Programming Activity 8
Logic operators
(Units 1, 2 and 4 – Problem Solving, Programming and Computers)

Learning objectives
- Analyse a problem, investigate requirements and design solutions
- Understand how to create an algorithm to solve a particular problem
- Make use of programming constructs including sequence, selection and iteration
- Be able to construct and interpret truth tables for a given logic statement (AND, OR, NOT)
- Be able to produce logic statements for a given problem

Assessment objectives
AO2, AO3

Spec alignment
Pages 10–12 & 15, 1.1, 1.2, 2.1, 2.2, 2.3, 2.4, 2.5, 4.3

Task
Create an algorithm that will give users the answers to logic questions. The users have to enter the type of logic operator (AND or OR), the two inputs and they will be shown the result.

Misconceptions/barriers
Students often have problems with the use of relational operators and the correct symbols to use in pseudocode as they may be different from those in the programming language they are using.

Differentiation
Low ability:
- Low-ability students will probably need reminding of logic operators, but they could be asked to revise this before the lesson.
- They could then be asked to write a simple algorithm without any input validation. The algorithm will require inputs and the use of operators.

High ability:
- High-ability students could be asked to provide suitable validation techniques.