Year 9 Computing Overview

Unit	Duration (lessons)	Learning Objectives/Outcomes
Logical thinking and reasoning	8	• understand the concept of logic • understand the basic logical operations – AND, OR, NOT • understand how to approach problems in a logical, structure and thorough manner • be able to demonstrate logical thinking and reasoning through the completion of puzzles and logic problems
Algorithms	8	• understand that algorithms are computational solutions that always finish and return an answer • be able to interpret simple algorithms to deduce their function • be able to create algorithms to solve simple problems • be able to detect and correct errors in simple algorithms
Pseudo-code	8	• understand that pseudo-code is a simplified computer programming-like way of representing how a program is supposed to work • understand a range of pseudo-code systems, including flowcharts • be able to interpret simple pseudo-code programs to deduce their function • be able to write simple pseudo-code programs to solve problems
Basic programming constructs	10	• understand what is meant by the terms data and information • be able to describe the difference between a constant and a variable • understand when to use constants and variables in problem solving scenarios • understand the different data types available to them. As a minimum, students should know about integer, Boolean, real, character and string data types and how these are represented in the programming language(s) they are using • be able to explain the purpose of data types within code understand and be able to program with 1 and 2 dimensional arrays • understand the need for structure when designing coded solutions to problems • understand how problems can be broken down into smaller problems and how these steps can be

		represented by the use of devices such as flowcharts and structure diagrams • understand and be able to describe the basic building blocks of coded solutions (i.e. sequencing, selection and iteration) • know when to use the different flow control blocks (i.e. sequencing, selection and iteration) to solve a problem • be able to use NOT, AND and OR when creating Boolean expressions and have experience in using these operators within coded solutions
Solving problems with code	10	• identify the needs of a problem • explore possible algorithms to solve those problems • convert algorithms into code and test their effectiveness