search engine effectively to find information and images. They recognise what kinds of websites are trustworthy sources of information and the benefits and risks of different apps and websites.* Discuss the difference between mobile, physical and wireless networks. Revisit how the internet works – introduce that all computers have a unique IP address (which identifies individual devices). Discuss with pupils the difference between a web browser and a search engine. To know how the internet works To know that all computers have a unique IP address. To know the difference between a web browser and a search engine. Use several different search engines (e.g. Google, Bing,	*In this series of lessons pupils will consolidate their knowledge about selection and how this can be used to create simple games in Scratch. They will make their own maze game and practise drawing their own backgrounds.*	*In this series of lessons pupils will learn about physical systems that involve computers. They will investigate different inputs and outputs, and combine loops, selection statements and variables to create their own classroom sound meter.*

	internet, and therefore it may not be reliable. To know that GoogleDocs is a site for collaborative working. To know the purpose, audience, function (job), terms of use of GoogleDocs, and responsible use in terms of creating content. To know the advantages/disadvantages of online collaboration **Advantages:** • People can get together and share good information that is useful • Share knowledge You can play on fun things together **Disadvatanges:** You can accidentally share things with the wrong person Hacking can occur Your identity could be stolen You could find something that is not very nice and not very reliable A scientist could share an idea and it could be changed and stolen		Factitious quiz to spot real and fake news. How do you report illegal or inappropriate material found online? See Thinkuknow.co.uk – Report Abuse. Discuss: how do we share and control our own data? What online games, apps and social media sites do the pupils use? What data do they share with them? Do they read the Terms and Conditions? What is a Digital Footprint? Complete the 'Controlling My Data Online' resource as a class.	- Design a program for a purpose. Decompose into parts and create an algorithm for each part. - Explain why we use selection, and use two-way selection in programs and algorithms, i.e. if…then…else… - Recognise variables in a program and what they do. - Create and use simple variables, e.g. to keep score. - Name a range of sensors in physical systems. - Recognise that different solutions may exist for the same problem. - Predict what will happen in a program or algorithm when the input changes (e.g. sensor, data or event). - Create an algorithm for a physical system containing a sensor and implement it as a program. - Evaluate a program and make improvements to the code or design accordingly.

Key Skills	Make a new folder named Year 5 in their space on PupilShare (using right-click): Children organise their work using folders Passwords: Each child should have their own account when logging on to the network.	Use keyboard shortcuts: Cut (Ctrl + X), copy (Ctrl + C) and paste (Ctrl + V). This is best used to move a file from one folder to another, to move an image from a folder into a presentation, or to move text in a document. You could also explore other shortcuts such as minimise all windows (windows key + M) or change window (Alt + tab). Organise files: Transfer the final version of piece of work (for example, a finished movie that has been edited) to a folder that is intended for completed	Search engines: Pupils use different search engines and compare results found. They identify key features and learn how to refine their searches using the tools. They use the search function on a tablet or PC to find applications or documents Practice searching the internet precisely: Use the tools/filters such as “time”, “size” (e.g. for high quality images), “colour” or “type”..	Save a piece of media: Take one of the projects from another strand (e.g. radio advert, animation film) and save a version on the network. After each lesson, save a new version and name it appropriately. Explain that this prevents them from losing the whole file from one mistake (accidentally deleting it or someone else saving over the top of it.)	By the end of Year 5: Type using all digits without looking at hands: Time how many words the children can type in a session. Can they beat their score next lesson?

Year 6					
	Autumn 1	**Autumn 2**	**Spring 2**	**Spring 1**	**Summer 1**
Theme	**Communicating: Text and Images**	**Communicating: Media**	**Understanding & Sharing Data**	**Programming A**	**Programming B**
Link to School Values	Together we do our best	Together we do our best	Together we are problem solvers	Together we are problem solvers	Together we are problem solvers
Key concepts and Vocabulary	Design Raster Bitmap Vector format	Trim Split Narration Shot Pan Zoom Camera Angle Camera Work Content Storytelling Shots Close Up Wide Shot Bird's Eye View High Angle Eye Level Low Angle Tilted Angle Static object	Spreadsheet Formula	Operator Set command Change command	Random
Recall	World Wide Web Website Internet Browser URL Blog Wiki Copyright Hyperlink Digital footprint	Sound Text Image Video File Record Play Stop Pause Media Trim Podcast Narration	Data Information Network Server Web browser Internet World Wide Web Search engine Algorithm Personal information Terms & Conditions	Variable Sensing flow	Output Physical System Sensor Simulation Flowchart

		Clip Soundtrack Sound effect Loop Moving object			
Sheffield Primary Computing Scheme Link	**How do I use the computer as a designer?**	**What makes an excellent film?**	**Why do we use spreadsheets?**	**How do I write complex programs?**	**How do I design real-world applications?**
	PC Paint Publisher	iPad PC Camera App Movie Maker Lightning Cables	PC Excel or iPad Google Sheets	PC/iPad Flowal	PC or iPad Scratch

	Pupils remix and edit a range of existing and their own media to create content, and consider the audience when designing and creating digital content. They recognise the benefits of using technology to collaborate with others. Pupils identify success criteria for creating digital content for a given purpose and audience, and evaluate their own content against success criteria and make improvements accordingly. They know where to find copyright free images and audio, and why this is important. Pupils explore a range of current logos and evaluate the content. • Simple. Simple logos are the ones people can recognize as soon as they see them. • Scalable. A great logo should be simple enough to be able to be scaled down or up and still look good. • Memorable / Impactful. • Versatile. It can be used on poster, packaging or digitally and still work well.	*Pupils remix and edit a range of existing and their own media to create content, and consider the audience when designing and creating digital content. Pupils identify success criteria for creating digital content for a given purpose and audience, and evaluate their own content against success criteria and make improvements accordingly. They know where to find copyright free images and audio, and why this is important.* Pupils evaluate films: camera angles, camera work, content and storytelling. Discuss the use of different camera angles and shots: Take shots on Camera on iPad • Close Up • Wide Shot • Bird's Eye View • High Angle • Eye Level • Low Angle • Tilted Angle Pupils use cameras to capture still and moving subjects: Take shots on Camera on iPad	*Pupils recognise what a spreadsheet is and what it is used for. They use simple formulae in a spreadsheet to find out information from a set of data, and produce simple graphs. Pupils can create a simple spreadsheet based on data they have collected.* Revisit 'What is Data versus Information?' (see Unit 3.3). Look at different examples of presenting data as information, e.g. infographics, websites, posters, videos, graphs. Discuss how media is combined to present information effectively. How do we store raw data? We could use a database or a spreadsheet. What is a spreadsheet and why do we use them? Look at a real spreadsheet, for example football league, properties of shapes. Pupils investigate a spreadsheet with rapidly changing data Pupils create formulae to perform the four operations • Addition • Subtraction • Multiplication • Division	*In this series of lessons pupils will consolidate their knowledge about selection, repetition and variables and use this to create more complex games in Scratch.*	*In this series of lessons pupils will learn about a range of physical systems and other real-world applications that use computers. They will consolidate their knowledge of sensors, loops, selection statements and variables in order to create their own real-world application.*

	• Relevant. Make people think of the product that they are linked to. Children create own logo using above success criteria (link to DT: Pizza Packaging). Pupils identify success criteria for creating digital content for a given purpose and audience. Overall purpose • Simple • Memorable/Impactful • Relevant Design: • Few words • Bold Text • Strong colours • Clear contrast between text and background • Clear pictures • Repeating pictures • Clear tag line Children create packaging/poster for relevant concept (link to DT: Pizza Packaging). They evaluate their own content against success criteria and make improvements accordingly.	Children use use Movie Maker to edit video clips on PCs. • Trim • Split • Add titles • Add music • Add transitions Children create a storyboard for a film (link to English: retelling story, link to Transition: Welcome film for Year 2s) Children use ipads to create film clips: Use camera. Children use Movie Maker to create and edit a film: Transfer videoes via Lightning Cable from iPad to PC. They evaluate their own content against success criteria and make improvements accordingly.	Pupils create formulae to perform more complex operations • average • Find the mode and range, median and mean of a set of data. Pick an average to show results in the best light: Data can also be presented in ways that are misleading. Pupils learn time saving techniques • Sum • copy • fill • order Children create graphs from data in a spreadsheet • Bar graph • Pie chart • Line graph Create a spreadsheet to fulfil a specific purpose (link to maths: organising data and costs for a party)	- Explain why we use variables in programs - Explain common errors in programs and how to fix them. - Design and program a physical computing system that uses sensors. - Plan out a program in detail, including task, algorithm, code and execution level. - Create programs including repeat until loops. - Combine a variable with relational operators (< = >) to determine when a program changes, e.g. if score > 5, say “well done”. - Recognise key concepts (sequence, selection, repetition and variables) in a range of languages and contexts, and how these influence the flow of a program.

Links to Online Safeguarding		They can explain why films have certain ratings.			
Key Skills	Branding: Understand that there is a difference between a brand and a program. For example Microsoft is a brand, and Internet Explorer is one example of an internet browser made by them. You could also use Google Chrome, Mozilla Firefox, Safari or Opera browsers. There are many types of word processing packages (Microsoft Word, Google Docs, Evernote) and drawing/presentation programs (Microsoft PowerPoint, Google Slides, ActivInspire). File types: Recognise common file types and extensions. Understand that different files work in different ways. For example: - JPEG files are images that can be easily copied and pasted - PNG image files can have transparent backgrounds, which lets you load them onto programs such as Scratch and use them as characters (without borders around the edge) - GIF files can be moving pictures, which can make short videos (very popular on social media)	Pupils understand that the iPad and the PC have different operating systems: IPad – iOS, PC – Windows. They understand the main functions of an operating system: • It determines the look and feel of the interface • The programs that run on the computer • The OS manages the hardware connected to it	Searching: Use the search tools/filters when finding something online. Search by "type", "colour", "size", "date", "usage rights" (copyright) or "country of origin". For example, search for an image which is tiny to use as a border. Alternatively find one which is large and therefore high quality, to use as a background. Make a rainbow collage using pictures of a certain colour.	They use more advanced searching techniques when using a search engine. Pupils recognise common file types and extensions, and know examples of why this is useful.	By the end of Year 6: Continue to type using all digits without looking at hands: Time how many words the children can type in a session. Can they beat their score next lesson?

	- MP3 files are compressed sound files, that take up less memory - WAV files are very large and high quality sound files Children could complete an activity where they match the file type to a description of it, and an icon showing how that type of file is represented. Extend with choosing a file type for a particular purpose. See also the Bitesize article on images types.				