MOOR PARK HIGH SCHOOL AND SIXTH FORM: CURRICULUM

Key Stage 3 Long Term Planning

Year 7 SYLLABUS 2021-22:

Curriculum Area: Computer Science

Year 7	Autumn 1	Autumn 2	Spring 1 and 2	Summer 1	Summer 2
Syllabus Areas	**E-Safety (Transition Unit)**	**Computational Thinking**	**Programming**	**Spreadsheets**	**Computer Science History**
Connections to prior learning	Students will build on any prior knowledge that they have already learnt at primary school on internet safety. Most primary schools teach students basic internet safety as It is a legal requirement and underpins the curriculum requirements in both primary and secondary school. This unit will also embed the qualities of learning that students should have learnt about over the 6 week holidays when reading the 'Go Big' book.	Students will have used PowerPoint in Autumn Term 1 therefore will be building on the basic skills they already have in this software. Additionally, some of our feeder primary schools teach students how to use Microsoft office products so will be able to recall key skills learnt in primary schools.	This unit will build on any prior knowledge from primary school of design-based programming. Some schools use scratch and other software including purple mash to introduce students into the coding world. This topic will also implement some of the fundamental programming techniques learnt in Autumn Term 2.	Students will have been using the Microsoft Office package throughout the year which makes Excel very intuitive to use. Some primary schools teach basics of spreadsheets whether that be via purple mash or Microsoft excel so some students will be able to build on their knowledge.	Students may have covered some of the aspects taught in this unit at primary school although this would not have been a requirement of their national curriculum. Students may however have heard of/used some of the devices and people that will be discussed in this topic through word of mouth or via the news.
Knowledge	Students will learn about the importance of staying safe online. This unit of work will include the impact of cyber bullying, the importance of setting passwords, how to protect yourself online and the consequences of inappropriate online use.	Students will be introduced to the key aspects of computational thinking which include Abstraction, Pattern Recognition and Decomposition. In addition to this, the pupils will understand what an algorithm is and how the fundamental programming concepts of sequencing, selection and iteration can be implemented.	Students will use Scratch programming language where they will learn how to program animations and games using blocked code. During this term, students will also be introduced to variables and the different data types that are used in programming. Micro:Bits may also be used dependent upon progress made.	Students will learn how to use spreadsheets using Microsoft Excel. They will be taught about the importance of using spreadsheets, how data can be stored and how to create formulas to manipulate data.	Students will learn about Ancient, Medieval, Analogue and Digital technology along with some of the famous computer scientists that helped shape our technology today.
Skills	Students will learn many skills in this unit. As it will be the students first experience in a computing classroom at the school, they will learn how to use and navigate themselves around the computer and the internet. In addition to this, pupils will learn how to use the features of Microsoft Word and Microsoft PowerPoint to display their work and create their assessment piece.	Students will build on their digital literacy skills by using Microsoft office to complete work and assessments on. Students will also develop their problem solving and thinking skills and will allow them to understand how best to solve problems.	Students will learn many skills whilst programming including sequencing, selection and iteration. Programming using blocked code will help students when it comes to high-level language programming.	Students will be able to use a specialist spreadsheet software to create formulas and functions in order to calculate information.	During this unit students will learn the skills required to potentially have a career in computer science through the understanding of how technology has progressed and what the famous faces of computer science had to do in order for this to happen.
Assessment	*Point 1:* Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. *Point 2:* Students will be given an online assessment to complete and check their understanding of this topic.	*Point 1:* Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. *Point 2:* Students will be assessed on an interactive presentation that they create which focuses on the topics they have learnt. This will also allow them to implement and combine sequencing,	*Point 1:* Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. *Point 2:* Students will program a game/animation in scratch using sequencing, selection, iteration and variables.	*Point 1:* Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. *Point 2:* Students will complete a written assessment that will test their understanding of the unit.	*Point 1:* Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. *Point 2: Students will also undertake their end of year 7 assessment during this term which will reflect everything taught during this academic year.*

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		selection and iteration with their digital literacy skills.			
Homework	Homework will involve creative consolidation tasks and independent research tasks. Homework will be provided 2 times during this term.	Homework will involve creative consolidation tasks and independent research tasks. Homework will be provided 2 times during this term.	Homework will involve creative consolidation tasks and independent research tasks. Students will be given a scratch work booklet to work on as homework. Homework will be provided 4 times during this term.	Homework will involve creative consolidation tasks and independent research tasks. Homework will be provided 2 times during this term.	. Homework will involve creative consolidation tasks and independent research tasks. Homework will be provided 2 times during this term.
Cultural enrichment including Trips, Visits, Experiences, Extra-curricular	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school. An officer from Lancashire Cyber Security Center will be invited in to talk to students about the threats online. Matrix Challenge	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school.	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school. Experience using Micro:Bit/Raspberry Pi	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school.	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school.
Literacy/Numeracy	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers.	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers.	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers. Numeracy skills will be focused on when dealing with variables, operators and data types.	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers. Numeracy skills will be focused on when inserting data, writing formulas and performing calculations.	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers.
CEIAG	A guest from the Lancashire National Cyber Security Unit will be invited in to discuss Cyber Crime and what their job entails.		Where can Computer Programming take you? Discussion on why programming is so important. Why are technology jobs the most in demand? Invite a Games designer in to talk to students.	Class discussions. What is the importance of spreadsheets? Why do almost all jobs require this skill? How do police and analysts use data?	

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Key Stage 3 Long Term Planning

Year 8 SYLLABUS 2021-22:

Year 8	Autumn 1 and 2	Spring 1	Spring 2	Summer 1 and 2
Syllabus Areas	**Python Programming**	**Data Representation**	**Computers**	**Photoshop**
Connections to prior learning	Students will use the programming skills they learnt in year 7 and transfer them to this unit.	Students will know what binary is from learning how to program in Y7 and Y8.	Students may have an understanding about some Computer Hardware components, in particular they will understand how some input/output and storage devices work. Students should have learnt about key hardware including I/O devices in primary school using purple mash or other software.	Students will build on any use of image editing software that they have used previously including Microsoft PowerPoint and everyday devices like image editing on their phones.
Knowledge	Students will be introduced to the high-level text-based programming language Python. Students will understand how to write syntax language and use data types, operators, variables, sequencing, selection and iteration to construct basic programs. Students will receive a work booklet and help sheets to support and scaffold their learning.	Students will learn about how data is represented on computers. Students will learn how to read binary numbers and convert them to denary (and vice-versa). Students will also learn how to perform binary calculations including addition, subtraction, and binary shifts. We will also look at hexadecimal.	Students will be taught an introduction to computers unit which will allow students to understand how computers work and what hardware and software is used. Students will learn how to take apart a computer, identify the different components and how they work and then rebuild the computer. The pupils will also gain a basic understanding of binary in preparation for the next term.	Students will be introduced to Adobe Photoshop and learn how to use the basic tools to manipulate a graphic.
Skills	Students will acquire many skills in this unit. They will learn how to use and write programs in a high-level text-based programming language. Students will also learn key programming skills such as logic skills, algorithmic thinking skills and how to identify and rectify errors in code.	Students will be able to convert Denary to Binary and vice versa. In addition to this, students will perform calculations with binary numbers.	Pupils will learn how to take apart a computer and put it back together. They will be able to identify parts of a computer and explain what function each element performs.	Students will learn the basic skills involved with graphic designing. Pupils will be able to use Adobe Photoshop in order to create a digital graphic. Students will also continue to improve their Digital Literacy skills by using Microsoft office and the internet.
Assessment	*Point 1:* Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. *Point 2:* Students will complete a work booklet during this term which will include multiple tasks relating to the content taught. Progress will be measured based on this. *Point 3:* A written/practical exam that will allow students to demonstrate what they have learnt.	*Point 1:* Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. *Point 2:* Students will complete a written assessment on data representation.	*Point 1:* Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. *Point 2:* Students will complete a written assessment based on the theory of computers.	*Point 1:* Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. *Point 2:* Students will create a digital graphic using Adobe Photoshop on their own using the skills they have learnt. The final design will be created in line with a design brief. *Point 3: Students will also undertake their end of year 7 assessment during this term which will reflect everything taught during this academic year*
Homework	Homework will involve creative consolidation tasks and independent research tasks. Students will be given a python homework booklet for this term. Students will receive 4 pieces of homework to complete this term.	Homework will involve creative consolidation tasks and independent research tasks. Homework will be provided 2 times during this term.	Homework will involve creative consolidation tasks and independent research tasks. Homework will be provided 2 times during this term.	Homework will involve creative consolidation tasks and independent research tasks. Homework will be provided 4 times during this term.
Cultural enrichment including Trips, Visits, Experiences, Extra-curricular	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school. Cyber First Girls Competition preparation	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school.	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school. Experience of pulling apart a computer and rebuilding it.	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school.

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Literacy/Numeracy	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers. Students will be using variables, data types and performing mathematical calculations throughout this topic.	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers. Students will be using binary and denary numbers throughout this topic to perform calculations.	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers. Students will be introduced to binary numbers.	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers.
CEIAG	Where can Computer Programming take you? Discussion on why programming is so important. Why are technology jobs the most in demand? Invite a Games designer in to talk to students		Discussion with the school's ICT technician. Why is understanding computer architecture important and what jobs can you go into if you enjoy this? ICT Technician, Hardware engineer etc.	Invite a graphic designer in to speak to students. What is a graphic designer?

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Year 9 SYLLABUS 2021-22:

Year 9	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Syllabus Areas	**Computers ***COVID CATCH UP*** **	**Networks ***COVID CATCH UP*** **	**Python Programming**	**Python Programming**	**Digital Graphics**	**Future of Technology and Artificial Intelligence**
Connections to prior learning	Due to the impact that COVID has had on Year 9 students, the photoshop unit from Year 8 will be taught here during the 2021/22 year. This is an important part of the curriculum that students must have learnt in preparation for their GCSE Options choices. Students will already have an undertaken an introduction to computers unit in year 8 so will use that knowledge and build on this during this term.	Due to the impact that COVID has had on Year 9 students, the photoshop unit from Year 8 will be taught here during the 2021/22 year. This is an important part of the curriculum that students must have learnt in preparation for their GCSE Options choices. Networks will have briefly been discussed in the Computer units during year 8 and year 9.	Students have already learnt the basics of python programming in year 8 so will use their prior knowledge to build on their programming ability.	Students have already learnt the basics of python programming in year 8 so will use their prior knowledge to build on their programming ability.	Students will have learnt how to use photoshop in year 8 so will continue building on this prior knowledge.	Although students may not have learnt about Artificial Intelligence directly they will be well aware of the advancements of technology during their lifetime and have some understanding of what the future holds.
Knowledge	Students will learn how to improve system performance by learning about clock speed, cores and cache. The pupils will also understand the difference between primary and secondary storage and be able to explain what they are used for. We will also look at system software and in particular utility software that will help students understand how to maintain and optimize a computer.	Students will be introduced to computer networking. They will understand what LAN, WAN and PAN networks are and will look at the different network topologies including star topology and bus topology.	Students will recap what they learnt in Python in Year 8 and then develop their use of this programming language further. Students will learn how to create lists, procedures, functions and will learn how to read and write to text files. Students will be able to combine all of the programming constructs they have learnt in order to develop complex programs.	Students will recap what they learnt in Python in Year 8 and then develop their use of this programming language further. Students will learn how to create lists, procedures, functions and will learn how to read and write to text files. Students will be able to combine all of the programming constructs they have learnt in order to develop complex programs.	During this unit students will develop their photoshop skills and understand how images must be resized, adapted and manipulated. Students will also learn about the different file types and how best to save final products. This will be important for all students going on to take Creative iMedia in Y10.	Students will be introduced into the world of Artificial intelligence and in particular Machine Learning. Additionally, students will have a look at some of the emerging technologies and discover the impact that these will have on our world.
Skills	The students will learn key skills that will allow them to perform maintenance on their own devices and optimize the performance of their devices.	Students will learn how networks work and how we can connect devices to a network.	Students will recap the key programming skills they learnt in Year 8, including sequencing, selection and iteration and then combine these skills with the new programming skills that they learn to create skilled and complex programs. Students will also learn key programming skills such as logic skills, algorithmic thinking skills and how to identify and rectify errors in code.	Students will recap the key programming skills they learnt in Year 8, including sequencing, selection and iteration and then combine these skills with the new programming skills that they learn to create skilled and complex programs. Students will also learn key programming skills such as logic skills, algorithmic thinking skills and how to identify and rectify errors in code.	Students will develop their Photoshop skills that they will have learnt in year 8 and during afterschool/lunchtime clubs. Additionally, students will learn how to export and save final products to suitable file formats.	Students will learn some key theory skills necessary for understanding the simulation and modelling topic for GCSE Computer Science.

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Assessment	Point 1: Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. Point 2: Students will complete a written/practical assessment on the content taught in this unit. As part of this assessment, students will be observed performing basic maintenance checks on a computer.	Point 1: Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. Point 2: Students will complete a written assessment that will test the students understanding of computer networks.	Point 1: Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. Point 2: Students will complete a work booklet over the course of this topic which will include theory based and practical programming tasks based on their lessons. Point 3: Students will complete a practical assessment where they will construct programs on python based on a given scenario.	Point 1: Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. Point 2: Students will complete a work booklet over the course of this topic which will include theory based and practical programming tasks based on their lessons. Point 3: Students will complete a practical assessment where they will construct programs on python based on a given scenario.	Point 1: Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's.	*Point 1:* Students will complete regular formative assessments at the end of each lesson. This will be in the form of interactive quizzes, exit tickets and quick questioning. In line with PLC's. *Point 2: Students will also undertake their end of year 7 assessment during this term which will reflect everything taught during this academic year.*
Homework	Students will receive regular homework in line with the faculty handbook. Homework will involve creative consolidation tasks and independent research tasks. Homework will be provided 2 times during this term.	Students will receive regular homework in line with the faculty handbook. Homework will involve creative consolidation tasks and independent research tasks. Homework will be provided 2 times during this term.	Students will receive regular homework in line with the faculty handbook. Homework will involve creative consolidation tasks and independent research tasks. Homework will be provided 2 times during this term.	Students will receive regular homework in line with the faculty handbook. Homework will involve creative consolidation tasks and independent research tasks. Homework will be provided 2 times during this term.	Students will receive regular homework in line with the faculty handbook. Homework will involve creative consolidation tasks and independent research tasks. Homework will be provided 2 times during this term.	Students will receive regular homework in line with the faculty handbook. Homework will involve creative consolidation tasks and independent research tasks. Homework will be provided 2 times during this term.
Cultural enrichment including Trips, Visits, Experiences, Extra-curricular	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school. Opportunity to perform real life maintenance on a computer.	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school. ICT technician will be invited to discuss how the schools network works.	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school. A high level games programmer will be invited in via stem in order to deliver a session to the students.	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school. A high level games programmer will be invited in via stem in order to deliver a session to the students.	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school.	Students will be invited to attend lunchtime/afterschool clubs which include a code club after school.
Literacy/Numeracy	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers.	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers.	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers. Students will be using variables, data types and performing mathematical calculations throughout this topic.	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers. Students will be using variables, data types and performing mathematical calculations throughout this topic.	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers.	Key words will be displayed and used throughout the lessons. Students will focus on their literacy skills when completing written work on the computers.
CEIAG	Discussion with the school's ICT technician. Why is understanding computer architecture important and what jobs can you go into if you enjoy this? ICT Technician, Hardware engineer etc.		Invite a software engineer to discuss their job and how important programming is. Discussion with ICT technician.			