

All Saints' Catholic Primary School

Computing

Curriculum Progression

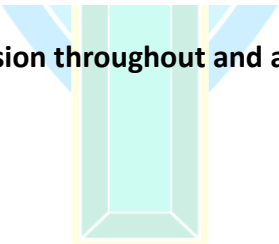
## OUR CURRICULUM INTENT

- ❖ We have designed an ambitious curriculum for all pupils that develops their knowledge, creativity, curiosity and skills-base. Utilising our location within North-West Durham, we deliver a curriculum that draws upon our rich history, cultural heritage and local resources.
- ❖ Our school life holds Gospel Values at its centre – this is evident within our curriculum delivery; we prioritise themes of fairness, integrity, compassion and responsibility and have high standards of all pupils in all subjects.
- ❖ Our curriculum is taught sequentially and systematically across each year group and assessments are used to inform current knowledge and future planning. Depending upon the individual needs of different cohorts or groups of pupils, the curriculum is adapted to ensure all children can access it and progress within it. Regardless of year group or subject, individual learning as well as collaborative learning is supported as part of a positive, hard working ethos.
- ❖ Prior learning is built upon with links made between old and new concepts. Meaningful learning is embedded throughout educational visits and creative activity and opportunity.
- ❖ When the children leave our school, we expect them to be confident learners who have a sound understanding of their place within our local community, our wider location and our global family. As a school, we are proud that our curriculum follows national policy but is also flexible and responsive to current issues.
- ❖ Our intention is for our pupils to be inspired to pursue knowledge and celebrate diversity in all areas.

## COMPUTING RATIONALE

- ❖ We have designed an ambitious computing curriculum for all pupils which is a progression of skills in digital literacy, computer science, information technology and online safety to ensure that children become competent in safely using, as well as understanding, technology.
- ❖ Our school life holds Gospel Values at its centre – this is evident within our curriculum delivery; we prioritise themes of fairness, integrity, compassion and responsibility. We aim for all children to understand that they have responsibilities as well as rights when using technology and the internet.
- ❖ Our curriculum is taught sequentially and systematically across each year group and assessments are used to inform current knowledge and future planning. Depending upon the individual needs of different cohorts or groups of pupils, the curriculum is adapted to ensure all children can access it and progress within it. Regardless of year group or subject, individual learning as well as collaborative learning is supported as part of a positive, hard-working ethos.
- ❖ When the children leave our school, we expect them to be confident learners who have a sound understanding of how to safely use computational thinking skills, digital literacy knowledge and creativity to understand and change the world. Computing allows our children to develop skills in finding, exploring, sharing and presenting information and we intend for our children to use their skills to make a positive impact upon our community and the wider world.

For each individual subject document which shows progression throughout and across each year group, please access the One Drive or see each subject coordinator.





All Saints' Catholic Primary School

**Computing Intent**

## Year One

<b>How do we use a computer safely?</b> <b>How can I paint without a paintbrush?</b>	<b>What is a program?</b> <b>How can I group different objects?</b>	<b>How can I write without a pencil?</b> <b>How do we make a sprite move?</b>
<ul style="list-style-type: none"> <li>Identify technology</li> <li>Identify a computer and its main parts</li> <li>Use a mouse in different ways</li> <li>Use a keyboard to type on a computer</li> <li>Use the keyboard to edit text</li> <li>Create rules for using technology responsibly</li> </ul> <ul style="list-style-type: none"> <li>Describe what different freehand tools do</li> <li>Use the shape tool and the line tools</li> <li>Make careful choices when painting a digital picture</li> <li>Explain why I chose the tools I used</li> <li>Use a computer on my own to paint a picture</li> <li>Compare painting a picture on a computer and on paper</li> </ul>	<ul style="list-style-type: none"> <li>Explain what a given command will do</li> <li>Act out a given word</li> <li>Combine forwards and backwards commands to make a sequence</li> <li>Combine four direction commands to make sequences</li> <li>Plan a simple program</li> <li>Find more than one solution to a problem</li> </ul> <ul style="list-style-type: none"> <li>Label objects</li> <li>Identify that objects can be counted</li> <li>Describe objects in different ways</li> <li>Count objects with the same properties</li> <li>Compare groups of objects</li> <li>Answer questions about groups of objects</li> </ul>	<ul style="list-style-type: none"> <li>Use a computer to write</li> <li>Add and remove text on a computer</li> <li>Identify that the look of text can be changed on a computer</li> <li>Make careful choices when changing text</li> <li>Explain why I used the tools that I chose</li> <li>Compare typing on a computer to writing on paper</li> </ul> <ul style="list-style-type: none"> <li>Choose a command for a given purpose</li> <li>Show that a series of commands can be joined together</li> <li>Identify the effect of changing a value</li> <li>Explain that each sprite has its own instructions</li> <li>Design the parts of a project</li> <li>Use my algorithm to create a program</li> </ul>
Online Safety will be visited throughout the year through Computing, PSHE and RSE	Know that the internet is accessed all over the world and know some devices are connected to the internet (OR & CO)	Know that they should always ask a responsible adult if they want to use a device and ask for help if they see anything that worries them (SII)
<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>
Technology, computer, mouse, keyboard, edit,	Command, forwards, backwards, sequence,	Type, add, remove, change, text, tools, font, size,

responsibly Freehand, tools, shape, line, digital, compare	program, solution, problem Label, objects, describe, properties, compare, questions	colour Command, value, sprite, stage, algorithm
<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>
EYFS Year One Autumn One	EYFS spring	EYFS autumn
<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>
Year Two Autumn One- What is I.T.? Year Three Autumn Two- How can I make pictures move?	Year Two Spring One- Why does an algorithm need to be in order? Year Two Spring Two- How can we show data?	Year Three Summer One- Is a computer document better than a handmade? Year Two Summer Two- What is a program?

## Year Two

<b>What is I.T.?</b> <b>How can we record a memory?</b>	<b>Why does an algorithm need to be in order?</b> <b>How can we show data?</b>	<b>How can I make music on a computer?</b> <b>What is a start and what is an outcome?</b>
<ul style="list-style-type: none"> <li>Recognise the uses and features of information technology</li> <li>Identify the uses of information technology in the school</li> <li>Identify information technology beyond school</li> <li>Explain how information technology helps us</li> <li>Explain how to use information technology safely</li> <li>Recognise that choices are made when using information technology</li> </ul> <ul style="list-style-type: none"> <li>Use a digital device to take a photograph</li> <li>Make choices when taking a photograph</li> <li>Describe what makes a good photograph</li> <li>Decide how photographs can be improved</li> <li>Use tools to change an image</li> <li>Recognise that photos can be changed</li> </ul>	<ul style="list-style-type: none"> <li>Describe a series of instructions as a sequence</li> <li>Explain what happens when we change the order of instructions</li> <li>Use logical reasoning to predict the outcome of a program</li> <li>Explain that programming projects can have code and artwork</li> <li>Design an algorithm</li> <li>Create and debug a program that I have written</li> </ul> <ul style="list-style-type: none"> <li>Recognise that we can count and compare objects using tally charts</li> <li>Recognise that objects can be represented as pictures</li> <li>Create a pictogram</li> <li>Select objects by attribute and make comparisons</li> <li>Recognise that people can be described by attributes</li> <li>Explain that we can present information using a computer</li> </ul>	<ul style="list-style-type: none"> <li>Say how music can make us feel</li> <li>Identify that there are patterns in music</li> <li>Experiment with sound using a computer</li> <li>Use a computer to create a musical pattern</li> <li>Create music for a purpose</li> <li>Review and refine our computer work</li> </ul> <ul style="list-style-type: none"> <li>Explain that a sequence of commands has a start</li> <li>Explain that a sequence of commands has an outcome</li> <li>Create a program using a given design</li> <li>Change a given design</li> <li>Create a program using my own design</li> <li>Decide how my project can be improved</li> </ul>

Online Safety will be visited throughout the year through Computing, PSHE and RSE	Know devices that enable direct communication between people through images and text (OR)	Know what personal information is and that they should never share this with anyone they don't know (MHWB)*	Know that they should tell a trusted adult if they are upset or worried about anything on a device (SII)	
	With support be able to use a safe search engine (MOI)	Explain what bullying is and how to get help from bullying (OB)	Explain the difference between things that are true or real (MIO)	Explain how passwords could and should be used (PS)
<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>	
Photograph, images, IT, information technology, technology	Pictogram, data, tally, instructions, sequence, program, algorithm		Sound, output, program, algorithm, sequence, goal, debug	
<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	
Year One Autumn-How do we use a computer safely  EYFS	Year One Spring- What is a program?  Year One Spring- How can I make groups?		EYFS  Year One Spring- What is a program? Year One Summer- How can I make a sprite move?	
<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>	
Year Three autumn - How do computers link together? Year Three Autumn- How can I make my picture move?	Year Three spring		Year Three summer	



Year Three			
How do computers link together? How can I make my pictures move?	Why does a program need to be in sequence? What is a branching database?	Is a computer document better than handmade? How can I program movement?	
<ul style="list-style-type: none"> <li>• Explain how digital devices function</li> <li>• Identify input and output devices</li> <li>• Recognise how digital devices can change the way we work</li> <li>• Explain how a computer network can be used to share information</li> <li>• Explore how digital devices can be connected</li> <li>• Recognise the physical components of a network</li> <li>• Explain that animation is a sequence of drawings or photographs</li> <li>• Relate animated movement with a sequence of images</li> <li>• Plan an animation</li> <li>• Identify the need to work consistently and carefully</li> <li>• Review and improve an animation</li> <li>• Evaluate the impact of adding other media to an animation</li> </ul>	<ul style="list-style-type: none"> <li>• Explore a new programming environment- Scratch</li> <li>• Identify that commands have an outcome</li> <li>• Explain that a program has a start</li> <li>• Recognise that a sequence of commands can have an order- sounds</li> <li>• Change the appearance of my project</li> <li>• Create a project from a task description</li> <li>• Create questions with yes/no answers</li> <li>• Identify the attributes needed to collect data about an object</li> <li>• Create a branching database</li> <li>• Explain why it is helpful for a database to be well structured</li> <li>• Plan the structure of a branching database</li> <li>• Independently create an identification tool</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise how text and images convey information</li> <li>• Recognise that text and layout can be edited</li> <li>• Choose appropriate page settings</li> <li>• Add content to a desktop publishing publication</li> <li>• Consider how different layouts can suit different purposes</li> <li>• Consider the benefits of desktop publishing</li> <li>• Explain how a sprite moves in an existing project</li> <li>• Create a program to move a sprite in four directions</li> <li>• Adapt a program to a new context</li> <li>• Develop my program by adding features</li> <li>• Identify and fix bugs in a program</li> <li>• Design and create a maze-based challenge</li> </ul>	
Online Safety will be visited throughout the year	Know that some people	Know that concerns	Give examples of how Create and use a simple

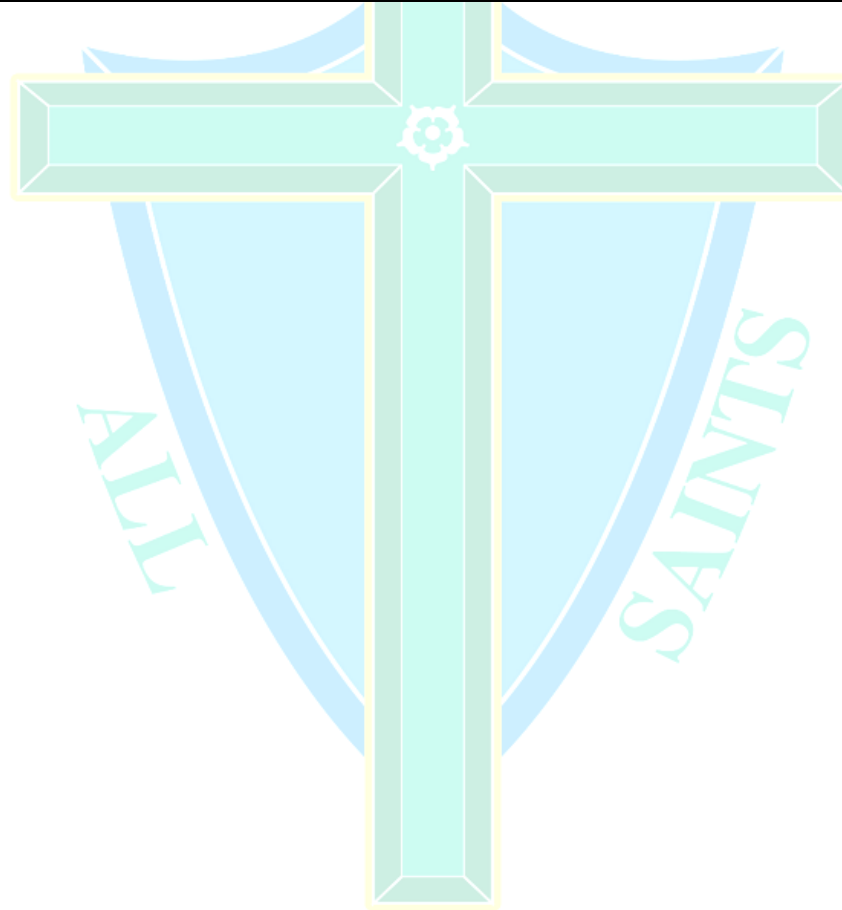
through Computing, PSHE and RSE	are the internet should not be trusted and understand the term identity (OI)	about what they see on-line should be reported to a trusted adult and describe appropriate ways to behave towards others online (ORep)	bullying behaviour could appear online and how to get support (OB)	password (PS)
	Use a search engine to find information given key words and discuss difference between belief, opinion and fact (MOI)	Know which websites are useful and begin to understand all might not be trustworthy or age appropriate (MHWB)*	Know that using technology can sometimes be inappropriate and give examples of what anyone may or may not be willing to share about themselves online (OR)	Explain why copying someone's work from the internet without permission is not fair (CO)
<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>
Connection, link, computers. Animation, images, plan	Scratch, algorithm, program, small steps, database		Publish, images, text, combination, program, sequence, debug	
<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>
Year Two Autumn- What is IT? Year Two Autumn- How can I record a memory?	Year Two spring		Year Two summer	
<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>
Year Four autumn	Year Four spring		Year Four summer	

**Year Four**

**What is the internet?  
How can we make a podcast?**

**Why is repetition important for  
programs?  
How can a computer help collect  
data?**

**Are photos always what we see?  
Why is repetition important in games?**



<ul style="list-style-type: none"> <li>• Describe how networks physically connect to other networks</li> <li>• Recognise how networked devices make up the internet</li> <li>• Outline how websites can be shared via the World Wide Web (WWW)</li> <li>• Describe how content can be added and accessed on the World Wide Web (WWW)</li> <li>• Recognise how the content of the WWW is created by people</li> <li>• Evaluate the consequences of unreliable content</li> <li>•</li> <li>• Identify that sound can be recorded</li> <li>• Explain that audio recordings can be edited</li> <li>• Recognise the different parts of creating a podcast project</li> <li>• Apply audio editing skills independently</li> <li>• Combine audio to enhance my podcast project</li> <li>• Evaluate the effective use of audio</li> </ul>	<ul style="list-style-type: none"> <li>• Identify that accuracy in programming is important</li> <li>• Create a program in a text-based language</li> <li>• Explain what 'repeat' means</li> <li>• Modify a count-controlled loop to produce a given outcome</li> <li>• Decompose a task into small steps</li> <li>• Create a program that uses count-controlled loops to produce a given outcome</li> <li>•</li> <li>• Explain that data gathered over time can be used to answer questions</li> <li>• Use a digital device to collect data automatically</li> <li>• Explain that a data logger collects 'data points' from sensors over time</li> <li>• Recognise how a computer can help us analyse data</li> <li>• Identify the data needed to answer questions</li> <li>• Use data from sensors to answer questions</li> </ul>	<ul style="list-style-type: none"> <li>• Explain that the composition of digital images can be changed</li> <li>• Explain that colours can be changed in digital images</li> <li>• Explain how cloning can be used in photo editing</li> <li>• Explain that images can be combined</li> <li>• Combine images for a purpose</li> <li>• Evaluate how changes can improve an image</li> <li>• Develop the use of count-controlled loops in a different programming environment</li> <li>• Explain that in programming there are infinite loops and count controlled loops</li> <li>• Develop a design that includes two or more loops which run at the same time</li> <li>• Modify an infinite loop in a given program</li> <li>• Design a project that includes repetition</li> <li>• Create a project that includes repetition</li> </ul>
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Online Safety will be visited throughout the year through Computing, PSHE and RSE	Know that pictures and text share on-line can end up with strangers and explain some ways that information about anyone online could be created, copied or shared by others (OR)	Reliably know what to do if they are exposed to unpleasant materials on any device (MOI)	Know that having a balance of online and offline activities is important and know that technology can be a distraction from other things (MHWB)*	Reliably uses a more complex password to access resources (PS)
	Know what the key words are to enter into a search engine to find information they want and recognise pop-ups, bots or 'fake news' (MOI)	Give examples of how to be respectful to others online and recognise healthy and unhealthy behaviours (ORep)*	Describe ways people can be bullied through a range of media (OB)	Explain how online identity can be different to offline identity (SII) To know digital age of consent (PS)
<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>		
Website, connection, content, reliable, unreliable Record, podcast, evaluate	Outcome, count control, decompose Data logger, recording		program, conditionals, inputs, outputs, predictions	
<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>		
Year Three autumn	Year Three spring		Year Three summer	
<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>		
Year Five autumn	Year Five spring		Year Five summer	

## Year 5

<b>Why do different search engines give different results?</b> <b>How can we share our learning with others? (Video editing)</b>	<b>Why do the lights come on when its dark?</b> <b>Why is a digital database quicker?</b>	<b>What is a vector drawing?</b> <b>How does a digital quiz work?</b>
<ul style="list-style-type: none"> <li>Explain that computers can be connected together to form systems</li> <li>Recognise the role of computer systems in our lives</li> <li>Experiment with search engines</li> <li>Describe how search engines select results</li> <li>Explain how search results are ranked</li> <li>Recognise why the order of results is important, and to whom</li>   <li>Explain what makes a video effective</li> <li>Identify digital devices that can record video</li> <li>Capture video using a range of techniques</li> <li>Create a storyboard</li> <li>Identify that video can be improved through reshooting and editing</li> <li>Consider the impact of the choices made when making and sharing a video</li> </ul>	<ul style="list-style-type: none"> <li>Control a simple circuit connected to a computer</li> <li>Write a program that includes count-controlled loops</li> <li>Explain that a loop can stop when a condition is met</li> <li>Explain that a loop can be used to repeatedly check whether a condition has been met</li> <li>Design a physical project that includes selection</li> <li>Create a program that controls a physical computing project</li>   <li>Use a form to record information</li> <li>Compare paper and computer-based databases</li> <li>Outline how you can answer questions by grouping and then sorting data</li> <li>Explain that tools can be used to select specific data</li> <li>Explain that computer programs can be used to compare data visually</li> <li>Use a real-world database to answer questions</li> </ul>	<ul style="list-style-type: none"> <li>Identify that drawing tools can be used to produce different outcomes</li> <li>Create a vector drawing by combining shapes</li> <li>Use tools to achieve a desired effect</li> <li>Recognise that vector drawings consist of layers</li> <li>Group objects to make them easier to work with</li> <li>Apply what I have learned about vector drawings</li>   <li>Explain how selection is used in computer programs</li> <li>Relate that a conditional statement connects a condition to an outcome</li> <li>Explain how selection directs the flow of a program</li> <li>Design a program which uses selection</li> <li>Create a program which uses selection</li> <li>Evaluate my program</li> </ul>

Online Safety will be visited throughout the year through Computing, PSHE and RSE		Know that it is irresponsible to share images of friends on-line without their permission (ORep)	Know that a balance of online and offline activities is important to maintain good health (MHWB)*	Know how to report concerns on-line (OB)	Effectively use a search engine to find multiple criteria using and to refine searches (MOI)
Know how to compare information from different websites and know that some sites may show bias (MOI)	Explain how identity online can be copied, modified or altered (SII)	Explain what a strong password is (PS)	Know the internet can draw us to information for different agendas i.e. website notifications, pop-ups, targeted ads (MOI)	Describe how information may be received by one person as 'banter' but as bullying by another person (OB)	Know that some people we communicate with online may want to do me or my friends harm and to recognise this is not my/our fault (OR)
<b>Vocabulary</b>		<b>Vocabulary</b>		<b>Vocabulary</b>	
settings, safety, images, search engine, bias video, storyboard		Control, loops Data, grouping, visual		Vector, layers, edit Program, debugging, algorithm, coding, sequence, conditional, selection	
<b>Prior Knowledge</b>		<b>Prior Knowledge</b>		<b>Prior Knowledge</b>	
Year Four autumn		Year Four spring		Year Four summer	
<b>Future Knowledge</b>		<b>Future Knowledge</b>		<b>Future Knowledge</b>	
Year Six autumn		Year Six spring		Year Six summer	

## Year Six

How are we all connected online? What is a website?	How do we keep a score on a game? Can we quickly explore data?	How does a computer show 3- dimentions? Can I use a micro:bit to control a program?		
<ul style="list-style-type: none"> <li>• Explain the importance of internet addresses</li> <li>• Recognise how data is transferred across the internet</li> <li>• Explain how sharing information online can help people to work together</li> <li>• Evaluate different ways of working together online</li> <li>• Recognise how we communicate using technology</li> <li>• Evaluate different methods of online communication</li>   <li>• Review an existing website and consider its structure</li> <li>• Plan the features of a web page</li> <li>• Consider the ownership and use of images (copyright)</li> <li>• Recognise the need to preview pages</li> <li>• Outline the need for a navigation path</li> <li>• Recognise the implications of linking to content owned by other people</li> </ul>	<ul style="list-style-type: none"> <li>• Define a 'variable' as something that is changeable</li> <li>• Explain why a variable is used in a program</li> <li>• Choose how to improve a game by using variables</li> <li>• Design a project that builds on a given example</li> <li>• Use my design to create a project</li> <li>• Evaluate my project</li>   <li>• Create a data set in a spreadsheet</li> <li>• Build a data set in a spreadsheet</li> <li>• Explain that formulas can be used to produce calculated data</li> <li>• Apply formulas to data</li> <li>• Create a spreadsheet to plan an event</li> <li>• Choose suitable ways to present data</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise that you can work in three dimensions on a computer</li> <li>• Identify that digital 3D objects can be modified</li> <li>• Recognise that objects can be combined in a 3D model</li> <li>• Create a 3D model for a given purpose</li> <li>• Plan my own 3D model</li> <li>• Create my own digital 3D model</li>   <li>• Create a program to run on a controllable device</li> <li>• Explain that selection can control the flow of a program</li> <li>• Update a variable with a user input</li> <li>• Use a conditional statement to compare a variable to a value</li> <li>• Design a project that uses inputs and outputs on a controllable device</li> <li>• Develop a program to use inputs and outputs on a controllable device</li> </ul>		
<p>Online Safety will be visited throughout the year through Computing, PSHE and RSE</p>	<p>Know how to reduce the risks posed by using social media by</p>	<p>Recognise and discuss the pressures that technology can place</p>	<p>Explain the ways in which anyone can develop an online</p>	<p>Describe how to capture bullying content as evidence</p>



		managing their friends lists and privacy settings (PS)	on someone and how they can manage this (MHWB)*	reputation (ORep) *	and how to share these with those that can help (OB)
Know that hacking or misusing someone else's account is illegal and can demonstrate ways in which some online content targets people to gain money or information illegally (MOI)	Know that search results can be manipulated by sponsorship and advertising and define the terms 'influence', 'manipulation', 'persuasion' and explain how someone might encounter them online (MOI)	Know how to validate information found through searches by checking more than one source (MOI)	Demonstrate how to make references to and acknowledge sources of work I have used from the internet (C&O)	Understand how shared privately online has unintended consequences such as 'screen grabs' (ORep)	Identify and critically evaluate online content related to gender, race, religion, diversity, culture and other groups and explain why it is important to challenge and reject inappropriate representations (SII)*
<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>
reputation, influence, manipulation, persuasion, screen grab/screenshot, edit, communication Website, copyright, preview navigation	Variable, algorithm Edit, data, formula, spreadsheet, sequence, insert			3-D, model, representation sequence, mathematical expression, construct, conditionals, loop, modify, algorithm, output	
<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>
Year Five autumn - Search Engines	Year Five summer			Year Five summer Year Six spring	
<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>
Key Stage Three Curriculum	Key Stage Three Curriculum			Key Stage Three Curriculum	