Year 8		Curriculum Checkpoints: What do students know and what can they do?			
Computer Science		Establishing	Securing	Flourishing	Excelling
Systems Architecture	Knowledge	Identify input and output devices and some parts of a computer. Understand the term fetch-decode-execute cycle.	Explain how input and output devices work together. Explain three or more parts of a computer. Explain the term fetch-decode-execute cycle.	Identify which peripherals are input and output devices. Explain five or more parts of a computer and how they work together. Explain the term fetch-decode-execute cycle and how it links with the CPU and RAM.	Explain the functionalities of a range of input and output devices. Physically identify and explain all parts of an internal computer and how they work together. Explain the term fetch-decode-execute cycle and how it links with the CPU and RAM and give a suitable example of the process.
Flowcharts and Python	Knowledge	Define the terms input, output, variable and conditional statement and comparison operators. Identify the common symbols used to make flowcharts	Identify Python code which uses input, output, variable, loops, conditional statement and comparison operators. Spot syntax errors in Python code. Identify and explain the purpose of each of the flowchart symbols	Explain lines of Python code which uses input, output, variable, loops, conditional statement and comparison operators. Spot syntax and logic errors in Python code. Explain all flowchart symbols and give examples of when they could be used.	Justify why conditional statements and loops are used. Spot and correct syntax and logic errors in Python code. Explain and justify the use of certain flowchart symbols for a given problem
	Practical Skills	Writes lines of code in Python which include; inputs, outputs and variables. Create basic flowcharts that makes use of processes and inputs/outputs	Develop programs which include, inputs, outputs and variables. Explain why an integer data type is important. Define what a conditional statement is. Create flowcharts that make use of decisions	Implement a calculator program which includes, inputs, outputs and variables. Explain why an integer data type is important and implement it in the calculator program. Define and implement a conditional statement. Create flowcharts that make use of multiple decisions to control traffic lights.	Create Python programs independently using inputs, outputs, variables, conditional statements, arithmetic and comparison operators. Implement loops into their programs. Create flowcharts that make use of multiple decisions to accurately control traffic lights to include delays between sets of lights
Databases	Knowledge	Identify fields and records in a database table. Define primary key and foreign key as well as a flat-file database and relational database	Identify key parts of a database to include fields and records. Explain what the purpose of primary keys and foreign keys are. Explain the advantages of storing data electronically	Identify key parts of a database to include fields and records. Explain what the purpose of primary keys and foreign keys ar and identify which fields would be the most suitable for these. Explain the advantages of storing data electronically. Explain the differences between a flat-file and relational database and give examples	Identify key parts of a database to include fields and records. Explain what the purpose of primary keys and foreign keys are and identify which fields would be the most suitable for these. Explain the advantages of storing data electronically. Explain the differences between a flat-file and relational database and give examples.
	Practical Skills	Create a basic flat file database using Microsoft Access to store some data	Create a flat-file database to store data on Microsoft Access whilst identifying the most appropriate data type for each field. Use basic SQL statements to include SELECT and FROM to query database	Create a flat-file and relational databases to store data on Microsoft Access whilst identifying the most appropriate data type for each field. Takes into consideration good database design such as appropriate field names. Use SQL to include SELECT, FROM and WHERE to query database.	Create a flat-file and relational databases to store data on Microsoft Access whilst identifying the most appropriate data type for each field. Takes into consideration good database design such as appropriate field names. Can use SQL to include SELECT, FROM and WHERE to query database. Use SQL to sort data into ascending and descending order
Cyber Security	Knowledge	Define key terms such as blagging, social engineering, phishing. Identify what attackers are trying to steal from victims. Identify the impact hacking has on organisations	Define and explain key terms such as blagging, social engineering, phishing. Explain what attackers are trying to steal from victims. Identify and understand the other types of hacks hackers use.	Explain all key terminology. Explain what attackers are trying to steal from victims and how this can be used against the victim. Explain the other types of hacks hackers use and compare the different hacks in terms of their impact.	Explain all key terminology. Explain what attackers are trying to steal from victims and can give clear examples of how this can be used against the victim. Explain the other types of hacks hackers use and compare the different hacks in terms of their impact giving real world examples.
Python	Knowledge	Define the terms input, output, variable and conditional statement and comparison operators. Identify the common symbols used to make flowcharts	Identify Python code which uses input, output, variable, loops, conditional statement and comparison operators. Spot syntax errors in Python code. Explain what boolean means	Identify Python code which uses input, output, variable, loops, conditional statement and comparison operators. Spot syntax errors in Python code. Explain what boolean means. Apply computational thinking to solve problems independently	Identify Python code which uses input, output, variable, loops, conditional statement and comparison operators. Spot syntax errors in Python code. Explain what boolean means. Apply computational thinking to solve complex problems independently
	Practical Skills	Write lines of code in Python which include; inputs, outputs and variables.	Develop programs which include, inputs, outputs and variables. Explain why an integer data type is important. Define what a conditional statement is. Use boolean logic in selection statements	Implement a speed camera and phone bill program which includes, inputs, outputs and variables. Can explain why an integer data type is important and implement it in the programs. Can define and implement a conditional statement.	Implement a speed camera and phone bill program which includes, inputs, outputs and variables. Can explain why an integer data type is important and implement it in the programs. Can define and implement a conditional statement. Can make use of iterative statements in programming.
Animation	Knowledge	Define key terms such as stop-motion, clay-motion and motion capture animation. Can identify features of an animation that make it good. Can take feedback from peers about animation.	Explain key terms and identify the differences between the different types of animation. Can explain what makes an animation a good animation. Can identify why asking for feedback on animation is important.	Explain key terms and identify the differences between the different types of animation. Explain what makes an animation a good animation giving examples of features. Understand the importance of feedback when developing a product and know how this can be used to fine tune development.	Explain key terms and identify the differences between the different types of animation. Explain what makes an animation a good animation giving examples of features. Understand the importance of feedback when developing a product and know how this can be used to fine tune development. Understand how to give good feedback using 2 WWW's and 1 EBI.
	Practical Skills	Use animation software to create basic stop-motion animation	Develop a stop-motion animation taking into consideration design aspects to make the animation look realistic.	Develop a stop-motion animation taking into consideration design aspects to make the animation look realistic. Use research from other animations as well as feedback from peers to further finetune animation. Create a limited presentation about development milestones during the animation.	Develop a stop-motion animation taking into consideration design aspects to make the animation look realistic. Use research from other animations as well as feedback from peers to further finetune animation. Create a well designed presentation for peers about animation development.