Grade Descriptors for GCSEs Graded 9-1: Computing (Programming)

9	To achieve a Grade 9 candidates will be able to: • analyse and decompose a range of complex problems and create an algorithm without any help • use a range of programming techniques in two text based languages confidently • write efficient code using a wide range of techniques, data structures and recursion • systematically resolve errors and build robust programs
8	To achieve a Grade 8 candidates will be able to: • analyse and decompose a more complex problem and create an algorithm without any help. • write an algorithm using a flow chart and pseudo code • Create an accurate algorithm • use a range of programming techniques in two text based languages • write efficient code using a range of techniques • apply MOD/DIV and exponential to solve problems • systematically resolve errors and build robust programs
7	To achieve a Grade 7 candidates will be able to: • analyse and decompose a complex problem, create an algorithm without any help • Create an accurate algorithm • use more than one text based programming language • use a range of casting and file handling skills • always write programs using procedure/ suitable functions • write nested statements • explain what exponential means • access/ modify 1d and 2d arrays • use a query language/search for data • Tests on programs are through
6	To achieve a Grade 6 candidates will be able to: • analyse and decompose a more complex problem, create an algorithm with some help • Create a mostly accurate algorithm • Have confidence in using at least one text based language • use procedures in code • research and find new ways to program problems (functions) • create a two dimensional array • solve Boolean logic problems of more than 2 levels • solve an MOD/DIV problem • use records to store data • systematically use a range of tests on programs
5	To achieve a Grade 5 candidates will be able to: • analyse and decompose a simple problem, create an algorithm with some help • Create an almost perfect algorithm that includes variables, decisions and a loop • use an algorithm to create a program in a text based language • explain what variables/ data types are needed • write a program using casting/ file handling • explain what functions/procedures are

	• solve Boolean logic problems (2 levels) • explain MOD/DIV • create and store data in a 1d array • always test programs
4	To achieve a Grade 4 candidates will be able to: • Practise writing sequences and don't require much help to make my own • work out the outcome of an algorithm using different data • Make an algorithm with a loop (iteration) • write a program with a loop (iteration) • explain where variables are required • give an example of a data type • solve a simple Boolean logic problem • know what the system life cycle is • explain why a program needs to be tested
3	To achieve a Grade 3 candidates will be able to: • write a set of instructions with some processing and a decision (selection) • make an algorithm with a decision • write a program (using a block/object orientated programming language) with a decision (selection) • use a variable • add, subtract, divide and multiply 2 digit numbers
2	To achieve a Grade 2 candidates will be able to: • Requires help to break problems down • make an algorithm with an input and output • write a program with an input • state what a variable is • add, subtract, divide and multiply simple numbers
1	To achieve a Grade 1 candidates will be able to: •