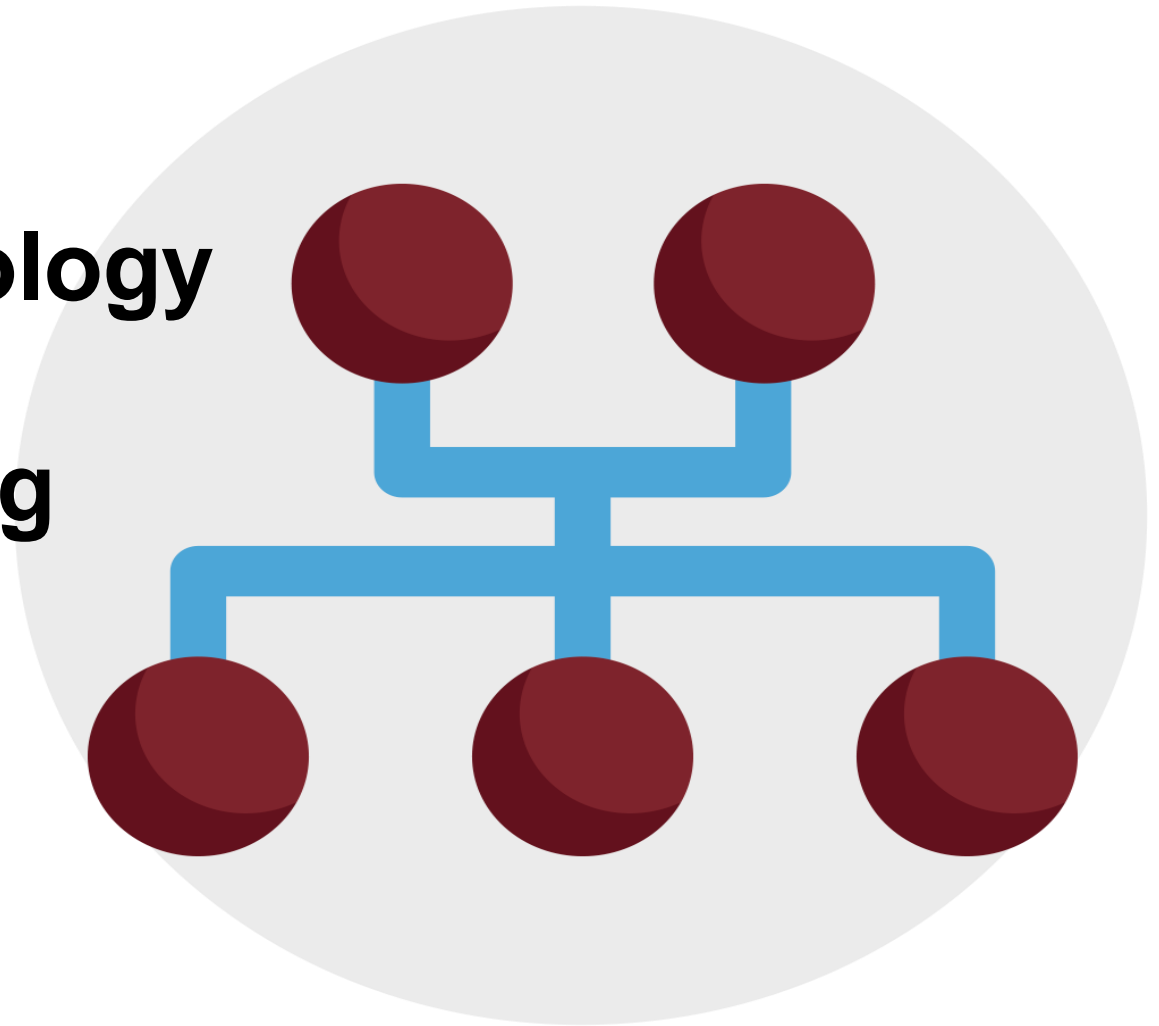


# Information Technology

## Curriculum Mapping

2021



Concept	Explanation of concept
Algorithms	Understands what an algorithm is and is able to express simple linear (non-branching) algorithms symbolically. Understands that computers need precise
Programming & Development	Knows that users can develop their own programs, and can demonstrate this by creating a simple program in an environment that does not rely on text e.g. programmable robots etc. Executes, checks and changes programs. Understands that programs execute by following precise instructions.
Data & Data Representation	Recognises that digital content can be represented in many forms. Distinguishes between some of these forms and can explain the different ways that they communicate information.
Hardware & Processing	Understands that computers have no intelligence and that computers can do nothing unless a program is executed. Recognises that all software executed on digital devices is programmed.
Communication & Networks	Obtains content from the world wide web using a web browser. Understands the importance of communicating safely and respectfully online, and the need for keeping personal information private. Knows what to do when concerned about content or being contacted.
Information Technology	Uses software under the control of the teacher to create, store and edit digital content using appropriate file and folder names. Understands that people interact with computers. Shares their use of technology in school. Knows common uses of information technology beyond the classroom. Talks about their work and makes changes to improve it.

<b>Concept</b>	<b>Explanation of concept</b>
Analyse	To understand the purpose, properties and content of digital products and pre-production.
Plan	To be able to plan the creation of digital products and pre-production.
Create	To be able to create digital products and pre-production.
Review	To be able review digital products and pre-production.

**Half term 1****Half term 2****Half term 3****Half term 4****Half term 5****Half term 6****Year 7**

<b>Learning</b>	Scratch An introduction to programming using variables, IF statements and operators. Resulting in programming a calculator.	Computer Hardware Learning a computer is, the internal components, the CPU and how it all works.	Introduction to HTML An introduction to HTML creating web pages conatining formatting, images and hyperlinks.	Scratch Game Maker An introduction to design and development - programming skills, levels and a scoring system.	Microbit Madness An introduction to the MicorBit programming a digital dice, digital compass and a handheld console.	Event Driven Scratch Programming skills including variables, random IFs and events, the magic 8 ball and a conversion calculator.
<b>Concepts</b>	Algorithms Programming & Development Hardware & Processing Communications & Networks	Hardware & Processing Data & Data Representation Information Technology	Algorithms Programming & Development Hardware & Processing Communications & Networks Information Technology	Algorithms Programming & Development Hardware & Processing Communications & Networks	Algorithms Programming & Development Hardware & Processing Communications & Networks Information Technology	Algorithms Programming & Development Hardware & Processing Communications & Networks
<b>Sticking Points Common Misconceptions</b>	Purpose of an algorithm An algorithm is a plan for a computer program An IF statement allows the programmer to have a number of outcomes using loops Flowcharts shapes and purpose	Hardware is the physical - the equipment you use Software - the programs that run on the computer The difference between a wired and wireless connection	HTML is the most common programming language used for building websites All lines of code have to be placed in tags <> Purpose of a hyperlink Use of diifferent file formats Has to be saved as .html to run as a webpage in a browser	Variables are data vaules that change when the user asks a question and there is an input e.g. The program asks the user their age	The events/blocks have to be in the correct sequence and attached for the program to function The program must be compiled for it to run	The program needs a start and end to be complete - the program will not initiate without these blocks
<b>AOs</b>	AO1 AO2 AO3	AO1 AO2	AO1 AO2 AO3	AO1 AO2 AO3	AO1 AO2 AO3	AO1 AO2 AO3

# Year 8

<b>Learning</b>	My Digital World What to trust online, how to search smart, copyrights and copywrongs, staying safe online and evidencing cyber abuse.	Binary Bits & Bobs The binary number system, adding binary numbers, ASCII and codebreaking, bitmap images and how computers represent sound.	Introduction to Python Outputs, inputs and variables, data types and maths and selection.	HTML & CSS Introduct ing HTML and CSS, CSS backgrounds and images, DIV tags, page sections and CSS, CSS DIVs and layouts.	Shooter Game Maker Skills - understanding gravity, programming shooter, baddies and scoring, remembering levels and game development.	Cyber Security Social media - public v private, identity theft, malware, hacking, encryption, cryptography and protection.
<b>Concepts</b>	Data & Data Representation Hardware & Processing Communication & Networks Information Technology	Data & Data Representation	Algorithms Programming & Development Hardware & Processing Communications & Networks Information Technology	Algorithms Programming & Development Hardware & Processing Communications & Networks Information Technology	Algorithms Programming & Development Hardware & Processing Communications & Networks	Data & Data Representation Hardware & Processing Communication & Networks Information Technology
<b>Sticking Points Common Misconceptions</b>	That you leave a digital footprint That when you delete some media it may not have deleted permanently Who you can speak to about cyber abuse/bullying	That the binary system uses a base 2 system compared to the denary/decimal base 10 system used in Maths Numbers are represented using 0's and 1's	Syntax erros are errors with langauge and/or punctuation Part of programming is debugging	The HTML is the content of the web page whereas the CSS is the styling of the web page The CSS must be saved as .style and be saved in the same folder as the webpage to fucntion	The for loop is used when we know the number of iterations - the while loop is used when we don't know the number of iterations	Malware is the collective name for malicious software such as viruses, ransomware and spyware - causes damage or allows unauthorised access
<b>AOs</b>	AO1 AO2	AO1 AO2	AO1 AO2 AO3	AO1 AO2 AO3	AO1 AO2 AO3	AO1 AO2

# Year 9

<p><b>Learning</b></p>	<p>Back to the future Alan Turing and code breaking, Sir Tim Berners Lee and the WWW, George Boole and Logic Gates and Charles Babbage and sorting algorithms.</p>	<p>Computer Networks Introduction to networks and LANs, network hardware, introduction to the internet and WANs, internet connections and data packets.</p>	<p>Python Programming Remembering Python, IF statements, while and for loops.</p>	<p>HTML, CSS &amp; JavaScript Remembering HTML, CSS and introducing JavaScript, JavaScript inputs and outputs, IF statements and coded solution.</p>	<p>Scrolling Game Maker Understanding scrolling backgrounds, the flying object and shooter, the baddie object and scoring, programming levels, design and build.</p>	<p>Cyber Security Social media - public v private, identity theft, malware, hacking, encryption, cryptography and protection.</p>
<p><b>Concepts</b></p>	<p>Algorithms Programming &amp; Development Data &amp; Data Representation Hardware &amp; Processing Communications &amp; Networks Information Technology</p>	<p>Data &amp; Data Representation Hardware &amp; Processing Communication &amp; Networks Information Technology</p>	<p>Algorithms Programming &amp; Development Hardware &amp; Processing Communications &amp; Networks Information Technology</p>	<p>Algorithms Programming &amp; Development Hardware &amp; Processing Communications &amp; Networks Information Technology</p>	<p>Algorithms Programming &amp; Development Hardware &amp; Processing Communications &amp; Networks</p>	<p>Data &amp; Data Representation Hardware &amp; Processing Communication &amp; Networks Information Technology</p>
<p><b>Sticking Points Common Misconceptions</b></p>	<p>That encryption was used in the WW11 Encrypted messages were sent between armies and any intercepted would need to be decrypted using a key The internet was given away for free - we pay a provider</p>	<p>The difference between a wired and wireless connection That you have to be connected to a network to use the internet, communicate, share software and access peripherals</p>	<p>Python is an open source software used by companies such as Twitter, Facebook and the BBC. The program has to be perfect in syntax and spacing - if not the program will run with errors and therefore need debugging.</p>	<p>HTML - content, CSS - styling and JavaScript is the behaviour of the webpage</p>	<p>Scrolling backgrounds can use different canvases - need to be coded in a loop</p>	<p>Hacking is not always for financial gain or unauthorised access - it can be used to test organisations' defence systems - it can be a highly skilled job.</p>
<p><b>AOs</b></p>	<p>AO1 AO2</p>	<p>AO1 AO2</p>	<p>AO1 AO2 AO3</p>	<p>AO1 AO2 AO3</p>	<p>AO1 AO2 AO3</p>	<p>AO1 AO2</p>

September 2021- July 2022	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
<b>Year 10</b>						
<b>Learning</b>	R082 Creating digital graphics - mandatory unit. LO1 - how and why digital graphics are used, types of digital graphics, file formats, properties and how purpose and audience influence the design and layout of digital graphics.	R082 LO2 - interpret client requirements, understand target audience, produce work plan, produce visualisation diagrams, identify assets and resources and how legislation applies to images used in digital graphics, whether sourced or created.	R082 LO3 - source and create asset for the digital graphic, check compatibility, create digital graphic using a range of tools and techniques, saving and exporting using appropriate file formats. R082 LO4 - review digital graphic against specific brief identifying areas for further development.	R085 Creating a multipage website. LO1 - the purpose and component features of multipage websites, the devices used to access web pages and the methods of internet connection. R085 LO2 - Interpret client requirements, understand target audience, produce work plan, create site map with navigation, produce visualisation diagrams, identify assets and resources, prepare assets, create test plan and how legislation applies to assets used in multipage websites.	R085 LO3 - create suitable folder structure, source and import assets, create master page, use range of tools in web authoring software to create multipage website, insert assets into web pages to create planned layouts, create navigation system, save website in appropriate file format, publish website to a location appropriate to the client requirements and how to use version control when creating a multipage website.	R085 - LO3 - contingency. R085 - LO4 - Review multipage website against specific brief and identify areas for improvement and further development of multipage website.
<b>Concepts</b>	Analyse	Plan	Create Review	Analyse Plan	Create	Create Review
<b>Sticking Points Common Misconceptions</b>	That digital graphics are designed for different purposes and audiences. That file formats have different properties and allow for different features - bitmap v vector.	That the design and content of the digital graphic will be determined by the purpose and target audience of the graphic. Most assets have legislation attached to them and therefore the user must check/seek permission(s).	Layers must be unlocked to allow editing You can change/set the resolution of a digital graphic and see the impact when printed No work is perfect - it can always be developed/improved	That products should be made before the designs	Rollover images are the same as animation Space needs to be considered	That the final product can look massively different to the initial designs
<b>AOs</b>	AO1	AO2	A03 A04	A01 A02	AO3	AO3 A04

# Year 11

<p><b>Learning</b></p>	<p>R081 Pre-production skills. LO1 the purposes, uses and content of pre production. R081 LO2 - planning pre-production, interpret client requirements, identify timescales based on target audience and end user requirements, conduct and analyse research, produce a work plan and production scehdule, identify target audience, hardware and software, health and safety and legislation.</p>	<p>R081 LO3 - produce pre-production documents, analyse pre-production, file formats and version control. R081 LO4 - review pre-production documents and identify areas for improvement re-production documents. JAN exam</p>	<p>JAN exam Contingency - R082 and R085</p>	<p>R087 Creating interactive multimedia products. LO1 - understand where different interactive multimedia products are used and their purpose, key design elements, hardware, software, peripherals, ternet connections and file formats. R087 LO2 - interpret client requirements, understand target audience, produce a work plan, planning structure and features, produce visualisation diagrams, identify assets and resources, produce a test plan and legislation on assets - whether sourced or created.</p>	<p>R087 LO3 - source assets to be used in product, create and re-purpose assets, store assets, create a product structure, set up interaction and playbackcontrols, save and export in appropriate file format to the software being used and the client requirements.</p>	<p>R087 LO4 - review interactive multimedia product against specific brief and identify areas for improvement and further development. Contingency - R082, R085 and R087 JUNE exam</p>
<p><b>Concepts</b></p>	<p>Analyse Plan</p>	<p>Create Review</p>	<p>Analyse Plan Create Review</p>	<p>Analyse Plan</p>	<p>Create</p>	<p>Review</p>
<p><b>Sticking Points Common Misconceptions</b></p>	<p>A storyboard and a script are the same pre-production document Understanding the purpose of a work plan - gantt chart and how to create one The difference between hardware and software The hazards associated with IT/environment Copyright covers a range of media</p>	<p>Version control allows us to save a document a number of times as different versions showing progress - versions are tracked with date and time</p>	<p>Exam is based on R081 although there are links to other units</p>	<p>Accessibility - can refer to the platform the product can be used on but also the individuals physical access such as visual or hearing impairments The design of products is influenced by the user and user requirements - data gathering ofetn takes place before designing such products</p>	<p>If we create the asset ourselves there is no legislation attached Some assets can be used in an educational setting without seeking permissions A logo can be used a home button - internal hyperlink</p>	<p>If you state there areas to improve and develop in your product you will not lose marks and it will not impact on your overall grade</p>
<p><b>AOs</b></p>	<p>AO1 AO2</p>	<p>AO3 AO4</p>	<p>AO1 AO2 AO3 AO4</p>	<p>AO1 AO2</p>	<p>AO3</p>	<p>AO1 AO2 AO3 AO4</p>