

Year 7

Subject: Computer Science

| Overview of the year: Students will be introduced to the computing curriculum where they will be shown how to use the school network and learn how to work safely. Further to this they will explore programming with the use of visual programming software and text based programming language. | | | Ways to consolidate and extend your learning in Computer Science: Attend lunchtime computing homework club, download or use the online version of visual programming software Scratch (www.scratch.mit.edu). Access the online London Grid for Learning (LGfL) online HTML tutorial (http://www.webtech.lgfl.net/). Use Notepad/WordPad to recap HTML skills. | |
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| Half term | Objectives/ enquiry questions | Content | Skills | Assessment |
| 1 & 2 | Unit 7.1: HWS Driving License | Students learn how to use school tools such as e-praise, SMHW and school email. They will be looking at file management and security (passwords). Students will also be able to use the Internet properly for school related purposes, such as research and getting images. | By completing this unit students will become more socially aware of the school's network and how to fully use it to improve their learning across the whole school community. In addition, by completing this unit students will gain a greater understanding of the implications of e-safety and cyberbullying. | Students will complete a quiz based on skills learnt, which is then assessed. Homework: Three e-safety related homework pieces to be completed every fortnight. |
| 2 & 3 | Unit 7.2: Scratch | This unit introduces the Scratch programming environment. They will plan and develop their own games, learning to incorporate variables, procedures, lists and operators. They should be able to create a fully working game using computer science concepts. | By completing this unit students are able to apply concepts such as sequencing, selection, abstraction and iteration to a game in Scratch. They will be applying their knowledge of skills learnt, to create a game specified by the teacher. | Assessment duration is 3 lessons. Students will peer mark an interim piece of work. Write, run and test a game from scratch. Homework: SAM Learning – 3 activities with quiz to assess learning. |
| 4 & 5 | Unit 7.3: HTML | This unit is covers the basics of HTML and CSS, and how to create a responsive design which adapts to any size of screen for viewing on, say, a mobile phone or a PC. | By completing this unit students will learn how to create text styles and add content, including text and graphics, in a specified position on a page, as well as navigation links to other pages on their website and to external websites. | Assessment duration is 3 lessons. Students will peer mark an interim piece of work. Create a web page based on a specific topic. E.g. Olympics, History of Computers etc. Homework: SAM Learning – 3 activities with quiz to assess learning. |
| 5 & 6 | Unit 7.4: Spreadsheets | This unit of work cover the basics of using a spreadsheet. Students will learn many skills to enable them to model a real world system. | By completing this unit students will learn how to create and format a spreadsheet. They will also learn basic calculations and formulae. Students will learn how they can use spreadsheets in the real world and then model a spreadsheet for an intended purpose. | Assessment duration is 3 lessons. Students will peer mark an interim piece of work. Create a spreadsheet to plan finances for an occasion. Homework: SAM Learning – 3 activities with quiz to assess learning. |

Year 8

Subject: Computer Science

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| <p>Overview of the year: Students will further enhance their computing skills by exploring graphic development, algorithms, Python skills and app development. Between big units, we complete small-unassessed units to investigate other areas of the Computer Science curriculum.</p> | <p>Ways to consolidate and extend your learning in Computer Science: Attend the lunchtime computing homework club. Download Python (https://www.python.org/downloads). Access the online London Grid for Learning (LGfL) app or python tutorials. (http://python.lgfl.org.uk/), (http://www.appmaker.lgfl.net/).</p> |
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| Half term | Objectives/ enquiry questions | Content | Skills | Assessment |
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| 1 & 2 | Unit 8.1: Graphics | This is an introduction to graphics and graphic file types. The unit explores how bitmap and vector images are represented and stored by the computer. | By completing this unit students will practice skills in design, photo editing and image manipulation to create a movie poster using a suitable graphics package. | Assessment duration is 3 lessons. Students will peer mark an interim piece of work. Create a movie poster. Homework: SAM Learning – 3 activities with quiz to assess learning. |
| 2 & 3 | Unit 8.2: Flowol | This is a practical unit covering the principles of producing control and monitoring solutions using a flowchart-based interface (Flowol 4). | Students will start by producing systems that use simple loops and basic outputs, and then move on to look at systems that have multiple inputs and outputs. They will refine their solutions using subroutines and variables. | Assessment duration is 3 lessons. Students will peer mark an interim piece of work. Create flowchart(s) to control a real world system. Homework: SAM Learning – 3 activities with quiz to assess learning. |
| 4 & 5 | Unit 8.3: Python | This is an introduction to Python programming language (used at GCSE/A Level). Students will adapt programming skills that will develop their programming skills and computational thinking. | The focus is on getting students to understand the process of developing programs, the importance of writing correct syntax, being able to formulate algorithms for simple programs and debugging their programs. | Assessment duration is 3 lessons. Students will peer mark an interim piece of work. Write, run and test a program from scratch. Homework: SAM Learning – 3 activities with quiz to assess learning. |
| 5 & 6 | Unit 8.4: App Development using Mediator. | This unit will enable students to create a complete app with full takeaway functionality on Android and Windows as an executable file. | By completing this unit students will plan and implement their own projects using skills from a teacher demonstration app which creates an app based on a topic of their choice. Image galleries, video, interactive maps, and web links could be used. | Assessment duration is 3 lessons. Students will peer mark an interim piece of work. Create an app from scratch using skills learnt during lessons. Homework: SAM Learning – 3 activities with quiz to assess learning. |

Year 9

Subject: Computer Science

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| <p>Overview of the year: Students will further enhance their computing skills by exploring database development, Python skills, sound recording/editing and video editing. Between big units, we complete small-unassessed units to investigate other areas of the Computer Science curriculum.</p> | <p>Ways to consolidate and extend your learning in Computer Science: Attend the lunchtime computing homework club. Download Python (https://www.python.org/downloads), Audacity (www.audacity.sourceforge.net), to practice skills learnt in lesson. If you have access to MS Access, use this software to recap database skills.</p> |
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| Half term | Objectives/ enquiry questions | Content | Skills | Assessment |
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| 1 & 2 | Unit 9.1: Database | This unit covers essential theory of databases, but has a practical focus, covering the creation and use of a single-table database and/or a simple relational database. We Microsoft Access 2016. | Create a flat-file or two-table relational database. Understand the importance of suitable data types, field types and validation. Create queries and reports using data from one or both tables. Students will demonstrate their knowledge and understand how we use databases in the real world. | Assessment duration is 1 lesson. Create a DB from scratch. Students will peer mark an interim piece of work. Homework: SAM Learning – 3 activities with quiz to assess learning. |
| 2 & 3 | Unit 9.2: Python | This is a continuation to Python (from year 8). Students will learn complex skills that will further develop their programming skills and computational thinking. These skills will help prepare students for GCSE Computer Science (if they choose as an option). | Create a Python quiz. Variables, selection were learnt in year 8 and will be recapped this unit. New concepts such as iteration, random and lists are used to produce a more efficient quiz. All these skills are needed for GCSE Computer Science. | Assessment duration is 3 lessons. Students will peer mark an interim piece of work. Write, run and test a program from scratch. Homework: SAM Learning – 3 activities with quiz to assess learning. |
| 4 & 5 | Unit 9.3: Sound | This unit teaches students how sound is digitised and stored on computers. They will manipulate sounds and merge sounds together to create a radio advert. | Undertake a creative project. Students need to analyse, plan, record, to produce a radio advertisement. Editing skills such as trimming, splitting, muting etc. are learnt throughout the unit and applied at the assessment. | Assessment duration is 3 lessons (including interim peer assessment). Create a radio advert. Homework: SAM Learning – 3 activities with quiz to assess learning. |
| 5 & 6 | Unit 9.4: Video | This is a creative project to analyse, plan and edit a short mashup clips to create a new trailer for a movie. The clip should ideally be limited to 30-60 seconds in order to fit within the timescales allowed. | The focus is on getting students involved in 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 | Assessment duration is 3 lessons (including interim peer assessment). Create a video “mashup”. Homework: SAM Learning – 3 activities with quiz to assess learning. |