Y7 ICT/Computer Science

Introduction	Unit 1 E-safety	Unit 2 Graphics	Unit 3 Cyber Security	Unit 4 Database	Unit 5 Computer Games Design	Additional Awards
Students will learn how to access the school systems from within and outside school. The systems they will use are the school network, Office 365, Teams, Outlook for Email and Satchel:One for homework. Students will	E-safety is an important aspect for students to learn as they start secondary school as they are exposed to more online content through their studies and greater opportunity to socialise in and out of school as well as online. Students will learn how to use social media in an acceptable way by not sharing personal information, not sharing images of themselves and	Using images to communicate is an essential skill. In this unit students will learn how digital images are stored as pixels. They will learn the difference between bitmap and vector graphics, and what affects the quality of images. Through developing a praise postcard they will learn to create shapes, fill shapes, add filters, customise filters, add text, format text including attaching text to	This unit follows on from the e-safety unit. It looks at the threats individuals and organisations face online, looking at the measures that can be taken to protect themselves from those threats. Phishing, social engineering, name generators and other threats are discussed as well as GDPR. Students will work through some IDEA award badges to assess understanding.	Data drives modern society and it is important that students understand the different organisations that store our data. Students will then learn to extract information from a database by using simple and complex queries to solve crimes. The results of the queries will be presented in the form of a report. **Link to National**	More and more the world economy relies on people who can code. In this unit students will create a computer game using the block based programming language Scratch. Students will need to use iterations and create variables to complete the task as well as understanding	• IDEA Bronze Award

be asked to complete a research task and document their work using the Office365 online version of PowerPoint, this will then be submitted to an assignment on Teams.	being courteous to all. They will work through activities highlighting the dangers they might face online and best practice for operating in the digital world. They will then create a presentation to provide guidelines to parents. **Link to National Curriculum POS** • Understand a range of ways to use technology safely, respectfully, responsibly, and securely, including protecting their online	paths, working with layers, importing images, removing back grounds and transforming images. **Link to National Curriculum POS** • understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in	**Link to National Curriculum POS** • Understand a range of ways to use technology safely, respectfully, responsibly, and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct, and know how to report concerns • Create, reuse, revise and repurpose digital artefacts for a	**Curriculum POS** • Understand a range of ways to use technology safely, respectfully, responsibly, and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct, and know how to report concerns • Create, reuse, revise and repurpose	angles. The creation of sprites provides a link to the graphics unit. **Link to National Curriculum POS** • understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to	

	identity and privacy; recognise inappropriate content, contact and conduct, and know how to report concerns • Create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design, and usability	the form of binary digits • create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability • create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability	given audience, with attention to trustworthiness, design, and usability	digital artefacts for a given audience, with attention to trustworthiness, design, and usability	compare the utility of alternative algorithms for the same problem • use 2 or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays];	

					design and develop modular programs that use procedures or functions	

Y8 ICT/Computer Science

Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Additional Awards
Sketchup – 3D Modelling	**Wearables**	**Binary**	**Input and Output Devices**	**Computer Programming Task**	
No longer do companies have to go to the expense of creating models to test designs. Students are taught the advantages and disadvantages of using 3D modelling software. Students are tasked with using Sketchup 3D to create the design of a house. They will use extrusion, scale, transform, move, fill, measurement and orbit tools to complete the task	Being able to understand how to programme physical is important in the modern world. **Link to National Curriculum POS** • understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of	In this unit students are taught how data is stored on a computer as 1s and 0s. This links to the Y7 Graphics unit where students are taught how data is stored. Students learn how to convert denary to binary and binary to denary. They also learn how computers use binary to store text and use that information to decode and write messages. **Link to National**	**Link to National Curriculum POS** • understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems • create, reuse, revise and repurpose digital artefacts for a given audience, with attention to	The programming task leads on from the Y7 unit on computer games programming. Students are provided with skills in using variables, iterations and procedures to tackle a real world problem through a process of decomposition, writing an algorithm, prototyping, testing and improving a solution. **Link to National**	• IDEA Bronze Award • IDEA Silver Award • Wakelet Ambassador

and then create a presentation to explain their designs. **Link to National Curriculum POS** - design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems - undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging	alternative algorithms for the same problem - use 2 or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions	**Curriculum POS** - understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits - create, reuse, revise and repurpose digital artefacts for a given	trustworthiness, design and usability	**Curriculum POS** - understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem - use 2 or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data	

goals, including collecting and analysing data and meeting the needs of known users		audience, with attention to trustworthiness, design and usability • create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability		structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions	

Y9 ICT/Computer Science

Unit 1 Graphics	Unit 2 Web design	Unit 3 Python Programming	Additional Awards
Following on from the graphics unit in Y7, students further develop their skills looking at filters, use of layers and image manipulation to create a product for a specific audience following a brief. The brief is based around work that would be done in the Y10 Creative iMedia course and so prepares students by providing them with skills that will be applicable in R082 Graphic unit. These skills could also be utilised in GCSE Media, GCSE Photography and GCSE Art. **Link to National Curriculum POS** • understand how instructions are stored	Most businesses now have a presence on the Internet. Having an understanding how these sites are built is becoming an invaluable skill to have. In this unit students explore the HTML language for creating the structure for simple pages and how these can be linked together. CSS is utilised to show students how they can style the pages. Most advanced skills look at embedding Web 2.0 elements create interactivity such as forms, video and sound. Students are also encouraged to utilise the graphics skills they developed in the previous unit to ensure the site developed meets the needs of the audience. The skills developed on this unit link into	In Y7/8 students have looked at decomposition of a programming problem, writing algorithms and coding solutions using the block based Scratch environment. In this unit students transfer some of the skills developed in those previous units into solving problems using the python text based language. Students will cover iterations, procedures, selection and variables. This unit draws from skills developed in Y7 and Y9 and links directly into GCSE Computer Science, BTEC IT Level 3 Unit 4 and 8 and GCE Computer Science. **Link to National Curriculum POS** • design, use and evaluate	• IDEA Bronze Award • IDEA Silver Award • Wakelet Ambassador

and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits • create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability • create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability	R085 Website development unit for the Creative iMedia course, GCSE Computer Science, GCE Computer Science and BTEC IT Level 3 Unit 6. **Link to National Curriculum POS** • create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability • 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 • use 2 or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop	computational abstractions that model the state and behaviour of real-world problems and physical systems • understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem • use 2 or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions	

| | modular programs that use procedures or functions | | |