MOOR PARK HIGH SCHOOL: CURRICULUM

Key Stage 4 Long Term Planning

SYLLABUS: Cambridge Nationals Level 1/2Information Technologies (IT)

INTENT: The Cambridge National in Information Technologies curriculum is designed to equip students with the knowledge, skills, and confidence needed to thrive in an increasingly digital world. The course provides a broad and practical understanding of IT, focusing on how technology is used in real-world contexts across a range of industries. Students develop key technical knowledge in areas such as data management, cyber security, augmented reality, and the design and development of IT solutions. Alongside this, the qualification emphasises essential transferable skills including problem-solving, creativity, project planning, and independent working. The curriculum is sequenced to build understanding progressively, ensuring that students can apply their knowledge through both examined units and coursework-based projects. This allows learners to gain hands-on experience using industry-relevant tools and techniques while developing the ability to analyse user requirements and produce effective digital solutions.

Curriculum Area: Arts, Performance and Technology (Computing)

Year 10	Autumn Term		Spring Term		Summer Term	
Syllabus	**R050 – IT In our World**	**R060 – Data Manipulation (NEA 1)**	**R050 – IT In our World**	**R060 – Data Manipulation (NEA 1)**	**R050 – IT In our World**	**R060 – Data Manipulation (NEA 1)**
Knowledge	Students will learn about the key design tools used when creating IT products, including wireframing and prototyping software. Students will also explore how humans interact with computers in everyday life, examining different types of interfaces such as GUIs, touch screens and voice recognition, and evaluating which interfaces are most suitable for different users and contexts.	Students will learn about different data types, structures and sources, including how data is collected, stored and organised in spreadsheets and databases. They will explore key concepts such as validation, verification, accuracy and the legal and ethical considerations of using data, including an introduction to data protection.	Students will learn how data is collected, stored and used within IT systems, and understand the importance of testing to ensure a product works as intended. Students will also explore the key pieces of cyber-security legislation, including the Computer Misuse Act and the Data Protection Act/GDPR, and understand the responsibilities that individuals and organisations have when handling data.	Students will learn about advanced data manipulation techniques, including complex formulas (IF, LOOKUP functions), data modelling, and the use of charts and graphs to present data effectively. They will also explore how to interpret and analyse data to support decision making.	Students will learn about the different methods of digital communication, including email, video conferencing and social media, and evaluate their advantages and disadvantages in personal and professional contexts. Students will also be introduced to the Internet of Everything (IoE), exploring how connected devices, people and data interact in the real world, and discuss the social, ethical and security implications of an increasingly connected society.	Students will learn about the requirements of the NEA, including how to plan, develop, test and evaluate a complete data manipulation solution. They will understand how to meet user requirements and produce outcomes that are fit for purpose.
Skills	Students will develop skills in designing and creating wireframes and prototypes using industry-standard software. They will practice evaluating different user interfaces and justifying design choices based on user needs and context.	Students will develop skills in creating and formatting spreadsheets, entering and organising data, and using basic formulas and functions such as SUM, AVERAGE and COUNT. They will practise sorting, filtering and validating data to ensure accuracy and usability.	Students will develop skills in identifying appropriate data collection and storage methods for different IT systems. They will also practice applying their knowledge of cyber-security legislation to real-world scenarios, assessing whether individuals and organisations are meeting their legal responsibilities.	Students will develop skills in designing and creating more complex spreadsheet models, using functions to automate calculations and producing appropriate data visualisations. They will practise analysing data sets and drawing conclusions from their findings.	Students will develop skills in comparing and evaluating digital communication methods, selecting the most appropriate option for different personal and professional situations. They will also practice analysing real-world IoE applications, considering their benefits and potential risks from social, ethical and security perspectives.	Students will develop skills in independently creating a full spreadsheet-based solution, including refining data, testing functionality and evaluating their work against given criteria. They will also practise writing detailed evaluations and suggesting improvements.

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Connections to previous learning	Builds on Year 7 **Using Media – Gaining Support for a Cause**, where students combined text, images and layout for a specific audience. Also develops further from Year 9 **Vector Graphics** and **Photoshop**, where students designed digital products with attention to usability, layout and audience. Links to KS3 focus on evaluating digital products and making design decisions.	Builds on KS3 learning from Years 7–9 where students have used spreadsheets for data handling and been introduced to data representation and digital systems. Also reinforces computational thinking approaches such as logical sequencing and problem solving.	Builds directly on Year 7 **Networking and E-Safety** and Year 8 **Cyber Security**, where students identified threats such as malware and phishing and methods to reduce risk. Expands Year 8 understanding of encryption and data protection into applying **legal and ethical responsibilities**. Also links to KS3 work on **data representation** and understanding how data is stored and used.	Builds on Autumn Term knowledge of spreadsheet fundamentals and links to KS3 learning in data analysis and problem solving. Also supports logical thinking developed through programming units.	Builds on Year 7 **Using Media** (communication for audience and purpose) and Year 9 **Digital Literacy Summer Project**, where students created digital content for real-world contexts. Also links to Year 8 **emerging technologies (AI/AR/VR)** and Year 7/8 **networking**, supporting understanding of how connected systems communicate (IoE). Extends KS3 learning by evaluating appropriateness, risks, and impact.	Builds on all prior learning from Autumn and Spring terms, bringing together knowledge of data handling, analysis and presentation. Also links to KS3 project-based learning and independent problem-solving skills.
Assessment	Students will complete regular formative assessment at the end of each lesson in the form of interactive quizzes, exit tickets and quick questioning, in line with PLCs. *Students* will complete a summative assessment at the end of the topic which will assess the key concepts learned in this unit.	Students will be assessed through practical spreadsheet tasks and short knowledge-based assessments, demonstrating their ability to organise, validate and manipulate data effectively. Peer and self-assessment will be used to review accuracy and efficiency. **Point 1: End of Autumn Term Assessment**	Students will complete regular formative assessment at the end of each lesson in the form of interactive quizzes, exit tickets and quick questioning, in line with PLCs. *Students* will complete a summative assessment at the end of the topic which will assess the key concepts learned in this unit.	Students will be assessed through a structured data project and NEA-style practice task, demonstrating their ability to create, analyse and present data solutions. Ongoing teacher, peer and self-assessment will support refinement. **Point 2: End of Spring Term Assessment /**	Students will complete regular formative assessment at the end of each lesson in the form of interactive quizzes, exit tickets and quick questioning, in line with PLCs. *Students* will complete a summative assessment at the end of the topic which will assess the key concepts learned in this unit. ***Point 3: Summer Mock Exams – R050 Exam Paper***	*Students will be assessed through completion of the NEA, including interim checkpoints, teacher feedback and final submission in line with OCR requirements.*
Homework	Homework will consolidate knowledge from **R050 (IT in the World)** and support coursework preparation for **R070 (Augmented Reality)**. Tasks will develop independent research skills, retrieval practice, and exam technique.	As the NEA cannot be completed at home, homework will focus on structured past paper questions to consolidate and embed knowledge from the R050 theory unit. These will be set weekly in line with the homework rotation to support exam readiness.	Homework will consolidate knowledge from **R050 (IT in the World)** and support coursework preparation for **R070 (Augmented Reality)**. Tasks will develop independent research skills, retrieval practice, and exam technique.	As the NEA cannot be completed at home, homework will focus on structured past paper questions to consolidate and embed knowledge from the R050 theory unit. These will be set weekly in line with the homework rotation to support exam readiness.	Homework will consolidate knowledge from **R050 (IT in the World)** and support coursework preparation for **R070 (Augmented Reality)**. Tasks will develop independent research skills, retrieval practice, and exam technique.	As the NEA cannot be completed at home, homework will focus on structured past paper questions to consolidate and embed knowledge from the R050 theory unit. These will be set weekly in line with the homework rotation to support exam readiness.
Culture Capital	Students will explore how user interface design is used in real-world applications such as websites, mobile apps and	Students will explore how organisations use data in real-world contexts such as business, healthcare and education, developing an	Students will explore **real-world cyber security incidents and data breaches**, understanding their impact on individuals and organisations,	Students will explore how data is used in industries such as marketing, retail and finance to influence decisions and predict trends.	Students will explore how **connected technologies (IoE/IoT)** are used in smart homes, transport systems and healthcare, considering both benefits and	Students will explore professional expectations in data handling, including accuracy, reliability and presenting information for different audiences.

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	gaming platforms. They will analyse well-known interfaces (e.g. social media, e-commerce) and understand how design choices influence user behaviour and accessibility.	understanding of the importance of accurate data handling.	as well as current issues around data privacy.		potential risks.	
Numeracy	Students will use numeracy when considering **layout, spacing, alignment and proportion** in wireframe designs. They will apply logical sequencing when structuring user journeys and screen flows.	Students will apply numeracy through calculating totals, averages and percentages, as well as interpreting data sets.	Students will use numeracy when analysing **data types, storage requirements and system capacity**. They will also interpret patterns in data security scenarios.	Students will apply numeracy through interpreting graphs, identifying trends and comparing data sets.	Students will use numeracy when comparing **data usage, connectivity and efficiency of communication methods**, and when interpreting how devices exchange information.	Students will apply numeracy through checking accuracy, validating data and comparing outputs.
Literacy	Students will develop literacy by using subject-specific vocabulary such as **wireframe, layout, navigation, usability and accessibility**. They will also justify their design decisions using clear written explanations.	Students will develop literacy by using key terminology such as data validation, field, record and formula, and explaining processes clearly in written form.	Students will develop literacy by using terminology such as **encryption, legislation, data protection, GDPR and cyber threat**, and by explaining legal responsibilities in written form.	Students will develop literacy by justifying their design choices and explaining data outcomes using appropriate technical language.	Students will develop literacy by analysing and comparing communication methods using terminology such as **bandwidth, network, protocol and digital communication**, and justifying their choices.	Students will develop literacy through extended writing, particularly in evaluation, justification and technical explanation.
CEIAG	Students will understand how UI/UX design links to careers in **web design, app development, digital marketing and software engineering**, and how user-focused design is essential in industry.	Students will understand how data skills link to careers in administration, finance, data analysis and business operations.	Students will understand how cyber security and data management link to careers such as **cyber security analyst, network engineer, data analyst and IT support specialist**.	Students will gain insight into careers in data analytics, business intelligence and IT systems, understanding how data is used to inform professional decisions.	Students will understand how communication technologies link to careers in **network engineering, telecommunications, cyber security and IT systems management**.	Students will understand how the skills developed support progression into careers such as data analyst, IT technician, business analyst and wider digital roles, as well as further study in IT and computing.

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Year 11

Year 11	Autumn Term		Spring Term		Summer Term	
Syllabus		**R070: Using Augmented Reality (NEA 1)**		**R070: Using Augmented Reality (NEA 1)**		**R070: Using Augmented Reality (NEA 1)**
Knowledge		Students will learn about Augmented Reality (AR), including its purpose, uses and the different types of AR and user interaction. They will also examine the devices used with AR technology and explore the planning, design considerations and tools involved in creating an AR model prototype.		Students will learn how to create an AR model prototype, including working with triggers, layers and user interaction to produce meaningful information output. They will also develop skills in testing and reviewing their prototype, reflecting on the process and evaluating the effectiveness of their final product.		Students will apply the knowledge and skills developed throughout the course to complete their NEA assessment. They will work independently to plan, create, test and review their work, demonstrating their understanding across all topic areas covered.
Skills		Students will develop skills in planning and designing an AR model prototype, applying design tools to produce accurate and detailed design documentation. They will practice analysing user interaction requirements and making informed design decisions.		Students will develop skills in building a functional AR model prototype, incorporating triggers, layers and user interaction. They will also practice carrying out structured testing, identifying errors and improvements, and writing a reflective review of their work		Students will develop skills independently managing and completing a project under assessment conditions. They will practice applying planning, designing, creating, testing and reviewing skills to produce a final piece of work that meets the given brief.
Connections to previous learning		Builds on Year 8 exposure to **AI/AR/VR concepts** in Cyber Security / Future Technology, introducing the purpose and context of emerging technologies. Also draws on Year 7 & 8 **Computational Thinking (decomposition, abstraction, pseudocode)** to support planning structured designs, alongside Year 9 **Data Science / Web Development**, where students analysed user needs and structured solutions.		Builds on Year 7 **Programming (Edison robots)** and Year 8/9 **Python programming**, where students developed skills in sequence, selection, iteration, testing and debugging. Also links to KS3 **Computational Thinking**, particularly problem-solving and algorithm design. Students now apply these to creating an interactive AR product with structured testing and refinement.		Draws together all KS3 strands: **media creation (Y7/Y9), programming (Y7–Y9), computational thinking (Y7–Y8), data (Y8–Y9), and digital literacy (Y9)**. Builds on the KS3 expectation of planning, creating and evaluating digital products independently. Students now apply these skills in a sustained, independent project under assessment conditions, demonstrating progression to KS4 standard.

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Assessment		Students will be assessed through review of their planning and design documentation for their AR model prototype, demonstrating their understanding of design considerations and appropriate use of design tools. Peer and self-assessment will be used to evaluate design decisions. ***Point 1: End of Term 1 Assessment***		Students will be assessed through the completion of their AR model prototype, alongside a structured testing log and written review. Evidence of iterative improvements and reflective evaluation will demonstrate their ability to create and refine a working digital product. ***Point 2: Progress Check for NEA Coursework – Formative Feedback provided to support students reaching target grade***		Students will be assessed through the completion of their AR model prototype, alongside a structured testing log and written review. Evidence of iterative improvements and reflective evaluation will demonstrate their ability to create and refine a working digital product. ***Point 4 – Final Progress check for NEA Coursework – formative feedback provided to support students reaching target grade*** ***Point 5: NEA Submission to OCR***
Homework		As the NEA cannot be completed at home, homework will focus on structured past paper questions to consolidate and embed knowledge from the R050 theory unit. These will be set weekly in line with the homework rotation to support exam readiness.		As the NEA cannot be completed at home, homework will focus on structured past paper questions to consolidate and embed knowledge from the R050 theory unit. These will be set weekly in line with the homework rotation to support exam readiness.		As the NEA cannot be completed at home, homework will focus on structured past paper questions to consolidate and embed knowledge from the R050 theory unit. These will be set weekly in line with the homework rotation to support exam readiness.
Culture Capital		Students will explore the use of **AR in industry**, including retail (e.g. virtual try-ons), education and healthcare, understanding its impact on society and innovation.		Students will explore how AR is used in **gaming, marketing and training simulations**, linking classroom learning to real-world application of interactive technologies.		Students will explore how digital technologies are used in **real-world projects across industries**, understanding how technology supports innovation, communication and problem-solving.
Numeracy		Students will apply numeracy when creating **accurate design plans**, including dimensions, positioning and scaling of AR elements. They will also use logical sequencing when planning user interaction.		Students will use numeracy when working with **coordinates, positioning, scale and timing** of AR elements. They will also apply logical thinking during testing and debugging.		Students will apply numeracy when planning projects, managing time, structuring data and ensuring accuracy in their final product.
Literacy		Students will develop literacy by producing		Students will develop literacy through writing **test plans and**		Students will develop literacy through completing **extended**

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		structured design documentation, using key terminology such as **prototype, user interaction, interface and constraints**, and explaining design decisions clearly.		**evaluation reports**, using terminology such as **testing, debugging, iteration and feedback**, and explaining improvements clearly.		**written tasks**, including planning documents, evaluations and reflections, using appropriate technical vocabulary.
CEIAG		Students will understand how AR technologies are used in careers such as **game design, architecture, engineering, healthcare and immersive media development**.		Students will understand how development and testing are key roles in careers such as **software development, QA testing, game design and immersive technology development**.		Students will understand how project-based work reflects real workplace expectations, developing