

# Computing Journey

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Introduction  
to Python  
programming



Mobile app  
development



Representations  
– from clay to  
silicone



Developing  
for the web



Layers of  
computing  
systems



Media –  
Vector  
graphics



E-Safety:  
Safety  
online



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E-Safety: Clear  
messaging in  
digital media



Networks from  
semaphores to  
the Internet



Programming  
essentials in  
Scratch



Modelling  
data using  
spreadsheets



Programming  
essentials in  
Scratch



Using media  
– Gaining  
support for a  
cause



Sensing  
movement



SCRATCH  
Creating  
media – 3D  
Modelling

Data and  
information -  
Intro to  
Spreadsheets



Programming  
– Variables in  
games



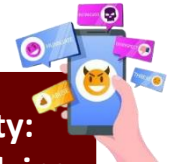
Creating  
media – Web  
page  
creation



Computing  
systems and  
networks



E- safety:  
Cyberbullying



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E-Safety:  
Welcome  
to the  
web



Computer  
systems and  
networks



Creating  
media –  
Video  
production



Google slides  
Presentations



Data and  
information  
– Flat-file  
data







Creating media  
– Introduction  
to vector  
graphics






Programming  
– Selection in  
quizzes










Scheme of Learning	E-safety: Welcome to the Web 	Computer systems and networks 	Creating media – Video production 	Google slides Presentations 
Knowledge	<ul style="list-style-type: none"><li>To understand the many positive uses of the internet.</li><li>To recognise what a website might look like.</li><li>To know what a hyperlink looks like.</li><li>To identify the basic features of a web browser.</li><li>To understand how to search for reliable information.</li><li>To be able to identify a number of different file types that might be saved from the internet.</li></ul>	<ul style="list-style-type: none"><li>To explain that computers can be connected together to form systems</li><li>To recognise the role of computer systems in our lives</li><li>To identify how to use a search engine</li><li>To describe how search engines select results</li><li>To explain how search results are ranked</li><li>To recognise why the order of results is important, and to whom</li></ul>	<ul style="list-style-type: none"><li>To explain what makes a video effective</li><li>To use a digital device to record video</li><li>To capture video using a range of techniques</li><li>To create a storyboard</li><li>To identify that video can be improved through reshooting and editing</li><li>To consider the impact of the choices made when making and sharing a vide</li></ul>	<ul style="list-style-type: none"><li>To identify careers that might sue presentation tools.</li><li>To apply word processing skills to format text and images to present professionally.</li><li>To create a presentation on a theme/topic.</li><li>To know how to add animations to slideshows.</li><li>To practice presentation skills to create interactive quizzes.</li></ul>
Sequencing Statements/ Cross Curricular Learning				Careers – Which jobs use PowerPoint/ Slides?
Enrichment Opportunities and British Values				




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Scheme of Learning	Data and information – Flat-file data 	Creating media – Introduction to vector graphics 	Programming – Selection in quizzes 
Knowledge	<ul style="list-style-type: none"><li>• To use a form to record information</li><li>• To compare paper and computer-bases databases</li><li>• To outline how you can answer questions by grouping and then sorting data</li><li>• To explain that tools can be used to select specific data</li><li>• To explain that computer programs can be used to compare data visually</li><li>• To use a real-world database to answer questions</li></ul>	<ul style="list-style-type: none"><li>• To identify that drawing tools can be used to produce different outcomes</li><li>• To create a vector drawing by combining shapes</li><li>• To use tools to achieve a desired effect</li><li>• To recognise that vector drawings consist of layers</li><li>• To group objects to make them easier to work with</li><li>• To apply what I have learned about vector drawings</li></ul>	<ul style="list-style-type: none"><li>• To explain how selection is used in computer programs</li><li>• To relates that a conditional statement connects a condition to an outcomes</li><li>• To explain how selection directs the flow of a program</li><li>• To design a program that uses selection</li><li>• To create a program that uses selection</li><li>• To evaluate my program</li></ul>
Sequencing Statements/ Cross Curricular Learning		Careers – Which jobs use PowerPoint/ Slides?	
Enrichment Opportunities and British Values			Encouraging girls into computer science

Scheme of Learning	E- safety: Cyberbullying 	Computing systems and networks 	Creating media – Web page creation 	Programming – Variables in games 
Knowledge	<ul style="list-style-type: none"><li>• To explain how sharing something online may have an impact either positively or negatively</li><li>• To describe how to be kind and show respect for others online</li><li>• To understand and describe how things shared privately can have unintended consequences</li><li>• To explain how someone would report online bullying in different contexts</li><li>• To describe how to capture bullying behaviour online</li></ul>	<ul style="list-style-type: none"><li>• To explain the importance of internet addresses</li><li>• To recognise how data is transferred across the internet</li><li>• To explain how sharing information online can help people to work together</li><li>• To evaluate different ways of working together online</li><li>• To recognise how we communicate using technology</li><li>• To evaluate different methods of online communication</li></ul>	<ul style="list-style-type: none"><li>• To review an existing website and consider its structure</li><li>• To plan the features of a web page</li><li>• To consider the ownership and use of images (copyright)</li><li>• To recognise the need to preview pages</li><li>• To outline the need for a navigation path</li><li>• To recognise the implications of linking to content owned by other people</li></ul>	<ul style="list-style-type: none"><li>• To define a ‘variable’ as something that is changeable</li><li>• To explain why a variable is used in a program</li><li>• To choose how to improve a game by using variables</li><li>• To design a project that builds on a given example</li><li>• To use my design to create a project</li><li>• To evaluate my project</li></ul> <div>Cont. ...</div>
Sequencing Statements/ Cross Curricular Learning			Y5 Vector drawing	
Enrichment Opportunities and British Values				<div>Back</div>

Scheme of Learning	<b>Data and information - Intro to Spreadsheets</b> 	<b>Creating media – 3D Modelling</b> 	<b>Sensing movement</b> 
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>• To create a data set in a spreadsheet</li> <li>• To build a data set in a spreadsheet</li> <li>• To explain that formulas can be used to produce calculated data</li> <li>• To apply formulas to data</li> <li>• To create a spreadsheet to plan an event</li> <li>• To choose suitable ways to present data</li> </ul>	<ul style="list-style-type: none"> <li>• To recognise that you can work in three dimensions on a computer</li> <li>• To identify that digital 3D objects can be modified</li> <li>• To recognise that objects can be combined in a 3D model</li> <li>• To create a 3D model for a given purpose</li> <li>• To plan my own 3D model</li> <li>• To create my own digital 3D model</li> </ul>	<ul style="list-style-type: none"> <li>• To create a program to run on a controllable device</li> <li>• To explain that selection can control the flow of a program</li> <li>• To update a variable with a user input</li> <li>• To use a conditionally statement to compare a variable to a value</li> <li>• To design a project that uses inputs and outputs on a controllable device</li> <li>• To develop a program to use inputs and outputs on a controllable device</li> </ul>
<b>Sequencing Statements/ Cross Curricular Learning</b>	<b>Y5 branching database</b> <b>Careers – Which jobs use PowerPoint/ Slides?</b>	<b>Y5 vector drawings</b>	<b>Careers – Which jobs use PowerPoint/ Slides?</b>
<b>Enrichment Opportunities and British Values</b>			

Scheme of Learning	E-Safety: Clear messaging in digital media 	Networks from semaphores to the Internet 	Programming essentials in Scratch 
Knowledge	<ul style="list-style-type: none"><li>To choose search terms relating to a particular issue</li><li>To describe and assess the benefits and the potential risks of sharing information online</li><li>To explain how the information online services hold about someone's forms part of their 'online identity'</li><li>To plan a poster to clearly convey a message</li><li>To modify a logo using a graphic editing program</li><li>To plan a consistent layout for a set of slides</li><li>To search for suitable text for slides</li><li>To plan how to deliver a presentation</li></ul>	<ul style="list-style-type: none"><li>To define 'protocol' and provide examples of non-networking protocols</li><li>To list examples of hardware necessary for connecting devices to network</li><li>To compare wired to wireless connections and list examples</li><li>To define what the internet is</li><li>To explain the difference between the internet, its services and the World Wide Web</li><li>To describe components (servers, browsers, pages, HTTP and HTTPS protocols, etc.) and how they work together</li></ul>	<ul style="list-style-type: none"><li>To compare how humans and computers understand instructions</li><li>To define a variable as a name that refers to data being stored by the computer</li><li>To define a condition as an expression that will be evaluated as either true or false</li><li>To create conditions that use comparison operators (&gt;,&lt;=)</li><li>To define iteration as group of instructions that are repeatedly executed</li><li>To independently design and apply programming constructs to solve a problem</li></ul>
Sequencing Statements/ Cross Curricular Learning	Welcome to the Web (Year 5) Online Safety: Cyberbullying (Year 6)	<ul style="list-style-type: none"><li>Careers – Which jobs use PowerPoint/ Slides?</li></ul>	
Enrichment Opportunities and British Values	Encouraging girls into computer science		Encouraging girls into computer science




Scheme of Learning	Modelling data using spreadsheets 	Programming essentials in Scratch 	Using media – Gaining support for a cause 
Knowledge	<ul style="list-style-type: none"><li>To identify columns, rows, cells, and cell references in spreadsheet software</li><li>To use basic formulas with cell references to perform calculations</li><li>To explain the differences between data and information</li><li>To analyse data using charts and functions</li><li>To analyse data using sort and filter, average and IF</li><li>To use conditional formatting</li></ul>	<ul style="list-style-type: none"><li>To define a subroutine as a group of instructions</li><li>To identify where condition-controlled iteration</li><li>To evaluate which type of iteration</li><li>To define a list as a collection</li><li>To decompose a larger problem</li><li>To apply appropriate constructs to solve a problem</li></ul>	<ul style="list-style-type: none"><li>To select the most appropriate software to use a complete a task</li><li>To select appropriate images for a given context</li><li>To critique digital content for credibility</li><li>To apply referencing techniques and recognise the concept of plagiarism</li><li>To construct a blog using appropriate software</li><li>To construct a blog using credible sources</li></ul>
Sequencing Statements/ Cross Curricular Learning	Y6 Spreadsheets		
Enrichment Opportunities and British Values		Encouraging girls into computer science	

Scheme of Learning	E- safety: Safety online 	Media – Vector graphics 	Layers of computing systems 	Developing for the web 
Knowledge	<ul style="list-style-type: none"><li>To explore the increasing use of social media.</li><li>To recognise how social media can and should be a significant part of our lives.</li><li>To understand the ever changing purpose of social media.</li><li>To understand the impacts of sexting</li><li>To understand the age restrictions on social media and the reasons why they are in place for safety.</li><li>To produce clearly presented information to educate others about the importance of staying safe on different social media.</li></ul>	<ul style="list-style-type: none"><li>To use tools to draw and modify shapes</li><li>To use tools to align and distribute objects to create uniformity</li><li>To explain that vector graphics are made up of paths</li><li>To choose a project and plan a design</li><li>To explain how markup defines what a vector graphic looks like</li><li>To explain key differences between vector and bitmap images</li></ul>	<p>To recall that a general-purpose computing system is a device for executing programs</p> <ul style="list-style-type: none"><li>To describe the function of the hardware components used in computing systems</li><li>To analyse how the hardware components in computing systems work together in order to execute programs</li><li>To describe the NOT, AND and OR logical operators, and how they are used to form logical expressions</li><li>To provide broad definitions of ‘artificial intelligence’ and ‘machine learning’</li><li>To explain the implications of sharing program code</li></ul>	<ul style="list-style-type: none"><li>To describe what HTML is</li><li>To display images within a web page</li><li>To describe what CSS is</li><li>To describe what a search engine is</li><li>To use search technologies effectively</li><li>to implement navigation to complete a functioning website</li></ul>
Sequencing Statements/ Cross Curricular Learning	Welcome to the Web (Year 5) Online Safety: Cyberbullying (Year 6) Online Safety: Digital Footprints (Year 7)  Careers: Which jobs now rely on social media? PSHE: Healthy Relationships	Y5 Vector drawings		
Enrichment Opportunities and British Values				Encouraging girls into computer science

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Scheme of Learning	Representations – from clay to silicone 	Mobile app development 	Introduction to Python programming 
Knowledge	<ul style="list-style-type: none"><li>• To list examples of representations</li><li>• To recall that characters can be represented as sequences of symbols and list examples of character coding schemes</li><li>• To explain what binary digits (bits) are, in terms of familiar symbols such as digits or letters</li><li>• To describe how natural numbers are represented as sequences of binary digits</li><li>• To convert between different units and multiples of representation size</li><li>• To apply all of the skills covered</li></ul>	<ul style="list-style-type: none"><li>• To understand the objectives and requirements of the Health and Fitness Tracker app</li><li>• To understand key online safety concepts and their importance in app development</li><li>• To understand the hardware components of mobile phones and their functions in app development</li><li>• To learn strategies for securely handling user data in app development</li><li>• To understand the app development process and tools used in mobile app development</li><li>• To continue developing your Health and Fitness Tracker apps</li></ul>	<ul style="list-style-type: none"><li>• To describe what algorithms and programs are and how they differ</li><li>• To describe the semantics of assignment statements</li><li>• To use relational operators to form logical expressions</li><li>• To use multi-branch selection (if, elif, else statements) to control the flow of program execution</li><li>• To use iteration (while loops) to control the flow of program execution</li><li>• Combine iteration and selection to control the flow of program execution</li></ul>
Sequencing Statements/ Cross Curricular Learning			
Enrichment Opportunities and British Values		Encouraging girls into computer science	Encouraging girls into computer science