Subject: ICT and Computing

National Curriculum

National Curriculum context – how does Kingsmead School follow the National Curriculum (in your subject)

A high quality Computing and ICT curriculum to help develop creativity, computational thinking to understand and change the world. Students become digitally literate and are a 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

- Developing the skills needed for employment.
- Gaining practical experience and competence with contemporary technologies including programming where appropriate.
- Increasing the capacity to transfer knowledge and skills between contexts.
- Developing practical skills in creativity and problem solving.
- Developing an understanding of the social and commercial impact of IT.
- Developing an understanding of the legal, social, economic, ethical and environmental issues raised by IT.
- Developing safe, secure and responsible practice when using IT including reducing risk.
- Development of social and emotional resilience and critical thinking skills
- Provide pupils with skills, knowledge and qualifications to make positive next steps post Kingsmead.

Curriculum Implementation

Term	Content/Topics	Assessment

Year 7	Autumn Term	1	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. Some introduction to Satchel and using Email functionality. Unit 1: How computers work part 1 This unit looks at the different parts of a computer and what can be connected to it. Inputs and outputs. Storage devices. Learning to type. Use of Ilearn website for further information and resources	• How Computers work assessment to be completed • Evidence of complete worksheets related to inputs, outputs, storage devices and learning to type • Student response to feedback and use of self-assessment where appropriate

		2	**Unit 2: How computers work part 2** 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. Hardware and software Binary Computer networks Computer networks 2 **Unit 3: Esafety** Students complete e-safety booklet. (foundation or higher)- Look at Cyberbullying, How to stay safe online, Trolling, Social networking, Mobile Technology, Grooming. Students learn how to protect from these and how to report these. **Unit 3: Introduction to Scratch** Including: Inserting an object and making it move. Adding blocks for sound and to make an object dance. Editing a sprite's appearance and their background. Repeating of commands. Checking their programming,	• Esafety assessment • Esafety quizzes • Writing report related to Esafety • Discussion related to Esafety • Leaflet completed about computer networks • Creating scratch programmes • Formal assessment • Understanding of the basics • Creating reports • Evaluation of the completed work

	Spring Term	3	**Unit 4: Programming – Sphero/Blocky games/Tynker** This unit looks at programming of the Sphero robot, designing and testing programmes, debugging programmes and solving problems by decomposition (i.e. looking at the problem to be solved and breaking it down into small, logical steps). Blockly games, Tynker, i-learn has lots of programming activities and games. Sketchnation – not strictly programming, but students create a game by editing a basic version that is presented on the website. Suitable for weaker students that cannot access any form of programming. Alternative for students will be to practice programming skills using introduction to pseudocode, tynker website and ilearn website. This will teach them fundamentals of programming and logical skills **Unit 4: Microbits (3 weeks)** **Unit 5: Digital literacy project (3 weeks)** Students will use all of the skills they have learnt in the units so far and will combine these to produce a project. This is so students can combine skills rather than just completing them in isolation. This will include: • Writing a formal letter • Creating a PowerPoint • Collating data • Creating a graph (using the insert feature on PowerPoint rather than Excel) Animation and	• Students create programmes as part of the assessment • Programme output and explanation by students • Students discussion • Question and answer session with the students • Students responding back to feedback

		4	Unit 6: Kodu Including: This is where students will design a computer game character and its scenery. They will then get the character to move, shoot weapons etc. Students will learn the purpose of variables. Unit 7: Internet research Searching effectively Using Booleon terms Using AND, OR operations. Selecting between fact and fiction Reliability of internet searches.	• Creating, testing and evaluating brochure created. • Question and answer session • Students responding back to feedback • Students checking completing work against the assessment criteria
	Summer Term	5	Unit 8: Introduction to excel spreadsheets This unit focuses on entering data and using basic formulae Including: Creating tables Entering data Producing and editing graphs Alignment, colour of cells and colour of text. Inserting basic formulae e.g. SUM, multiplying, averages, subtractions, dividing. (History of computers) How Computers have changed over time, students use this knowledge to predict how computers will be in the future Pupils will share findings using desktop publishing software, presentation software Pupils can use the Internet and a desktop publishing tool to present the ways computers helps their lives and their family lives by finding images of the different devices/services, adding it to a document (Microsoft Word/PowerPoint, Google Docs, Apple Pages) and then using a text box to describe how they use that technology or their family does. Alternatively, pupils could use the unplugged worksheet below and draw the technology and write in the description.	• Basic understanding about formatting • Entering data • Entering formulae • Using basic sum, if functions • Creating charts • Evaluating completed final spreadsheet model • Understanding about the model and how it changes • Pupils will create a document that demonstrates their understanding. Pupils should: Find suitable images from the Internet Combine images with text in desktop publishing software Understand how technology improves tasks or makes tasks easier Understand how technology changes over time and predict how it will change further Show awareness of the limitations of technology

		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. Image Editing To edit a photo/image using an online editor including: – Take and crop a screenshot and learn about ratios. - Adjust the colours, brightness, contrast and filters. – Add drawing and text layers. – Import new images as layers and resize/add effects. – Save finished image to use in other projects.	• The pupils should by the end of the activity pack have two images (three if they do the extension activity in task 2) – the improved photo of the girl on the grass, the old fashioned photo of the girl and map screenshot, cropped, annotated and layered with other images.
	Term		**Content/Topics**	**Assessment**
Year 8	Autumn Term	1	Networking – Computer network and protocols Historic communication methods Brief history of communication Brief information about networking hardware require Setting up network Difference between wired and wireless networks	• Assessment linked to each lesson , Q and A session, worksheets completed with questions answered • Presentation created about basics of setting up network
		2	The Internet Brief history of the internet Data transfer across internet Packet and data transfer Internet services WWW, ISP, Security and SPAM The world wide web ISP, Domain, URL	• Understanding about how data transfer works • Be able to define what ISP is • Understand differences between ISP, Domain and URL
	Spring Term	3	Website building blocks Using HTML tags Applying formatting Building basic web page using various types of tags Understanding the purpose of these tags	• Setting up website using basic tags • Understanding about functionality of each tag • Able to identify differences between good and bad designs of websites
		4	Using advanced tags such as image tag, paragraph tag, italics tag and table tag to build basic web page Creating design for the website and evaluating final product against the set criteria Searching the web- learning basics of effective searching, using various operators to search effectively	• All activities in this lesson offer the teacher the chance to formatively feed back to the learners. Judgements should be made about the accuracy of designs compared to the provided target documents.

				• There is also a short plenary activity that consolidates the key learning over the last few lessons and should be used to gauge how much the learners are developing their ability to 'read' HTML.
	Summer Term	5	**Use of Media** Features of word processor software Licensing of appropriate images The credibility of sources Research and plan your blog Students look at difference licences associated with images, and understand if they are allowed to use these images. Students learn how to effectively source images. Students learn how to write blogs and compare blogs with professional blogs	• The assessment for this unit is in the form of a multiple choice test. Alternatively, learners could complete the test digitally using self-marking software (Google Forms, Microsoft Forms, Socrative, Diagnostic Questions, etc
		6	**Travel Brochure** Travel brochure description, planning for travel brochure. Collecting assets and creating a source table Developing of basic and advanced formatting skills in desktop publishing Using basic and advanced formatting skills to create poster to promote holiday destination Self evaluation and peer evaluation against the set criteria	• Self evaluation • Peer evaluation • Assessment against set criteria
	Term		**Content/Topics**	**Assessment**
Year 9	Autumn Term	1	**Recap on Esafety** To explain how internet is dangerous and how to protect ourselves from it To identify devices that can cause risk and how to protect from them Explain what cyberbullying is and how to protect from cyberbullying Benefits and limitation of social networking Understand how to apply basic and advanced formatting to Microsoft word documents Understand and apply basic formatting to Microsoft Powerpoint Understand and apply basic and advanced formatting to Publisher documents e.g inserting text, inserting pictures, changing fonts, colours, editing	• Completed Presentation based on the topic given • Entry level 1 completed in ICT, this encompasses students creating a presentation or leaflet related to Esafety. • Question and answer session • Students responding back to feedback • Self assessment by students • Peer assessment by students where appropriate

			Alternative unit – Computer Crime – this unit has been used to share knowledge about computer crime by uploading work on Satchel or sending work packs. Students develop knowledge about how to avoid phishing, hacking, spams, spyware and computer crime. Students learn about computer legislation e.g computer misuse act and copyright act.	• Students complete assessment related to computer misuse act and copyright act • Students design leaflets and powerpoints related to copyright act and computer misuse act
		2	Recap on Esafety To explain how internet is dangerous and how to protect ourselves from it To identify devices that can cause risk and how to protect from them Explain what cyberbullying is and how to protect from cyberbullying Benefits and limitation of social networking Understand how to apply basic and advanced formatting to Microsoft word documents Understand and apply basic formatting to Microsoft Powerpoint Understand and apply basic and advanced formatting to Publisher documents e.g inserting text, inserting pictures, changing fonts, colours, editing images, changing background, cropping pictures and printing completed documents	• Presentation or leaflet completed against the entry level criteria • Question and answer session • Students responding back to feedback • Self assessment by students • Peer assessment by students
	Spring Term	3	Introduction to Movie Plus Current videos Planning, producing and creating their own movies Understand the sequence of movies, planning movies using storyboard or other planning tools Basic and advanced understanding of the Serif movie make software Gathering of elements Students are provided movie criteria and also log to assess current progress Students understand how to add text, images, sound and video to the Movie plus software Students learn skills related to trimming, splitting and exporting movies in a different format. Students learn to test and evaluate completed movie to determine areas of strengths and developments. Students working towards level 2 will action these areas of development.	• Use Movie Plus software to create professional movie • Planning, Testing and Evaluating • Students follow Level 1 Video editing criteria to review, plan, design and implement videos editing. Students evaluate completed design against the assessment criteria • Opportunities of self evaluation and peer evaluation used by students where possible
		4	Introduction to Movie Plus Current videos Planning, producing and creating their own movies Understand the sequence of movies, planning movies using storyboard or other planning tools Basic and advanced understanding of the Serif movie make software Gathering of elements Students are provided movie criteria and also log to assess current progress Students understand how to add text, images, sound and video to the Movie plus software	

			Students learn skills related to trimming, splitting and exporting movies in a different format. Students learn to test and evaluate completed movie to determine areas of strengths and developments. Students working towards level 2 will action these areas of development	
	Summer Term	5	**Achievement at Entry level 1** Achievement at Level 1 reflects the ability to use relevant knowledge, skills and procedures to complete routine tasks. It includes responsibility for completing tasks and procedures subject to direction or guidance. **Achievement at Entry level 2** Achievement at Level 2 reflects the ability to select and use relevant knowledge, ideas, skills and procedures to complete well-defined tasks and address straight-forward problems. It includes taking responsibility for completing tasks and procedures and exercising autonomy and judgment subject to overall direction or guidance. Introduction to Small basic – students learn how to programme using turtle Students practice how to use text commands in small basic to create basic and advanced programmes Students practice how to use for loop to initiate a programme and also look at the impact of this Students learn the concept of variables, why are they used and how are they used	Completion of the Entry level course • Small basic output • Completed programmes • Understanding of the completed programmes • Debugging of the programmes • Self assessment and peer assessment where applicable • Students responding back to feedback
		6	**TIM level 1 (IT Security unit)** I can identify security concerns that might effect system performance Security precautions to protect data Recap on Phishing and how to protect from Phishing Understand importance of backing up data Understand importance of anti virus software and how viruses effect computer systems Students will be able to answer questions, create a presentation or poster to provide tips to be secure online, this will be used towards Level 1 IT security assessment. Recap on Esafety issues related to Cyberbullying, trolling, hacking, Phishing and Spams as discussed in the term 1	• Assessment linked to understanding developed while completing the coursework. Evidence of completed Presentation or word document.

	Term		Content/Topics	Assessment (including formal exam options)
Year 10	Autumn Term	1	Programming in Python State what a programming language Is and what a program is Basic understanding of variables and how to use them Understand benefits of using Python Basic understanding about data types and how to use them Understand how to use IDLE editor to write programmes Understand If statement and use indentation Understand benefits of functions and how to use them Be able to write and recall functions	• Students complete entry level qualification • Demonstration of work completing when writing programmes • Screenshots with annotations of completed work • Assessment linked with work completed • Internal and external moderation completed
		2	Tlm level 1/ 2pathway for digital editing and publishing Understanding the need of master slide and how to construct master slides in presentation Understanding the need of planning before creating presentations, use storyboard and mind maps to plan out different elements of presentation. Understand why we source components and provide evidence of sourcing text, pictures and other elements Understand and apply mouse over effects and advanced animations to the presentation (level 2) Understand the need of triggers and how to apply triggers to the presentation (Level 2) Understand the need of testing and evaluating presentations, with making improvements where appropriate. Alternative theory based unit Graphics – Students explore topics related to differences between bitmap and vector graphics Understand purpose of conveying Effects and enhancement Purpose of file types and storage types	• Completion of the Digital Editing and Publishing unit. • Internal Moderation and External Moderation completed • Students complete formal assessment related to differences between graphics types and file types

	Spring Term	3	Digital Modelling Unit Introduction to spreadsheets Understand how to enter data into Microsoft excel Understand how to edit, format cells in Microsoft excel Understand and demonstrate how to add data using simple functions such as SUM Understand how to use Count, Count If functions in excel. Understand how to apply conditional formatting to Microsoft excel models. Understand and demonstrate how to create different types of charts in Microsoft excel Understand the concept of modelling in excel Apply basic testing to the model Evaluate final model to identify areas of strengths and areas of development, apply those areas of development where appropriate and amend model.	• Completed Spreadsheet • Self assessment • Peer assessment • Internal moderation • External Moderation • Assessment against the set criteria • Students respond back to feedback
		4	Digital Modelling Unit Introduction to spreadsheets Understand how to enter data into Microsoft excel Understand how to edit, format cells in Microsoft excel Understand and demonstrate how to add data using simple functions such as SUM Understand how to use Count, Count If functions in excel. Understand how to apply conditional formatting to Microsoft excel models. Understand and demonstrate how to create different types of charts in Microsoft excel Understand the concept of modelling in excel Apply basic testing to the model Evaluate final model to identify areas of strengths and areas of development, apply those areas of development where appropriate and amend model.	• 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** **Outstanding work left to be completed and following** 1) Introduction to cloud computing- benefits and limitations 2) Introduction to programming using HTML- why do we use HTML tags , difference between HTTP and HTTPS 3) Understand about blogs, web blogs, wikis, chatrooms- investigate benefits and limitations 4) What is Voice over internet protocol? Benefits and limitations of this 5) Understand about different types of software and file extensions- need of file extensions 6) Understand about data representation and the need of it? 7) How disable people use ICT? E.g puff up switches, eye typer and foot mouse devices 8) Recap on Copyright laws and computer misuse act legislation 9) What is AUP and need of AUP?	• Mock Exam and Assessment related to the development of understanding about these topics.
		6	Exam preparation to carry on if not completed in Summer 1 Closing any gaps- ensure all students have completed, level 1 IT security unit, digital modelling and digital editing unit. 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** I can identify design needs e.g a simple plan to identify needs of audience I can find suitable images to support my design Source of images to identify where images were procured from, do they comply with copyright legislation Understand how to use Serif Photo plus – basic introduction on skills e.g inserting images, adjusting and retouching images, use of Makeover studio if applicable, Using Creative imagery tools to enhance images.	• Differences between bitmap and vector graphics • Formal assessment related to this topic • Planning, designing and implementation of the graphics • Evaluation of completed work against the criteria • Students respond back to feedback

			Students will learnt how to rotate, align and layers images- this will be demonstrated in the work they have completed Students will learn how to scale images, this will be demonstrated in the work they have completed Students will learn difference between vector bitmap images Understand how to export vector graphics into rastor graphics Complete evaluation of finish work.	
		2	Improving Productivity Level 1/level 2 I can identify the purpose of using IT in my task I can plan appropriately to carry out IT related tasks I can identify reasons for choosing particular software I can demonstrate the need of using AUP I can identify automated routines to improve productivity e.g CTRL C For Level 2 where appropriate – Students need to describe the methods, skills and resources needed to complete my tasks successfully describe factors that might affect the task describe any legal or local guidelines or constraints that apply to the task or activity	
	Spring Term	3	Exam preparation Close any gaps Ensure students have completed necessary units to achieve minimum level 1 qualification in ICT Exam preparation 1) Introduction to cloud computing- benefits and limitations	

			2) Introduction to programming using HTML- why do we use HTML tags , difference between HTTP and HTTPS 3) Understand about blogs, web blogs, wikis, chatrooms- investigate benefits and limitations 4) What is Voice over internet protocol? Benefits and limitations of this 5) Understand about different types of software and file extensions- need of file extensions 6) Understand about data representation and the need of it? 7) How disable people use ICT? E.g puff up switches, eye typer and foot mouse devices 8) Recap on Copyright laws and computer misuse act legislation 9) What is AUP and need of AUP?	