

# Year 13: BTEC Level 3 National Extended Certificate in Computing

Unit	Title	Exam or Internal Assessment
1	Principles of Computer Science	Exam
17	Mobile Apps Development	Internal Assessment

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topics	<b>Unit 1</b> Topic C: Programming Paradigms  <b>Foci:</b> Data Types, Structures & validation Control Structures Built-in functions Sorting & Searching Algorithms	<b>Unit 1</b> Topic D: Types of programming languages  <b>Foci:</b> Procedural Event-driven Object-oriented Coding for the web Translation	<b>Unit 1</b> Exam Preparation  <b>Foci:</b> Past Papers			
	<b>Unit 17</b> Topic A: Mobile Apps and devices  <b>Foci:</b> Mobile Apps - Types - Context - Design Principles Mobile Devices - Integration - Programming	<b>Unit 17</b> Topics B&C: Mobile App design & Development  <b>Foci:</b> Analysing requirements Documentation	<b>Unit 17</b> Topic C: Mobile App development  <b>Foci:</b> Content preparation Development Testing Evaluation			
Assessments	<b>Unit 1</b> End of Topic Test for Topic A	<b>Unit 1</b> End of Topic Test for Topic B	<b>Unit 1</b> External Examination			
		<b>Unit 17</b> Assignment 1 – Investigating mobile apps	<b>Unit 17</b> Assignment 2 – Design & Develop a mobile app that utilises device functions			
Building on Prior Learning	<p><b>Substantive Knowledge</b> – From GCSE, students will draw on knowledge of programming and simple standard algorithms e.g. linear search. The year 13 programme of study then builds on this looking at different types of programming language, design and development of mobile apps / interfaces and more complex standard sorting and searching algorithms.</p> <p><b>Disciplinary/procedural Knowledge</b> – Students will be familiar with programming, abstraction and decomposition. The year 13 program of study builds on this with students using each of these in larger, project scenarios and examining and evaluating existing code against requirements, for efficiency, good practice etc.</p>					
Cultural Capital	<p><b>There is cultural capital in abundance in this programme of study:</b> Given the relative youth of Computer Science as a discipline, cultural capital is usually a mix of computing history alongside identification and explanation of related personal experience to a given topic. For example, a networking topic might look historically at the influence of the cold war when designing the built-in resilience and redundancy of the internet, but equally relevant would be the day-to-day experience of using the internet that verifies the topologies and architectures learned in class.</p>					
Mastery	<p><b>In terms of mastery:</b> Students are able to analyse and interpret given problems and develop a detailed and complex solution in response. Students demonstrate an in-depth understanding of programming constructs and a thorough understanding of how data is handled in a computer program.</p>					
Development of Character	<p><b>A wide range of virtues are covered through the teaching of Computing:</b> For example, through programming students learn creativity, open mindedness to alternative solutions, persistence through debugging, bravery in seeing mistakes positively and the appreciation of beauty in the simplicity of a solution.</p>					
Extra-Curricular opportunities	<p><b>In School:</b> Coding Ambassador  <b>Outside of School:</b> University computer science taster day</p>					
Metacognitive Learning	<p>Students in Computing will learn through expert modelling and exposure to a range of exam type questions and related mark-schemes, allowing them to tackle any type of question in this area. To form these routines in knowledge, feedback will form an important part of developing students as metacognitive learners, they will be able to effectively apply exam technique, and use feedback for areas of development, to help plan for success in future assessments/work. Students in Year 12 should be self-regulated learners, know how to learn, successfully revise, and apply knowledge of computing to make clear judgements and reach justifiable conclusions.</p>					