

Subject: ICT and Computing

Subject Leader

J Singh

National Curriculum

We offer a high quality Computing and ICT curriculum to help develop creativity and computational thinking to understand and change the world. Students become digitally literate and are 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. We follow the National Curriculum by providing opportunities to students to develop analytical, problem solving, design and computational thinking skills.

Curriculum Intent

We aim to ensure our students have the necessary skills required for employment. This comes through developing IT User skills and also practical skills. We heavily focus on developing skills related to safe use of ICT, this entails topics like cyberbullying, trolling, viruses, hacking and social networking. We teach our students to use these effectively and how to report and prevent incidents related to this. We teach our students the need for learning IT and Computing skills and how they will help them in the future either to gain employment or progress to higher qualifications.

A big aspect of our curriculum is to look at the legal aspects related to ICT e.g. Copyright law, Computer Misuse Act and Data Protection Act. Students are taught the need for these, their main principles and implications if someone does not follow these rules. Through Computing and Programming, students gain understanding of problem solving and logical thinking. They develop these skills through the use of software such as Scratch, Micro bits and Sphero programming, which gives them more hands on programming experience. We teach our students skills related to competent use of Office packages, Serif programmes and variety of basic programming. While completing these projects students go through the cycle of planning, designing, implementing and evaluating work they have completed. This helps students to explore assessment criteria and progress from Entry level to Level 2. Students are able to identify which aspects they need to complete to move from Level 1 to Level 2. We also try to develop critical thinking skills

At KS3 the ICT and Computing Department aims to embed skills and knowledge in wide variety of ICT and computing capabilities including digital literacy. We start in Year Seven and Eight with a two year rolling programme where students focus on enhancing skills in the office suite, using word processing, presentation, publisher, spreadsheet and Esafety. We look at programming and computing by teaching our students about the basics of hardware and software, binary and algorithms. Once students have gained basic understanding we look at introducing them to practical programming by using software such as Scratch, Microbits and Sphero. We endeavour to make the curriculum fun and interesting but also including a high level of challenge.

In Year Nine we continue to build on their skills and prepare them to complete Entry Level Certification in IT User Skills. This entails developing better understanding about IT Security skills e.g. hacking, viruses, phishing and spam. Students also use their existing skills related to Word, PowerPoint and Publisher to complete a project.

With Year Ten and Eleven students, we focus on completing five mandatory units. Students have to complete units in: IT Security, Digital Editing, Digital Modelling, Improving Productivity and Digital Graphics. Students learn and develop a wide variety of skills related to graphics editing and IT security (Esafety), working through projects. In order to progress to Level 2, students have to evaluate completed work in detail and describe each assessment criteria in detail. We work with our students to enhance literacy skills and numeracy skills. Once all the coursework is completed, students develop understanding about various computing topics e.g. Cloud Computing, Binary, File types, Copyright law. These are tested in the exam students have to sit once all the coursework is completed. Students have to successfully pass both the coursework and examination in order to achieve the full qualification.

Curriculum Implementation

Term	Content/Topics	Assessment
------	----------------	------------

Year 7	Autumn Term	<p>1</p> <p>Introductory lesson (fun lesson e.g. graffiti creator to label ICT book, PS4 controller skins, Befunky photo editor) Introduction to school network (turning on the computer, logging in, saving documents, creating new folders, opening programmes etc.)- Learning to type games Online e-safety quiz before students get into the bulk of the ICT course. Unit 1: How computers work part 1 <i>This unit looks at the different parts of a computer and what can be connected to it.</i> Inputs and outputs-Explore differences between input and output devices, which follow into which category and why. Storage devices- Explore differences between different types of Storage devices e.g magnetic, USB, RAM and ROM Learning to type- Students develop skills to learn to type effectively. Esafety- Students explore topics related to Cyberbullying, Grooming, trolling, Phishing and how to be safe while being online.</p>	<p>How Computers work: assessment to be completed Ongoing assessment Pupils completing Self-Assessment Oral questioning Differentiated tasks Differentiated learning outcomes Online E-safety Quiz</p>
	Autumn Term	<p>2</p> <p>Unit 2: How computers work part 2 <i>This unit looks at the computer in more detail, saying exactly how it works. It also looks at how computers can be connected together to form a network.</i> Hardware and software- Students explore about different hardware and software components, Binary- Understand how data is stored using zeros and ones Computer networks- understand different components required to build a working network Computer networks 2- understand difference between WAN and LAN, and how they are used in day to day life. Unit 3: Esafety Students complete e-safety booklet. (foundation or higher)- Further develop understanding about how to stay online, Social networking pros and cons, Phishing and Spams, Viruses, Trojans. Students develop understanding about these topics</p>	<p>Oral Questioning Differentiated tasks and outcomes End of term assessment Students completing self-assessment</p>
	Spring Term	<p>3</p> <p>Sphero Students develop skills related to creating, designing, testing and debugging programs. Students are also taught skills related to problem solving through decomposition, students are taught skills related to problem solving and breaking it down into smaller steps. In addition to this student learn problem solving skills by using Blockly games, Tynker websites and Sketchation. To further develop programming skills, students are taught skills of programming using Microsoft make code. This teaches students to use block programming to solve problems, move objects, change colours and add further complexity to the programmes.</p>	<p>Students create programmes as part of the assessment Completed projects Self-assessment Differentiated outcomes Practical outcomes Questioning to determine understanding</p>

Year 8	Summer Term	4	<p>Desktop Publishing Students learn skills to produce a magazine cover or travel brochure for a particular audience. Students are taught skills related to inserting pictures, editing text, inserting tables, editing backgrounds and creating professional brochures to promote holiday destination. Students are taught the process of planning, design, creating, testing and evaluating. This unit fits in with the work students will complete at KS4- where students use the existing knowledge to further develop understanding and knowledge about Microsoft Publisher. Once completed, students are provided with the opportunity to evaluate completed work against the success criteria.</p>	<p>Creating, testing and evaluating brochure created. Oral questioning Comparing different types of brochures Identify good and bad features in brochures Demonstration of skills to effectively use Microsoft Publisher End product with final evaluation.</p>
		5	<p>Flowol - a visual programming unit We teach students how to construct flow diagrams to programme objects. Students are taught skills related to control and sequencing. Students develop basic understanding related to using symbols of flowcharts. This is further developed by using different mimics to create programmes, test these programmes and evaluate created programmes. Students are provided with skills to develop logical thinking skills and problem solving approach.</p>	<p>Students follow instructions to create different programmes based in the mimic provided. Completed end product Understanding of the flow chart symbols Completion of self-assessment Using instructions correctly to create flow chart</p>
		6	<p>Unit Sonic Music editing software- Students learn how to use this software to edit, programme and test music. This will help students to develop programming Skills and logical skills. Students develop skills to plan, test and evaluate programmes created.</p>	<p>Understanding of the basic of programming Use of symbols effectively Development of programming skills Oral questioning Ongoing teacher assessment Self-assessment</p>
	Term	Content/Topics	Assessment	
Year 8	Autumn Term	<p>1</p> <p>Introductory lesson (fun lesson e.g. graffiti creator to label ICT book, PS4 controller skins, Befunky photo editor) Introduction to school network (turning on the computer, logging in, saving documents, creating new folders, opening programmes etc.)- Learning to type games Online e-safety quiz before students get into the bulk of the ICT course. Unit 1: How computers work part 1 <i>This unit looks at the different parts of a computer and what can be connected to it.</i> Inputs and outputs-Explore differences between input and output devices, which follow into which category and why. Storage devices- Explore differences between different types of Storage devices e.g magnetic, USB, RAM and ROM Learning to type- Students develop skills to learn to type effectively. Esafety- Students explore topics related to Cyberbullying, Grooming, trolling, Phishing and how to be safe while being online.</p>	<p>How Computers work: assessment to be completed Ongoing assessment Pupils completing self-assessment Oral questioning Differentiated tasks Differentiated learning outcomes Online E-safety Quiz</p>	

	2	<p>Unit 2: How computers work part 2 <i>This unit looks at the computer in more detail, saying exactly how it works. It also looks at how computers can be connected together to form a network.</i> Hardware and software- Students explore about different hardware and software components, Binary- Understand how data is stored using zeros and ones Computer networks- understand different components required to build a working network Computer networks 2- understand difference between WAN and LAN, and how they are used in day to day life.</p> <p>Unit 3: Esafety Students complete e-safety booklet. (foundation or higher)- Further develop understanding about how to stay online, Social networking pros and cons, Phishing and Spams, Viruses, Trojans. Students develop understanding about these topics</p>	<p>Oral Questioning Differentiated tasks and outcomes End of term assessment Pupils completing self-assessment</p>
Spring Term	3	<p>Sphero Students develop skills related to creating, designing, testing and debugging programs. Students are also taught skills related to problem solving through decomposition, students are taught skills related to problem solving and breaking it down into smaller steps. In addition to this student learn problem solving skills by using Blockly games, Tynker websites and Sketchation. To further develop programming skills, students are taught skills of programming using Microsoft make code. This teaches students to use block programming to solve problems, move objects, change colours and add further complexity to the programmes.</p>	<p>Students create programmes as part of the assessment Completed projects Self-assessment Differentiated outcomes Practical outcomes Questioning to determine understanding</p>
	4	<p>Microsoft publisher Students learn skills to produce a magazine cover or travel brochure for a particular audience. Students are taught skills related to inserting pictures, editing text, inserting tables, editing backgrounds and creating professional brochures to promote holiday destination. Students are taught the process of planning, design, creating, testing and evaluating. This unit fits in with the work students will complete at KS4- where students use the existing knowledge to further develop understanding and knowledge about Microsoft Publisher. Once completed, students are provided with the opportunity to evaluate completed work against the success criteria.</p>	<p>Creating, testing and evaluating brochure created. Oral questioning Comparing different types of brochures Identify good and bad features in brochures Demonstration of skills to effectively use Microsoft Publisher End product with Final evaluation.</p>
Summer Term	5	<p>Flowol - a visual programming unit We teach students how to construct flow diagrams to programme objects. Students are taught skills related to control and sequencing. Students develop basic understanding related to using symbols of flowcharts. This is further developed by using different mimics to create programmes, test these programmes and evaluate created programmes. Students are provided with skills to develop logical thinking skills and problem solving approach.</p>	<p>Students follow instructions to create different programmes based in the mimic provided. Completed end product Understanding of the flow chart symbols Completion of self-assessment Using instructions correctly to create flow chart</p>

		6	Unit Sonic Music editing software- Students learn how to use this software to edit, programme and test music. This will help students to develop programming Skills and logical skills. Students develop skills to plan, test and evaluate programmes created.	
	Term		Content/Topics	Assessment
Year 9	Autumn Term	1	<p>IT Security for Users and Digital Editing Students will be commencing Entry level Qualification in ICT, which requires them to complete mandatory units related to IT Security and Digital Editing IT Security- Students will develop understanding about how internet is dangerous and how to protect ourselves from it. Students will learn how to identify devices which can cause risk and how to protect from them. Students will have the opportunity to develop further understanding about Cyberbullying, Trolling, Phishing, Spams and other internet security topics. Students will also be provided opportunity to learn about pros and cons of Social Networking. Digital Editing- While completing this unit, students will be working through a project to demonstrate how to edit and format Microsoft office packages. Students will be providing opportunity to complete a project where they are able to plan, design, produce, test and evaluate Digital Product created by them. This will be assessed against the Entry level criteria with opportunity to improve to Level 1 and Level 2 Understand how to apply basic and advanced formatting to Microsoft word documents</p>	<p>IT Security Assessment as part of the Entry Level Course</p> <p>Digital Editing Assessment as part of the Entry level course</p>
		2	<p>IT Security for Users and Digital Editing Students will be commencing Entry level Qualification in ICT, which requires them to complete mandatory units related to IT Security and Digital Editing IT Security- Students will develop understanding about how internet is dangerous and how to protect ourselves from it. Students will learn how to identify devices which can cause risk and how to protect from them. Students will have the opportunity to develop further understanding about Cyberbullying, Trolling, Phishing, Spams and other internet security topics. Students will also be provided opportunity to learn about pros and cons of Social Networking. Digital Editing- While completing this unit, students will be working through a project to demonstrate how to edit and format Microsoft office packages. Students will be providing opportunity to complete a project where they are able to plan, design, produce, test and evaluate Digital Product created by them. This will be assessed against the Entry level criteria with opportunity to improve to Level 1 and Level 2 Understand how to apply basic and advanced formatting to Microsoft word documents</p>	
	Spring Term	3	<p>Introduction to Movie Plus Students will be provided with skills to review existing movies, identify aim, audience and Strengths and weaknesses associated with these movies. Students will be provided with skills to plan, design, produce, test and evaluate movies. They will be provided with basics skills to edit, insert pictures, add transitions, trim and split clips while using Serif Movie Plus. Once</p>	<p>Use Movie Plus software to create professional movie Planning, Testing and Evaluating Completion of the Entry level assessment criteria</p>

Summer Term		Product has been created they will have the opportunity to Evaluate against the criteria and identify areas of development to move towards Level 1 and Level 2	Differentiated learning outcomes based on the criteria
	4	Introduction to Movie Plus Students will be provided with skills to review existing movies, identify aim, audience and Strengths and weaknesses associated with these movies. Students will be provided with skills to plan, design, produce, test and evaluate movies. They will be provided with basics skills to edit, insert pictures, add transitions, trim and split clips while using Serif Movie Plus. Once Product has been created they will have the opportunity to Evaluate against the criteria and identify areas of development to move towards Level 1 and Level 2	
	5	Familiarity with Computer Systems Students will develop skills to identify differences between input and output devices with suitable examples, they will also look at internal and external devices with details with suitable examples. This will be further developed by looking at types of storage e.g Magnetic, optical and Solid State. Some students will have the opportunity to look at the purpose of the CPU and the relationship with RAM (Fetch- Execute Cycle)	Completion of Computer Systems Assessment Questioning Differentiated outcomes
	6	Introduction to excel spreadsheets <i>This unit focuses on entering data and using basic formulae</i> Students will be provided with opportunity to develop skills to enter, edit and format data using Microsoft Excel. This will include creating tables, entering data, producing and editing graphs, changing alignment, colour of cells and colour of text. Students will be provided with skills to insert basic formulae.	Entry level assessment (Digital Modelling)

Term		Content/Topics	Assessment (including formal exam options)
Year 10	Autumn Term	1	Recap on basics of Word, PowerPoint, Publisher to work towards entry level qualification. Recap on Email Scam, Phishing and other IT Security topics. Students will be able to learn about why people hack and how to protect from hacking. They will have the opportunity to learn about different types of data, need of personal data and laws related to personal data. In addition to this, students will learn about Copyright law- need of copyright law, items covered by copyright and penalties if you don't comply with copyright legislation
	2	Tlm level 1/ 2 pathway for digital editing and publishing Students will learn about the need of master slide and how to construct masters slides in presentation, students will be creating multimedia presentations based on the topic given. This will demonstrate advanced skills such as mouse over animations, need of planning before creating presentation, use of storyboards and mind maps to plan. Students will learn about importance of sourcing components and provide evidence of sourcing text, pictures and other elements. Some students who are able to pursue Level 2 will have the opportunity to describe and evaluate	Assessment related to understanding about Copyright law and data protection act Completion of all the criteria at Level 1 for IT security users qualification
			Completion of the Digital Editing and Publishing unit. Internal Moderation and External Moderation completed Assessment criteria for Level 1 and Level 2

		completed project in details, they will also learn about need of triggers and how to apply triggers to the presentation.	
Spring Term	3	Digital Modelling Unit Students will recap on basics of spreadsheets, how to edit data, format cells in Microsoft Excel. Students will be provided with skills to use Count, Count if functions in Excel. They will be able to apply conditional formatting to Microsoft excel models. Some students will be able to apply basic testing of the model and evaluate completed model. This will also include creating variety of charts. Students will be able to evaluate completed charts to identify areas of strengths, weaknesses and improvements	Assessment criteria at Level 1/ Level 2 For level 2, students need to evaluate in detail and use advanced functions in the spreadsheet model.
	4	Digital Modelling Unit Students will recap on basics of spreadsheets, how to edit data, format cells in Microsoft Excel. Students will be provided with skills to use Count, Count if functions in Excel. They will be able to apply conditional formatting to Microsoft excel models. Some students will be able to apply basic testing of the model and evaluate completed model. This will also include creating variety of charts. Students will be able to evaluate completed charts to identify areas of strengths, weaknesses and improvements	Completion of the Digital Modelling Unit Students understand how to independently use Microsoft Excel Successful Internal and External Moderation of the unit
Summer Term	5	Exam preparation Introduction to cloud computing- benefits and limitations, Introduction to programming using HTML- why do we use HTML tags , difference between HTTP and HTTPS , Understand about blogs, web blogs, wikis, chatrooms- investigate benefits and limitations What is Voice over internet protocol? Benefits and limitations of this Understand about different types of software and file extensions- need of file extensions Understand about data representation and the need of it? How disable people use ICT? E.g puff up switches, eye type and foot mouse devices Recap on Copyright laws and computer misuse act legislation What is AUP and need of AUP?	Mock Exam and Assessment related to the development of understanding about these topics
	6	Exam preparation Introduction to cloud computing- benefits and limitations, Introduction to programming using HTML- why do we use HTML tags , difference between HTTP and HTTPS , Understand about blogs, web blogs, wikis, chatrooms- investigate benefits and limitations What is Voice over internet protocol? Benefits and limitations of this Understand about different types of software and file extensions- need of file extensions Understand about data representation and the need of it? How disable people use ICT? E.g puff up switches, eye type and foot mouse devices Recap on Copyright laws and computer misuse act legislation What is AUP and need of AUP? Students who have gaps need to be given sufficient time to close these gaps.	

		Students who have completed these units to be pushed towards Level 2 qualification, teachers to provide feedback related to improvements they should make to improve work.	
	Term	Content/Topics	Assessment (including formal exam options)
Year 11	Autumn Term	1 Digital Graphics unit Students will be taught how to identify design needs e.g simple plan to identify needs of audience, they will learn how to find suitable images, students will be taught how source images and understand about copyright legislation in relation to images. Students will be taught necessary skills related to use of Serif Photo Plus- this will include inserting images, adjusting images, retouching images, use of makeover studio and using creative imagery. They will learn how to scale images and evaluate and present images in a digital format.	Completion of coursework Assessment criteria at Level 1 and Level 2
		2 Improving Productivity Level 1/level 2 Students will learn how to using ICT to improve productivity. They will have to relate this to the existing project they have completed and justify and describe how use of IT has improved efficiency and productivity. They will be able to demonstrate the need and importance of planning, students will learn about importance of Acceptable use policy and why they are important in organisations. Students will learn about automated routines and recap on importance of password and password protection. They will be able to describe in detail factors which might effect when completing ICT related tasks.	Improving productivity level 1 and level 2 assessment
	Spring Term	3 Exam preparation Close any gaps Ensure students have completed necessary units to achieve minimum level 1 qualification in ICT Introduction to cloud computing- benefits and limitations, Introduction to programming using HTML- why do we use HTML tags, difference between HTTP and HTTPS Understand about blogs, web blogs, wikis, chatrooms- investigate benefits and limitations What is voice over internet protocol? Benefits and limitations of this Understand about different types of software and file extensions- need of file extensions Understand about data representation and the need of it? How disable people use ICT? E.g puff up switches, eye type and foot mouse devices Recap on Copyright laws and computer misuse act legislation What is AUP and need of AUP?	
		4	
	Summer Term	5	

		6		