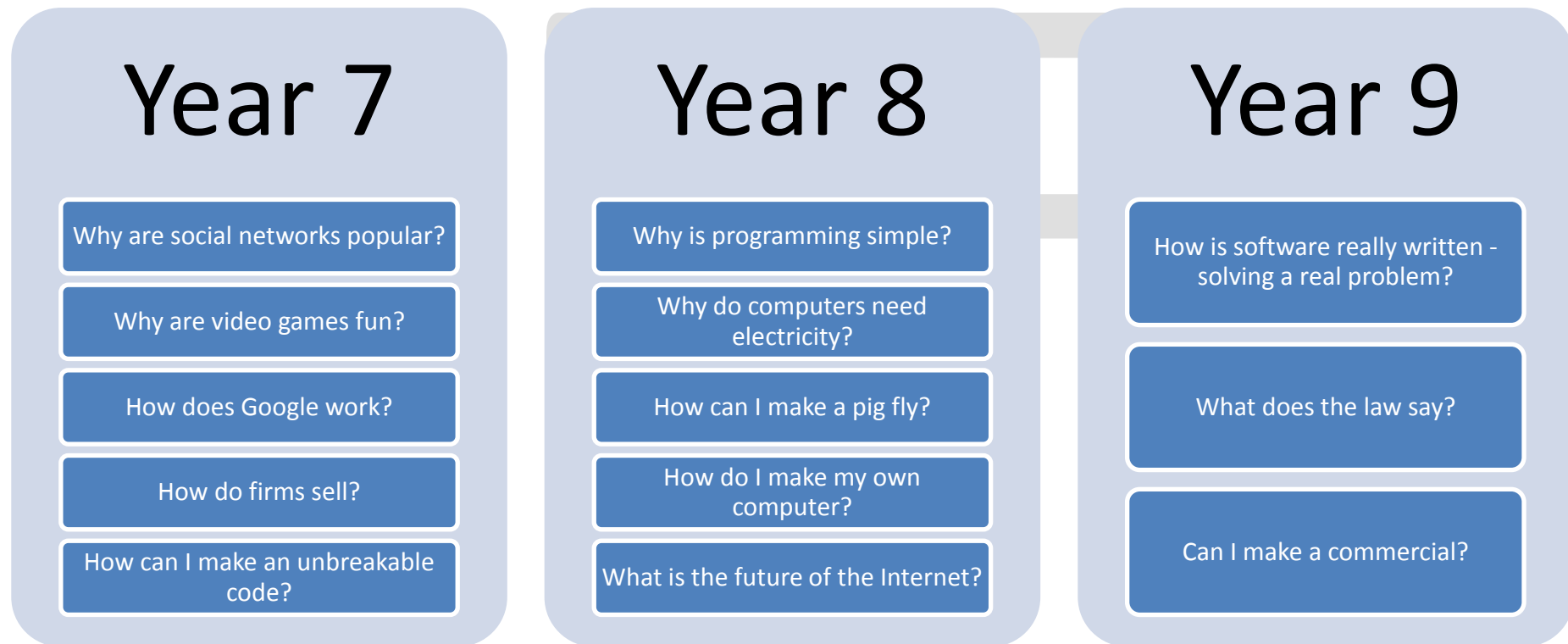


AN ENQUIRY BASED CURRICULUM MAP BASED ON THE PROGRAMME OF STUDY FOR SEPTEMBER 2014

An enquiry based curriculum is where students are presented with a question and through research and teaching are able at the end of a period of time able to answer the question.



The resources indicated are free, although for the TES and CAS sites you will need to register.

WHY ARE SOCIAL NETWORKS POPULAR?		AUTUMN 1
Sub Enquiries	How do I access the school network? What is on the school network? How should I behave online? How do people behave online? What are my rights and responsibilities? Why are some services free?	
Curriculum Aims	Introduction to the school network Rules and behaviour Social Networks and e-safety	
Programme of Study Coverage	<ul style="list-style-type: none"> <li>understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</li> <li>understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.</li> </ul>	
Some Example Resources	Childnet – Let’s Fight it together	<a href="http://old.digizen.org/cyberbullying/fullFilm.aspx">http://old.digizen.org/cyberbullying/fullFilm.aspx</a>
	UK Safer Internet Centre - Ask.fm Online Safety Guidance	<a href="http://www.swgfl.org.uk/Staying-Safe/Files/Documents/ASK-FM-Online-Safety-Guidance">http://www.swgfl.org.uk/Staying-Safe/Files/Documents/ASK-FM-Online-Safety-Guidance</a>
	UK Safer Internet Centre – Facebook Privacy Guide	<a href="http://www.saferinternet.org.uk/ufiles/Facebook-checklist-Aug2013.pdf">http://www.saferinternet.org.uk/ufiles/Facebook-checklist-Aug2013.pdf</a>
	SWGfL – ‘So you got naked online’	<a href="http://www.saferinternet.org.uk/ufiles/Sexting%20Toolkit.pdf">http://www.saferinternet.org.uk/ufiles/Sexting%20Toolkit.pdf</a>
	Facebook – Family Safety Centre	<a href="https://www.facebook.com/safety?fref=ts">https://www.facebook.com/safety?fref=ts</a>
	eLIM – ExeBYTE eSafety award	<a href="https://slp.somerset.gov.uk/cypd/elim/somersetict/Site%20Pages/e-safety%20pages/BYTE%20sub%20pages/ExaBYTE.aspx?PageView=Shared">https://slp.somerset.gov.uk/cypd/elim/somersetict/Site%20Pages/e-safety%20pages/BYTE%20sub%20pages/ExaBYTE.aspx?PageView=Shared</a>
	SWGfL CommonSense Unit - ‘Opps I broadcast on the Internet’ (Page 10)	<a href="http://www.swgfl.org.uk/Staying-Safe/Digital-Literacy-(1)/Files/Five/Digital-Literacy---Citizenship-KS3-Scheme-of-Learn">http://www.swgfl.org.uk/Staying-Safe/Digital-Literacy-(1)/Files/Five/Digital-Literacy---Citizenship-KS3-Scheme-of-Learn</a>
	SWGfL CommonSense Unit - ‘Forms and Norms’ (Page 18)	<a href="http://www.swgfl.org.uk/Staying-Safe/Digital-Literacy-(1)/Files/Five/Digital-Literacy---Citizenship-KS3-Scheme-of-Learn">http://www.swgfl.org.uk/Staying-Safe/Digital-Literacy-(1)/Files/Five/Digital-Literacy---Citizenship-KS3-Scheme-of-Learn</a>
Teach ICT – Social Networking	<a href="http://www.teach-ict.com/ks3/year9/social_networking/social_networking.htm">http://www.teach-ict.com/ks3/year9/social_networking/social_networking.htm</a>	

WHY ARE VIDEO GAMES FUN?		AUTUMN 2
Sub Enquiries	What makes a good game? How can I create a simple game? How do games controllers work?	
Curriculum Aims	Introduction to programming through Scratch/Kodu Considering and designing for users' needs Elements of control technology and hardware	
Programme of Study Coverage	<ul style="list-style-type: none"> <li>• use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions</li> <li>• understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</li> <li>• create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability</li> </ul>	
Some Example Resources	Common Sense – 10 surprising ways to spot a Great Video Game	<a href="http://www.commonsemmedia.org/blog/10-surprising-ways-to-spot-a-great-video-game">http://www.commonsemmedia.org/blog/10-surprising-ways-to-spot-a-great-video-game</a>
	Scratch	<a href="http://mit.scratch.edu">http://mit.scratch.edu</a>
	Kodu	<a href="http://www.kodugamelab.com/">http://www.kodugamelab.com/</a>
	Scratch for Educators	<a href="http://scratch.mit.edu/educators/">http://scratch.mit.edu/educators/</a>
	Teach ICT - Scratch	<a href="http://www.teach-ict.com/ks3/year7/game_generation/game_generation.htm">http://www.teach-ict.com/ks3/year7/game_generation/game_generation.htm</a>
	CAS - Scratch Resource Set	<a href="http://community.computingschool.org.uk/set/5">http://community.computingschool.org.uk/set/5</a>
	eLIM – Programming with Scratch page	<a href="https://slp.somerset.gov.uk/cypd/elim/somersetict/Site%20Pages/Scratch.aspx?PageView=Shared">https://slp.somerset.gov.uk/cypd/elim/somersetict/Site%20Pages/Scratch.aspx?PageView=Shared</a>
Picoboards Website	<a href="http://proto-pic.co.uk/picoboard/?gclid=CLezxKX-ka8CFZARfAod4Whcxw">http://proto-pic.co.uk/picoboard/?gclid=CLezxKX-ka8CFZARfAod4Whcxw</a>	

HOW DOES GOOGLE WORK?		SPRING 1
Sub Enquiries	What is a search engine? How can I improve my search techniques? How do search engines rank their results? What data do search engines capture? What can I copy?	
Curriculum Aims	Improving search techniques Understanding of the Internet Understanding of search engines Understanding of copyright	
Programme of Study Coverage	<ul style="list-style-type: none"> <li>understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.</li> </ul>	
Some Example Resources	BBC – What is a search engine?	<a href="http://www.bbc.co.uk/webwise/0/22562913">http://www.bbc.co.uk/webwise/0/22562913</a>
	Google – Search Techniques	<a href="https://support.google.com/websearch/answer/136861?hl=en">https://support.google.com/websearch/answer/136861?hl=en</a>
	Google – About Search	<a href="https://www.google.com/competition/howgooglesearchworks.html">https://www.google.com/competition/howgooglesearchworks.html</a>
	Idfive – Dirty Secret behind Use Data Collection and tracking	<a href="http://idfive.com/insight/whitepapers/dirty-secret-behind-user-data-collection-tracking">http://idfive.com/insight/whitepapers/dirty-secret-behind-user-data-collection-tracking</a>
	The Copyright Hub	<a href="http://copyrighthub.co.uk/#">http://copyrighthub.co.uk/#</a>

HOW DO FIRMS SELL?		SPRING 2/SUMMER 1
Sub Enquiries	What methods do firms use? How do firms keep track of their customers? What should a promotional flyer look like? What should a website look like?	
Curriculum Aims	Use of various applications including databases, Word Processing and DTP etc Creation of website	
Programme of Study Coverage	<ul style="list-style-type: none"> <li>design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems</li> <li>undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users</li> <li>create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability</li> </ul>	
Some Example Resources	Investopedia -7 popular marketing techniques	<a href="http://www.investopedia.com/articles/financial-theory/11/small-business-marketing-techniques.asp">http://www.investopedia.com/articles/financial-theory/11/small-business-marketing-techniques.asp</a>
	Small Business Computing – customer Databases as a marketing tool	<a href="http://www.smallbusinesscomputing.com/emarketing/article.php/3877761/Customer-Databases-as-Marketing-Tools.htm">http://www.smallbusinesscomputing.com/emarketing/article.php/3877761/Customer-Databases-as-Marketing-Tools.htm</a>
	TES – Introduction to Databases	<a href="http://www.tes.co.uk/teaching-resource/Introduction-to-database-6033558/">http://www.tes.co.uk/teaching-resource/Introduction-to-database-6033558/</a>
	YouTube – How to make a great flyer	<a href="http://www.youtube.com/watch?v=XrExaesCQyw">http://www.youtube.com/watch?v=XrExaesCQyw</a>
	Teachers TV – KS3/4 ICT – Multi Media Web Page	<a href="http://www.tes.co.uk/teaching-resource/Teachers-TV-KS3-4-ICT-Multi-Media-Web-Page-6039012/">http://www.tes.co.uk/teaching-resource/Teachers-TV-KS3-4-ICT-Multi-Media-Web-Page-6039012/</a>
	TeachICT – First Gear Project	<a href="http://www.teachict.co.uk/files/firstgear/index.html">http://www.teachict.co.uk/files/firstgear/index.html</a>

HOW DO I MAKE AN UNBREAKABLE CODE?		SUMMER 2
Sub Enquiries	How do computers store information? How do computers communicate? Why do I need to code the information? How can I code information?	
Curriculum Aims	Teaching about binary numbers Simple operations on binary numbers Encryption Transfer of information between computers e-safety	
Programme of Study Coverage	<ul style="list-style-type: none"> <li>understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]</li> <li>understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</li> <li>understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits</li> <li>understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.</li> </ul>	
Some Example Resources	Prezi on Binary	<a href="http://prezi.com/-8pk0o-l6zoi/more-binary/">http://prezi.com/-8pk0o-l6zoi/more-binary/</a>
	TES – Results from search on binary	<a href="http://www.tes.co.uk/taxonomySearchResults.aspx?keywords=binary">http://www.tes.co.uk/taxonomySearchResults.aspx?keywords=binary</a>
	Binary Game	<a href="http://www.pwnict.co.uk/binaryGrid/index.html">http://www.pwnict.co.uk/binaryGrid/index.html</a>
	TES – Materials on Boolean from TES	<a href="http://www.tes.co.uk/teaching-resource/Boolean-Logic-6304206/">http://www.tes.co.uk/teaching-resource/Boolean-Logic-6304206/</a>
	Teach ICT - Cryptography	<a href="http://www.teach-ict.com/ks3/year9/cryptography/cryptography.htm">http://www.teach-ict.com/ks3/year9/cryptography/cryptography.htm</a>
	YouTube – How Encryption Works (first part only!)	<a href="http://www.youtube.com/watch?v=-oCpWmSjEW8">http://www.youtube.com/watch?v=-oCpWmSjEW8</a>
	eLIM – ExaBYTE	<a href="https://slp.somerset.gov.uk/cypd/elim/somersetict/Site%20Pages/e-safety%20pages/BYTE%20sub%20pages/ExaBYTE.aspx?PageView=Shared">https://slp.somerset.gov.uk/cypd/elim/somersetict/Site%20Pages/e-safety%20pages/BYTE%20sub%20pages/ExaBYTE.aspx?PageView=Shared</a>
Link to eLIM resources for Binary and Logic Gates	<a href="https://slp.somerset.gov.uk/cypd/elim/somersetict/Computing_curriculum_ks3_ks4/Forms/AllItems.aspx?RootFolder=%2fcypd%2felim%2fsomersetict%2fComputing%5fcurriculum%5fks3%5fks4%2fBinary%20Work&amp;FolderCTID=&amp;View=%7bE4E979BE%2d3409%2d4D54%2d8C10%2d8AC50A7F76E8%7d">https://slp.somerset.gov.uk/cypd/elim/somersetict/Computing_curriculum_ks3_ks4/Forms/AllItems.aspx?RootFolder=%2fcypd%2felim%2fsomersetict%2fComputing%5fcurriculum%5fks3%5fks4%2fBinary%20Work&amp;FolderCTID=&amp;View=%7bE4E979BE%2d3409%2d4D54%2d8C10%2d8AC50A7F76E8%7d</a>	

YEAR 8

WHY IS PROGRAMMING SIMPLE?		AUTUMN 1, 2
Sub Enquiries	What do computer programs look like? How can I think about designing a computer program? How do I write a computer program?	
Curriculum Aims	Introduction to Python Introduction to computational thinking especially algorithms	
Programme of Study Coverage	<ul style="list-style-type: none"> <li>understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem</li> <li>use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions</li> </ul>	
Some Example Resources	TES – Python Search	<a href="http://www.tes.co.uk/taxonomySearchResults.aspx?keywords=python">http://www.tes.co.uk/taxonomySearchResults.aspx?keywords=python</a>
	CAS – Python Set of Resources	<a href="http://community.computingschool.org.uk/set/3">http://community.computingschool.org.uk/set/3</a>
	Codeacademy	<a href="http://www.codecademy.com">www.codecademy.com</a>
	Interactive Classrooms – Python Magic	<a href="http://www.interactiveclassroom.net/?page_id=897">http://www.interactiveclassroom.net/?page_id=897</a>
	eLIM – Scratch Resources	<a href="https://slp.somerset.gov.uk/cypd/elim/somersetict/Site%20Pages/Scratch.aspx">https://slp.somerset.gov.uk/cypd/elim/somersetict/Site%20Pages/Scratch.aspx</a>

WHY DO COMPUTERS NEED ELECTRICITY?		SPRING 1
Sub Enquiries	How do computers work? What are the parts of the computer? How are pictures stored?	
Curriculum Aims	Use of binary in computers Components of the computer	
Programme of Study Coverage	<ul style="list-style-type: none"> <li>understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented between binary and decimal]</li> <li>understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and images) are stored and transmitted</li> </ul>	
Some Example Resources	Binary Convertor	<a href="http://www.advanced-ict.info/interactive/binary.html">http://www.advanced-ict.info/interactive/binary.html</a>
	Boolean Logic	<a href="http://www.advanced-ict.info/interactive/boolean.html">http://www.advanced-ict.info/interactive/boolean.html</a>
	Circuits	<a href="http://www.advanced-ict.info/interactive/circuits.html">http://www.advanced-ict.info/interactive/circuits.html</a>
	Bitwise Logic	<a href="http://www.advanced-ict.info/interactive/bitwise.html">http://www.advanced-ict.info/interactive/bitwise.html</a>
	CSUnplugged – Activities on Data Representation etc	<a href="http://csunplugged.org/activities">http://csunplugged.org/activities</a>
	Link to eLIM resources for Binary and Logic Gates	<a href="https://slp.somerset.gov.uk/cypd/elim/somersetict/Computing_curriculum_ks3_ks4/Forms/AllItems.aspx?RootFolder=%2fcypd%2fAC50A7F76E8%7d">https://slp.somerset.gov.uk/cypd/elim/somersetict/Computing_curriculum_ks3_ks4/Forms/AllItems.aspx?RootFolder=%2fcypd%2fAC50A7F76E8%7d</a>



HOW CAN I MAKE A PIG FLY?		SPRING 2
Sub Enquiries	What software do I need to know about to draw a picture? How can I animate? How can I distribute my animation?	
Curriculum Aims	Use of graphic Packages Use of animation packages Use of internet enabled services to distribute content	
Programme of Study Coverage	<ul style="list-style-type: none"> <li>undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users</li> <li>create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability</li> </ul>	
Some Example Resources	TES – Theory of Graphics	<a href="http://www.tes.co.uk/teaching-resource/Graphics-Theory-Powerpoint-6005612/">http://www.tes.co.uk/teaching-resource/Graphics-Theory-Powerpoint-6005612/</a>
	CAS – Set of tutorials for Serif DrawPlus	<a href="http://community.computingschool.org.uk/resources/382">http://community.computingschool.org.uk/resources/382</a>
	TeachICT – Animation	<a href="http://www.teach-ict.com/gcse_new/software/animation/home_animation.htm">http://www.teach-ict.com/gcse_new/software/animation/home_animation.htm</a>
	TeachICT – PivotStickfigure Animation SoW	<a href="http://www.teach-ict.com/ks3/year8/animation_stickfigure/pivot_stickfigure.htm">http://www.teach-ict.com/ks3/year8/animation_stickfigure/pivot_stickfigure.htm</a>
	Interactive Classroom –Animation Project	<a href="http://www.interactiveclassroom.net/?page_id=923">http://www.interactiveclassroom.net/?page_id=923</a>

HOW DO I MAKE MY OWN COMPUTER?		SUMMER 2
Sub Enquiries	Can I make a computer? What are the parts of the computer? How can I cost my solution?	
Curriculum Aims	Components of a computer Spread sheet modelling How computers communicate with each other	
Programme of Study Coverage	<ul style="list-style-type: none"> <li>undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users</li> <li>understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</li> </ul>	
Some Example Resources	TES – Search on Hardware	<a href="http://www.tes.co.uk/taxonomySearchResults.aspx?mode=browse&amp;parametrics=44354,46018,46092,46096">http://www.tes.co.uk/taxonomySearchResults.aspx?mode=browse&amp;parametrics=44354,46018,46092,46096</a>
	Interactive Classrooms.net – PC Basics	<a href="http://www.interactiveclassroom.net/?page_id=195">http://www.interactiveclassroom.net/?page_id=195</a>
	Teaching Ideas – Workstations and Networks	<a href="http://www.teachingideas.co.uk/ict/workstationnetwork.htm">http://www.teachingideas.co.uk/ict/workstationnetwork.htm</a>

WHAT IS THE FUTURE OF THE INTERNET?		SUMMER 2
Sub Enquiries	What is the Internet? How does the Internet work? What can computers on the Internet do? How can I protect myself?	
Curriculum Aims	Understanding of the Internet E-safety	
Programme of Study Coverage	<ul style="list-style-type: none"> <li>understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</li> <li>understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns</li> </ul>	
Some Example Resources	Teach ICT – Technology of the Future	<a href="http://www.teach-ict.com/ks3/year9/future_technology/future_technology.htm">http://www.teach-ict.com/ks3/year9/future_technology/future_technology.htm</a>
	YouTube – The Internet of Things	<a href="http://www.youtube.com/watch?v=Cpbbrpgwu2I">http://www.youtube.com/watch?v=Cpbbrpgwu2I</a>
	How Stuff Works – What is the future of the Internet	<a href="http://computer.howstuffworks.com/future-of-the-internet.htm">http://computer.howstuffworks.com/future-of-the-internet.htm</a>
	Six Revisions – 6 Predictions for the Future of the Internet	<a href="http://sixrevisions.com/web-technology/6-predictions-for-the-future-of-the-internet/">http://sixrevisions.com/web-technology/6-predictions-for-the-future-of-the-internet/</a>

**YEAR 9**

Year 9 is a chance to complete extended projects. Each of the below are not resourced but are indicative of the areas that could be covered. The work could be customised to fit into the ways of working needed for Key Stage 4 work.

HOW IS SOFTWARE REALLY WRITTEN –SOLVING A REAL PROBLEM?		AUTUMN
Sub Enquiries	How are real problems solved with programming? How can I create a mobile app?	
Curriculum Aims	Computational thinking More python programming Mobile app design	
Programme of Study Coverage	<ul style="list-style-type: none"> <li>• design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems</li> <li>• understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem</li> <li>• use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions</li> </ul>	

WHAT DOES THE LAW SAY?		SPRING
Sub Enquiries	What are the laws that pertain to IT? What are my rights? What is the best way of communicating this information?	
Curriculum Aims	e-safety Long term project and presentation work	
Programme of Study Coverage	<ul style="list-style-type: none"> <li>undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users</li> <li>create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability</li> <li>understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns</li> </ul>	

CAN I MAKE A COMMERCIAL?		SUMMER
Sub Enquiries	What makes a good commercial? How can I create a commercial? What makes a good promotional campaign?	
Curriculum Aims	Sound editing Video editing User requirements	
Programme of Study Coverage	<ul style="list-style-type: none"> <li>undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users</li> <li>create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability</li> </ul>	

## PROGRAMME OF STUDY

Pupils should be taught to:

- design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems
- understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem
- use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions
- understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]
- understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems
- understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits
- undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users
- create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability
- understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/239067/SECONDARY\\_national\\_curriculum\\_-\\_Computing.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/239067/SECONDARY_national_curriculum_-_Computing.pdf)