Computing department - year 7 scheme of work

Term	Title	Unit content	Key vocabulary	Resource links:
Autumn 1	Unit 1: Presenting information part one	Pupils should be taught to undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users Pupils should be taught to create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability and demonstrate their knowledge of using PowerPoint and other relevant presentation software. • Pupils will identify, discuss and explain the advantages and disadvantages of using PowerPoint as an application for presenting information. Pupils will show their knowledge of PowerPoint by completing a short presentation about themselves using a background, formatted text and a relevant image. • Pupils will apply the skills they have learned in PowerPoint to create a simple presentation using Prezi. Pupils will identify, discuss and explain the advantages and disadvantages of using Prezi as an application for presenting information. • Pupils will apply the skills they have learnt in PowerPoint to create a simple presentation using Google Slides. Pupils will identify, discuss and explain the advantages and disadvantages of using Prezi as an application for presenting information. • Pupils will evaluate the three different applications for presenting information and justify their decision. Pupils will start to design and create an All About Me presentation concentrating on the needs of the known user.	PowerPoint, presentation software, software, images, cropping, Prezi, Google Slides, Font	1. Powerpoint (All About Me)

		• Pupils start creating their All About Me presentation. Pupils will continue to design and create their work to meet the needs of the known user. Pupils will demonstrate a good level of spelling, punctuation, and grammar. Pupils continue to develop their work. They are reminded at the beginning of each session on the needs of the known user. • Pupils carry out some peer evaluation on work from the group or examples from previous work. Pupils then complete an evaluation and submit their work for feedback and will evaluate and critique their work to ensure they have met the success criteria. Pupils will understand feedback to make improvements to their work and to incorporate feedback in future work.		
Autumn 2	Unit 1: Presenting information part two	Pupils should be taught to undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users Pupils should be taught to create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability • Discussion with pupils what DTP is (producing high quality publications to print) including examples in world around them (leaflets, menus, cards, books, magazines etc.). The term-long project is to create a high quality leaflet (tri-fold, 6 page) detailing the Rise to a chosen audience. • Students will create supporting planning documentation and create their own leaflet, with appropriate headings, subject matter, images and layout. Students will get the chance to take their own photos of the school and upload and use them. • If pupils finish they will repurpose their leaflet for a different audience i.e if they have designed it for children they should make changes so it is suitable for adults and save it under a different name. • Pupils will also create a second leaflet on an academic topic of their choice e.g. World War 2 from primary • Pupils will evaluate and critique their work to ensure they have met the success criteria. Pupils carry out some peer evaluation on work from the	Desktop publishing, digital artefacts, audience profile, headings, layout, design	2. Desktop Publishing (DTP)

		group or examples from previous work. Pupils then complete an evaluation and submit their work for feedback.		
Assessment point 1				
Spring 1 Spring 2	Unit 2: Spreadsheets and Modelling	Week 1 plan: Formulae, replication and referencing - About the lessons: This lesson introduces students to spreadsheets. They will learn key terms associated with spreadsheets and how to write basic formulae to add, subtract, multiply and divide. They will learn how to replicate data and extend series using the fill handle, and the difference between relative and absolute cell references. They will then apply this learning to practical activities using the spreadsheets provided. Week 2 plan: Functions using SUM, AVERAGE, MAX and MIN - About the lessons: This lesson introduces students to using some of the standard functions: SUM, AVERAGE, MAX and MIN. They will learn how to write each of the formulae and apply it to a data set using cell ranges. They will then apply this learning to practical activities using the spreadsheets provided. Week 3 plan: Boolean operators and the IF and COUNT functions - About the lessons: This lesson introduces students to the IF function. They will learn the Boolean operators used to create a logical test and use them to write IF functions. They will also learn the difference between the COUNT and COUNTA functions. They will then apply this learning to practical activities using the spreadsheets provided. Week 4 plan: Formatting, graphs and charts - About the lessons: This lesson is concerned with formatting cells to improve the presentation of data in a spreadsheet, using conditional formatting to help identify trends and creating graphs and charts using the data. Students will learn how to format cells and how to apply conditional formatting based on a set of rules. They will apply this learning to practical activities using the spreadsheets provided. They will then	spreadsheet, cell, row, column, cell reference, formula, replication, fill handle, relative cell reference, absolute cell reference, function, function name, cell range, parentheses, SUM, AVERAGE, MAX and MIN, spreadsheet, cell, row, column, cell reference, formula, replication, fill handle, relative cell reference, absolute cell reference,	[Spreadsheets](#)

			function, function name, cell range, parentheses, logical test/logical expression, Boolean, Boolean operators, criterion, formatting, conditional formatting, bar chart, column chart, pie chart, line graph, modelling, Goal Seek	
		learn about three common types of charts and their use, and practice creating charts using data provided. Week 5 plan: Modelling - About the lessons: This lesson looks at the use of spreadsheets for modelling. Students will consider some of the different ways that spreadsheets can be used to model situations. They will learn how to use Goal Seek to solve 'what-if' questions. They will then apply this learning to practical activities using the spreadsheets provided. Week plan 6: Theme park challenge - About the lessons: This lesson consolidates students' learning about spreadsheets with an extended activity based around a theme park. The activity requires students to use many of the different skills and techniques they have learned during the previous five lessons. There is also an additional worksheet containing challenge questions linked to the spreadsheet, which can be given to more able students once they have completed the main activity.		
Assessment point 2				
Summer 1	Unit 3: Block coding part one (Scratch)	Programming can be broken down into three key constructs: sequence, selection and iteration. When students understand these three key constructs, they will not only be able to demonstrate problem-solving skills in a programming environment but also in everyday life. This module will use Scratch as the mechanism for developing understanding of these concepts using a range of fun block-based programming activities. By the end of this module, students should be able to: Know and understand the key concepts and principles of Computing: • Understand the concepts of sequencing, selection and iteration		Part One - Scratch

		- Apply knowledge and understanding of the key concepts and principles of Computing - Develop working programs in Scratch - Analyse problems in computational terms - Analyse the requirements of a program - Identify the processes needed to solve a problem - Plan creative solutions to problems - Design programs in Scratch to solve specific problems - Develop confident and responsible use of modern information technologies - Use Scratch confidently solve a range of problems		
Summer 2	Unit 3: Block coding part two (Micro:Bit and MakeCode)	Continuing with block coding, students will prepare code to use with a physical Micro:Bit giving a tangible way to develop coding whilst boosting confidence to try new things and experiment with code. Pupils will be introduced to the Micro:Bit as an input, process, output device that can be programmed. Pupils will familiarize themselves with the device itself and the programming environment, before creating their own programs. They will then run their programs on the device. The students will complete several online coding challenges with both virtual and physical microbits before moving on to the final project of the term weeks 4-7. It offers pupils the opportunity to use all of these constructs in a different, but still familiar environment, while also utilizing a physical device — the Micro:Bit. The unit begins with a simple program for pupils to build in and test within the new programming environment, before transferring it to their Micro:Bit for use The micro:Bits will be coded to work with a KLEF Piano module and when inserted into the piano be able to play the coded sounds associated with each key. This project also incorporates the art department (creating a piano shaped stand for the Micro:Bit) and music (playing the piano using a Micro:Bit processor)		Part Two - MicroBit and MakeCode
Assessment point 3				