Computing - Learning Journey Year 9

Autumn Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	
Topic	**Python programming – Part II - Using Trinket.io**								HALF TERM
Challenge Objective and Content (for all learners)	• Using inputs, assignment and output statements in sequence • Using selection to control the flow of program execution • Using iteration to control the flow of program execution • Using the importing of libraries to increase the complexity of code.								
Inspire Opportunities	Students understanding to be challenged and stretched using introduction of Arrays and Dictionaries								
Assessment Opportunities	Formative assessment: Through teacher observation, questioning and marked activities Summative assessment: End of Unit assessment								

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	**Cyber Security**						CHRISTMAS
Challenge Objective and Content (for all learners)	• Recap on Malware Types • Hacking – Types of hackers and ethical hacking • Types of attacks - Brute force & DDoS attacks. • Computer Misuse Act. • Network Protections (Ani-malware, Firewalls, Authorisation, User permissions)						
Inspire Opportunities	Students will be challenged through real world case studies focusing on specific Hacks and Malware attacks that have occured and the devasting impact these can have on our services.						
Assessment Opportunities	Formative assessment: Through teacher observation, questioning and marked activities Summative assessment: End of Unit assessment						

Computing - Learning Journey Year 9

Spring Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	**Data Representation – Part II**						**HALF TERM**
Challenge Objective and Content (for all learners)	• Students are to be introduced to more complex data representation, including textual representations (ASCII) and image representation. • Retrieval from last year's data representation unit to include Binary & Binary addition as well as Hexadecimal.						
Inspire Opportunities	Students will be challenged to develop their understanding of data representation through more complex representation methods such as Unicode.						
Assessment Opportunities	Formative assessment: Through teacher observation, questioning and marked activities Summative assessment: End of Unit assessment						

	Week 1	Week 2	Week 3	Week 4	Week 5	
Topic	**Encryption**					**EASTER**
Challenge Objective and Content (for all learners)	• To be able to describe what encryption is and how it is used. • To be able to describe some history of encryption – specifically Alan Turing • To be able to identify encryption types. • To be able to implement some encryption and decryption techniques. •					
Inspire Opportunities	Defining and explaining encryption difficulties in the real world and the potential ethical difficulties that occur with these, examples include WhatsApp and Meta. History of Computing research to understand the significance of encryption throughout WW2.					
Assessment Opportunities	Formative assessment: Through teacher observation, questioning and marked activities Summative assessment: End of Unit assessment					

Computing - Learning Journey Year 9

Summer Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	**Artificial Intelligence**						HALF TERM
Challenge Objective and Content (for all learners)	• To be able to describe what artificial intelligence is • To be able to describe how artificial intelligence is used in the world today • To be able to discuss how artificial intelligence may be utilised in the future. • To be able to discuss potential difficulties with artificial intelligence such as deep fakes and plagiarism.						
Inspire Opportunities	Students will be challenged through tasks based upon machine learning algorithms and potential ethical dilemmas that are associated with these.						
Assessment Opportunities	Formative assessment: Through teacher observation, questioning and marked activities Summative assessment: End of Unit assessment						

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	**Internet of Things & 3D Design**						SUMMER
Challenge Objective and Content (for all learners)	• To be able to understand the elements of a design brief and create a project from these. • To know what the Internet of Things means and how this has developed • To describe how the Internet of Things is used in society today • To be able to design and create a 3D design project using Sketch-Up						
Inspire Opportunities	Student will receive challenge activities which discuss Environmentally friendly homes and the impact this is having on our society. They will also be able to conduct research into IOT devices and make their own judgements surrounding usefulness as well as ethical use.						
Assessment Opportunities	Formative assessment: Through teacher observation, questioning and marked activities Summative assessment: Teacher assessment of practical task						