# Computing Curriculum

2023 - 2024

We empower | We respect | We care







## Computing is...

comprised of three strands: **Computer Science**, **Information Technology**, and **Digital Literacy**. Together these strands come together to teach children how computers and computer systems work, how to design, build and analyse programs, and how to find and manage digital information securely. Each component is essential in preparing children to thrive in an increasingly digital world.



"Technology can become the 'wings' that will allow the educational world to fly farther and faster than ever before; if we will allow it." Jenny Arledge



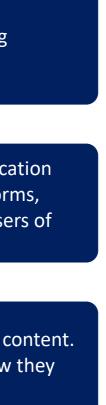
Computer Science- The study of computers as machines and how they operate including programming, algorithms, variables, sequence, selection and repetition.



**Digital Literacy-** The skills you need to live, learn, and work in a society where communication and access to information is increasingly through digital technologies like internet platforms, social media, and mobile devices. This includes being knowledgeable and responsible users of technology, using the internet and other platforms safely and respectfully.

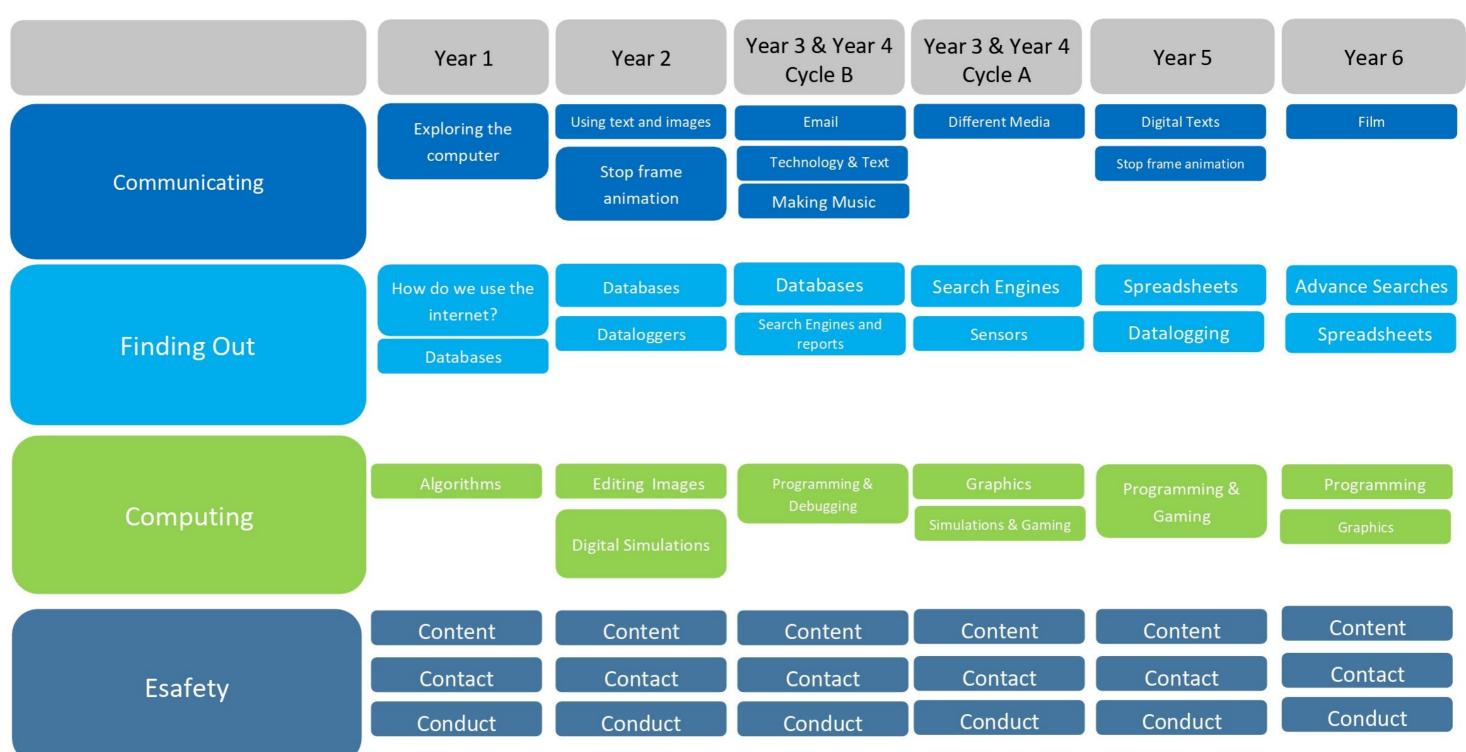


**Information Technology-** The ability to create, retrieve, combine and manipulate digital content. The understanding of computer networks, the world-wide web and the internet and how they operate.





## **Computing Curriculum Map**





## **Computing Progression**

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Stop Frame Animation Key Knowledge       - Images taken with a digital camera can be transferred to the computer. - Video is composed of a series of still images       - Capure video using a range of device. - Digital texts may be nonlinear - Technology can be used to refar from eig. Text hook takes stop frame animation.       - Capure video using a range of device. - Digital texts may be nonlinear - Technology can be used to refar from eig. Text hook takes stop frame animation.       - Capure video using a range of device. - Digital texts may be nonlinear - Technology can be used to refar from eig. Text hook takes stop frame animation.       - Capure video using a range of device. - Digital texts may be nonlinear - Technology can be used to refar from eig. Text hook takes stop frame animation.       - Capure video using a range of device. - Digital texts may be nonlinear - Technology can be used to refar from eig. Text hook takes stop frame animation.       - Capure animation - Capure animation and video can be effect an ensort video including toxt. - Capure animation and video can be effect an ensort video including stopt. - Capure animation in ceding dips to make longer sequences - Capure animation in ceding dips to make longer sequences - Capure animation and takes might sound like real instruments. - Create a simple stop frame animation.       - Capure animation and - Capure animation and advide can be defined and computer animation may be recorded on a computer and tak software and paps to create musical sounds, and these might sound like real instruments. - Create a simple stop frame animation.       - Capure animation - Capure animation and advide can be advide - Digital devices may be used to create musical sounds and these might sound - Capure anital software and paps to create musical sounds and phrases. - Create an advide sounde advide advidence - Capure anital software and paps to create						-Select the most appropriate w
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music apps or software.				music apps or software.		

4



ar 5	Year 6
	Communicating
	Film
	Key Knowledge
oftware has tools to	- Filming techniques and video editing can
collaborative editing.	be combined to create a video for a
llows choices to be	specific purpose.
	-Editing, camera angles, lighting
s multimodal text to	techniques can be used to achieve a
ler audience.	desired effect in a digital text.
ndividual and	-ICT enables you to create music with a
	range of input devices e.g. electronic
	keyboards.
text including making	-Software can be used to create and edit
0 0	complex digital texts, with elements from
d layout of digital texts	a variety of sources.
o support the planning	Required skills:
rk Is and to shair on to	-Use text, sound, image, video, camera angles
ols and techniques to	and framing editing tools and techniques to
priate way to	create a desired effect.
priate way to	-Use a range of devices to create music.
	- Create a multimodal text including a range
ation	of elements e.g. sounds and videos.
	-Critically evaluate web content. -Evaluate forms of digital media and the
ows the last frame to	impact its form can have.
ng the next frame.	-Produce content for a web page.
needs decomposing	- Work collaboratively on an online
needs decomposing	document.
	-As a class make use of video technologies to
nimation which	work collaboratively.
o my object to make	
er	
and make small	
hots	

	Year I	Year 2	Year 3 & Year 4 Cycle B	Year 3 & Year 4 Cycle A	Year 5	Year 6
	Finding Out	Finding Out	Finding Out	Finding Out	Finding Out	Finding Out
	How do we use the internet?	Databases	Databases	Search Engines	Spreadsheets	Advance Searches
	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge
	-Both traditional and digital methods can	- ICT can be used to create graphs from	-Databases exist in a variety of forms and	-Web browsers allow you to keep	-Tables and graphs can show more than	-Searches can be refined through the use
	be used to find useful information.	data	provide a means of storing information	bookmarks and keep a history of sites	one variable allowing one to look at	of advanced search operators.
	-Web pages can be viewed using a web	Required skills:	that can be searched.	visited.	relationships and trends more clearly.	- The accuracy of information on the
	browser that lets us look at web pages	-Search a database.	-A database is created by collecting and	-Although search engines can locate	-Information contained within databases	internet should always be checked.
	and navigate around them sites can be	-Use a database to produce bar charts.	inputting data into a prepared structure.	information on the internet, results may	may contain errors and that this can	Required skills:
	bookmarks as favourites.	-Complete a table e.g. a simple spreadsheet	-When answering a specific question	need to be skimmed to save time and to	affect results.	- Refine search techniques making use of
	-Know that companies use the internet to	and then create a graph to answer a question.	some graphs are more appropriate than	assess their usefulness.	-A spreadsheet can be used to organise,	advanced search operators such as inverted
	encourage people to buy things.		others.	-The copyright of images and sounds	sort and analyse data and produce graphs	commas, +, -
	Required skills:	Detalogram	-Understand that information needs to	should be considered when downloading	and reports.	-Download files from websites, saving and opening them.
	-Discuss how people use the internet to	Dataloggers Kov Knowledge	be collected and entered accurately.	them from the internet.	-Data held in a spreadsheet can be sorted	-Use web-based tools to ask a question, find
	help them with their work e.g. selling,	Key Knowledge -Everyday devices like automatic doors,	Required skills:	-Understand how technology is used	and filtered using software tools	out information or submit information or
	research, communicating, sharing	car park barriers, streetlights etc can be	- Explore a range of paper-based databases	extensively in peoples working and	Required skills:	opinion.
	information.	controlled by simple sensors.	and compare to ICT versions	personal lives e.g. selling, research,	-Create a database using more complex setup	- Explore the plausibility of websites,
	<ul> <li>Select programmes and apps and</li> </ul>	-Our senses allow us to find out what is	-Open a prepared database, and identify the	communicating, sharing, and managing	tools (e.g. keywords) to answer specific	identifying some ways to check author,
	navigate through screens and menus	happening in the world and some	main features: records, types of fields etc. -Use the search tool on a simple database to	information.	questions.	accuracy etc
	-Use a search engine.	machines can do the same.	find out the answers to questions by ordering	-Understand the impact of ICT on	-Recognise when data is implausible by checking data for accuracy against predicted	-Find specific information by searching an
	-Use simple navigation tools including	-A computer can be used to view a visual	records by a key field.	society.	or expected outcomes.	online database e.g. Census data.
	hyperlinks, menus, index, and forward and	representation of external conditions like	-Create a simple database with different types	-Identify ways in which companies use the	-Create tables and graphs with more than one	-Create a presentation for a specific audience by gathering information from a selection of
	back buttons e.tc to explore pre-selected	sound levels and temperature.	of fields and records.	internet for marketing.	variable.	websites.
_	digital information sources purposefully.	Required skills:	-Use a variety of graphs to display the	Required skills:	-Use the features of a spreadsheet to answer	-Use a moderated website, video conference,
on	-Select programs and apps, navigate	-Begin to identify and talk about how everyday	information, including pie charts, and discuss	-Access a website by typing in the URL,	questions by producing graphs using sort and	forum, or learning platform to ask a question,
Progression	screens and menus.	devices with sensors work.	which type of graph works best for different	selecting from favourites or from the history.	filter features.	submit information or offer an opinion.
re		-View data and on-screen measurements e.g.	kinds of data.	-Skim and scan search engine results and look at their web address for clues as to their	-Choose when to search when to sort and	
og	Databases	sound levels, temperature, precipitation	Secure and up outs	usefulness	when to use a graph to answer questions. -Analyse information by transferring it into an	Spreadsheets
Pr	Key Knowledge	collected in school and beyond through	Search engines and reports Key Knowledge	- Answer specific questions on a topic by	appropriate data handling package e.g.	Key Knowledge
Out	-Data represented graphically can be	sensors and websites and apps.	- Web pages have a unique address or	creating a report using programmes such as	Spreadsheets	-Spreadsheets can be used to create a
ō	easier to understand than tables or text.	-Compare photographs they have taken which show change e.g. clouds on different days.	URL (unique resource locators)	Word or presentations using programmes		simple model, perform calculations and
Finding (	-ICT can be used to create graphs from	show change e.g. clouds on different days.	- Although keywords can be used to	such as PowerPoint or Prezi	Data Logging	are useful when numbers change to
dir	data.		search for information, results may not	- Search using keywords either within a digital	Key Knowledge	explore outcomes and what if scenarios
in	-ICT can be used to create a database		always be useful	content library or in a child friendly reference site	- There are advantages in using	e.g. currency converter
ш.	Required skills:		- Folders can be used to organise	- Locate and download images and sounds	computers to monitor and log data such	Required skills:
	-Use ICT to create pictograms and use		Favourites and links.	from the internet	as accuracy and reliability over long	-Enter labels, numbers & formulae into a spreadsheet.
	them to answer simple questions. -Input data into a simple database		Required skills:		periods of time.	- Use a spreadsheet to convert one value to
	program and use it to answer simple		-Use search engines to find images for a	Sensors	Required skills:	another based on a rule
			specific topic.	Key Knowledge	-Use software to analyse and interpret data	-Design & create a simple spreadsheet model
	questions.		<ul> <li>Locate a web page by typing a simple URL</li> </ul>	-Conditions such as light intensity,	collected locally and remotely to investigate	using information from experiments and real-
			into the address bar of a web browser	temperature and sound level can be	specific questions or theories. -Build up a system that controls events in	life situations e.g. predict shadow length at
			- Bookmark a website as a favourite.	measured by devices attached to a	response to changing conditions.	different times of the day from initial
			<ul> <li>Find images and text relating to a specific topic by using keywords to search an online</li> </ul>	computer.	LINK to science or maths	measurements, convert one value to another. -Change data in a spreadsheet to answer,
			library e.g. Living Library	-Different conditions will be measured by	(This does not need to be done using	'what if?' questions and check predictions.
			- Create a new folder within the favourites	different sensors.	data loggers, they can use research they	what h questions and check predictions.
			folder to save a link to a useful website.	-Understand how sensors in the	have collected by class sample or the	
				environment control devices.	internet. The focus will be on the analysis	
				-There are advantages in using computers	of the data.)	
				to monitor and log data such as accuracy	· · · · · · · · · · · · · · · · · · ·	
				and reliability over long periods of time.		
				Required skills:		
				-Take readings as part of a science or		
				humanities activity using a simple sensor(s)		
				attached to a computer or data logger.		
				-Use appropriate sensors attached to a computer or data logging device to take		
				readings to investigate a specific question or		
				theory.		
				//		

Year I	Year 2	Year 3 & Year 4 Cycle B	Year 3 & Year 4 Cycle A	Year 5	Year 6
<ul> <li>Computing Algorithms</li> <li>-Control a programmable toy by giving it an instruction e.g. a Bee-Bot.</li> <li>-Predict the behaviour of a simple set of instructions</li> <li>-Write an algorithm refining the instructions to achieve a desired outcome.</li> <li>Key Knowledge</li> <li>- Many everyday devices and toys respond to signals and instructions.</li> <li>- An algorithm is a sequence of instructions which can control a device.</li> <li>- Algorithms are implemented as programs on digital devices.</li> <li>- A digital device may be used to simulate a wide range of environments and situations.</li> </ul>	Computing Editing Images Key Knowledge -Software and apps can be used to create and edit images. -Digital devices aid the drawing of more complex shapes and designs. - Digital photos can be altered using simple painting tools. Required skills: -Use an art package on a digital device to create an image. -Select purposefully and use a variety of tools in a painting package e.g. the straight line, geometric shapes and flood fill tools. -Open a digital image from a file and add effects painting effects using brushes and stamps. Digital Simulations Key Knowledge -Digital simulation allows users to explore options and make choices. Required skills: -Create and debug a simple program to control an on-screen object. -Explore the effect of changing the variables in simulations.	Computing Programming and debugging Key Knowledge -Devices are controlled by a repeated set of instructions. -A procedure is a set of instructions which may be repeated in a program. -Digital simulations allow users to solve problems and test ideas. -Variables can be changed within a digital simulation to achieve a specific outcome. <b>Required skills:</b> -Create a program which includes sequence, selection and repetition. -Create a program which responds to various forms of inputs and outputs. -Write a program to achieve a specific goal. -Use logical reasoning to detect and correct errors in algorithms and programs	Computing Graphics Key Knowledge -Graphics software can be used to select, copy, cut and paste areas of a picture and to automate some tasks. Required skills: -Create and manipulate graphics within a graphics package, move, rotate and re-size graphic elements. -Use tools to explore the effects of cutting, copying and pasting areas of an image. - Create and edit vector graphics e.g. Using the drawing tool in Word - Use the selection/capture tools to explore the effects of cutting, copying and pasting areas of an image Simulations and gaming Key Knowledge - Variables can be changed within a computer simulation to achieve a specific outcome. Required skills: -Explore the effect of changing the variables in simulations and use them to make and test predictions, changing the variables in a simulation to achieve a given outcome. -Record the outcome of choices in a simulation systematically to help achieve an outcome. -Evaluate an online game.	Computing Programming and Gaming Key Knowledge - Technology allows people to play games and access simulations on a range of devices at the same time. - Digital devices need to be programmed to make them work. - Control systems have a number of distinct components that combine to work effectively e.g. inputs and outputs. - Devices can be controlled through direct instructions or from sensing equipment. - Control programs can be written to respond to circumstances flexibly e.g. – if this then that. <b>Required skills:</b> - Solve a problem by decomposing into smaller parts. - Produce a program to accomplish a specific goal which includes variables and a range of inputs and outputs. - Use logical reasoning to explain how a simple algorithm works.	Computing Programming Key Knowledge -Digital games and simulations are written using a programming language. - Explain how loops and nested loops work - Identify the need for random numbers <b>Required skills:</b> -Discuss how games have evolved. -Evaluate games and design their own including rules. - Create loops and nested loops to make the code more efficient. - Choose commands for a purpose. - Write an effective algorithm. <b>Graphics</b> Key Knowledge -Graphics software can be used to create and edit an image for a specific purpose. - Graphics software allows layers to be created within and image and that this allows complex images to be created and manipulated. <b>Required skills:</b> -Select appropriate graphics tools to fulfil a design brief e.g. create an image for an advert. -Use the layers tool in graphics software to create a complex design with several graphical elements.

Year I	Year 2	Year 3 & Year 4 Cycle B	Year 3 & Year 4 Cycle A	Year 5
<ul> <li>Online Safety: Content <ul> <li>Know the SMART rules.</li> <li>Know what to do if they view content they think is inappropriate or upsetting (school policy) e.g. know how to minimise a screen if they</li> <li>Privacy &amp; Security <ul> <li>I can explain that passwords are used to protect information, accounts and devices.</li> <li>I can recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names).</li> <li>I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others.</li> </ul> </li> <li>Copyright &amp; Ownership <ul> <li>I can explain why work I create using technology belongs to me.</li> <li>I can say why it belongs to me (e.g. 'I designed it' or 'I filmed it'').</li> </ul> </li> </ul></li></ul>	<ul> <li>Online Safety: Content</li> <li>Begin to evaluate web sites by giving opinions about preferred sites.</li> <li>Know that anyone can create a web site and it is sometimes difficult to know if information is true.</li> <li>Privacy &amp; Security</li> <li>-I can explain how passwords can be used to protect information, accounts and devices.</li> <li>-I can explain and give examples of what is meant by 'private' and 'keeping things private'.</li> <li>- I can describe and explain some rules for keeping personal information private (e.g. creating and protecting passwords).</li> <li>- I can explain how some people may have devices in their homes connected to the internet and give examples (e.g. lights, fridges, toys, televisions).</li> <li>Copyright &amp; Ownership</li> <li>- I can describe why other people's work belongs to them.</li> </ul>	<ul> <li><b>Conline Safety: Content</b></li> <li>Be aware of the school Acceptable use Policy and the SMART online rules: Safe/Meeting/Accepting/Reliable/Tell.</li> <li>-Know what to do if content is inappropriate or upsetting (school policy) e.g. know who to report to and talk to.</li> <li>Be aware that taking text or images from some sites may be stealing other people's work.</li> <li><b>Privacy &amp; Security</b></li> <li>I can describe simple strategies for creating and keeping passwords private.</li> <li>I can give reasons why someone should only share information with people they choose to and can trust. I can explain that if they are not sure or feel pressured then they should tell a trusted adult.</li> <li>I can describe how connected devices can collect and share anyone's information with others.</li> <li><b>Copyright &amp; Ownership</b></li> <li>I can explain why copying someone else's work from the internet without permission isn't fair and can explain what problems this might cause.</li> </ul>	<ul> <li><b>Online Safety: Content</b></li> <li>-Understand the Internet contains fact, fiction and opinion and begin to distinguish between them.</li> <li>-Know when an email should not be opened, or messages ignored.</li> <li>-Know that the aim of many sites is to sell something or gain personal information.</li> <li><b>Privacy &amp; Security</b></li> <li>- I can describe strategies for keeping personal information private, depending on context.</li> <li>-I can explain that internet use is never fully private and is monitored, e.g. adult supervision.</li> <li>-I can describe how some online services may seek consent to store information about me; I know how to respond appropriately and who I can ask if I am not sure.</li> <li>-I know what the digital age of consent is and the impact this has on online services asking for consent.</li> <li><b>Copyright &amp; Ownership</b></li> <li>- 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.</li> <li>-I can give some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images.</li> </ul>	<b>Copyright &amp; Ownership</b> -I can explain what a sprong and demonstrate how to cre- information (e.g. friends, cor- internet and whether it can <b>Privacy &amp; Security</b> -I can explain what a strong and demonstrate how to cre- -I can explain what a strong and demonstrate how to cre- -I can explain what a strong and demonstrate how to cre- -I can explain what a strong and demonstrate how to cre- -I can explain how many free- services may read and share information (e.g. friends, cor- images, videos, voice, messa, geolocation) with others. -I can explain what app pern- and can give some examples <b>Copyright &amp; Ownership</b> - I can give examples of cont- permitted to be reused and this content can be found or

o evaluate consider rategies to sources used umber of

f an individual oropriate ce. lti-authored

(e.g. Wikipedia). e need to check or can be legally ge from the an be re-used.

ng password is create one. ree apps or re private contacts, likes, sages,

rmissions are es.

hen it is k of others. ontent that is nd know how

online.

Year 6

**Online Safety: Content** -Check the validity of a website, e.g. look for the author via the 'Contact us' or 'About us' area of the website, or

through 'Who is' sites that list the author's details.

-Understand the need for privacy settings on any social networking sites (and that those privacy settings may not be observed by online 'friends' who can use/share/download your images/content).

-Know the importance of not uploading other people's images or content without their permission

-Know that many commercial providers have sophisticated ways of trying to sell on the internet (e.g. hoax 'You have a virus' message box to sell antivirus software).

#### Privacy & Security

-l can describe effective ways people can manage passwords (e.g. storing them securely or saving them in the browser). -I can explain what to do if a password is shared, lost or stolen.

-I can describe how and why people should keep their software and apps up to date, e.g. auto updates.

-I can describe simple ways to increase privacy on apps and services that provide privacy settings.

-I can describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g. scams, phishing). -I know that online services have terms and conditions that govern their use. Copyright & Ownership

- I can demonstrate the use of search tools to find and access online content which can be reused by others.

- I can demonstrate how to make references to and acknowledge sources I have used from the internet.

#### Year I Year 2 Year 3 & Year 4 Cycle B Year 3 & Year 4 Cycle A **Online Safety: Contact Online Safety: Contact Online Safety: Contact Online Safety: Contact** -Know to keep personal information -Know to keep personal information and -Know when an email should not be Begin to evaluate web sites by giving private when communicating online opinions about preferred sites. passwords private when communicating opened, or messages ignored. Self-image & identity -Know that anyone can create a web site online (including email, blogging and -Understand that online communication -l can recognise, online or offline, that instant messaging).

anyone can say 'no' / 'please stop' / 'l'll tell' / 'l'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset.

-I can recognise that there may be people online who could make someone 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 and how they can help.

#### **Online Relationships**

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-I can give examples of when I should ask permission to do something online and explain why this is important.

- I can use the internet with adult support to communicate with people I know (e.g. video call apps or services). - I can explain why it is important to be

considerate and kind to people online and to respect their choices.

-I can explain why things one person finds funny or sad online may not always be seen in the same way by others. **Online Reputation** 

-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.

and it is sometimes difficult to know if information is true.

#### **Online Safety: Contact**

-Know that online communication is not always confidential and that it can be monitored.

#### Self-image & identity

-I can explain how other people may look and act differently online and offline. - I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened; I can give examples of how they might get help. **Online Relationships** 

-I can give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky. (e.g. email, online gaming, a pen-pal in another school / country).

-I can explain who I should ask before sharing things about myself or others online.

-I can describe different ways to ask for, give, or deny my permission online and can identify who can help me if I am not sure.

-I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do. -l can identify who can help me if something happens online without my consent.

-I can explain how it may make others feel if I do not ask their permission or ignore their answers before sharing something about them online.

-I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online.

#### **Online Reputation**

-I can explain how information put online about someone can last for a long time. -I can describe how anyone's online information could be seen by others. -I know who to talk to if something has been put online without consent or if it is incorrect.

-Know they can create an alias or avatar when online.

#### Self-image & identity

-I can explain what is meant by the term 'identity'. -I can explain how people can represent themselves in different ways online. -I can explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why. **Online Relationships** 

### -I can describe ways people who have

similar likes and interests can get together online. -I can explain what it means to 'know someone' online and why this might be different from knowing someone offline. -I can explain what is meant by 'trusting someone online', why this is different from 'liking someone online', and why it is important to be careful about who to

trust online including what information and content they are trusted with. -I can explain why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried.

-I can explain how someone's feelings can be hurt by what is said or written online. -I can explain the importance of giving and gaining permission before sharing things online; how the principles of sharing online is the same as sharing offline e.g. sharing images and videos. **Online Reputation** 

-I can explain how to search for information about others online. -I can give examples of what anyone may or may not be willing to share about themselves online.

-I can explain the need to be careful before sharing anything personal. -I can explain who someone can ask if they are unsure about putting something online.

is not always confidential and that it can be monitored.

#### -Know that anyone can create a user showing any age or gender and people you meet online may not be who they say they are (social networking, chat rooms and instant messenger).

#### Self-image & identity

-I can explain how my online identity can be different to my offline identity. -I can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them. - I can explain that others online can pretend to be someone else, including my

friends, and can suggest reasons why they might do this.

#### **Online Relationships**

-I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms).

- I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours.

- I can explain how content shared online may feel unimportant to one person but may be important to other people's thoughts feelings and beliefs.

#### **Online Reputation**

-I can describe how to find out information about others by searching online.

-I can explain ways that some of the information about anyone online could have been created, copied or shared by others.

**Online Safety: Contact** -Demonstrate safe practice when selecting images or content for uploading to an online space.

-Understand some malicious adults use the internet to make contact and "groom" young children. Know how to report any suspicions (Think You Know **REPORT ABUSE** page). Self-image & identity -I can explain how identity online can be copied, modified or altered. - I can demonstrate how to make

**Online Relationships** -I can give examples of technology specific forms of communication (e.g. emojis, memes and GIFs). -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 describe some of the ways

people may be involved in online communities and describe how they might collaborate constructively with others and make positive contributions. (e.g. gaming communities or social media groups).

-I can explain how someone can get help if they are having problems and identify when to tell a trusted adult. -I can demonstrate how to support others (including those who are having difficulties) online.

#### **Online Reputation**

-I can search for information about an individual online and summarise the information found.

-I can describe ways that information about anyone online can be used by others to make judgments about an individual and why these may be incorrect.

#### Year 5

responsible choices about having an

online identity, depending on context.

Year 6

**Online Safety: Contact** 

-Understand the need for privacy settings on any social networking sites (and that those privacy settings may not be observed by online 'friends' who can use/share/download your images/content).

Self-image & identity

-I can identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online.

-I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline.

-l can explain the importance of asking until I get the help needed.

**Online Relationships** -I can explain how sharing something online may have an impact either positively or negatively.

-I can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not.

-I can describe how things shared privately online can have unintended consequences for others. e.g. screengrabs.

-I can explain that taking or sharing inappropriate images of someone (e.g. embarrassing images), even if they say it is okay, may have an impact for the sharer and others; and who can help if someone is worried about this. **Online Reputation** 

-l can explain the ways in which anyone can develop a positive online reputation. -l can explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity

Year I	Year 2	Year 3 & Year 4 Cycle B	Year 3 & Year 4 Cycle A	Year 5
Online Safety: Conduct	Online Safety: Conduct	Online Safety: Conduct	Online Safety: Conduct	Online Safety: Conduct
-Identify some risks presented by new	-Learn to respect the work of others that is	-Know how to respond to unpleasant	-Know there are writing conventions for	-Know when to reply to a group
technologies inside and outside school (e.g.	stored on a shared drive of a network or	communications via mobile phone, text, IM or	electronic communication (language, tone,	'reply all' and when to 'cc'.
online games, mobile phone texting,	presented online.	email, chat rooms. (Save the message and	accuracy).	Online Bullying
cyberbullying).	Online Bullying	show to a trusted adult).	Online Bullying	- I can recognise online bullying c
Online Bullying	- I can explain what bullying is, how people	Online Bullying	-l can recognise when someone is upset, hurt	different to bullying in the physica
-I can describe how to behave online in ways	may bully others and how bullying can make	- I can describe appropriate ways to behave	or angry online.	can describe some of those differ
that do not upset others and can give examples	someone feel.	towards other people online and why this is	-l can explain why people need to think	-I can describe how what one per
Managing Online Information	-I can explain why anyone who experiences	important.	carefully about how content they post might	perceives as playful joking and tea
- I can give simple examples of how to find	bullying is not to blame.	-I can give examples of how bullying behaviour	affect others, their feelings and how it may	(including 'banter') might be expe
information using digital technologies, e.g.	-I can talk about how anyone experiencing	could appear online and how someone can	affect how others feel about them (their	others as bullying.
search engines, voice activated searching).	bullying can get help	get support.	reputation).	-I can explain how anyone can get
-I know / understand that we can encounter a	Managing Online Information	Managing Online Information	-l can describe ways people can be bullied	are being bullied online and identi
range of things online including things we like	-I can use simple keywords in search engines.	- I can demonstrate how to use key phrases in	through a range of media (e.g. image, video,	tell a trusted adult.
and don't like as well as things which are real	-I can demonstrate how to navigate a simple	search engines to gather accurate information	text, chat).	-I can identify a range of ways to
or make believe / a joke.	webpage to get to information I need (e.g.	online.	Managing Online Information	concerns and access support bot
-I know how to get help from a trusted adult if	home, forward, back buttons; links, tabs and	- I can explain what autocomplete is and how	- I can analyse information to make a	and at home about online bullying
we see content that makes us feel sad,	sections).	to choose the best suggestion.	judgement about probable accuracy and I	-I can explain how to block abusiv
uncomfortable worried or frightened.	-I can explain what voice activated searching is	- I can explain how the internet can be used	understand why it is important to make my	-I can describe the helpline servic
Health, wellbeing & lifestyle	and how it might be used, and know it is not a	to sell and buy things.	own decisions regarding content and that my	help people experiencing bullying
- I can explain rules to keep myself safe when	real person (e.g. Alexa, Google Now, Siri).	-I can explain the difference between a 'belief',	decisions are respected by others.	access them (e.g. Childline or The
using technology both in and beyond the	-l can explain the difference between things	an 'opinion' and a 'fact. and can give examples	-I can describe how to search for information	Managing Online Information
home.	that are imaginary, 'made up' or 'make believe'	of how and where they might be shared	within a wide group of technologies and make	- I can explain the benefits and lin
	and things that are 'true' or 'real'.	online, e.g. in videos, memes, posts, news	a judgement about the probable accuracy (e.g.	using different types of search teo
	-I can explain why some information I find	stories etc.	social media, image sites, video sites).	e.g. voice-activation search engine
	online may not be real or true	-I can explain that not all opinions shared may	-I can describe some of the methods used to	-I can explain how some technolo

#### Health, wellbeing & lifestyle

- I can explain simple guidance for using technology in different environments and settings e.g. accessing online technologies in public places and the home environment. - I can say how those rules / guides can help anyone accessing online technologies.

be accepted as true or fair by others (e.g. monsters under the bed).

encourage people to buy things online (e.g.

advertising offers; in-app purchases, pop-ups)

and can recognise some of these when they

-I can explain why lots of people sharing the

same opinions or beliefs online do not make

-I can explain that technology can be designed

to act like or impersonate living things (e.g.

bots) and describe what the benefits and the

-I can explain what is meant by fake news e.g.

why some people will create stories or alter

photographs and put them online to pretend

-I can explain how using technology can be a

distraction from other things, in both a

-I can identify times or situations when

someone may need to limit the amount of

time they use technology e.g. I can suggest

strategies to help with limiting this time.

those opinions or beliefs true.

something is true when it isn't

positive and negative way.

Health, wellbeing & lifestyle

appear online.

risks might be.

-I can describe and demonstrate how we can get help from a trusted adult if we see content that makes us feel sad, uncomfortable worried or frightened.

#### Health, wellbeing & lifestyle

- I can explain why spending too much time using technology can sometimes have a negative impact on anyone, e.g. mood, sleep, body, relationships; I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged (e.g. doing homework, games, films, videos). -I can explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g. age restricted gaming or web sites).

#### Year 6 Online Safety: Conduct ip email using -Understand the importance of appropriate online behaviour and that online bullying is unacceptable. Know to whom to report any incidents. can be ical world and -Understand the different audience of a school Learning Platform and an online social ferences. network. berson Online Bullying teasing - I can describe how to capture bullying perienced by content as evidence (e.g screen-grab, URL, get help if they profile) to share with others who can help entify when to me -I can explain how someone would report online bullying in different contexts. to report oth in school Managing Online Information -I can explain how search engines work and ing. isive users. how results are selected and ranked. vices which can -I can explain how to use search technologies ing, and how to effectively. The Mix). -I can describe how some online information can be opinion and can offer examples. ion limitations of -I can explain how and why some people may present 'opinions' as 'facts'; why the technologies popularity of an opinion or the personalities ine. ology can limit of those promoting it does not necessarily the information I aim presented with e.g. make it true, fair or perhaps even legal. voice-activated searching giving one result. -I can define the terms 'influence', -I can explain what is meant by 'being 'manipulation' and 'persuasion' and explain sceptical'; I can give examples of when and how someone might encounter these online why it is important to be 'sceptical'. (e.g. advertising and 'ad targeting' and -I can evaluate digital content and can explain targeting for fake news). how to make choices about what is

-l understand the concept of persuasive design and how it can be used to influences peoples' choices.

- I can demonstrate how to analyse and evaluate the validity of 'facts' and information and I can explain why using these strategies are important.

-I can explain how companies and news providers target people with online news stories they are more likely to engage with and how to recognise this.

-I can describe the difference between online misinformation and dis-information. -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 or disinformation). I can identify, flag and report inappropriate content

someone's emotions and behaviour, and explain why this may be harmful. -I can explain what is meant by a 'hoax'. I can

trustworthy e.g. differentiating between

information, reviews, fact, opinion, belief,

to information for different agendas, e.g.

vloggers, content creators, influencers).

-I can explain what is meant by the term

and reinforced online, and why accepting

-I can describe how fake news may affect

'stereotype', how 'stereotypes' are amplified

'stereotypes' may influence how people think

-I can identify ways the internet can draw us

website notifications, pop-ups, targeted ads.

-I can describe ways of identifying when online

content has been commercially sponsored or

boosted, (e.g. by commercial companies or by

-l can explain key concepts including:

validity, reliability and evidence.

adverts and search results.

about others.

explain why someone would need to think carefully before they share.

	Health, wellbeing & lifest -I can describe ways technolo health and well-being both po- mindfulness apps) and negativ -I can describe some strategi to promote health and wellb- to technology. -I recognise the benefits and information about health and and how we should balance to to trusted adults and profess -I can explain how and why s games may request or take p additional content (or in app
	-I can explain how and why s games may request or take p
	additional content (e.g. in-ap lootboxes) and explain the in seeking permission from a tr
	before purchasing

**estyle** nology can affect n positively (e.g. atively.

tegies, tips or advice ellbeing with regards

nd risks of accessing and well-being online ce this with talking essionals. y some apps and e payment for

app purchases, e importance of

. a trusted adult

#### Health, wellbeing & lifestyle

- I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose. -I recognise and can discuss the pressures that technology can place on someone and how / when they could manage this. -I can recognise features of persuasive design

and how they are used to keep users engaged

(current and future use). -I can assess and action different strategies to limit the impact of technology on health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise).



Year 1	Autumn	Spring	
Communicating Finding Out Computing	Communicating Autumn 1 and 2- Exploring the computer Key Knowledge -Text can be entered and corrected -Events can be recorded using text, sound, still and moving images. -Images, text and sounds can be combined using digital devices. Required skills - Use a keyboard to enter and edit text. - Use a word bank to enter text. - Take a photograph and record a video which includes sound. -Explore a digital text e.g. a talking book. - Use their own username and password to get on to the school's network.	<ul> <li>Finding Out</li> <li>Spring 1 - How do we use the internet?</li> <li>Key Knowledge</li> <li>Both traditional and digital methods can be used to find useful information.</li> <li>Web pages can be viewed using a web browser that lets us look at web pages and navigate around them sites can be bookmarks as favourites.</li> <li>-Know that companies use the internet to encourage people to buy things.</li> <li>Required skills:</li> <li>-Discuss how people use the internet to help them with their work e.g. selling, research, communicating, sharing information.</li> <li>- Select programmes and apps and navigate through screens and menus</li> <li>-Use a search engine.</li> <li>-Use simple navigation tools including hyperlinks, menus, index, and forward and back buttons e.tc to explore pre-selected digital information sources purposefully.</li> <li>-Select programs and apps, navigate screens and menus.</li> <li>Spring 2- Databases</li> <li>Key Knowledge</li> <li>-Data represented graphically can be easier to understand than tables or text.</li> <li>-ICT can be used to create graphs from data.</li> <li>-ICT can be used to create a database</li> <li>Required skills:</li> <li>-Use ICT to create pictograms and use them to answer simple questions.</li> </ul>	Computing Summer I and -Control a progra -Predict the behar -Write an algorith Key Knowledge - Many everyday de -An algorithm is a -Algorithms are ir -A digital device m situations.
Online safety	<ul> <li>Online Safety: Content</li> <li>Know the SMART rules.</li> <li>Know what to do if they view content they think is inappropriate or upsetting (school policy) e.g. know how to minimise a screen if they</li> <li>Privacy &amp; Security</li> <li>I can explain that passwords are used to protect information, accounts and devices.</li> <li>I can recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names).</li> <li>I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others.</li> <li>Copyright &amp; Ownership</li> <li>I can explain why work I create using technology belongs to me.</li> <li>I can save my work under a suitable title / name so that others know it belongs to me (e.g. filename, name on content).</li> <li>I understand that work created by others does not belong to me even if I save a copy</li> </ul>	<ul> <li>-Input data into a simple database program and use it to answer simple questions.</li> <li>Online Safety: Contact <ul> <li>-Know to keep personal information private when communicating online</li> <li>Self-image &amp; identity</li> <li>-I can recognise, online or offline, that anyone can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset.</li> <li>-I can recognise that there may be people online who could make someone feel sad, embarrassed or upset.</li> <li>-I can recognise that there may be people online who could make someone feel sad, embarrassed or upset.</li> <li>-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 and how they can help.</li> </ul> </li> <li>Online Relationships <ul> <li>-I can use the internet with adult support to communicate with people I know (e.g. video call apps or services).</li> <li>-I can explain why it is important to be considerate and kind to people online and to respect their choices.</li> <li>-I can explain why things one person finds funny or sad online may not always be seen in the same way by others.</li> </ul> </li> <li>Online Reputation <ul> <li>-I can recognise that information can stay online and could be copied.</li> <li>-I can describe what information I should not put online without asking a trusted adult first.</li> </ul> </li> </ul>	Online Safety: 0 -Identify some ris (e.g. online games Online Bullying -I can describe ho give examples Managing Onlin - I can give simple technologies, e.g. -I know / underst things we like and a joke. -I know how to g feel sad, uncomfo Health, wellbei - I can explain rul beyond the home



#### nd 2 - Algorithms

- grammable toy by giving it an instruction e.g. a Bee-Bot.
- haviour of a simple set of instructions
- rithm refining the instructions to achieve a desired outcome.
- devices and toys respond to signals and instructions.
- is a sequence of instructions which can control a device.
- e implemented as programs on digital devices.
- e may be used to simulate a wide range of environments and

#### y: Conduct

risks presented by new technologies inside and outside school nes, mobile phone texting, cyberbullying).

#### ing

how to behave online in ways that do not upset others and can

#### nline Information

- ple examples of how to find information using digital e.g. search engines, voice activated searching).
- rstand that we can encounter a range of things online including and don't like as well as things which are real or make believe /
- o get help from a trusted adult if we see content that makes us nfortable worried or frightened.

#### being & lifestyle

rules to keep myself safe when using technology both in and me.

	Online Safety resources: Education for a Connected World 2020 edition & Projectevolve.co.uk			
Vocabulary	Space Bar, Delete, Return Key, Enter, Mouse, Trackpad, arrow keys,cursor, select,	Databases Columns, category, tally chart, pictograms, explain, branching database, categorise, chart, label,	Digital, program Alorithm, bee-b	
Hardware/ software/ resources	Seesaw, Word, Pages Google Docs Pic Collage, Book Creator,	How do we use the internet? <u>1 &amp; 2</u> Databases <u>https://www.j2e.com/j2data/</u> <u>https://www.j2e.com/jit5</u>	Beebot app, Scra <u>Bee-bot online</u> Beebot equipme <u>Kapow I</u> <u>Kapow</u>	

am, follow, code, bugs, fix, order, -bot, computing code, computer program, predict, tinker,

cratch Jnr, Kodable, ScratchJr

ment, tunnels, bridges etc & maps

<u>w 2</u>

Year 2	Autumn	Spring	
Communicating Finding Out Computing	Communicating Autumn 1- Using text and images Key Knowledge - ICT can be used to change the appearance of text to suit a purpose. -Text, images and sound may be changed to suit a purpose. -Text, images and sound may be sourced from a variety of places including the internet. Required skills: - Combine images texts and sounds to create a simple presentation. -Use digital effects to change the appearance of text, sound and image to suit a purpose e.g. font, alignment and formatting. -Explore digital content on the internet. -Know how to save, copy and paste images from the internet with support from an adult. Autumn 2 - Stop Frame Animation Key Knowledge - Images taken with a digital camera can be transferred to the computer. - Video is composed of a series of still images - Still images can be combined to make a stop frame animation. Required skills: - Taske a photograph. Video record a sound using a digital device. - Transfer digital resources between devices. - Still images can be combined to make a stop frame animation. - Sequence, delete and crop images with adult help - Compose a video from a series of still images. - Create a simple stop frame animation.	<ul> <li>Finding Out Spring 1 - Databases</li> <li>Key Knowledge <ul> <li>ICT can be used to create graphs from data</li> </ul> </li> <li>Required skills: <ul> <li>Search a database.</li> <li>Use a database to produce bar charts.</li> <li>Complete a table e.g. a simple spreadsheet and then create a graph to answer a question.</li> </ul> </li> <li>Spring 2 - Dataloggers (link to science?) <ul> <li>Key Knowledge</li> <li>Everyday devices like automatic doors, car park barriers, streetlights etc can be controlled by simple sensors.</li> <li>Our senses allow us to find out what is happening in the world and some machines can do the same.</li> <li>A computer can be used to view a visual representation of external conditions like sound levels and temperature.</li> <li>Required skills:</li> <li>Begin to identify and talk about how everyday devices with sensors work.</li> <li>View data and on-screen measurements e.g. sound levels, temperature, precipitation collected in school and beyond through sensors and websites and apps.</li> <li>Compare photographs they have taken which show change e.g. clouds on different days.</li> </ul> </li> </ul>	Computing Summer I - Editin Key Knowledge -Software and apps -Digital devices aid - Digital photos can b Required skills: -Use an art package o -Select purposefully ar geometric shapes and -Open a digital image stamps. Summer 2 - Digi Key Knowledge -Digital simulation a Required skills: -Create and debug a s -Explore the effect of

#### iting Images

- ops can be used to create and edit images. and the drawing of more complex shapes and designs. In be altered using simple painting tools.
- ye on a digital device to create an image. Iy and use a variety of tools in a painting package e.g. the straight line, and flood fill tools.
- age from a file and add effects painting effects using brushes and

#### igital Simulations

- n allows users to explore options and make choices.
- g a simple program to control an on-screen object. ct of changing the variables in simulations.

	Opling Safety Content	Online Safety Contact	Opling Safety Conduct
Online Safety	Online Safety: Content -Begin to evaluate web sites by giving opinions about preferred sites.	Online Safety: Contact -Know that online communication is not always confidential and that it can be	Online Safety: Conduct -Learn to respect the work of others that is stored on a shared drive of a
	-Know that anyone can create a web site and it is sometimes difficult to know	monitored.	network or presented online.
	if information is true.	Self-image & identity	Online Bullying
	Privacy & Security	-I can explain how other people may look and act differently online and offline.	- I can explain what bullying is, how people may bully others and how bullying
	-I can explain how passwords can be used to protect information, accounts	- I can give examples of issues online that might make someone feel sad,	can make someone feel.
	and devices.	worried, uncomfortable or frightened; I can give examples of how they might	-I can explain why anyone who experiences bullying is not to blame.
	- I can explain and give examples of what is meant by 'private' and 'keeping	get help.	-I can talk about how anyone experiencing bullying can get help
	things private'.	Online Relationships	Managing Online Information
	- I can describe and explain some rules for keeping personal information	-I can give examples of how someone might use technology to communicate	-I can use simple keywords in search engines.
	private (e.g. creating and protecting passwords). - I can explain how some people may have devices in their homes connected	with others they don't also know offline and explain why this might be risky.	-I can demonstrate how to navigate a simple webpage to get to information I
	to the internet and give examples (e.g. lights, fridges, toys, televisions).	(e.g. email, online gaming, a pen-pal in another school / country). -I can explain who I should ask before sharing things about myself or others	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, and
	Copyright & Ownership	online.	know it is not a real person (e.g. Alexa, Google Now, Siri).
	- I can recognise that content on the internet may belong to other people.	-I can describe different ways to ask for, give, or deny my permission online	-I can explain the difference between things that are imaginary, 'made up' or
	- I can describe why other people's work belongs to them.	and can identify who can help me if I am not sure.	'make believe' and things that are 'true' or 'real'.
	, , , , , , , , , , , , , , , , , , ,	-I can explain why I have a right to say 'no' or 'I will have to ask someone'. I	-I can explain why some information I find online may not be real or true
		can explain who can help me if I feel under pressure to agree to something I	Health, wellbeing & lifestyle
		am unsure about or don't want to do.	- I can explain simple guidance for using technology in different environments
		-I can identify who can help me if something happens online without my	and settings e.g. accessing online technologies in public places and the home
		consent.	environment.
		-I can explain how it may make others feel if I do not ask their permission or	- I can say how those rules / guides can help anyone accessing online
		ignore their answers before sharing something about them online. -I can explain why I should always ask a trusted adult before clicking 'yes',	technologies.
		'agree' or 'accept' online.	
		Online Reputation	
		-I can explain how information put online about someone can last for a long	
		time.	
		-I can describe how anyone's online information could be seen by others.	
		-I know who to talk to if something has been put online without consent or if	
		it is incorrect.	
		fety resources: Education for a Connected World 2020 edition & Projected	evolve.co.uk
Vocabulary	Using text and images	Venn diagrams, carroll diagrams, bar charts, database, table	Editing Images
	Cut, copy, paste. Caps Lock, Insert, Image, Save, clipboard, editing,		Crop, filters, fill, export, JPEG, zoom, flash, undo
	header, highlight		
	Stop Frame Animation		
	Stop motion, ghosting, timing, cartoon		
Hardware/	Using text and images	Seesaw, Pic Collage, Plickers Google Sheets, Google Forms, Excel,	Editing Images
	Seesaw, Word, Pages Google Docs Pic Collage, Keynote Book Creator,	Numbers,	Camera, Image editing software on laptops: Paint, Serif Drawplus5,
software/	Popplet, Sonic Pi (laptop & desktop users- kapow link), scratch (tablet &		Serif PhotoPlus, Powerpoint. Apps: Keynote, Mark up, Photobooth,
resources	chromebook users ( kapow link).	Dataloggers	Seesaw, Keynote, Pic Collage, Notes
		<u>1</u> , <u>2</u> & <u>3</u> – enable Flash	
	Stop Frame Animation		Digital Simulations App ScratchJr
	Puppetpals, ChatterPix Kids, I Can Animate, Seesaw, Stop Motion		
	Studio app, Power-Point, Microsoft Photos, J2E animation. (Kapow link		Kapow unit: Using Scratch Jr
	to this.)		
			Planning unit example Simulations to explore <u>1 &amp; 2</u>
			·

Year 4		
Communicating Autumn I- Email Key Knowledge       Findin Spring Key Knowledge         -Electronic communication can take a variety of forms e.g. email / blogging / instant messaging / Skype / FaceTime       -Database information e- Email can be used to send messages between individuals and groups.       -A data structu         - E-mail addresses have a particular format Required skills:       -Open, read and send a reply to an email address,       -White others.         - Write and send a new email to several people       -Discuss ways in which ICT is used to communicate       -When others.         Autumn I - Technology and Text (cross-curricular) Key Knowledge       -Digital texts may be nonlinear       -Create -Digital texts may be nonlinear         - There are a range of modes of communication including text, audio, video -Digital texts may be nonlinear       -Create -Create a digital text which includes making choices.       Spring Key Knowledge         - Change the layout of a text to suit a purpose e.g. Text box, tables, images, 'Word Art', builet points, paragraphs.       -Web       -Web         - Create a digital text which includes making choices.       - Sputom a mange or video (including sound) using an electronic recording device.       -Web         - Import videos and sound in to editing clips to make longer sequences       -Web       - Niche sequence         - Digital devices may be used to create musical. sounds, and these might sound like real instruments.       - Sounds may be recorded on a computer and that software enables you to rending addresses       - Sounds <th>nen answering a specific question some graphs are more appropriate than</th> <th>Computing Summer I ar Key Knowledg -Devices are co -A procedure ii -Digital simulat -Variables can I outcome. Required skills -Create a progra -Create a progra -Use logical reas</th>	nen answering a specific question some graphs are more appropriate than	Computing Summer I ar Key Knowledg -Devices are co -A procedure ii -Digital simulat -Variables can I outcome. Required skills -Create a progra -Create a progra -Use logical reas

#### nd 2- programming and debugging ge

- is a set of instructions which may be repeated in a program. tions allow users to solve problems and test ideas.
- be changed within a digital simulation to achieve a specific
- am which includes sequence, selection and repetition. am which responds to various forms of inputs and outputs.
- m to achieve a specific goal.
- soning to detect and correct errors in algorithms and programs

Online Safety	Online Safety: Content	Online Safety: Contact	Online Safety: Conduct	
	-Be aware of the school Acceptable use Policy and the SMART online rules:	-Know to keep personal information and passwords private when	-Know how to respond to unpleasant communications via mobile phone, text,	
	Safe/Meeting/Accepting/Reliable/Tell.	communicating online (including email, blogging and instant messaging).	IM or email, chat rooms. (Save the message and show to a trusted adult).	
	-Know what to do if content is inappropriate or upsetting (school policy) e.g.	-Know they can create an alias or avatar when online.	Online Bullying	
	know who to report to and talk to.	Self-image & identity	- I can describe appropriate ways to behave towards other people online and	
	-Be aware that taking text or images from some sites may be stealing other	-l can explain what is meant by the term 'identity'.	why this is important.	
	people's work.	-l can explain how people can represent themselves in different ways online.	-I can give examples of how bullying behaviour could appear online and how	
	Privacy & Security	-I can explain ways in which someone might change their identity depending on	someone can get support.	
	<ul> <li>I can describe simple strategies for creating and keeping passwords private.</li> <li>I can give reasons why someone should only share information with people</li> </ul>	what they are doing online (e.g. gaming; using an avatar; social media) and why. <b>Online Relationships</b>	Managing Online Information	
	they choose to and can trust. I can explain that if they are not sure or feel	-I can describe ways people who have similar likes and interests can get	- I can demonstrate how to use key phrases in search engines to gather accurate information online.	
	pressured then they should tell a trusted adult.	together online.	- I can explain what autocomplete is and how to choose the best suggestion.	
	-I can describe how connected devices can collect and share anyone's	-I can explain what it means to 'know someone' online and why this might be	- I can explain how the internet can be used to sell and buy things.	
	information with others.	different from knowing someone offline.	-l can explain the difference between a 'belief', an 'opinion' and a 'fact. and can	
	Copyright & Ownership	-l can explain what is meant by 'trusting someone online', why this is different	give examples of how and where they might be shared online, e.g. in videos,	
	- I can explain why copying someone else's work from the internet without	from 'liking someone online', and why it is important to be careful about who	memes, posts, news stories etc.	
	permission isn't fair and can explain what problems this might cause.	to trust online including what information and content they are trusted with.	-I can explain that not all opinions shared may be accepted as true or fair by	
		-I can explain why someone may change their mind about trusting anyone with	others (e.g. monsters under the bed).	
		something if they feel nervous, uncomfortable or worried.	-I can describe and demonstrate how we can get help from a trusted adult if	
		-I can explain how someone's feelings can be hurt by what is said or written	we see content that makes us feel sad, uncomfortable worried or frightened.	
		online.	Health, wellbeing & lifestyle	
		-I can explain the importance of giving and gaining permission before sharing	- I can explain why spending too much time using technology can sometimes	
		things online; how the principles of sharing online is the same as sharing offline	have a negative impact on anyone, e.g. mood, sleep, body, relationships; I can	
		e.g. sharing images and videos.	give some examples of both positive and negative activities where it is easy to	
		Online Reputation	spend a lot of time engaged (e.g. doing homework, games, films, videos).	
		-l can explain how to search for information about others online.	-I can explain why some online activities have age restrictions, why it is	
		-I can give examples of what anyone may or may not be willing to share about	important to follow them and know who I can talk to if others pressure me	
		themselves online.	to watch or do something online that makes me feel uncomfortable (e.g. age	
		-l can explain the need to be careful before sharing anything personal. -l can explain who someone can ask if they are unsure about putting something	restricted gaming or web sites).	
		online.		
	Online Safety resources: Education for a Connected World 2020 edition & Projectevolve.co.uk			
	Chime Salety resources. Education for a Connected World 2020 edition & <u>Projectevolve.co.uk</u>			
Vocabulary	Technology and Text (cross-curricular)	Databases	Sequence, inputs, outputs, code, design, programming language,	
v o cubarar y	Touch type. Edit, format, font, size, borders, shadows, duplicate,	Table, column, row, cell, spreadsheet, graph,	Scratch	
	organise, undo, redo, autocorrect, clipart			
	Making Music			
	Input, output, selection, mix,			
Hardware/	Technology and Text (cross-curricular)	Databases	Beebot, Scratch Jnr, Kodable, Tynker, Scratch 3, Hopscotch, Swift	
	Seesaw, Word, Pages, Google Docs Keynote Book Creator, Popplet	Google Sheets, Google Forms, Excel, Numbers,	Playgrounds,	
software			- 10 1	
	Making Music	http://www.j2e.com/help/videos/datags4	Simulations to explore $\underline{1} \& \underline{2}$	
	Seesaw, Voice Memos, Garageband, Anchor, Keezy, Sonic Pi (laptop &			
	desktop users- kapow link), scratch (tablet & chromebook users- kapow	<u>1, 2</u>	Kapow unit: Y3 Scratch	
	link)			

Year 5	Autumn	Spring	
Communicating Finding Out Computing	<ul> <li>Communicating Autumn 1- Digital Texts</li> <li>Key Knowledge</li> <li>Word processing software has tools to allow individual and collaborative editing.</li> <li>A non-linear text allows choices to be made.</li> <li>The internet enables multimodal text to be shared with a wider audience.</li> <li>Technology allows individual and collaborative editing.</li> <li>Required skills:</li> <li>Create a multimodal text including making choices</li> <li>Evaluate the design and layout of digital texts and use their findings to support the planning and design in their work</li> <li>Use video editing tools and techniques to create a desired effect</li> <li>Select the most appropriate way to communicate ideas.</li> </ul> Autumn 2- Stop Frame Animation Key Knowledge <ul> <li>'Onion skinning' allows the last frame to be seen when creating the next frame.</li> <li>An animation story needs decomposing into smaller parts.</li> <li>Required skills:</li> <li>Create a stop frame animation which includes a soundtrack.</li> <li>Make small changes to my object to make my animation smoother</li> <li>Keep the camera still and make small movements between shots</li> </ul>	<ul> <li>Finding Out</li> <li>Spring 1 and 2- Spreadsheets</li> <li>Key Knowledge</li> <li>-Tables and graphs can show more than one variable allowing one to look at relationships and trends more clearly.</li> <li>-Information contained within databases may contain errors and that this can affect results.</li> <li>-A spreadsheet can be used to organise, sort and analyse data and produce graphs and reports.</li> <li>-Data held in a spreadsheet can be sorted and filtered using software tools Required skills:</li> <li>-Create a database using more complex setup tools (e.g. keywords) to answer specific questions.</li> <li>-Recognise when data is implausible by checking data for accuracy against predicted or expected outcomes.</li> <li>-Create tables and graphs with more than one variable.</li> <li>-Use the features of a spreadsheet to answer questions by producing graphs using sort and filter features.</li> <li>-Choose when to search when to sort and when to use a graph to answer questions.</li> <li>-Analyse information by transferring it into an appropriate data handling package e.g. Spreadsheets</li> </ul> Spring 2- Data Logging Key Knowledge <ul> <li>There are advantages in using computers to monitor and log data such as accuracy and reliability over long periods of time.</li> <li>Required skills:</li> <li>-Use software to analyse and interpret data collected locally and remotely to investigate specific questions or theories.</li> <li>Build up a system that controls events in response to changing conditions.</li> <li>LINK to science or maths</li> <li>(This does not need to be done using data loggers, they can use research they have collected by class sample or the internet. The focus will be on the analysis of the data.)</li> </ul>	Computing Summer I and 2 Key Knowledge -Technology allows devices at the same -Digital devices nee -Control systems h work effectively e.g -Devices can be co equipment. -Control programs this then that. Required skills: -Solve a problem by -Produce a program of inputs and outputs -Use logical reasoning

#### nd 2- Programming and Gaming

lows people to play games and access simulations on a range of same time.

need to be programmed to make them work.

ns have a number of distinct components that combine to y e.g. inputs and outputs.

e controlled through direct instructions or from sensing

ams can be written to respond to circumstances flexibly e.g. - if

by decomposing into smaller parts.

ram to accomplish a specific goal which includes variables and a range puts.

oning to explain how a simple algorithm works.

Online Safety	<ul> <li>Online Safety: Content</li> <li>-Use a range of sources to evaluate information found online, consider plausibility and develop strategies to make judgements on the sources used e.g. cross-referencing a number of websites.</li> <li>-Understand the impact of an individual sending or uploading inappropriate content to a wider audience.</li> <li>-Understand wikis are multi-authored and can be hard to verify (e.g. Wikipedia).</li> <li>-Have an awareness of the need to check a resource has copyright or can be legally downloaded free of charge from the internet and whether it can be reused.</li> <li>Privacy &amp; Security</li> <li>-I can explain what a strong password is and demonstrate how to create one.</li> <li>-I can explain how many free apps or services may read and share private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others.</li> <li>-I can explain what app permissions are and can give some examples.</li> <li>Copyright &amp; Ownership</li> <li>-I can assess and justify when it is acceptable to use the work of others.</li> <li>-I can give examples of content that is permitted to be reused and know how this content can be found online.</li> </ul>	<ul> <li>Online Safety: Contact</li> <li>-Demonstrate safe practice when selecting images or content for uploading to an online space.</li> <li>-Understand some malicious adults use the internet to make contact and "groom" young children. Know how to report any suspicions (Think You Know REPORT ABUSE page).</li> <li>Self-image &amp; identity</li> <li>-I can explain how identity online can be copied, modified or altered.</li> <li>- I can demonstrate how to make responsible choices about having an online identity, depending on context.</li> <li>Online Relationships</li> <li>-I can give examples of technology specific forms of communication (e.g. emojis, memes and GIFs).</li> <li>-I can recognise that there are some people I communicate with online who may want to do me or my friends harm.</li> <li>-I can recognise that this is not my / our fault. I can describe some of the ways people may be involved in online communities and describe how they might collaborate constructively with others and make positive contributions. (e.g. gaming communities or social media groups).</li> <li>-I can explain how someone can get help if they are having problems and identify when to tell a trusted adult.</li> <li>-I can search for information about an individual online and summarise the information found.</li> <li>-I can describe ways that information about anyone online can be used by others to make judgments about an individual and why these may be incorrect.</li> </ul>	Online Safety: C -Know when to rep Online Bullying - I can recognise on can describe some -I can describe how 'banter') might be of -I can explain how to tell a trusted add -I can identify a ran and at home about -I can explain how -I can explain how -I can explain how -I can explain how -I can explain how voice-activated sea -I can explain how voice-activated sea -I can explain how voice-activated sea -I can explain what is important to be -I can explain key of reliability and evide -I can describe way sponsored or boos influencers). -I can explain what and reinforced onli about others. -I can explain what think carefully befo Health, wellbeing -I can describe som regards to technolo -I can explain how additional content
	Online Saf	fety resources: Education for a Connected World 2020 edition & <u>Projecte</u>	seeking permission
Vocabulary	<ul> <li>Digital Texts</li> <li>Import, export, hyperlinks, animate, build in, build out, italics, bold, arrange, bullets,</li> <li>Stop Frame Animation</li> <li>Chroma Key, Flipbook, export, GIF, publish,</li> </ul>	Spreadsheets Formula bar, Autosum, Autofill, value	

#### Conduct

eply to a group email using 'reply all' and when to 'cc'.

- nline bullying can be different to bullying in the physical world and of those differences.
- w what one person perceives as playful joking and teasing (including experienced by others as bullying.
- v anyone can get help if they are being bullied online and identify when dult.
- nge of ways to report concerns and access support both in school t online bullying.
- to block abusive users.
- e helpline services which can help people experiencing bullying, and em (e.g. Childline or The Mix).

#### e Information

- benefits and limitations of using different types of search voice-activation search engine.
- some technology can limit the information I aim presented with e.g. arching giving one result.
- t is meant by 'being sceptical'; I can give examples of when and why it 'sceptical'.
- ital content and can explain how to make choices about what is ifferentiating between adverts and search results.
- concepts including: information, reviews, fact, opinion, belief, validity, ence.
- is the internet can draw us to information for different agendas, e.g. ons, pop-ups, targeted ads.
- ys of identifying when online content has been commercially
- sted, (e.g. by commercial companies or by vloggers, content creators,
- t is meant by the term 'stereotype', how 'stereotypes' are amplified line, and why accepting 'stereotypes' may influence how people think
- w fake news may affect someone's emotions and behaviour, and nay be harmful.
- is meant by a 'hoax'. I can explain why someone would need to ore they share.

#### ng & lifestyle

- ys technology can affect health and well-being both positively (e.g. and negatively.
- me strategies, tips or advice to promote health and wellbeing with logy.
- enefits and risks of accessing information about health and well-being e should balance this with talking to trusted adults and professionals. and why some apps and games may request or take payment for (e.g. in-app purchases, lootboxes) and explain the importance of n from a trusted adult before purchasing.

Hardware/ softwareDigital Texts Seesaw, Word, PagesGoogle Docs Keynote Book Creator, PoppletStop Frame Animation Puppetpals, ChatterPix Kids, Animate Anything, I Can Animate, iFunFace, Seesaw, Plotagon, Puppetmaster, Toontastic, -Stop motion animation. (Maybe extra features?)	Spreadsheets Google Sheets, Google Forms, Excel, Numbers, Mentimeter <u>1</u> , <u>2</u> ,	Simulations to exp <u>Code Studio</u> – set of to be checked on t <u>Construct 2 or Con</u> -Hour of code (Us children really low coding activities/g frozen etc.) LB to
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Year 6	Autumn	Spring	
Communicating Finding Out Computing	<ul> <li>Communicating Autumn I and 2- Film Key Knowledge</li> <li>Filming techniques and video editing can be combined to create a video for a specific purpose.</li> <li>Editing, camera angles, lighting techniques can be used to achieve a desired effect in a digital text.</li> <li>ICT enables you to create music with a range of input devices e.g. electronic keyboards.</li> <li>Software can be used to create and edit complex digital texts, with elements from a variety of sources.</li> <li>Required skills:</li> <li>Use text, sound, image, video, camera angles and framing editing tools and techniques to create a desired effect.</li> <li>Use a range of devices to create music.</li> <li>Create a multimodal text including a range of elements e.g. sounds and videos.</li> <li>Critically evaluate web content.</li> <li>Evaluate forms of digital media and the impact its form can have.</li> <li>Produce content for a web page.</li> <li>Work collaboratively on an online document.</li> <li>As a class make use of video technologies to work collaboratively.</li> </ul>	<ul> <li>Finding Out</li> <li>Spring 1 - Advance Searches</li> <li>Key Knowledge</li> <li>-Searches can be refined through the use of advanced search operators.</li> <li>The accuracy of information on the internet should always be checked.</li> <li>Required skills: <ul> <li>Refine search techniques making use of advanced search operators such as inverted commas, +, -</li> <li>Download files from websites, saving and opening them.</li> <li>Use web-based tools to ask a question, find out information or submit information or opinion.</li> <li>Explore the plausibility of websites, identifying some ways to check author, accuracy etc</li> <li>Find specific information by searching an online database e.g. Census data.</li> <li>Create a presentation for a specific audience by gathering information from a selection of websites.</li> <li>Use a moderated website, video conference, forum, or learning platform to ask a question, submit information or offer an opinion.</li> </ul> </li> <li>Spring 2- Spreadsheets <ul> <li>Key Knowledge</li> <li>Spreadsheets can be used to create a simple model, perform calculations and are useful when numbers change to explore outcomes and what if scenarios e.g. currency converter</li> <li>Required skills: <ul> <li>Use a spreadsheet to convert one value to another based on a rule</li> <li>Design &amp; create a simple spreadsheet model using information from experiments and real- life situations e.g. predict shadow length at different times of the day from initial measurements, convert one value to another.</li> <li>Change data in a spreadsheet to answer, 'what if? questions and check predictions.</li> </ul> </li> </ul></li></ul>	Computing Summer I – Pro Key Knowledge -Digital games and - Explain how loo - Identify the need Required skills: -Discuss how games -Evaluate games and - Create loops and - Choose command - Write an effective Summer 2- Gra Key Knowledge -Graphics softwar purpose. -Graphics softwar allows complex in Required skills: -Select appropriate advert. -Use the layers tool graphical elements.

explore <u>1</u>

set up classes and track their progress – this would need on the software compliance first <u>Construct 3</u> – design games

(Used at Bracken Lane for KS2 during coding weekloved this- can set age settings & there are lots of es/games to choose from. Some linked to Minecraft, 8 took idea from Tuxford Secondary that use it in KS3.

### Summer

#### Programming

- and simulations are written using a programming language.
- oops and nested loops work
- eed for random numbers
- mes have evolved.
- and design their own including rules.
- nd nested loops to make the code more efficient.
- ands for a purpose.
- ve algorithm.

#### raphics

- vare can be used to create and edit an image for a specific
- vare allows layers to be created within and image and that this a images to be created and manipulated.
- ate graphics tools to fulfil a design brief e.g. create an image for an
- ool in graphics software to create a complex design with several ts.

Online Safety	<ul> <li>Online Safety: Content</li> <li>Check the validity of a website, e.g. look for the author via the 'Contact us' or 'About us' area of the website, or through 'Who is' sites that list the author's details.</li> <li>Understand the need for privacy settings on any social networking sites (and that those privacy settings may not be observed by online 'friends' who can use/share/download your image/content).</li> <li>Now the importance of not uploading other people's images or content without their permission</li> <li>Know that many commercial providers have sophisticated ways of trying to sell on the internet (e.g. hoax 'You have a virus' message box to sell antivirus software).</li> <li>Privacy &amp; Becority</li> <li>an describe effective ways people can manage passwords (e.g. storing them securely or saving them in the browser).</li> <li>I can describe be flective ways people should keep their software and apps up to date, e.g. auto updates.</li> <li>an describe how and why people should keep their software and apps up to date, e.g. auto updates.</li> <li>an describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g. scams, phishing).</li> <li>an demonstrate the use of search tools to find and access online content which can be reused by others.</li> <li>I can demonstrate the use of search tools to find and access online content which can be reused by others.</li> <li>I can demonstrate how to make references to and acknowledge sources I have used from the internet.</li> </ul>	<ul> <li>Online Safety: Contact <ul> <li>Understand the need for privacy settings on any social networking sites (and that those privacy settings may not be observed by online 'friends' who can use/share/download your images/content).</li> </ul> </li> <li>Self-image &amp; identity <ul> <li>can identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online.</li> <li>can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline.</li> <li>can explain the importance of asking until I get the help needed.</li> </ul> </li> <li>Online Relationships <ul> <li>can explain how sharing something online may have an impact either positively or negatively.</li> <li>can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not.</li> <li>can explain that taking or sharing inappropriate images of someone (e.g. embarrassing images), even if they say it is okay, may have an impact for the sharer and others; and who can help if someone is worried about this.</li> </ul> </li> <li>Online Reputation <ul> <li>can explain the ways in which anyone can develop a positive online reputation.</li> <li>can explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity</li> </ul> </li> </ul>	Online Safety: Co -Understand the imp unacceptable. Know -Understand the diff network. Online Bullying - I can describe how profile) to share wit -I can explain how s Managing Online -I can explain how s -I can explain how s -I can explain how to -I can explain how to -I can describe how -I can explain how a popularity of an opin make it true, fair or -I can define the term someone might enco for fake news). -I understand the co peoples' choices. - I can demonstrate and I can explain how c stories they are mon -I can describe the co stories they are mon -I can describe the co stories they are mon -I can describe the co -I can explain why in or untrue. -I can assess how th disinformation). I can Health, wellbeing - I can describe com parental warnings) a -I recognise and can how / when they co -I can sess and act (e.g. night-shift mod
	Online Sa	fety resources: Education for a Connected World 2020 edition & Projecte	<u>volve.co.uk</u>
Vocabulary	Split screen, cutaway, montage, fade, animation, stop motion, onion skinning	Spreadsheets Range, =, fill, conditional formatting,	Onion skimming
Hardware/ software	<ul> <li>Stop Motion Studio app iMovie <u>resource example</u></li> <li>Doink Greenscreen, iMovie, Shadow Puppets Edu, Videorama, Apple Clips Explain Everything, audacity</li> <li>-Music- Sonic Pi (laptop &amp; desktop users.) (<u>Kapow link.</u>)</li> <li>-Music- Scratch (tablet &amp; chromebook.) (<u>Kapow link.</u>)</li> <li>-Editing- WeVideo (Kapow link.)</li> <li>-Stop motion animation. (Maybe extra features?)</li> </ul>	Advance Searches         1, 2, 3, 4, 5         Spreadsheets         Google Sheets, Google Forms, Excel, Numbers, Y6 Spreadsheets: Numbers app, Excel         https://www.mrpict.com/numbers.html         -Microsoft 365: Computing systems & network: Search engines. (Kapow link.)         -Google: Computing systems & search engines. (Kapow link.)	Graphics Image editing so PhotoPlus, Powe Adobe Spark Pos -BBC micro:bit ap -Python (Kapow -Hour of code

#### Conduct

importance of appropriate online behaviour and that online bullying is ow to whom to report any incidents. different audience of a school Learning Platform and an online social ow to capture bullying content as evidence (e.g screen-grab, URL, with others who can help me. v someone would report online bullying in different contexts. ne Information search engines work and how results are selected and ranked. to use search technologies effectively. by some online information can be opinion and can offer examples. and why some people may present 'opinions' as 'facts'; why the pinion or the personalities of those promoting it does not necessarily or perhaps even legal. terms 'influence', 'manipulation' and 'persuasion' and explain how encounter these online (e.g. advertising and 'ad targeting' and targeting concept of persuasive design and how it can be used to influences te how to analyse and evaluate the validity of 'facts' and information why using these strategies are important. companies and news providers target people with online news nore likely to engage with and how to recognise this. e difference between online misinformation and dis-information. information that is on a large number of sites may still be inaccurate this might happen (e.g. the sharing of misinformation or can identify, flag and report inappropriate content ing & lifestyle ommon systems that regulate age-related content (e.g. PEGI, BBFC, ) and describe their purpose. can discuss the pressures that technology can place on someone and could manage this. eatures of persuasive design and how they are used to keep users and future use). action different strategies to limit the impact of technology on health ode, regular breaks, correct posture, sleep, diet and exercise).

#### ing

software on laptops: Paint, Serif Drawplus5, Serif werpoint

Post app - posters and infographics.

app using Android or Apple. (Kapow link.)

#### ow link.)