

SUBJECT		YEAR	TERM
A-Level Computer Science (OCR)		12	2
UNIT			
Advanced Programming			
INTENT			
PRIOR LEARNING (TOPIC) – GCSE Programming Units			
This unit focuses upon two key areas: Object Orientated Programming and Recursion. Each of these represents a paradigm shift in terms of the approach pupils have taken thus far to programming. They are both important for future learning, with recursion being used in many of the algorithms pupils need to know and Object Orientation being extremely useful for programming projects.			Specification Points: This unit covers points 1.2.4e and 2.2.1b and f.
FUTURE LEARNING (TOPIC): Complex Data Structures and Programming Project			
IMPLEMENTATION		IMPACT	
Throughout the unit pupils will cover: <ul style="list-style-type: none">• The use of Object Orientated Programming (OOP).• Core concepts surrounding OOP including classes, objects, attributes, methods, inheritance, polymorphism and encapsulation.• How to write and interpret recursive algorithms and how they compare to iterative alternatives.		Assessment: Pupils will sit a 40 mark in-lesson assessment at the end of the unit, the score from which will be translated into an A* to E style grading. In addition to this, pupils will complete regular exam style questions both during lesson and as part of homework tasks.	
HOW CAN PARENTS HELP AT HOME?			
All course materials are available via Firefly. In the build-up to the assessment, parents can help by supporting their child’s revision. This can include testing them using flash cards or simply getting them to explain topics to you.			
HELPFUL READING/FURTHER DISCUSSION			
READING/EXTRA-LEARNING There are an enormous number of online courses and tutorials to help pupils develop their computer science skills further. Visit the Next Steps section of the Computing department’s Firefly page for more details.	CAREERS The skills / knowledge learnt in this unit lead perfectly into a wide range of careers including software development.		WIDER SKILLS Digital Literacy Problem Solving Resilience
VOCABULARY			
Class, Object, Instance, Attribute, Method, Constructor, Sub-Class, Super-Class, Inheritance, Polymorphism, Encapsulation, Overriding, Recursion, Base Case, Call Stack, Stack Frame.			