



NOTTINGHAM GIRLS' ACADEMY

Computing Curriculum

Purpose of Study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Aims

The Nottingham Girls' Academy curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology

Curriculum-at-a-Glance: Computing

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Year 7	Core Skills	E-safety 1	Information, reliability, validity and bias	Modelling	Algorithms	Programming 1
Year 8	E-safety 2	Binary 1	Impact of ICT	Databases	Hardware & Software 1	Mop up
Year 9	E-safety 3	Binary 2	Hardware & Software 2	Networking	Digital Graphics	Programming 2
Year 10	R081: Pre-production skills			R082: Creating digital graphics		
Year 11	R088: Creating a digital sound sequence		R087: Creating interactive multimedia products			
Year 12	Unit 1 Fundamentals of IT		Unit 2 Global Information		Unit 1 & 2 Revision	Unit 17 Internet of Everything
Year 13	Unit 17 Internet of Everything	Unit 5 Virtual and Augmented Reality		Unit 13 Social Media and Digital Marketing		

Medium Term Plan: Computing

Year 7 Computing

Knowledge, Qualifications and Assessment

What pupils will study during Year 7, our ambition for the knowledge they retain and subject specific skill they will develop and how learning will be assessed formatively and summatively.

Unit Title	Periods	Learning Challenge What will pupils produce at the end of a unit to demonstrate their learning?	Learning Journey What knowledge and subject specific skills will pupils learn in order to complete the Learning Challenge?	Learning Consolidation What prior learning will pupils consolidate using spaced retrieval and spaced practice?
Core Skills	7	Be able to use the computer system effectively	How to log in, passwords, using OneDrive, using Teams, email, using AirHead and LaunchPads.	n/a
E-safety 1	6	End of unit assessment	How to stay safe online, how to behave online, online risks, what cyberbullying is and what to do about it, how to report problems	Work done in primary school
Information, Reliability, Validity and Bias	6	End of unit test	Types of information, purposes of information, ways to tell if something is true or not, types of website domain names, how to use advanced web searching	Starters relating to previous unit
Modelling	7	A working spreadsheet	What a spreadsheet is, formulae, basic functions, advanced functions, sorting, filtering, graphs, formatting	Starters relating to previous unit
Algorithms	6	Working diagrams with various algorithmic concepts	What algorithms are, sequencing, iteration, repetition/looping, branching, variables	Starters relating to previous unit
Programming 1	7	Flowcharts that use the algorithmic concepts	What flowcharts are and how they work, the flowchart symbols, using the	Starters relating to previous unit

			algorithmic concepts to simulate a real-life situation	
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Qualities

During Year 7, pupils will have opportunities to develop the following BUILD qualities:

BUILD Quality	How the Year 7 Computing curriculum contributes to developing this quality:
Respect	The whole e-safety 1 unit focusses on acting in an appropriate way online
Kindness	The whole e-safety 1 unit focusses on acting in an appropriate way online
Tolerance	The whole e-safety 1 unit focusses on acting in an appropriate way online
Resilience	Algorithms and programming require perseverance and trial and error
Creativity	Algorithms and programming require creative thinking skills, as does Modelling
Positivity	
Integrity	
Aspiration	
Empathy	The whole e-safety 1 unit focusses on acting in an appropriate way online

Skills

During Year 7, pupils will have opportunities to develop the following wider skills:

Skill Area	How the Year 7 Computing curriculum contributes to developing this skill area:
Literacy & Numeracy	Modelling is full of examples of using numeracy. E-safety 1 requires a lot of written work
Communication	E-safety 1 has a section on different ways to communicate online
Problem Solving	Algorithms and programming require creative problem solving, as does Modelling
Leadership	
Collaboration	
Metacognition	Algorithms allows students to study how to think and solve problems through decomposition and abstraction
Physical, Practical and Technical	Modelling and programming both require practical skills
Digital Literacy	The whole curriculum builds this

Year 8 Computing

Knowledge, Qualifications and Assessment

What pupils will study during Year 8, our ambition for the knowledge they retain and subject specific skill they will develop and how learning will be assessed formatively and summatively.

Unit Title	Periods	Learning Challenge What will pupils produce at the end of a unit to demonstrate their learning?	Learning Journey What knowledge and subject specific skills will pupils learn in order to complete the Learning Challenge?	Learning Consolidation What prior learning will pupils consolidate using spaced retrieval and spaced practice?
E-safety 2	6	End of unit assessment	How to use technology and online services correctly, more ways of reporting issues, risk and mitigations, issues of an online presence	E-safety 1 content from Y7
Binary 1	6	End of unit assessment	What binary is, how to add binary numbers, how to convert from binary to denary and denary to binary, how to subtract binary numbers	Starters relating to previous unit
Impact of ICT	7	End of unit assessment	How much information organisations store about us, what they do with it, RFID, different technologies used to collect information, political, legal, social, ethical and moral issues of collecting and using data, Data Protection	E-safety 1 and 2 content
Databases	8	A working database	What a database is, tables, records, fields, how to create a database, data types, how to create quality questionnaires, sorting, filtering, queries	Impact of ICT content (storing data, ethics)
Hardware and Software 1	7	End of unit assessment	The difference between hardware and software, parts of a computer, peripherals, operating systems, application software	Starters relating to previous unit

Qualities

During Year 8, pupils will have opportunities to develop the following BUILD qualities:

BUILD Quality	How the Year 8 Computing curriculum contributes to developing this quality:
Respect	The whole e-safety 2 unit focusses on acting in an appropriate way online
Kindness	The whole e-safety 2 unit focusses on acting in an appropriate way online
Tolerance	The whole e-safety 2 unit focusses on acting in an appropriate way online
Resilience	Binary 1 requires students to work on unfamiliar problems
Creativity	
Positivity	
Integrity	Impact of ICT considers moral and ethical dilemmas and encourage students to make the correct choices
Aspiration	
Empathy	The whole e-safety 2 unit focusses on acting in an appropriate way online

Skills

During Year 8, pupils will have opportunities to develop the following wider skills:

Skill Area	How the Year 8 Computing curriculum contributes to developing this skill area:
Literacy & Numeracy	Binary 1 is purely mathematical
Communication	E-safety 2 is about how to communicate online safely
Problem Solving	Binary 1 and Databases require creative problem solving
Leadership	
Collaboration	
Metacognition	
Physical, Practical and Technical	Databases and Hardware & Software 1 both require practical skills
Digital Literacy	The whole curriculum builds this

Year 9 Computing

Knowledge, Qualifications and Assessment

What pupils will study during Year 9, our ambition for the knowledge they retain and subject specific skill they will develop and how learning will be assessed formatively and summatively.

Unit Title	Periods	Learning Challenge What will pupils produce at the end of a unit to demonstrate their learning?	Learning Journey What knowledge and subject specific skills will pupils learn in order to complete the Learning Challenge?	Learning Consolidation What prior learning will pupils consolidate using spaced retrieval and spaced practice?
E-safety 3	5	End of unit assessment	Types of malware, how to prevent malware, firewalls, anti-virus software, the importance of updating	E-safety 2 content
Binary 2	6	End of unit assessment	What hexadecimal is, how to convert from hexadecimal to binary, from binary to hexadecimal, negative numbers	Binary 1 content
Hardware and Software 2	6	End of unit assessment	The CPU, the parts of a CPU, transistors, Moore's Law, von Neumann architecture	Binary 1 and Hardware and Software 1 content
Networking	5	End of unit assessment	What a network is, networking hardware, network topologies, LAN & WAN	Hardware and Software 1 & 2
Digital Graphics	8	A finished piece of digital art using the different techniques	What digital graphics are, basic tools and techniques, advanced tools and techniques, raster and vector, resolution, colour depth	Starters relating to previous unit
Programming 2	7	A working program	Written programming languages, syntax, writing simple programs, command words, using variables, using iteration, using IF, using sub-programs	Algorithms & Programming 1 content

Qualities

During Year 9, pupils will have opportunities to develop the following BUILD qualities:

BUILD Quality	How the Year 9 Computing curriculum contributes to developing this quality:
Respect	
Kindness	
Tolerance	
Resilience	Programming 2 require perseverance and trial and error
Creativity	Programming 2 requires creative thinking skills, Digital Graphics requires imagination and some artistic ability
Positivity	
Integrity	
Aspiration	
Empathy	

Skills

During Year 9, pupils will have opportunities to develop the following wider skills:

Skill Area	How the Year 9 Computing curriculum contributes to developing this skill area:
Literacy & Numeracy	Binary 2 is purely mathematical, Programming 2 requires a whole new language to be learned
Communication	
Problem Solving	Binary 2 and Programming 2 require creative problem solving
Leadership	
Collaboration	
Metacognition	Programming 2 allows students to study how to think and solve problems through decomposition and abstraction
Physical, Practical and Technical	E-safety 3, Hardware and Software 2, Networking and Digital Graphics all require practical skills
Digital Literacy	The whole curriculum builds this

Year 10 and 11 Computing

Knowledge, Qualifications and Assessment

What pupils will study during Year 10 and 11, our ambition for the knowledge they retain and subject specific skill they will develop and how learning will be assessed formatively and summatively.

Unit Title	Periods	Learning Challenge What will pupils produce at the end of a unit to demonstrate their learning?	Learning Journey What knowledge and subject specific skills will pupils learn in order to complete the Learning Challenge?	Learning Consolidation What prior learning will pupils consolidate using spaced retrieval and spaced practice?
Year 10. R081: Pre-production skills Learning Outcome 1: Understand the purpose and content of pre-production	34	Regular exam questions and mini-tests. Mock exams.	The purpose and uses for, and content of, mood boards, mind maps, spider diagrams, visualisation diagrams, storyboards, and scripts.	Starter tasks recapping prior learning. Mock questions that can be on any prior learning.
R081: Pre-production skills Learning Outcome 2: Be able to plan pre-production		Regular exam questions and mini-tests. Mock exams.	How to interpret client requirements based on a brief. How to identify timescales for production based on target audience and requirements. How to conduct and analyse research for a creative digital media product. How to produce a work plan and production schedule. The importance of identifying the target audience and how they can be categorised. The hardware, software and techniques used for digitising and creating documents.	Starter tasks recapping prior learning. Mock questions that can be on any prior learning.

			The health and safety considerations when creating digital media products. Legislation regarding assets to be sources, and how it applies to creative media production.	
R081: Pre-production skills Learning Outcome 3: Be able to produce pre-production documents		Regular exam questions and mini-tests. Mock exams.	How to create a mood board, mind map/spider diagram, visualisation diagram or sketch, storyboard. How to analyse a script. Understand the properties and limitations of file formats for - still images, audio, and moving images. Suitable naming conventions are. How to identify appropriate file formats needed to produce pre-production documents and final products.	Starter tasks recapping prior learning. Mock questions that can be on any prior learning.
R081: Pre-production skills Learning Outcome 4: Be able to review pre-production documents		Regular exam questions and mini-tests. Mock exams.	How to review a pre-production document. How to identify areas for improvement in a pre-production document.	Starter tasks recapping prior learning. Mock questions that can be on any prior learning.
R082: Creating digital graphics Learning Outcome 1: Understand the purpose and properties of digital graphics	34	Internal marked and externally moderated coursework based on assignments.	Understand why digital graphics are used. Understand how digital graphics are used. Know the types of digital graphics. Know the types of file format. Know the properties of digital graphics and their suitability for use in creating images. Know how different purposes and audiences influence the design and layout of digital graphics.	Starter tasks recapping prior learning. Practice assignment tasks consolidation various learning. Many aspects tie in with Unit R081: Pre-production Skills.

<p>R082: Creating digital graphics</p> <p>Learning Outcome 2: Be able to plan the creation of a digital graphic</p>		<p>Internal marked and externally moderated coursework based on assignments.</p>	<p>How to interpret client requirements for a digital graphic based on a specific brief. Understand target audience requirements for a digital graphic. How to produce a work plan for an original graphics creation. How to produce a visualisation diagram for a digital graphic. How to identify the assets needed to create a digital graphic. How to identify the resources needed to create a digital graphic. Understand how legislation applies to images used in digital graphics, whether sourced or created.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Many aspects tie in with Unit R081: Pre-production Skills.</p>
<p>R082: Creating digital graphics</p> <p>Learning Outcome 3: Be able to create a digital graphic</p>		<p>Internal marked and externally moderated coursework based on assignments.</p>	<p>How to source assets identified for use in a digital graphic. How to create assets identified for use in a digital graphic. How to ensure the technical compatibility of assets with the final graphic. How to create a digital graphic using a range of tools and techniques within the image editing software application. How to save a digital graphic in a format appropriate to the software being used. How to export the digital graphic using appropriate formats and properties for print, web, and multimedia use. How to use version control when creating a digital graphic.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Many aspects tie in with Unit R081: Pre-production Skills.</p>

<p>R082: Creating digital graphics</p> <p>Learning Outcome 4: Be able to review a digital graphic</p>		<p>Internal marked and externally moderated coursework based on assignments.</p>	<p>How to review a digital graphic against a specific brief.</p> <p>How to identify areas in a digital graphic for improvement and further development.</p>	
<p>Year 11.</p> <p>R088: Creating a digital sound sequence</p> <p>Learning Outcome 1: Understand the uses and properties of digital sound</p>	<p>34</p>	<p>Internal marked and externally moderated coursework based on assignments.</p>	<p>Know the sectors and uses of digital audio products (commercial contexts, entertainment, business, education).</p> <p>Know the audio file formats (mp3, wav, wma, aiff, ogg vorbis).</p> <p>Know the the properties of digital sounds (bit depth, sample rate, tonal range, clarity, pitch, timbre).</p> <p>Know the environmental considerations and limitations relating to audio recording (distance from audio source, directionality, background noise, wind).</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Many aspects tie in with Unit R081: Pre-production Skills.</p>
<p>R088: Creating a digital sound sequence</p> <p>Learning Outcome 2: Be able to plan a digital sound sequence</p>		<p>Internal marked and externally moderated coursework based on assignments.</p>	<p>How to interpret client requirements for a digital sound sequence based on a specific brief.</p> <p>How to understand target audience requirements for a digital sound sequence.</p> <p>How to produce a work plan for a digital sound sequence.</p> <p>How to identify appropriate equipment and software to be used in the creation of a digital sound sequence, for recording, storage, and mixing.</p> <p>How to plan the content and sequence for a digital sound.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Many aspects tie in with Unit R081: Pre-production Skills.</p>

			<p>How to create and maintain a test plan during production of a digital sound sequence.</p> <p>Understand how legislation applies to the use of sounds, whether sourced or recorded.</p>	
<p>R088: Creating a digital sound sequence</p> <p>Learning Outcome 3: Be able to create a digital sound sequence</p>		<p>Internal marked and externally moderated coursework based on assignments.</p>	<p>How to record and source sounds to store as assets for use in a digital sound sequence.</p> <p>How to import assets into sound editing software.</p> <p>How to use features of the sound editing software to edit assets.</p> <p>How to use the features of sound editing software to enhance assets.</p> <p>How to use a range of tools and techniques to mix assets within audio software.</p> <p>How to save a digital sound sequence in a format appropriate to the software being used.</p> <p>How to export a digital sound sequence in a file format appropriate to client requirements.</p> <p>How to use version control when creating digital sound sequences.</p> <p>Understand considerations when exporting different file formats and file sizes.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Many aspects tie in with Unit R081: Pre-production Skills.</p>
<p>R088: Creating a digital sound sequence</p>		<p>Internal marked and externally moderated coursework based on assignments.</p>	<p>How to review a digital sound sequence against a specific brief.</p> <p>How to identify areas for improvement and further development of a digital sound sequence.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p>

Learning Outcome 4: Be able to review a digital sound sequence				Many aspects tie in with Unit R081: Pre-production Skills.
<p>R087: Creating interactive multimedia products</p> <p>Learning Outcome 1: Understand the uses and properties of interactive multimedia products</p>	34	Internal marked and externally moderated coursework based on assignments.	<p>Understand where different interactive multimedia products are used and their purpose (websites, information kiosks, mobile phone applications, e-learning products)</p> <p>Know the key elements to consider when designing interactive multimedia products (colour scheme, house style, layout, GUI (graphical user interface), accessibility).</p> <p>Know the required hardware, software and peripherals to create and view interactive multimedia products.</p> <p>Understand the type of limitations caused by connections, bandwidth and data transfer when accessing interactive multimedia products.</p> <p>Know the file formats supported by different platforms.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Many aspects tie in with Unit R081: Pre-production Skills.</p>
<p>R087: Creating interactive multimedia products</p> <p>Learning Outcome 2: Be able to plan interactive multimedia products</p>		Internal marked and externally moderated coursework based on assignments.	<p>How to interpret client requirements for interactive multimedia products based on a specific brief.</p> <p>How to understand target audience requirements for interactive multimedia products.</p> <p>How to produce a work plan for an original interactive multimedia product.</p> <p>How to plan the structure and features of an interactive multimedia product.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Many aspects tie in with Unit R081: Pre-production Skills.</p>

			<p>How to produce a series of visualisation diagrams (screen design, navigation features, assets).</p> <p>How to identify the assets and resources needed to create an interactive multimedia product.</p> <p>How to create and maintain a test plan to test an interactive multimedia product during production.</p> <p>Understand how legislation applies to assets to be used when creating interactive multimedia products, whether sourced or created.</p>	
<p>R087: Creating interactive multimedia products</p> <p>Learning Outcome 3: Be able to create interactive multimedia products</p>		<p>Internal marked and externally moderated coursework based on assignments.</p>	<p>How to source assets to be used in an interactive multimedia product.</p> <p>How to create and re-purpose assets.</p> <p>How to store assets to be used in an interactive multimedia product.</p> <p>How to create an interactive multimedia product structure.</p> <p>How to set up interaction and playback controls.</p> <p>How to save an interactive multimedia product in a format appropriate to the software being used.</p> <p>How to export the interactive multimedia product in a file format appropriate to client requirements.</p> <p>How to use version control when creating interactive multimedia products.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Many aspects tie in with Unit R081: Pre-production Skills.</p>
<p>R087: Creating interactive multimedia products</p>		<p>Internal marked and externally moderated coursework based on assignments.</p>	<p>How to review an interactive multimedia product against a specific brief.</p> <p>How to identify areas for improvement and further development of an interactive multimedia product.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p>

Learning Outcome 4: Be able to review interactive multimedia products				Many aspects tie in with Unit R081: Pre-production Skills.
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Qualities

During Years 10 and 11, pupils will have opportunities to develop the following BUILD qualities:

BUILD Quality	How the Year 10 and 11 Computing curriculum contributes to developing this quality:
Respect	To give appropriate and helpful feedback to peers. To listen to each other during group discussions.
Kindness	To be prepared to help peers who struggle or need assistance and to give appropriate feedback.
Tolerance	Respect for each other's opinion when carrying out a project, understand diversity in culture, religion and ethnicity when looking at global issues. To listen to each other during group discussions.
Resilience	By handing work in on time and improving it when necessary.
Creativity	All three coursework units require creative work to be completed.
Positivity	To not denigrate other peers' viewpoints or work.
Integrity	To not plagiarise other students' work.
Aspiration	
Empathy	To give appropriate and helpful feedback to peers. To listen to each other during group discussions.

Skills

During Years 10 and 11, pupils will have opportunities to develop the following wider skills:

Skill Area	How the Year 10 and 11 Computing curriculum contributes to developing this skill area:
Literacy & Numeracy	Literacy through three coursework units. A small amount of numeracy in the file size/dimensions work.
Communication	Non-verbal and verbal through group work. Written through coursework.
Problem Solving	Coursework projects have elements of problem solving.
Leadership	
Collaboration	
Metacognition	
Physical, Practical and Technical	The whole course teaches technical skills and knowledge.
Digital Literacy	The course will improve learners' digital literacy and knowledge.

Year 12 & 13 Computing

Knowledge, Qualifications and Assessment

What pupils will study during Year 12 and 13, our ambition for the knowledge they retain and subject specific skill they will develop and how learning will be assessed formatively and summatively.

Unit Title	Periods	Learning Challenge What will pupils produce at the end of a unit to demonstrate their learning?	Learning Journey What knowledge and subject specific skills will pupils learn in order to complete the Learning Challenge?	Learning Consolidation What prior learning will pupils consolidate using spaced retrieval and spaced practice?
Year 12. Unit 1: Fundamentals of IT Learning Outcome 1 Understand computer hardware	90	Regular exam questions and mini-tests. End of Learning Outcome test.	Know about computer hardware – input/output and communication devices. Know about computer components – cpu, motherboard, storage, ports, memory, expansions cards, psu. Know about types of computer systems – desktop/server, tablet/hybrid, smartphone, embedded/IoT, mainframe, quantum. Know about connectivity methods – copper, fibre, wireless. Know about communications hardware – hub, switch, router, mode, wap, hybrid. Know how to troubleshoot hardware – faults, tools, documentation. Know the units of measurement – bit, nibble, byte, metric and binary. Know about number systems – binary, decimal, hex. Can convert between the different number systems.	Starter tasks recapping prior learning. Mock questions that can be on any prior learning.
Unit 1: Fundamentals of IT		Regular exam questions and mini-tests. End of Learning Outcome test.	Know about the types of software - open source, closed source, off the shelf,	Starter tasks recapping prior learning.

<p>Learning Outcome 2</p> <p>Understand computer software</p>			<p>bespoke, shareware, freeware, embedded.</p> <p>Know about the types of application software – productivity, development tools, business.</p> <p>Know about the types of utility software.</p> <p>Know about operating systems – single/multi-user, single/multiple processor, off the shelf, open source, bespoke.</p> <p>Know about different communication methods (SMS, email, messaging software, social networking/social media, VoIP, personal assistants, teleconference, video conference, cellular/satellite, instant messaging.</p> <p>Know how to troubleshoot software – faults, tools and documentation.</p> <p>Know about the protocols – IP, TCP, UDP, SMTP, FTP, HTTP, SNMP, ICMP, POP.</p>	<p>Mock questions that can be on any prior learning.</p>
<p>Unit 1: Fundamentals of IT</p> <p>Learning Outcome 3</p> <p>Understand business IT systems</p>		<p>Regular exam questions and mini-tests.</p> <p>End of Learning Outcome test.</p>	<p>Know about different types of server – file, print, application, database, web, mail, hypervisor.</p> <p>Understand virtualisation – server, client, storage, cloud, hybrid.</p> <p>Know about networking characteristics – peer to peer, client/server, bus/star/ring, addressing, diagrams.</p> <p>Know about connectivity methods – LAN, PAN, WAN, MAN, voice, satellite.</p> <p>Know about business systems – MIS, CRM, SOP, helpdesk.</p>	<p>Starter tasks recapping prior learning.</p> <p>Mock questions that can be on any prior learning.</p>
<p>Unit 1: Fundamentals of IT</p>		<p>Regular exam questions and mini-tests.</p> <p>End of Learning Outcome test.</p>	<p>Know about communication skills – interpersonal, questioning, verbal,</p>	<p>Starter tasks recapping prior learning.</p>

<p>Learning Outcome 4</p> <p>Understand employability and communication skills used in an IT environment</p>			<p>written, non-verbal, barriers, use of language.</p> <p>Know about communication technology – presentation software, word processing, email, web, blogs/vlogs, instant messaging.</p> <p>Know personal attributes.</p> <p>Know how to be ready for work – dress, presentation, attitudes.</p> <p>Know job roles and skills needed – network manager, IT technician, programmer, web designer, animator.</p> <p>Know about professional bodies.</p> <p>Know about industry certification.</p>	<p>Mock questions that can be on any prior learning.</p>
<p>Unit 1: Fundamentals of IT</p> <p>Learning Outcome 5</p> <p>Understand ethical and operational issues and threats to computer systems</p>		<p>Regular exam questions and mini-tests.</p> <p>End of Learning Outcome test.</p>	<p>Know about different ethical issues – whistle blowing, discrimination, use of information, codes of practice, staying safe online, bias.</p> <p>Know about operational issues – security, H&S, disaster planning/recovery, policies, change management, scale of change.</p> <p>Know about different threats – phishing, hacking, viruses, Trojans, interception, eavesdropping, data theft, social engineering.</p> <p>Know about physical security – locks, biometrics, RFID, tokens, privacy screens.</p> <p>Know about digital security - anti-virus, firewalls, anti-spyware, username/passwords, permissions, encryption.</p> <p>Know about safe disposal of data and computer equipment – legislation, overwriting, electromagnetic wipe, physical destruction.</p>	<p>Starter tasks recapping prior learning.</p> <p>Mock questions that can be on any prior learning.</p>

<p>Unit 2: Global Information</p> <p>Learning Outcome 1</p> <p>Understand where information is held globally and how it is transmitted</p>	<p>90</p>	<p>Regular exam questions and mini-tests. End of Learning Outcome test.</p>	<p>Know the different holders of information – categories, location, comparison across the global divide.</p> <p>Know the different types of storage media – paper, optical, magnetic, solid state.</p> <p>Know about types of information access and storage devices – handheld, portable, fixed, shared.</p> <p>Know about the internet, including connections.</p> <p>Know about the WWW – internet, intranet, extranet.</p> <p>Know different information formats – webpages, blogs, podcasts, streaming, social media, document stores, RSS.</p> <p>Understand the advantages and disadvantages of the internet for individuals and organisations.</p>	<p>Starter tasks recapping prior learning.</p> <p>Mock questions that can be on any prior learning.</p>
<p>Unit 2: Global Information</p> <p>Learning Outcome 2</p> <p>Understand the styles, classification and the management of global information</p>		<p>Regular exam questions and mini-tests. End of Learning Outcome test.</p>	<p>Know different information styles and their uses – text, graphic, video, animated, audio, numerical, Braille, tactile images, subtitles, Boolean, tables and spreadsheets, charts and graphs.</p> <p>Know about information classification – sensitive, non-sensitive, private, public, personal, business, confidential, classified, partially and fully anonymised.</p> <p>Know about quality of information – characteristics, importance, consequences.</p> <p>Know about information management – collecting, storing, retrieving,</p>	<p>Starter tasks recapping prior learning.</p> <p>Mock questions that can be on any prior learning.</p>

			manipulating, processing, analysing, securing, transmitting, impacts.	
<p>Unit 2: Global Information</p> <p>Learning Outcome 3</p> <p>Understand the use of global information and the benefits to individuals and organisations</p>		<p>Regular exam questions and mini-tests.</p> <p>End of Learning Outcome test.</p>	<p>Understand the different between data and information.</p> <p>Know about categories of information used by individuals – communication, education and training, entertainment, planning, financial, research, location-dependent.</p> <p>Know about categories of information used by organisations – knowledge management and creation, MIS, marketing/promotion/sales, financial analysis and modelling, contact management, decision making, communication, big data.</p> <p>Know the stages of data analysis – identify the need, define scope, identify sources, source and select information, select the tools, process and analyse data, record and store information, share results.</p> <p>Know about different data analysis tools – data tables, visualisation of data, trend and pattern identification, data cleaning, geographic information system.</p> <p>Know about information system structure – open/close systems.</p>	<p>Starter tasks recapping prior learning.</p> <p>Mock questions that can be on any prior learning.</p>
<p>Unit 2: Global Information</p> <p>Learning Outcome 4</p> <p>Understand the legal and</p>		<p>Regular exam questions and mini-tests.</p> <p>End of Learning Outcome test.</p>	<p>Know and understand UK legislation – DPA 1998/2018, RIPA 2000/IPA 2016, PoFA 2012, Privacy and Electronic Communications Regulations 2003/2011, FoIA 2000, CMA 1990, ICO, CDA 1988, EQA 2011.</p>	<p>Starter tasks recapping prior learning.</p> <p>Mock questions that can be on any prior learning.</p>

regulatory framework governing the storage and use of global information			<p>Know about global information protection regulations and issues, including UNCRPD.</p> <p>Know about Green IT – requirements, UN Climate Change Summits, UK policy, carbon footprint.</p>	
<p>Unit 2: Global Information</p> <p>Learning Outcome 5</p> <p>Understand the process flow of information</p>		<p>Regular exam questions and mini-tests.</p> <p>End of Learning Outcome test.</p>	<p>Know about different information sources and data types – internal, external, primary, secondary, qualitative, quantitative.</p> <p>Know about DFDs – external entities, processes, data stores, data flows, symbols, rules, impacts.</p>	<p>Starter tasks recapping prior learning.</p> <p>Mock questions that can be on any prior learning.</p>
<p>Unit 2: Global Information</p> <p>Learning Outcome 6</p> <p>Understand the principles of information security</p>		<p>Regular exam questions and mini-tests.</p> <p>End of Learning Outcome test.</p>	<p>Know the principles of information security – confidentiality, integrity, availability.</p> <p>Know about risks – unauthorised or unintended access to data, accidental loss of data, intentional destruction of data, intentional tampering of data.</p> <p>Understand impacts of losing data – IP, loss of service, loss of reputation.</p> <p>Know protection methods – access rights, responsibilities, disaster recovery, risk assessments, effectiveness, training.</p> <p>Know physical protection methods – locks, keypads, biometrics, location, backups, security staff, shredding.</p> <p>Know logical protection methods – tiered levels of access, firewalls, anti-malware, obfuscation, encryption, passwords.</p>	<p>Starter tasks recapping prior learning.</p> <p>Mock questions that can be on any prior learning.</p>
Unit 17: Internet of Everything	60	Internal marked and externally moderated coursework based on an assignment.	Understand Things – physical objects, physical objects, experiential interactions,	Starter tasks recapping prior learning.

<p>Learning Outcome 1</p> <p>Understand what is meant by the Internet of Everything (IoE)</p>			<p>aids to people, aids to society/community, machines. Know where it is used. Know applications of use – body/health, home/garden, city/neighbourhood, industry, the environment. Know about the global impacts. Know the four pillars – people, data, process, things. Understand the People pillar – the types of people and how they connect. Understand the Data pillar – the types of data and how data can be converted into information. Know different information gathering devices. Understand the Process pillar – the methods and capabilities. Know different connectivity methods – wired, Wi-Fi, Bluetooth, local, cloud-based, data centre-based, RFID. Know about networked connections. Understand security issues – ownership of information, unauthorised access, attacks, challenges.</p>	<p>Practice assignment tasks consolidation various learning.</p> <p>Links to various aspects of Unit 1 and 2.</p>
<p>Year 13.</p> <p>Unit 17: Internet of Everything</p> <p>Learning Outcome 2</p> <p>Be able to repurpose technologies to extend the scope of the IoE</p>		<p>Internal marked and externally moderated coursework based on an assignment.</p>	<p>Know about developments that have been made/are being made in different sectors - body/health, home/garden, city/neighbourhood, industry, the environment. Know how to write a feasibility study.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Links to various aspects of Unit 1 and 2.</p>

<p>Unit 17: Internet of Everything</p> <p>Learning Outcome 3</p> <p>Be able to present concept ideas for repurposed developments</p>		<p>Internal marked and externally moderated coursework based on an assignment.</p>	<p>Know how to write a business proposal and the elements needed.</p> <p>Know how to write a pitch.</p> <p>Know how to obtain and act on feedback.</p> <p>Understand how to take in to account stakeholder considerations.</p> <p>Know how to revise a proposal – analyse the feedback, make changes.</p> <p>Understand how to write success criteria.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Links to various aspects of Unit 1 and 2.</p>
<p>Unit 5: Virtual and Augmented Reality</p> <p>Learning Outcome 1</p> <p>Understand virtual and augmented reality and how they may be used</p>	60	<p>Internal marked and externally moderated coursework based on an assignment.</p>	<p>Know about VR and AR as concepts – the pioneers and uses.</p> <p>Know the areas of use – architecture, business, education, entertainment, health care, military, sport.</p> <p>Understand potential impacts.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Links to various aspects of Unit 1 and 2.</p>
<p>Unit 5: Virtual and Augmented Reality</p> <p>Learning Outcome 2</p> <p>2. Be able to design virtual and augmented reality resources</p>		<p>Internal marked and externally moderated coursework based on an assignment.</p>	<p>Know about different technologies – hardware and software.</p> <p>Know how to design AR and VE products – aims, financial plan, quality plan, target audience, nature, content, resource plan, design tools, trigger images, hardware and software requirements.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Links to various aspects of Unit 1 and 2.</p>
<p>Unit 5: Virtual and Augmented Reality</p> <p>Learning Outcome 3</p>		<p>Internal marked and externally moderated coursework based on an assignment.</p>	<p>Know how to develop an AR/VR product – trigger points, layers.</p> <p>Know how to test AR/VR product.</p> <p>Know how to evaluate an AR/VR product – design stage, project management stage, creation stage, possible improvements.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Links to various aspects of Unit 1 and 2.</p>

Be able to create a virtual or augmented reality resource				
Unit 5: Virtual and Augmented Reality Learning Outcome 4 Be able to predict future applications for virtual and augmented reality		Internal marked and externally moderated coursework based on an assignment.	Know about potential future uses of AR/VR. Know how to repurpose existing products.	Starter tasks recapping prior learning. Practice assignment tasks consolidation various learning. Links to various aspects of Unit 1 and 2.
Unit 13: Social Media and Digital Marketing Learning Outcome 1 Understand digital Marketing	60	Internal marked and externally moderated coursework based on an assignment.	Know about the role of marketing within a business – research, need, selling. Know how digital marketing can be used as a business tool – establishment, growth, continuity. Know about the tools – social media, email, landing page optimisation, banners, popups/unders, SEO, paid and organic searches, channels. Know about digital marketing strategies. Know about the digital marketing life cycles and stages.	Starter tasks recapping prior learning. Practice assignment tasks consolidation various learning. Links to various aspects of Unit 1 and 2.
Unit 13: Social Media and Digital Marketing Learning Outcome 2 Understand the use of social media in a business		Internal marked and externally moderated coursework based on an assignment.	Know about research – primary/secondary. Know how data can be used as a resource – data management, sources, collection, analysis, sale. Know how data can be used – identifying gaps in markets, identifying changes in customer habits, targeting, planning. Know about communication – staff and customers.	Starter tasks recapping prior learning. Practice assignment tasks consolidation various learning. Links to various aspects of Unit 1 and 2.

			<p>Know about legislation – DPA 1998/2018, business policies.</p> <p>Understand moral and ethical issues – bias, integrity.</p>	
<p>Unit 13: Social Media and Digital Marketing</p> <p>Learning Outcome 3</p> <p>Be able to plan content and propose appropriate social media channels for digital marketing campaigns</p>		<p>Internal marked and externally moderated coursework based on an assignment.</p>	<p>Know about social media channels.</p> <p>Understand potential outcomes – planning techniques, positive impacts (increased market share, increased customer loyalty, improved customer service, effect on product life cycle, financial impacts), negative impacts (work rate, bullying, threats, employability, image).</p> <p>Understand possible restrictions – legislation, technology, skills.</p> <p>Understand the target audience – market segmentation.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Links to various aspects of Unit 1 and 2.</p>
<p>Unit 13: Social Media and Digital Marketing</p> <p>Learning Outcome 4</p>		<p>Internal marked and externally moderated coursework based on an assignment.</p>	<p>Know about the features of a social media marketing campaign (staffing mix, objectives, targets, message, USP, image, channels, timescales, funnel, tools).</p> <p>Understand campaign considerations (objectives, alignment with business, format, channels, frequency, image, bias).</p> <p>Understand the effectiveness of campaigns – comparing to targets, feedback, assessment against outcomes.</p> <p>Know how to recommend improvements to business processes to support campaigns – analyse outcomes, review processes, make recommendations.</p>	<p>Starter tasks recapping prior learning.</p> <p>Practice assignment tasks consolidation various learning.</p> <p>Links to various aspects of Unit 1 and 2.</p>

Qualities

During Year 12 and 13, pupils will have opportunities to develop the following BUILD qualities:

BUILD Quality	How the Year 12 and 13 Computing curriculum contributes to developing this quality:
Respect	Through verbal communication to an audience, demonstration of British Values (legislation), environmentally friendliness and being ethical. To treat visitors with deference.
Kindness	To be prepared to help peers who struggle or need assistance
Tolerance	Respect for each other's opinion when carrying out a project, understand diversity in culture, religion and ethnicity when looking at global issues.
Resilience	Presenting work in front of unfamiliar people.
Creativity	Creating innovative projects in the coursework.
Positivity	
Integrity	
Aspiration	Investigating skills and attributes required by employers, and how to improve these in themselves.
Empathy	To support each other in projects and to treat visitors with deference.

Skills

During Year 12 and 13, pupils will have opportunities to develop the following wider skills:

Skill Area	How the Year 12 and 13 Computing curriculum contributes to developing this skill area:
Literacy & Numeracy	Literacy through three coursework units. Numeracy through the number bases and conversion work.
Communication	Non-verbal and verbal through various presentations and group work. Written through coursework.
Problem Solving	Coursework projects have elements of problem solving.
Leadership	
Collaboration	
Metacognition	
Physical, Practical and Technical	The whole course teaches technical skills and knowledge.
Digital Literacy	The course will improve learners' digital literacy and knowledge.

Enrichment

During Year 12 and 13, the following events, visits, and trips will enrich the Computing curriculum:

Event, Visit or Trip	Linked unit(s) of study	How the event, visit or trip enriches the curriculum:
Visit to server room	Unit 1	It puts the theoretical work being done into perspective and allows learners to ask questions of the IT technician.
Presentation of work to Ideagen staff, along with tour of Ideagen	Unit 17	The course requires learners to present their work to stakeholders to obtain feedback. By having adults who work in the industry to give that feedback, they will gain better and more useful feedback and it will also give them a taste of the IT work environment.
Visit to Ideagen and talk and tour regarding cyber security	Unit 1 and 2	Learners get to see cyber security in action and also to ask questions of someone who actually does it. This will give them a real-world viewpoint they will not be able to gain in a classroom.