

# Year 8

# Subject: Computer Science

Year 8	Unit of work & brief outline of what will be covered.	Key Objectives – what will students learn	Assessment
1 & 2	Unit 8.1 Computer Hardware. This unit introduces the elements of computer hardware. How each element works and how they interact with each other.	By covering this unit, the students will be able to define a computer, identify computer hardware, and their functions, CPU, the fetch-decode-execute cycle and how the devices work together i.e., CPU, RAM, Hard Drive, Motherboard and Input/output Devices	Students will complete activities each lesson. They will then complete an interim assessment, self, and final unit assessment, based on hardware, its functions, what is inside a computer and how it all works collectively. Students will submit a unit Dedicated Improvement and Reflection Time (D.I.R.T) sheet, completed for their final unit assessment. <b>Homework:</b> Students' complete three computer hardware-based homework set in SAM Learning and Google classroom.
2 & 3	Unit 8.2: Programming with Python This is an introduction to Python, a powerful but easy-to-use high-level programming language. They will be learning to use some basic functions like print, input, if statements and how variables are used to store data.	By covering this unit, the students will understand the process of developing programs, the importance of writing correct syntax, being able to formulate algorithms for simple programs and debugging their programs. They will understand key computational concepts like sequencing, data types, casting etc.	Students will complete activities each lesson. They will then complete an interim assessment, self, and final unit assessment. In their final assessment they will create a quiz with multiple choice answers incorporating all their programming concepts learnt. Students will submit a unit Dedicated Improvement and Reflection Time (D.I.R.T) sheet, completed for their final unit assessment. <b>Homework:</b> Students' complete three python code-based homework set in SAM Learning and Google classroom.
3 & 4	Unit 8.3: Web design HTML Intermediate This unit introduces the elements website development using Hypertext Markup language (HTML) and the scripting language for creating website and Cascading style sheet (CSS) the tools and facilities in formation websites.	By covering this unit, students will understand and use basic HTML tags using a text editor. They will Edit HTML code and view changes in a browser. They will learn how CSS is used to set styles in webpages and to be able to write CSS to set styles. They will understand how CSS is used to improve the appearance of a webpage by changing layout, images and fonts using CSS.	Students will complete activities each lesson. They will then complete an interim assessment, self, and final unit assessment where they create a website using HTML and CSS. Students will submit a unit Dedicated Improvement and Reflection Time (D.I.R.T) sheet, completed for their final unit assessment. <b>Homework:</b> Students' complete three HTML and CSS code-based homework set in SAM Learning and Google classroom.
5 & 6	Unit 8.4: Control with Flowol This is a practical unit covering the principles of producing control and monitoring solutions using a flowchart-based approach (Flowol 4)	By covering this unit, students will learn how to use flowchart symbols and processes in Flowol 4 to create programs which will control devices. Students will produce systems that use simple loops, basic input and outputs, and then move on to look at systems that incorporate a variety of sensors as an input source. They will refine their solutions using subroutines and variables.	Students will complete activities each lesson. They will then complete an interim assessment, self, and final unit assessment where they create a different solution to real life problems with all skill learnt. Students will submit a unit Dedicated Improvement and Reflection Time (D.I.R.T) sheet, completed for their final unit assessment. <b>Homework:</b> Students complete three flowcharts-based homework, set in SAM Learning and Google classroom.