Curriculum Handbook for Computing

Key Stage 2 Sequence of Learning

St. Martin's
C. of E. Primary School
Serve one another in love
Galatians 5v13

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

Boggle Hole	Unit Name: Networks	Strand: Computing systems and networks		
	National curriculum objectives	**Key Vocabulary**		
	Understand computer networks, including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information*	device file internet network network switch packet data router	server the cloud user WiFi wired wireless wireless access point	
	Unit Outcomes			
	Recognise that a network is two or more devices connected and its purpose. *Identify key components that make up the school's network.* *Explain the difference between wired and wireless connections.* *Recognise that files are saved on a server.* *Understand the role of the server in a network when requesting a website.* *Identify parts of a website's journey to reach your computer.* *Recognise that routers connect to send information.*			

	Understand that data is broken into packets.			

Sequence of Learning	Success Criteria	Vocabulary
1 – To recognise what a network is.	I can explain the purpose of a network. I can name the key parts of a network. I can explain the difference between a wired and wireless connection. I can identify which components can be connected.	component, network, network map, network switch, router, server, wifi, wired, wireless, wireless access points
2 – To demonstrate how information moves around a network.	I can discuss the journey of a file. I can explain parts of a network. I can identify real-world networks.	device, file, network, network switch, router, server, wired, wireless, user.
3 – To demonstrate how a website works.	I can recognise that the internet is a network. I can list the parts of a network needed for a website to work. I can recognise the role of the cloud.	file, server, the cloud, user, user request, website
4 – To explore the role of a router.	I can recognise the role that a router plays in a network. I can give examples of how a router is used. I can explain what a router does.	internet, network, router, server

	5 – To identify the role of packet data.	I can recognise that data is transferred across the internet. I can explain that routers connect to send information. I can demonstrate that data can be too big to send whole	packet data, route, router, server

Boggle Hole	Unit Name: Programming: Scratch	Strand: Programming		
	National curriculum objectives	**Key Vocabulary**		
	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	algorithm animation application code code block debug decompose game interface	loop predict program remixing code repetition code review Scratch sprite tinker	
	Unit Outcomes			
	Explain what some of the blocks do in Scratch. Explain what a loop is and include one in their program. Suggest possible additions to an existing program by remixing code. Recognise where something on screen is controlled by code.			

	Use a systematic approach to find bugs. Understand the definitions of decomposition and algorithm and how they are used to create accurate code.			

Sequence of Learning	Success Criteria	Vocabulary
1 – To explore a programming application	I can identify that Scratch is a coding application. I can predict what I think different code will do. I can explore an application independently.	coding, predict, program, sprite, tinker.
2 – To use repetition (a loop) in a program.	I can understand and explain what a loop is. I can recognise when a loop is used. I can choose an appropriate loop.	loop, repetition.
3 – To program an animation.	I can decompose a project. I can remix a project. I can select the correct blocks to achieve my goals	animation, code blocks, decomposition, remixing code.
4 – To program a story.	I can choose appropriate blocks. I can continue someone else's program. I can debug my own program.	debug, storytelling.
5 – To program a game.	I can explain the purpose of an algorithm.	algorithm, game

		I can decompose a problem. I can use an algorithm to code a program.	

Boggle Hole	Unit Name: Emailing (Google)	Strand: Computing systems and networks		
	National curriculum objectives	**Key Vocabulary**		
	Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create [...] content that accomplish given goals. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Attachment Bcc (Blind carbon copy) Cc (Carbon copy) Compose Content Cyberbullying Document Domain Download Email Email account Email address Emoji Emotions Fake Font Genuine Hacker Icons Inbox Information	Link Log in Log out Negative language Password Personal information Positive language Reply Responsible digital citizen Scammer Settings Send Sign in Spam email Subject bar Theme Tone Username Virus WiFi	
	Unit Outcomes			
	Log in and out of email. Edit an email. Add an attachment to an email. Send a simple email with a subject plus 'To' and 'From' in the body of the text. Type in the email address correctly and send the email. Write an email using positive language, with an awareness of how it will make the recipient feel. Recognise unkind behaviour online and know how to report it.			

	Offer advice to victims of cyberbullying. *Recognise when an email may be fake and explain how they know.*			

Sequence of Learning	Success Criteria	Vocabulary
1 – To understand how we communicate with technology.	*I can discuss early methods of communication.* *I can identify which method of communication suits each purpose.* *I can explain what an email is.*	communicate, email, inbox, phone call, recipient, text message, unplugged, video call.
2 – To understand what emails are and how to send one.	*I can log in and log out of my email account.* *I can write an email to my teacher.* *I can identify that emails can be used to send information around the world.*	computer, domain, email, email address, log off, log on, password, responsible digital citizen, settings, subject bar, theme, username, Wi-Fi.
3 – To know how to create an email with an attachment.	*I can log into my email account.* *I can send an email with an attachment.*	attachment, content, copyright, document, email, emoji, font, icons, inbox, spam.
4 – To understand the importance of being kind online.	*I can use positive language within an email.* *I can recognise when online behaviour is unkind.* *I can be a responsible digital citizen.*	Bcc, body language, Cc, emotions, negative language, positive language, tone of voice.
5 – To recognise when an email is not genuine.	*I can recognise when an email might be fake.*	attachment, download, email, fake, genuine, hacker, install, link, mark it as

		I can recall that I shouldn't click on links in an email unless I know what it is. *I can identify what to do if I suspect an email is fake.*	spam, personal information, phishing, scammer, spam, virus.

Boggle Hole	Unit Name: Journey Inside A Computer	Strand: Computing systems and networks		
	National curriculum objectives	**Key Vocabulary**		
	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. *Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.* *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.* *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.*	Algorithm Assemble CPU (central processing unit) Data Decompose Desktop Disassemble GPU (graphics processing unit) Hard drive HDD (hard disk drive) Infinite loop Input Keyboard Laptop Memory	Microphone Monitor Mouse Output Photocopier Program QR Code RAM (random access memory) ROM (read only memory) Storage Tablet device Technology Touchscreen Touchpad	
	Unit Outcomes			
	Recognise inputs and outputs and that the computer sends and receives information. *Explain that the parts of a laptop work together and the purpose of each part.* *Explain what an algorithm is.*			

	Suggest what memory is for inside a computer. Make comparisons between different types of computer.			

Sequence of Learning	Success Criteria	Vocabulary
1 – To recognise basic inputs and outputs.	I can identify some inputs and outputs. I can recall that a computer follows instructions. I can explain what the computer is doing.	computer, data, computer program, input, keyboard, monitor, mouse, output.
2 – To decompose a laptop.	I can suggest a laptop's inputs and outputs. I can recall that a laptop is made up of many parts. I can use logic to explain the purpose of some parts.	CPU, GPU, input, output, RAM, ROM
3 – To understand the purpose of computer parts.	I can explain that a computer is made up of many parts. I can suggest the purpose of each part. I can follow an algorithm.	algorithm, CPU, GPU, infinite loop.
4 – To understand the purpose of computer parts.	I can explain that a computer is made up of many parts. I can suggest the purpose of each part. I can use a QR code.	components, disassemble, hard drive, QR code, ROM, RAM

	5 – To decompose a tablet computer.	*I can recall that a tablet is a computer.* *I can compare similarities and differences across different types of computer.* *I can use logic to suggest what's inside a computer.*	

Boggle Hole	Unit Name: Video Trailers	Strand: Creating Media		
	National curriculum objectives	**Key Vocabulary**		
	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.* *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.* *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.*	Application Camera angle Clip Cross blur Cross fade Cross zoom Desktop Digital device Dip to black	Import Key events Laptop Music Photo Plan Recording Sound effects Storyboard	
	Unit Outcomes			

	Describe the purpose of a trailer. Create a storyboard for a book trailer. Consider camera angles when taking photos or videos. Import videos and photos into film editing software. Record sounds and add these to a video. Add text to a video. Incorporate transitions between images. Evaluate their own and others' trailers.	Directional wipe Edit Film Film editing software Graphics	Time code Trailer Transition Video Voiceover	

Sequence of Learning	Success Criteria	Vocabulary
1 – To plan a book trailer.	I can describe the purpose of a book trailer. I can identify the key events in a story. I can plan a book trailer.	film, key events, plan, storyboard, trailer.
2 – To take photos or videos that tell a story.	I can frame shots differently to create the effect I want. I can use digital devices to record video or take photos.	film, key events, storyboard, trailer, video, voiceover.
3 – To edit a video.	I can import videos and photos into film editing software. I can record sounds using digital devices. I can add sound effects and music to a video.	application, edit, film editing software, graphics, recording, sound effects, time code, video, voiceover.

	4 – To add text and transitions to a video.	I can add text to my video. I understand what transitions are in film. I can incorporate different transitions in my video.	cross blur, cross fade, cross zoom, dip to black, directional wipe, transition.
	5 – To evaluate video editing.	I can explain what makes a successful video. I can explain what makes a successful book trailer. I can think about how I share book recommendations.	evaluate, sound effects, transition, video, video editing.

Boggle Hole	Unit Name: Comparison Cards Databases	Strand: Data Handling		
	National curriculum objectives	Key Vocabulary		
	Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Categorise Category Chart Data Database Excel Fields Filter Graph	Information Interpret PDF Questionnaire Record Representation Sort Spreadsheet	

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Unit Outcomes
Explain what is meant by 'field,' 'record,' and 'data.' Compare paper and computerised databases. Put values into a spreadsheet. Sort, filter and interpret data in a spreadsheet. Create a graph on Google Sheets. Explain the purpose of visual representations of data.

Sequence of Learning	Success Criteria	Vocabulary
1 – To understand the terminology around databases.	I know what field, record and data mean. I can compare numbers. I can scan a record for relevant information.	category, data, database, fields, information, records, spreadsheet.
2 – To compare paper and computerised databases.	I understand what a paper database is and can name examples. I understand what a computerised database is. I can compare the advantages and disadvantages of paper and computerised databases.	cons, data, database, pros, sort, spreadsheet.
3 – To sort, filter and interpret data.	I can input data into a database. I know how to sort data. I can filter data by a particular value.	data, database, filter, interpret, questionnaire, sort, spreadsheet.

		I can create questions that can be answered using information from a database. I can interpret information	
	4 – To represent data in different ways.	I can create a graph and chart in Google Sheets. I can name different types of charts. I understand the purpose of visual representations of data.	chart, data, databases, graphs, representation, spreadsheet.
	5 – To sort data for a purpose.	I understand that databases are used for different purposes. I know how to sort and filter data. I can explain what information is useful in an online database.	database, filter, information, online, plan, sort.

Boggle Hole	Unit Name: Online Safety	Strand: Online Safety		
	National curriculum objectives	Key Vocabulary		
	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	accurate age restrictions autocomplete belief charity content digital device	opinion online emotions organisation permission privacy settings reliable	

	Recognise acceptable/unacceptable behaviour. Identify a range of ways to report concerns about content and contact.	fact fake news hoax internet internet of things	search search engine share smart devices social media platforms	

Unit Outcomes
Differentiate between fact, opinion and belief online. Explain how to deal with upsetting online content. Recognise that digital devices communicate with each other to share personal information. Explain what social media platforms are used for. Recognise why social media platforms are age-restricted.

Sequence of Learning	Success Criteria	Vocabulary
1 – To understand how the internet can be used to share beliefs, opinions and facts.	I can understand that not all information on the internet is true. I can explain the terms belief, opinion and fact. I can use key phrases within a search engine to produce accurate results.	belief, fact, fake news, hoax, internet, opinion, reliable, search engine.
2 – To explain what should be done before sharing information online.	I can recognise why I need to ask for permission. I can explain who I need to ask permission from before sharing content online. I can identify how others may feel if I share things online without their permission.	content, permission, share.
3 – To identify the effects that the internet can have on people's feelings.	I can identify different ways that I use the internet. I can recognise how different online activities can affect my emotions.	charity, online emotions, organisation.

		I can identify actions that I can take if something on the internet has upset me.	
	4 – To understand the ways personal information can be shared on the internet.	*I can understand what privacy settings are.* *I can recognise that devices can communicate with one another to share personal information.* *I can explain what autocomplete is and how to choose the best suggestion.*	autocomplete, digital device, internet of things, smart devices.
	5 – To understand the rules for social media platforms.	*I can understand what social media platforms are used for.* *I can recognise why social media platforms are age-restricted.* *I can list some top tips on using social media platforms for people to stay safe.*	ages restrictions, search, social media platforms.

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<table>
<tr><td rowspan="4">Robin Hoods Bay</td><td colspan="2">Unit Name: Collaborative Learning</td><td colspan="3">Strand: Computer Systems and Networks</td></tr>
<tr><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">Understand computer networks, including the internet; how they can provide multiple services, such as the world wide web, and the opportunities they offer for communication and collaboration.

Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</td><td>Animations
Average
Bar chart
Collaboration
Comment
Contribution
Data
Edited
Email account
Format
Freeze
Icon
Images
Insert
Link</td><td>Multiple choice
Numerical data
Pie chart
Presentations
Resolved
Reviewing comments Share
Slides
Software
Spreadsheets
Suggestions
Survey
Teamwork
Themes
Transitions</td><td></td></tr>
<tr><td colspan="2">Unit Outcomes
Understand the need to be thoughtful when working on a collaborative document.

Use comments to suggest changes to a document and understand how to resolve comments.

Use a variety of different slide styles to convey information including images and transitions.

Create a Google Form with a range of different questions types that will provide different types of answers, e.g. text, multiple choice or numerical values.

Export data to a spreadsheet, highlighting data, using conditional formatting and calculating averages and sums of numbers.</td><td colspan="3"></td></tr>
</table>

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	Sequence of Learning	Success Criteria	Vocabulary
	1 – To understand that software can be used to work online collaboratively.	I understand I can work with a partner without being in the same room. I can contribute to teamwork sensibly and responsibly. I can recognise what behaviour is appropriate when collaborating online.	collaborate, document, email, link, online, software, teamwork.
	2 – To understand how to contribute to someone else's work effectively.	I can share my work with other people and access documents shared with me. I can understand that it is important to be positive and supportive of my classmates. I can use collaborative word processing software to make suggestions or comments on someone else's work.	collaborate, comment, edit, e-document, reply, resolve, reviewing comments, share, suggestion.
	3 – To understand how to create effective presentations.	I can understand how to use presentation software. I can include images and text in my slides. I can use transitions and animations to make my slides more interesting.	insert (file), present, presentation, presentation software, slide, theme, transition.
	4 – To understand how to create and share Google Forms.	I can understand how to create a Google Form. I can understand why a survey might be useful. I can share a form with my class.	bar chart, data representation, email, multiple choice, pie chart, share, spreadsheet, survey, theme.
	5 – To understand how to use a shared spreadsheet to explore data.	I can export data to a spreadsheet. I can highlight data using conditional formatting. I can use a spreadsheet to calculate averages and sums of numbers.	average, data, numerical data, spreadsheet.

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<table>
<tr><td rowspan="4">Robin Hoods Bay</td><td colspan="2">Unit Name: Further Coding With Scratch</td><td colspan="3">Strand: Programming</td></tr>
<tr><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.

Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.</td><td>code block

conditional statement

coordinates

decompose

feature

information

negative number

orientation</td><td>position

program

project

script

sprite

stage

tinker

variable</td><td></td></tr>
<tr><td colspan="2">Unit Outcomes
Understand how to create a simple script in Scratch.

Add or change a sprite and prevent it from rotating.

Use decomposition to identify key features and understand how to decipher actions that make the quiz game work.

Understand what a variable is and how to use the 'say' and 'ask' blocks.

Create a variable and be able to use a variable to record a score.

Understand what a variable is and how it works within a program.</td><td colspan="3"></td></tr>
</table>

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	Sequence of Learning	Success Criteria	Vocabulary
	1 – To recall the key features of Scratch	I can name the main areas of Scratch. I can recognise how to adjust my sprite's orientation in Scratch. I can create a simple script for a new sprite to my stage.	code block, coordinates, direction, negative number, orientation, position, Scratch, sprite, stage
	2 – To understand how a Scratch game works by using decomposition to identify key features.	I can recognise that a sprite may contain more than one script. I can identify the parts of a Scratch game. I can explain the term 'decomposition'.	code, code block, decompose, feature, quiz
	3 – To recognise what a variable is.	I can use the 'ask' block in Scratch. I can understand what variable means. I can create a variable in Scratch to store an answer.	conditional statement, program, project, tinker, variable.
	4 – To understand how to make a variable in Scratch.	I can create a variable and use it to store information. I can 'call' a variable within my program. I can recognise that variables can be words or numbers.	information, script, variable panel
	5 – To create a quiz using variables.	I can create a range of questions. I can use the 'if/else' block to check whether an answer is correct. I can use the 'score' variable to calculate the total number of correct answers. I can make my quiz engaging and exciting.	no new vocabulary this lesson

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Robin Hoods Bay	Unit Name: Emailing (Google)	Strand: Computing systems and networks		
	National curriculum objectives	**Key Vocabulary**		
	Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create [...] content that accomplish given goals. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Attachment Bcc (Blind carbon copy) Cc (Carbon copy) Compose Content Cyberbullying Document Domain Download Email Email account Email address Emoji Emotions Fake Font Genuine Hacker Icons Inbox Information	Link Log in Log out Negative language Password Personal information Positive language Reply Responsible digital citizen Scammer Settings Send Sign in Spam email Subject bar Theme Tone Username Virus WiFi	
	Unit Outcomes			
	Log in and out of email. Edit an email. Add an attachment to an email. Send a simple email with a subject plus 'To' and 'From' in the body of the text. Type in the email address correctly and send the email. Write an email using positive language, with an awareness of how it will make the recipient feel. Recognise unkind behaviour online and know how to report it. Offer advice to victims of cyberbullying. Recognise when an email may be fake and explain how they know.			

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	Sequence of Learning	Success Criteria	Vocabulary
	1 – To understand how we communicate with technology.	I can discuss early methods of communication. I can identify which method of communication suits each purpose. I can explain what an email is.	communicate, email, inbox, phone call, recipient, text message, unplugged, video call.
	2 – To understand what emails are and how to send one.	I can log in and log out of my email account. I can write an email to my teacher. I can identify that emails can be used to send information around the world.	computer, domain, email, email address, log off, log on, password, responsible digital citizen, settings, subject bar, theme, username, Wi-Fi.
	3 – To know how to create an email with an attachment.	I can log into my email account. I can send an email with an attachment.	attachment, content, copyright, document, email, emoji, font, icons, inbox, spam.
	4 – To understand the importance of being kind online.	I can use positive language within an email. I can recognise when online behaviour is unkind. I can be a responsible digital citizen.	Bcc, body language, Cc, emotions, negative language, positive language, tone of voice.
	5 – To recognise when an email is not genuine.	I can recognise when an email might be fake. I can recall that I shouldn't click on links in an email unless I know what it is. I can identify what to do if I suspect an email is fake.	attachment, download, email, fake, genuine, hacker, install, link, mark it as spam, personal information, phishing, scammer, spam, virus.

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Robin Hoods Bay	Unit Name: HTML	Strand: Skills Showcase		
	National curriculum objectives	**Key Vocabulary**		
	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems. Solve problems by decomposing them into smaller parts.	Code Component Content Copyright CSS End tag Fake news Hacking Heading Headline Hex code HTML	Input Internet browser Output Paragraph Permission Remixing Script Start tag Tags Text URL Webpage	
	Unit Outcomes			
	Add text between the heading and paragraph tags. Easily activate the goggles to investigate a web page. Explain how they altered the HTML to create their own posters. Change the colours and sizes of their object elements. Explain how they created their story. Adapt the basic elements of a story within a web page using the 'Inspect Elements' tool. Change an image within a web page and create their own news story, replacing the text and images of a webpage.			

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	Sequence of Learning	Success Criteria	Vocabulary
	1 – To understand and identify examples of HTML tags.	I can identify that web pages are built using different programming languages, and one of them is HTML. I can identify some HTML tags. I can recall that each line of code has a start tag and an end tag.	code (verb), end tag, heading, HTML, Internet browser, paragraph, script, start tag, webpage.
	2 – To change HTML code for a specific purpose.	I can identify and remix some parts of HTML code. I can change the text size and content.	content, CSS, HTML, remixing, tags.
	3 – To change the HTML and CSS to alter the appearance of an object on the web.	I can change the size of some of the elements. I can change the colour of some of the elements.	HTML, CSS, hex code
	4 – To understand and explore complex components of a web page.	I can use the inspect elements tool to explore the different components that make up a web page. I can spot and identify a fake news story on a web page. I can explain that the changes I have made to a web page are not permanent.	hacker, HTML, webpage, web page elements.
	5 – To alter key elements on a web page including text and images.	I can find images that are permitted for reuse. I can use the 'Inspect Elements' tool. I can change the elements of a website in regard to both the text and images.	content, copyright, HTML, URL, web page.

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<table>
<tr><td rowspan="4">Robin Hoods Bay</td><td colspan="2">Unit Name: Data Handling</td><td colspan="3">Strand: Data Handling</td></tr>
<tr><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.

Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</td><td>Accurate
Backdrop
Climate zone
Cold
Collaboration
Condensation
Cylinder
Degrees
Evaporation
Extreme weather
Forecast
Heat sensor
Lightning
Measurement
Pinwheel</td><td>Presenter
Rain
Satellite
Script
Sensitive
Sensor data
Solar panel
Tablet/Digital camera
Temperature
Thermometer
Tornado
Warm
Weather
Weather forecast
Wind</td><td></td></tr>
<tr><td colspan="2">Unit Outcomes
Search the web efficiently to find temperatures of different cities and record this accurately.

Design a weather station that gathers and records sensor data, explaining how it works and the units of measurement it would use.

Design an automated machine that uses selection to respond to sensor data.

Search for and record weather forecast information in a spreadsheet and explain how this data is collected.

Create a video which includes weather forecast information.</td><td colspan="3"></td></tr>
</table>

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	Sequence of Learning	Success Criteria	Vocabulary
	1 – To log data taken from online sources in a spreadsheet.	I know what the weather is and what can affect it. I understand the importance of data in weather forecasting. I can search the internet for weather data. I can record this data in a spreadsheet.	accurate, condensation, degrees Celsius, evaporation, measurement, weather.
	2 – To design a weather station.	I understand what sensor data is. I know different units of measurement. I can design a device to sense and record the weather.	forecast, pinwheel, satellite, solar panel, temperature, thermometer.
	3 – To design an automated machine to respond to sensor data.	I know that sensor data can be used to help predict extreme weather. I can use keywords to effectively search for information on the Internet. I can write an algorithm for an automated machine which uses selection.	accurate, climate zone, extreme weather, lightning, sensor data, tornado.
	4 – To understand how weather forecasts are made.	I know how weather is predicted. I can use search engines to find information. I can record data in a spreadsheet.	heat sensor, satellite, temperature, weather forecast, wind speed.
	5 – To use tablets or digital cameras to present a weather forecast.	I know what information is included in a weather forecast. I can write a short script for a weather forecast. I can create a short video.	filming, presenter, script, temperature, weather forecast.

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

<table>
<tr><td>Robin Hoods Bay</td><td colspan="2">Unit Name: Video Trailers</td><td colspan="3">Strand: Creating Media</td></tr>
<tr><td rowspan="3"></td><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</td><td>Application

Camera angle

Clip
Cross blur

Cross fade

Cross zoom

Desktop

Digital device

Dip to black

Directional wipe

Edit

Film

Film editing software

Graphics</td><td>Import

Key events

Laptop

Music

Photo

Plan

Recording

Sound effects

Storyboard

Time code

Trailer

Transition

Video

Voiceover</td></tr>
<tr><td colspan="2">Unit Outcomes
Describe the purpose of a trailer.

Create a storyboard for a book trailer.

Consider camera angles when taking photos or videos.

Import videos and photos into film editing software.

Record sounds and add these to a video.

Add text to a video.

Incorporate transitions between images.

Evaluate their own and others' trailers.</td></tr>
</table>

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To plan a book trailer.	I can describe the purpose of a book trailer. I can identify the key events in a story. I can plan a book trailer.	film, key events, plan, storyboard, trailer.
	2 – To take photos or videos that tell a story.	I can frame shots differently to create the effect I want. I can use digital devices to record video or take photos.	film, key events, storyboard, trailer, video, voiceover.
	3 – To edit a video.	I can import videos and photos into film editing software. I can record sounds using digital devices. I can add sound effects and music to a video.	application, edit, film editing software, graphics, recording, sound effects, time code, video, voiceover.
	4 – To add text and transitions to a video.	I can add text to my video. I understand what transitions are in film. I can incorporate different transitions in my video.	cross blur, cross fade, cross zoom, dip to black, directional wipe, transition.
	5 – To evaluate video editing.	I can explain what makes a successful video. I can explain what makes a successful book trailer. I can think about how I share book recommendations.	evaluate, sound effects, transition, video, video editing.

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

Robin Hoods Bay	Unit Name: Online Safety		Strand: Online Safety		
	National curriculum objectives		Key Vocabulary		
	Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		Accuracy Advantages Advertisements Belief Bot Chatbot Computer Distractions Fact Hashtag Implications In-app purchases	Influencer Opinion Program Recommendations Reliable Risks Screen time Search results Snippets Sponsored Trustworthy	
	Unit Outcomes Describe how to search over multiple platforms and are aware of the accuracy of the results presented. Describe some of the methods used to persuade people to buy online. Explain the difference between fact, opinion and belief and recognise these online. Explain what a bot is and give examples of different bots. Explain some positive and negative distractions of using technology and small strategies on how to reduce the amount of time spent on technology.				
	Sequence of Learning	Success Criteria		Vocabulary	
	1 – To describe how to search for information within a wide group of	I can describe how to search for information on search engines, social media and image and video sites.			

	technologies and make a judgement about the probable accuracy	I can make judgments about the accuracy of the information I am presented with.	search results, trustworthy, reliable, advertisements, sponsored, snippets, accuracy.
	2 – To describe some of the methods used to encourage people to buy things online.	I can describe some methods used by companies such as 'in-app purchases and 'pop-ups'. I can recognise some of these when they appear. I can think about ways to avoid purchases.	ad, sponsored, in-app purchases, influencer, recommendations, advertisements.
	3 – To explain why lots of people sharing the same opinions or beliefs online do not make those opinions of beliefs true.	I can explain the difference between facts, opinions and beliefs. I can make my own judgments about what I read and see online.	fact, opinion, belief, reliability.
	4 – To explain that technology can be designed to act like or impersonate living things.	I can explain what a 'bot' is. I can provide examples of bots. I can describe the benefits and the risk of using bots now and in the future.	bot, chatbot, computer, program, risks, advantages, implications.
	5 – To explain how technology can be a distraction and identify when I might need to limit the amount of time spent using technology.	I can explain how technology can be both a positive and negative distraction. I can recognise the amount of time I spend on technology. I can suggest strategies to help limit time spent on technology	distractions, screen time, hashtag.

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

<table>
<tr><td rowspan="4">Saltwick Bay</td><td colspan="2">Unit Name: Search Engines</td><td colspan="3">Strand: Computing Systems and Networks</td></tr>
<tr><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

Select, use and combine a variety of software (including internet services) to create content that accomplishes given goals, including collecting data and information.

Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</td><td>Algorithm
Appropriate
Copyright
Correct
Credit
Data leak
Deceive
Fair
Fake
Inappropriate
Incorrect</td><td>Index
Information
Keywords
Network
Privacy
Rank
Real
Search engine
TASK
Web crawler
Website</td><td></td></tr>
<tr><td colspan="2">Unit Outcomes

Explain what a search engine is, suggesting several search engines to use and explain how to use them to find websites and information.

Suggest that things online aren't always true and recognise what to check for.

Explain why keywords are important and what TASK stands for, using these strategies to search effectively.

Recognise the terms 'copyright' and 'fair use' and combine text and images in a poster.

Make parallels between book searching and internet searching, explaining the role of web crawlers and recognising that results are rated to decide rank.</td><td colspan="3"></td></tr>
</table>

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To understand what a search engine is and how to use it.	I can explain what a search engine is. I can use a search engine to navigate the web. I can suggest keywords for searching.	data leak, data privacy, network, online, search engine, website.
	2 – To be aware that not everything online is true.	I can recognise that not everything online is true. I can understand anyone can create a website. I can suggest ways of checking validity.	correct, deceive, fake news, inaccurate information, real.
	3 – To search effectively.	I can understand the importance of keywords. I can use the acronym TASK. I can use my search skills to answer focused questions.	keywords, TASK.
	4 – To create an informative poster.	I can include a title and at least five facts. I can choose appropriate pictures, colours and designs. I can consider fair use. I can credit people for information, images and videos I use.	copyright, credit, fair, inappropriate.
	5 – To understand how search engines work.	I can understand the role of a web index. I can explain what web crawlers are. I can discuss page rank.	algorithm, index, page rank, search engine, web crawler.

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

<table>
<tr><td>Saltwick Bay</td><td colspan="2">Unit Name: Further Coding With Scratch</td><td colspan="3">Strand: Programming</td></tr>
<tr><td rowspan="3"></td><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.

Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.</td><td>code block

conditional statement

coordinates

decompose

feature

information

negative number

orientation</td><td>position

program

project

script

sprite

stage

tinker

variable</td><td></td></tr>
<tr><td colspan="2">Unit Outcomes
Understand how to create a simple script in Scratch.

Add or change a sprite and prevent it from rotating.

Use decomposition to identify key features and understand how to decipher actions that make the quiz game work.

Understand what a variable is and how to use the 'say' and 'ask' blocks.

Create a variable and be able to use a variable to record a score.

Understand what a variable is and how it works within a program.</td><td colspan="3"></td></tr>
</table>

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To recall the key features of Scratch	I can name the main areas of Scratch. I can recognise how to adjust my sprite's orientation in Scratch. I can create a simple script for a new sprite to my stage.	code block, coordinates, direction, negative number, orientation, position, Scratch, sprite, stage
	2 – To understand how a Scratch game works by using decomposition to identify key features.	I can recognise that a sprite may contain more than one script. I can identify the parts of a Scratch game. I can explain the term 'decomposition'.	code, code block, decompose, feature, quiz
	3 – To recognise what a variable is.	I can use the 'ask' block in Scratch. I can understand what variable means. I can create a variable in Scratch to store an answer.	conditional statement, program, project, tinker, variable.
	4 – To understand how to make a variable in Scratch.	I can create a variable and use it to store information. I can 'call' a variable within my program. I can recognise that variables can be words or numbers.	information, script, variable panel
	5 – To create a quiz using variables.	I can create a range of questions. I can use the 'if/else' block to check whether an answer is correct. I can use the 'score' variable to calculate the total number of correct answers. I can make my quiz engaging and exciting.	no new vocabulary this lesson

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

<table>
<tr><td rowspan="4">Saltwick Bay</td><td colspan="2">Unit Name: Website Design</td><td colspan="3">Strand: Creating Media</td></tr>
<tr><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">Understand computer networks including the internet; how they can provide multiple services, such as the world wide web and the opportunities they offer for communication and collaboration.

Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</td><td>Assessment
Audience
Checklist
Collaboration
Content
Contribution
Create
Design
Embed
Evaluate
Features
Google Sites
Hobby
Homepage
Hyperlinks</td><td>Images
Insert
Online
Plan
Progress
Published
Record
Review
Style
Subpage
Tab
Theme
Web page
Website
World Wide Web</td><td></td></tr>
<tr><td colspan="2">Unit Outcomes
Use most of the tabs (e.g. insert, pages, themes) on Google Sites on their website.

Create a clear plan for their web page and begin to create it.

Create a professional looking web page with useful information and a clear style, which is easy for the user to read and find information from.

Create a clear plan by referring back to their checklist.

Create four web pages with a range of features on their website.</td><td colspan="3"></td></tr>
</table>

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To explore the features of Google Sites.	I can create a webpage using Google Sites. I can add content to a webpage. I can use a range of features in Google Sites and record my progress.	audience, checklist, content, features, Google Sites, information, progress, published, theme, web page, WWW.
	2 – To plan content for a collaborative webpage.	I can plan the content for my webpage. I can use different features on Google sites. I can work collaboratively.	collaboration, content, contribution, design, hyperlinks, images, online, review, style, tab, web page, website.
	3 – To create a webpage as part of a collaborative class website.	I can build a webpage. I can include many features of Google Sites. I can make my page informative and interactive.	collaboration, embed, features, hyperlink, insert, webpage.
	4 – To plan and create a website.	I can plan a website in detail, considering the Google Sites features that I will include. I can start to build a website based on my designs. I can consider information that other people would find useful and interesting.	create, design, features, hyperlink, information, plan, web page, website.
	5 – To create and evaluate a website.	I can build a website with four web pages. I can use a range of features on Google Sites. I can evaluate a website.	embed, evaluate, features, homepage, plan, subpage, web page, website.

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

Saltwick Bay	Unit Name: HTML	Strand: Skills Showcase		
	National curriculum objectives	**Key Vocabulary**		
	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems. Solve problems by decomposing them into smaller parts.	Code Component Content Copyright CSS End tag Fake news Hacking Heading Headline Hex code HTML	Input Internet browser Output Paragraph Permission Remixing Script Start tag Tags Text URL Webpage	
	Unit Outcomes			
	Add text between the heading and paragraph tags. Easily activate the goggles to investigate a web page. Explain how they altered the HTML to create their own posters. Change the colours and sizes of their object elements. Explain how they created their story. Adapt the basic elements of a story within a web page using the 'Inspect Elements' tool. Change an image within a web page and create their own news story, replacing the text and images of a webpage.			

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To understand and identify examples of HTML tags.	I can identify that web pages are built using different programming languages, and one of them is HTML. I can identify some HTML tags. I can recall that each line of code has a start tag and an end tag.	code (verb), end tag, heading, HTML, Internet browser, paragraph, script, start tag, webpage.
	2 – To change HTML code for a specific purpose.	I can identify and remix some parts of HTML code. I can change the text size and content.	content, CSS, HTML, remixing, tags.
	3 – To change the HTML and CSS to alter the appearance of an object on the web.	I can change the size of some of the elements. I can change the colour of some of the elements.	HTML, CSS, hex code
	4 – To understand and explore complex components of a web page.	I can use the inspect elements tool to explore the different components that make up a web page. I can spot and identify a fake news story on a web page. I can explain that the changes I have made to a web page are not permanent.	hacker, HTML, webpage, web page elements.
	5 – To alter key elements on a web page including text and images.	I can find images that are permitted for reuse. I can use the 'Inspect Elements' tool. I can change the elements of a website in regard to both the text and images.	content, copyright, HTML, URL, web page.

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

Saltwick Bay	Unit Name: Stop Motion Animation	Strand: Creating Media		
	National curriculum objectives	**Key Vocabulary**		
	Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller part. select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	Animation Animator Background Character Decomposition Design Digital device Edit Evaluate Flip book	Fluid movement Frames Model Moving images Onion skinning Still images Stop motion Storyboard Thaumatrope Zoetrope	
	Unit Outcomes			
	Create a toy with simple images with a single movement. Create a short stop motion with small changes between images. Think of a simple story idea for their animation then decompose it into smaller parts to create a storyboard with simple characters. Make small changes to the models to ensure a smooth animation and delete unnecessary frames. Add effects such as extending parts and titles. Provide helpful feedback to other groups about their animations.			

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To understand what animation is.	I understand and can explain what 'animation' means. I can explain the history of animation. I can create my own 19th century animation toy.	animation, still images, moving images, Thaumatrope, flip book, Zoetrope, frames.
	2 – To understand what stop motion animation is.	I understand and can explain what 'stop motion' means. I can take photos of an object. I can make small changes to my object between each photo. I can follow the steps in using an editing piece of software.	stop motion, animation, digital device, digital device frame, editing, photos, still image.
	3 – To plan my stop motion video, thinking about the characters I want to use.	I can work collaboratively with others to plan a storyboard for an animation. I can think carefully about keeping my animation idea simple. I can decompose my story into smaller parts.	script, animation, frames, storyboard, decomposition.
	4 – To create a stop motion animation.	I can create a simple animation following my storyboard plan I can change my plan to recognise when something is too difficult to animate I understand the importance of keeping the camera still and making small movements between shots.	stop motion, animation, model, character, frame, design, animator, background, decomposition.

	5 – To edit and assess my stop motion animation.	I can create an animation project in Microsoft Photos I can delete frames. I can duplicate frames to extend my animation. I can add titles and effects. I can assess my animation.	stop motion, animation, edit, effects, evaluate, frames, fluid movement.

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

<table>
<tr><td rowspan="4">Saltwick Bay</td><td colspan="2">Unit Name: Investigating Weather</td><td colspan="3">Strand: Data Handling</td></tr>
<tr><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.

Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.</td><td>Accurate
Backdrop
Climate zone
Cold
Collaboration
Condensation
Cylinder
Degrees
Evaporation
Extreme weather
Forecast
Heat sensor
Lightning
Measurement
Pinwheel</td><td>Presenter
Rain
Satellite
Script
Sensitive
Sensor data
Solar panel
Tablet/Digital camera
Temperature
Thermometer
Tornado
Warm
Weather
Weather forecast
Wind</td><td></td></tr>
<tr><td colspan="2">Unit Outcomes
Search the web efficiently to find temperatures of different cities and record this accurately.

Design a weather station that gathers and records sensor data, explaining how it works and the units of measurement it would use.

Design an automated machine that uses selection to respond to sensor data.

Search for and record weather forecast information in a spreadsheet and explain how this data is collected.

Create a video which includes weather forecast information.</td><td colspan="3"></td></tr>
</table>

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To log data taken from online sources in a spreadsheet.	I know what the weather is and what can affect it. I understand the importance of data in weather forecasting. I can search the internet for weather data. I can record this data in a spreadsheet.	accurate, condensation, degrees Celsius, evaporation, measurement, weather.
	2 – To design a weather station.	I understand what sensor data is. I know different units of measurement. I can design a device to sense and record the weather.	forecast, pinwheel, satellite, solar panel, temperature, thermometer.
	3 – To design an automated machine to respond to sensor data.	I know that sensor data can be used to help predict extreme weather. I can use keywords to effectively search for information on the Internet. I can write an algorithm for an automated machine which uses selection.	accurate, climate zone, extreme weather, lightning, sensor data, tornado.
	4 – To understand how weather forecasts are made.	I know how weather is predicted. I can use search engines to find information. I can record data in a spreadsheet.	heat sensor, satellite, temperature, weather forecast, wind speed.
	5 – To use tablets or digital cameras to present a weather forecast.	I know what information is included in a weather forecast. I can write a short script for a weather forecast. I can create a short video.	filming, presenter, script, temperature, weather forecast.

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

Saltwick Bay	Unit Name: Online Safety	Strand: Online Safety		
	National curriculum objectives	**Key Vocabulary**		
	Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Accuracy Advantages Advertisements Belief Bot Chatbot Computer Distractions Fact Hashtag Implications In-app purchases	Influencer Opinion Program Recommendations Reliable Risks Screen time Search results Snippets Sponsored Trustworthy	
	Unit Outcomes			
	Describe how to search over multiple platforms and are aware of the accuracy of the results presented. *Describe some of the methods used to persuade people to buy online.* *Explain the difference between fact, opinion and belief and recognise these online.* *Explain what a bot is and give examples of different bots.* *Explain some positive and negative distractions of using technology and small strategies on how to reduce the amount of time spent on technology.*			

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy	I can describe how to search for information on search engines, social media and image and video sites. I can make judgments about the accuracy of the information I am presented with.	search results, trustworthy, reliable, advertisements, sponsored, snippets, accuracy.
	2 – To describe some of the methods used to encourage people to buy things online.	I can describe some methods used by companies such as 'in-app purchases and 'pop-ups'. I can recognise some of these when they appear. I can think about ways to avoid purchases.	ad, sponsored, in-app purchases, influencer, recommendations, advertisements.
	3 – To explain why lots of people sharing the same opinions or beliefs online do not make those opinions of beliefs true.	I can explain the difference between facts, opinions and beliefs. I can make my own judgments about what I read and see online.	fact, opinion, belief, reliability.
	4 – To explain that technology can be designed to act like or impersonate living things.	I can explain what a 'bot' is. I can provide examples of bots. I can describe the benefits and the risk of using bots now and in the future.	bot, chatbot, computer, program, risks, advantages, implications.
	5 – To explain how technology can be a distraction and identify when I might need to limit the amount of time spent using technology.	I can explain how technology can be both a positive and negative distraction. I can recognise the amount of time I spend on technology. I can suggest strategies to help limit time spent on technology	distractions, screen time, hashtag.

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

<table>
<tr><td rowspan="4">Sandsend</td><td colspan="2">Unit Name: Search Engines</td><td colspan="3">Strand: Computing Systems and Networks</td></tr>
<tr><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

Select, use and combine a variety of software (including internet services) to create content that accomplishes given goals, including collecting data and information.

Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</td><td>Algorithm
Appropriate
Copyright
Correct
Credit
Data leak
Deceive
Fair
Fake
Inappropriate
Incorrect</td><td>Index
Information
Keywords
Network
Privacy
Rank
Real
Search engine
TASK
Web crawler
Website</td><td></td></tr>
<tr><td colspan="2">Unit Outcomes

Explain what a search engine is, suggesting several search engines to use and explain how to use them to find websites and information.

Suggest that things online aren't always true and recognise what to check for.

Explain why keywords are important and what TASK stands for, using these strategies to search effectively.

Recognise the terms 'copyright' and 'fair use' and combine text and images in a poster.

Make parallels between book searching and internet searching, explaining the role of web crawlers and recognising that results are rated to decide rank.</td><td colspan="3"></td></tr>
</table>

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To understand what a search engine is and how to use it.	I can explain what a search engine is. I can use a search engine to navigate the web. I can suggest keywords for searching.	data leak, data privacy, network, online, search engine, website.
	2 – To be aware that not everything online is true.	I can recognise that not everything online is true. I can understand anyone can create a website. I can suggest ways of checking validity.	correct, deceive, fake news, inaccurate information, real.
	3 – To search effectively.	I can understand the importance of keywords. I can use the acronym TASK. I can use my search skills to answer focused questions.	keywords, TASK.
	4 – To create an informative poster.	I can include a title and at least five facts. I can choose appropriate pictures, colours and designs. I can consider fair use. I can credit people for information, images and videos I use.	copyright, credit, fair, inappropriate.
	5 – To understand how search engines work.	I can understand the role of a web index. I can explain what web crawlers are. I can discuss page rank.	algorithm, index, page rank, search engine, web crawler.

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

<table>
<tr><td rowspan="4">Sandsend</td><td colspan="2">Unit Name: Programming Music: Scratch</td><td colspan="3">Strand: Programming</td></tr>
<tr><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.

Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.

Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</td><td>basic commands

bug

code

debug

decompose

loop

mind map

music

output

pitch</td><td>program language

program

repeat

rhythm

Scratch

soundtrack

tempo

timbre

tinker</td><td></td></tr>
<tr><td colspan="2">Unit Outcomes
Iterate ideas, testing and changing throughout the lesson. Explain what the basic commands do.

Explain how their program links to the theme. Include a loop in their work. Correct their own simple mistakes.

Explain their scene in the story. Link musical concepts to their scene. Include a repeat and explain its function to enhance music.

Code a piece of music that combines a variety of structures. Use loops in their programming.

Recognise that programming music is a way to apply their skills.</td><td colspan="3"></td></tr>
</table>

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To tinker with Scratch music elements.	I can identify that Scratch is a coding application with music elements. I can predict what I think different code blocks will do. I can explore Scratch independently. I can explain what I found from tinkering.	basic command, debug, program language, Scratch, tinker.
	2 – To create a program that plays themed music.	I can use Scratch's basic sound commands. I can include a loop in my program. I can debug simple errors in my code.	code, debug, loop, pitch, program, rhythm, tempo, timbre.
	3 - To plan a soundtrack program.	I can decompose a story. I can plan my program by tinkering. I can explain how my program will add to the story.	decompose, pitch, rhythm, soundtrack, tempo, timbre
	4 – To program a soundtrack.	I can work from a plan. I can use a range of programming commands. I can explain how my program enhances the scene.	bug, loop, repeat.
	5 – To program music for a specific purpose.	I can combine known commands. I can code music with a purpose. I can use repetition in a program. I can use various forms of output [sound].	music, output.

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

Sandsend	Unit Name: Mars Rover 1	Strand: Data Handling		
	National curriculum objectives	**Key Vocabulary**		
	Understand computer networks including the internet; how they can provide multiple services, such as the world-wide web; and the opportunities they offer for communication and collaboration. *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.*	8-bit binary Addition ASCII Binary code Boolean Byte Communicate Construction CPU Data transmission Decimal numbers Design Discovery Distance Hexadecimal Input Instructions	Internet Mars Rover Moon Numerical data Output Planet Radio signal RAM Research Scientist Sequence Signal Simulation Space Subtraction Technology Transmit	
	Unit Outcomes *Identify some of the types of data that the Mars Rover could collect (for example, photos).* *Explain how the Mars Rover transmits the data back to Earth and the challenges involved in this.* *Read any number in binary, up to eight bits.* *Identify input, processing and output on the Mars Rovers.* *Read binary numbers and grasp the concept of binary addition.* *Relate binary signals (Boolean) to a simple character-based language, ASCII.*			

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To identify how and why data is collected from space.	I can recall the meanings of 'data' and 'transmit'. I can identify a type of data that the Mars Rover may transmit back to Earth. I can identify the challenges of transmitting data over large distances. I can explain why data is being collected from the Mars Rover.	data, data transmission, discovery, distance, Mars Rover, Moon, planet, scientist, signal.
	2 – To read and calculate numbers using binary code.	I can identify binary as the most basic way that computers communicate. I can read binary numbers up to eight characters. I can recall that each number (one or zero) is referred to as a bit. I can calculate binary numbers, knowing each digit is worth double the one that precedes it.	8-bit binary, binary code, data transmission, numerical data, radio signal, sequence.
	3 – To identify the computer architecture of the Mars Rovers.	I can identify sensors. I can identify the difference between computer input and output. I can explain how the size of random-access memory (RAM) affects the processing of data (CPU).	byte, CPU, input, output, RAM, sequence, simulation.
	4 – To use simple operations to calculate bit patterns.	I can recall how binary is used to represent numbers up to 255. I can recall that computers use binary mathematically to calculate data. I can carry out binary addition.	addition, binary numbers, decimal numbers, input, output, subtraction.

	5 – To represent binary as text.	*I can recall that binary is the main means of all data transfer.* *I can identify that data transfer needs a common language.* *I can use binary to create a written message.*	ASCII, binary, Boolean, data.

Sandsend	Unit Name: Micro:bit	Strand: Programming		
	National curriculum objectives	**Key Vocabulary**		
	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. *Use sequence, selection, and repetition in programs.* *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.*	Algorithm Animation App Blocks Bluetooth Code block Connection Create Debug Decompose Designing Desktop Device Download Images Input Instructions Laptop Load Loop	Micro:bit Outputs Pairing Pedometer Polling Predict Program Repetition Reset Sabotage Scoreboard Screen Systematic Tablet Tinkering USB Variables Wifi Wireless Wires	
	Unit Outcomes *Clip blocks together and predict what will happen. Make connections with previous programming interfaces they've used, e.g. Scratch.* *Create their own images to make the animation and recognise the difference between 'on start' and 'forever'.* *Recognise blocks they've used previously, identifying inputs and outputs used and make predictions about how variables work.*			

	Choose appropriate blocks to complete the program and attempt the challenges independently. Break a program down into smaller steps, suggesting appropriate blocks and match the algorithm to the program.			

Sequence of Learning	Success Criteria	Vocabulary
1 – To tinker with a new piece of software.	I can predict what I think something new will do. I can explore something independently. I can explain what I found.	Bluetooth, code blocks, feature, micro:bit, pairing, predict, tinker.
2 – To program an animation.	I can decompose an animation into a series of images. I can explain the difference between 'on start' and 'forever' blocks. I can choose the blocks I need for my program.	hex file, animation, code blocks, emulator, program, loop, repetition.
3 – To recognise coding structures.	I can identify some code blocks. I can predict what a block or program does. I can explain how and why a program works.	code blocks, program, poll, variable.
4 – To create a program for a specific task.	I can recognise code blocks. I can decompose a program. I can debug a program.	code blocks, decompose, pedometer, variable.

	5 – To create a program.	*I can decompose a program.* *I can write an algorithm.* *I can debug a program.*	algorithm, debug, decompose, code blocks, program, scoreboard.

Sandsend	Unit Name: Stop Motion Animation	Strand: Creating Media		
	National curriculum objectives	**Key Vocabulary**		
	Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. *design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller part.* select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	Animation Animator Background Character Decomposition Design Digital device Edit Evaluate Flip book	Fluid movement Frames Model Moving images Onion skinning Still images Stop motion Storyboard Thaumatrope Zoetrope	
	Unit Outcomes			
	Create a toy with simple images with a single movement. *Create a short stop motion with small changes between images.* *Think of a simple story idea for their animation then decompose it into smaller parts to create a storyboard with simple characters.* *Make small changes to the models to ensure a smooth animation and delete unnecessary frames.*			

	Add effects such as extending parts and titles. Provide helpful feedback to other groups about their animations.			

Sequence of Learning	Success Criteria	Vocabulary
1 – To understand what animation is.	I understand and can explain what 'animation' means. I can explain the history of animation. I can create my own 19th century animation toy.	animation, still images, moving images, Thaumatrope, flip book, Zoetrope, frames.
2 – To understand what stop motion animation is.	I understand and can explain what 'stop motion' means. I can take photos of an object. I can make small changes to my object between each photo. I can follow the steps in using an editing piece of software.	stop motion, animation, digital device, digital device frame, editing, photos, still image.
3 – To plan my stop motion video, thinking about the characters I want to use.	I can work collaboratively with others to plan a storyboard for an animation. I can think carefully about keeping my animation idea simple. I can decompose my story into smaller parts.	script, animation, frames, storyboard, decomposition.

	4 – To create a stop motion animation.	I can create a simple animation following my storyboard plan I can change my plan to recognise when something is too difficult to animate I understand the importance of keeping the camera still and making small movements between shots.	stop motion, animation, model, character, frame, design, animator, background, decomposition.
	5 – To edit and assess my stop motion animation.	I can create an animation project in Microsoft Photos I can delete frames. I can duplicate frames to extend my animation. I can add titles and effects. I can assess my animation.	stop motion, animation, edit, effects, evaluate, frames, fluid movement.

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Computing Sequence of Learning – Key Stage 2

<table>
<tr><td rowspan="4">Sandsend</td><td colspan="2">Unit Name: Mars Rover 2</td><td colspan="3">Strand: Data Handling</td></tr>
<tr><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">Understand computer networks including the internet; how they can provide multiple services, such as the world-wide web, and the opportunities they offer for communication and collaboration.

Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</td><td>3D
Algorithm
Binary image
CAD
Compression
CPU
Data
Drag and drop
Fetch, decode, execute ID card
Input</td><td>JPEG
Memory
Online community
Operating system
Output
Pixels
RAM
Responsible
RGB
ROM
Safe</td><td></td></tr>
<tr><td colspan="2">Unit Outcomes</td></tr>
<tr><td colspan="2">Create a pixel picture, explaining that a pixel is the smallest element of a digital image and that binary is used to code and transfer this data.

Save a JPEG as a bitmap and recognise the difference in file size as well as explaining how pixels are used to transfer image data.

Explain the 'fetch, decode, execute' cycle in relation to real-world situations.

Create a profile with a safe and suitable username and password and begin to use 3D design tools.

Independently take tutorial lessons, applying what they have learnt to their design and understand the importance of using an online community responsibly.</td></tr>
</table>

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Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To recognise how bit patterns represent images as pixels.	I can recall how computers transfer data in binary. I can relate 8-bit binary to 256 possibilities. I can identify that a pixel is the smallest possible element of a digital image. I can explain how a series of pixels are used to encode an image.	binary image, input, memory, output, pixel.
	2 – To explain how the data for digital images can be compressed.	I recall that images are made of pixels. I can relate the number of pixels to the size of an image. I can explain one of the methods of JPEG compression. I can explain how to reduce the file-size of a digital image.	compression, data, ID card, JPEG, pixels, RAM, RGB
	3 – To identify and explain the fetch, decode, execute cycle.	I understand the difference between ROM and RAM. I know what fetch, decode and execute look like in different contexts and examples. I can explain the fetch, decode, execute cycle.	algorithm, CPU, operating system, RAM, ROM
	4 – To create a safe online profile and tinker with 3D design software.	I can choose a safe and suitable username and password. I understand the importance of keeping personal information safe. I can begin to use 3D design software.	3D, CAD, drag and drop, RAM

	5 – To modify the design of a 3D object using CAD software.	I can undertake independent online tutorial-based learning. I can name my object. I can share my object to an online community. I can discuss how to use an online community responsibly.	3D, CAD, online community.

Sandsend	Unit Name: Online Safety	Strand: Online Safety		
	National curriculum objectives	**Key Vocabulary**		
	Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	Accurate information Advice App permissions Application Apps Bullying Communication Emojis Health In-app purchases Information Judgement Memes Mental health Mindfulness	Mini-biography Online communication Opinion Organisation Password Personal information Positive contributions Private information Real world Strong password Summarise Support Technology Trusted adult Wellbeing	
	Unit Outcomes			
	Understand that passwords need to be strong and that apps require some form of passwords. Recognise a couple of the different types of online communication and know who to go to if they need help with any communication matters online. Search for simple information about a person, such as their birthday or key life moments.			

	Know what bullying is and that it can occur both online and in the real world. Recognise when health and wellbeing are being affected in either a positive or negative way through online use. Offer a couple of advice tips to combat the negative effects of online use.			

Sequence of Learning	Success Criteria	Vocabulary
1 – To understand how apps can access our personal information and how to alter the permissions.	I can understand the importance of keeping passwords safe. I can identify that passwords are needed for access to 'apps'. I can explore how apps require permission to access private information.	password, strong password, applications, apps, private information, personal information, in-app purchases, app permissions.
2 – To be aware of the positive and negative aspects of online communication.	I can understand different types of online communication. I am aware of some of the different types of online communication. I can recognise the positive and negative forms of online communication.	technology, communication, online communication, emojis, memes, positive contributions, trusted adult, advice, organisations.
3 – To understand how online information can be used to form judgements.	I can understand why people search personal information about others online. I know how to search for personal information about others online. I can form opinions about the reliability of the information about a person	information, personal information, private information, judgement, summarise, accurate information, opinion, mini-biography.

	4 – To discover ways to overcome bullying.	*I can recognise differences between online and offline bullying.* *I can describe some of the differences between online and offline bullying.* *I can identify ways to help those being bullied online.* *I can recall organisations and people who can help with online bullying issues.*	bully, bullying, online, real world, trusted adult, organistion.
	5 – To understand how technology can affect health and wellbeing.	*I can identify the advantages and disadvantages technology has to health (mental and/or physical).* *I can research advice and ways to support others with their online health and wellbeing.* *I know where I can go to for support if my wellbeing is being negatively affected by technology.*	online, technology, health, wellbeing, support, application, organisation, mental health, mindfulness.

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Computing Sequence of Learning – Key Stage 2

<table>
<tr><td rowspan="4">Runswick Bay</td><td colspan="2">Unit Name: Bletchley Park</td><td colspan="3">Strand: Computing Systems and Networks.</td></tr>
<tr><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">Solve problems by decomposing them into smaller parts.

Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.

Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.

Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</td><td>Acrostic Code
Brute force hacking Caesar cipher
Chip and pin system Cipher
Code
Combination
Contribute
Convince
Date shift cipher
Discovery
Hero</td><td>Invention
Nth Letter Cipher
Password
Pig Latin
Pigpen cipher
Present
Scrambled
Secret
Secure
Technological advancement
Trial and error</td><td></td></tr>
<tr><td colspan="2">Unit Outcomes
Explain that codes can be used for a number of different reasons and decode messages.

Explain how to ensure a password is secure and how this works.

Create a simple website with information about Bletchley Park including the need to build electronic thinking machines to solve cipher codes.

Explain the importance of historical figures and their contribution towards computer science.</td><td colspan="3"></td></tr>
</table>

	Present information about their historical figure in an interesting and engaging manner.			

Sequence of Learning	Success Criteria	Vocabulary
1 – To understand there are many different types of secret codes.	I can explain why codes might be valuable. I can identify some common secret codes. I can decipher some secret codes. I can write a message using a secret code.	acrostic code, Caesar cipher, cipher, data shift cipher, nth letter cipher, pigpen cipher, scrambled, secret.
2 – To understand the importance of having a secure password.	I can describe what is meant by brute force hacking. I can understand why it is important to have a secure password. I can explain why a longer password is more secure than a short one.	brute force hacking, chip and PIN, combination, password, secure, trial and error.
3 – To understand the importance of Bletchley Park to the WW2 war effort.	I can understand that Bletchley Park was important during WW2. I can explain what the first computer was built for. I can create an information poster about Bletchley Park.	brute force hacking, cipher, encrypt, invention, secure, technological advancement, trial and error.
4 – To research historical figures that contributed to technological advances in computing.	I can identify some of the people who contributed to computing history.	discovery, invention, technological advancement.

		I can explain what some historical figures achieved. *I can research one historical figure in detail.*	
	5 – To research and present information about historical figures in computing.	*I can identify why historical figures were influential in creating modern computers.* *I can present information using presentation software.* *I can explain why a historical figure is important.*	contribute, convince, hero, present.

Runswick Bay	**Unit Name: Intro To Python**	**Strand: Programming**		
	National curriculum objectives	**Key Vocabulary**		
	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. *Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.*	Algorithm Code Command Design Import Indentation Input Instructions	Loop Output Patterns Random Remix Repeat Shape	

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Computing Sequence of Learning – Key Stage 2

Unit Outcomes
Iterate ideas, testing and changing throughout the lesson and explain what their program does. Use nested loops in their designs, explaining why they need two repeats. Alter the house drawing using Python commands; use comments to show a level of understanding around what their code does. Use loops in Python and explain what the parts of a loop do. Recognise that computers can choose random numbers; decompose the program into an algorithm and modify a program to personalise it.

Sequence of Learning	Success Criteria	Vocabulary
1 – To tinker with a new piece of software.	I can predict what I think something new will do. I can explore something independently. I can explain what I found.	code, command, instructions, loop, pattern.
2 – To understand nested loops.	I can explain what a loop is. I can understand why we use loops. I can explain how a nested loop works.	nested loop, repeat, shape.
3 – To understand basic Python commands.	I can decompose a picture. I can 'remix' a project by tinkering.	input, import.

		I can choose Python commands for a purpose.	
	4 – To use loops when programming.	I can explain what a loop is. I can suggest an appropriate place to use a loop. I can use the syntax for a loop.	design, indentation.
	5 – To understand the use of random numbers.	I can identify the need for random numbers. I can decompose a program. I can write an algorithm.	algorithm, output, random numbers, remix.

Runswick Bay	Unit Name: Big Data 1	Strand: Data Handling		
	National curriculum objectives	**Key Vocabulary**		
	Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	Algorithms Barcode Binary Boolean Brand Chips Commuter Contactless Data Encrypted	MagicBand Privacy Proximity QR code QR scanner Radio waves RFID Signal Systems/data analyst Transmission	
	Unit Outcomes			
	Understand why barcodes and QR codes were created. Create (and scan) their own QR code using a QR code generator website. Explain how infrared can be used to transmit a Boolean type signal.			

	Explain how RFID works, recall a use of RFID chips, and type formulas into spreadsheets. Take real-time data and enter it effectively into a spreadsheet. Presenting the data collected as an answer to a question. Recognising the value of analysing real-time data. Analyse and evaluate transport data and consider how this provides a useful service to commuters.	Infrared	Wireless	

Sequence of Learning	Success Criteria	Vocabulary
1 – To identify how barcodes and QR codes work.	I can identify and collect data from QR codes. I can recall how the data contained within barcodes and QR codes can be used by computers.	barcode, QR code, QR scanner.
2 – To know how infrared waves transmit data.	I can explain how infrared light can be used to transmit data. I can recall that infrared light can be used for a variety of purposes.	data, infrared, proximity, QR code, signal, transmission.
3 – To recognise how RFID is used.	I can identify how RFID can be used to transmit data. I can recall that encoding keeps data safe. I can type formulas into cells using a spreadsheet.	barcodes, chip, encrypt, infrared, QR codes, radio waves, RFID, wireless.
4 – To input and analyse real-world data.	I can recognise further uses of RFID.	column, data, input, RFID, row, spreadsheet.

		I can input and present data in a spreadsheet. I can make conclusions from a data source.	
	5 – To analyse and evaluate data.	I can recall how RFID is used in data transfer. I can identify how RFID helps to solve real-world data challenges. I can sort and compare data within a spreadsheet.	algorithm, brand, commuter, contactless, systems analyst.

Runswick Bay	Unit Name: History of Computers	Strand: Creating Media		
	National curriculum objectives	**Key Vocabulary**		
	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.	Background noise Byte Computer Devices File FX Gigabyte Graphics Hard drive Hardware Kilobytes Megabyte Memory storage Mouse Operating system Overlay Play	Processor Radio play RAM Raspberry Pi Record Reverb ROM Script Smartphone Sound Sound effects Terrabytes Touch screen Track Trackpad Trailer	

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Unit Outcomes			
Explain how to record sounds and add in sound effects over the top. Produce a simple radio play with some special effects and simple edits which demonstrate an understanding of how to use the software. Create a document that includes correct date information and facts about the computers and how they made a difference. Demonstrate a clear understanding of their device and how it affected modern computers, including well-researched information with an understanding of the reliability of their sources. Describe all of the features that we'd expect a computer to have including RAM, ROM, hard drive and processor, but of a higher specification than currently available.			

Sequence of Learning	Success Criteria	Vocabulary
1 – To tinker with sound.	I can identify the key features of a radio play. I can record sounds to sound recording software. I can add tracks in order to include sound effects into my recording.	overlay, radio play, record, sound clip, sound effect, track.
2 – To record, edit and add sound effects to a radio play.	I can plan and record a radio play. I can edit my radio play to remove any mistakes. I can add sound effects to my radio play to make it more interesting.	background noise, FX, radio play, script, sound effect.
3 – To understand how computers have changed and the impact this has had on the modern world.	I can identify how computers have evolved over time.	byte, computer, gigabytes, graphics, kilobytes, megabytes, terrabytes.

		I understand that computers are everywhere in modern life. I can recognise some of the earliest computers and how they impacted the modern world.	
	4 – To research one of the computers that changed the world and present information about it to the class.	I can present information about one device that changed the world. I can research information carefully. I can recognise whether information is reliable. I can cite and record sources found on the internet.	computer, devices, memory storage.
	5 – To design a computer of the future.	I can recognise the components of a computer and why they are important. I can identify how computers have evolved over time. I can use my understanding of historic computers to design a computer of the future.	CPU, GPU, hard drive, operating system, RAM, ROM

Runswick Bay	Unit Name: Big Data 2	Strand: Data Handling		
	National curriculum objectives	Key Vocabulary		
	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Understand computer networks including the internet, how they can provide multiple services, such as the world-wide web, and the opportunities they offer for communication and collaboration.	Big Data Bluetooth Corrupted Data Energy	QR codes Revolution RFID SIM Simulation	

	Unit Outcomes Recognise that data can become corrupted within a network and that data sent in packets is more robust, as well as identify the need to update devices and software. Recognise differences between mobile data and WiFi and use a spreadsheet to compare and identify high-use data activities and low-use data activities. Make links between the Internet of Things and Big Data and give a basic example of how data analysis/analytics can lead to improvement in town planning. Explain ways that Big Data or IoT principles could be used to solve a problem or improve efficiency within the school and prepare a presentation about their idea, considering the privacy of some data. Present their ideas about how Big Data/IoT can improve the school and provide feedback to others on their presentations.		GPS Improve Infrared Internet of Things Personal Privacy	Smart city Smart school Stop motion Threat WiFi Wireless	
	Sequence of Learning	**Success Criteria**		**Vocabulary**	
	1 – To explain how data can be safely transferred.	I can recognise that data can become corrupted within a network. I can explain how data sent in 'packets' is more robust. I can identify the need to update devices and software.		big data, Bluetooth, corrupt data, infrared waves, QR code, RFID, wireless.	
	2 – To investigate the data usage of online activities.	I can compare methods of wireless data transfer. I can recognise differences between Wi-Fi and mobile data. I can use a spreadsheet to compare the data-usage of various online activities.		big data, Internet of Things, mobile data, SIM, Wi-Fi.	
	3 – To identify how data analysis can improve city life.	I can identify the meaning of the term 'Internet of Things'.			

		I can recall how devices can be connected to the 'Internet of Things' – via WiFi or mobile data. I can recognise how the IoT has led to Big Data. I can link data analytics to improvement in town planning.	big data, computer simulation, Internet of Things, smart city.
	4 – To design a system for turning a school into a smart school.	I can recall methods of data transfer. I can evaluate the methods of data transfer. I can apply Big Data/IoT principles to solve a problem. I can research the technology associated with solving the problem. I can prepare a presentation.	big data, data, energy, improve, smart school.
	5 – To present ideas for turning a school into a smart school.	I can present my ideas for improving a school through the application of Big Data and the Internet of Things. I can listen to the ideas of my peers and provide effective feedback on their presentations. I can ask and answer effective questions that deepen my understanding.	big data, GPS, privacy, QR code, revolution.

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Computing Sequence of Learning – Key Stage 2

<table>
<tr><td rowspan="4">Runswick Bay</td><td colspan="2">Unit Name: Inventing a Product</td><td colspan="3">Strand: Skills Showcase</td></tr>
<tr><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.

Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.

Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</td><td>Adapt
Advert
Algorithm
Bugs
Coding
Debugging
Design
Edit
Electronic
Evaluate
Facts
Image rights
Images
Influence
Information
Inputs
Loops</td><td>Manipulation
Opinions
Output
Photos
Product
Program
Repetition
Screenshot
Search engine
Selection
Sequence
Snippets
Software
Structures
Variables
Video
Website</td><td></td></tr>
<tr><td colspan="2">Unit Outcomes
Evaluate code, understanding what it does and adapt existing to code for a specific purpose.

Debug programs and make them more efficient using sequence, selection, repetition or variables.

Design appropriate housing for their product using CAD software, including any input or output devices needed to make it work.

Create an appealing website for their product, aimed at their target audience which explains what their product is and what it does, using persuasive language.

Create an edited video of their project, articulating the key benefits.

Describe and show how to search for information online and be aware of the accuracy of the results presented.</td><td colspan="3"></td></tr>
</table>

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Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To design an electronic product.	I can evaluate code and understand what it does. I know that programs are designed for a specific purpose. I can use and adapt existing code to design a product.	adapt, code, design, electronic, evaluate, product.
	2 – To code and debug a program.	I can debug programs and make them more efficient. I can use sequence, selection, repetition, variables or inputs and outputs within my program.	algorithm, bug, coding, debug, input, loop, output, program, repetition, selection, sequence, structure, variable.
	3 – To use CAD to design a product.	I understand the inputs and outputs needed for my product. I can design appropriate housing for this. I can use CAD software to create shapes.	algorithm, design, input, output, product, software.
	4 – To create a website.	I can create an appealing website for my product. I can describe clearly what my product is and what it does. I can use persuasive language.	image rights, images, information, product, screenshot, website.
	5 – To create and edit a video.	I can record a video or take photos of my product. I can identify and articulate the key benefits of my product. I can edit a video.	advert, edit, photos, product, video.
	6 – To understand the techniques used in advertising a product.	I can understand how to use search technologies effectively. I can define the terms 'opinions', 'facts', influence', 'manipulation' and 'persuasion' and how they are used in advertisements. I can use opinions and facts in an advertisement for my product.	advertisement, facts, influence, manipulation, opinions, search engine, search results, snippets.

St. Martin's C of E (VA) Primary School
Computing Sequence of Learning – Key Stage 2

<table>
<tr><td rowspan="4">Runswick Bay</td><td colspan="2">Unit Name: Online Safety</td><td colspan="3">Strand: Online Safety</td></tr>
<tr><td colspan="2">National curriculum objectives</td><td colspan="3">Key Vocabulary</td></tr>
<tr><td colspan="2">use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</td><td>Anonymity
Antivirus
Biometrics
Block and report
Consent
Copy
Digital footprint
Digital personality
Financial information
Hacking
Inappropriate
Malware
Online bullying
Online reputation
Password
Paste
Personal information</td><td>Personality
Phishing
Privacy settings
Private
Reliable source
Report
Reputation
Respect
Scammers
Screengrab
Secure
Settings
Software updates
Two factor authenication
URL
Username</td><td></td></tr>
<tr><td colspan="2">Unit Outcomes
Discuss a range of issues online that can leave pupils feeling sad, frightened, worried or uncomfortable and can describe numerous ways to get help.

Explain how sharing online can have both positive and negative impacts.

Be aware of how to seek consent from others before sharing material online and can describe how content can still be shared online even if it is set to private.

Explain what a 'digital reputation' is and what it can consist of.

Understand the importance of capturing evidence of online bullying and can demonstrate some of these methods on the devices used at school.

Describe ways to manage passwords and strategies to add extra security such as two-factor authentication.

Explain what to do if passwords are shared, lost, or stolen.

Describe strategies to identify scams.

Explain ways to increase their privacy settings and understand why it is important to keep their software updated.</td><td></td><td></td><td></td></tr>
</table>

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Computing Sequence of Learning – Key Stage 2

	Sequence of Learning	Success Criteria	Vocabulary
	1 – To describe issues online that give us negative feelings and know ways to get help.	I can describe scenarios that could make someone feel sad, worried, uncomfortable or frightened. I can give examples of how to get help online and offline. I can explain the importance of asking for help.	online, report, block, privacy settings.
	2 – To think about the impact and consequences of sharing online.	I can describe how to be kind and show respect for others online. I know the risk involved with sharing things online even if it is sent privately.	consent, private, settings, screengrab, respect, inappropriate.
	3 – To know how to create a positive online reputation.	I can describe what a positive online reputation is. I can explain strategies to create a positive online reputation.	reputation, online reputation, digital footprint, personality, digital personality, anonymity.
	4 – To be able to describe how to capture bullying as evidence.	I know a range of strategies to collect evidence. I know who to share evidence with to help me.	online bullying, screen grab, screenshot, copy, paste, URL, block and report.
	5 – To manage personal passwords effectively.	I know how to create a strong password. I know a range of strategies for managing my passwords. I can explain what to do if my password is shared, lost or stolen.	biometrics, two factor authentication, password, username, secure, hacking.
	6 – To be aware of strategies to help be protected online.	I can describe simple ways to increase my privacy settings. I can explain why I should keep my software updated. I can describe strategies to identify scams.	personal information, financial information, scammers, phishing, malware, software updates, reliable source, antivirus.