

## Programming Activity 7

### Finding a specific word in an email

(Units 1 and 2 Problem Solving and Programming)

#### 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.
- Finding the length of and traversing strings.

#### Assessment objectives

AO2 and AO3

#### Spec alignment

Pages 10–12, 1.1, 1.2, 2.1, 2.2, 2.3, 2.4, 2.5

#### Task

As part of your work experience you have been asked to create an algorithm that will allow an operator to search an email for a specific word.

It must allow the operator to:

- Enter an email.
- Enter the key word to search for.

The algorithm should then report if the word has been found and, if so, how many times.

#### Misconceptions/barriers

Students often need reminding that counting starts at 0 and not 1.

#### Differentiation

Low ability:

Those with lower ability may need some signposting about the following:

- finding the length of strings
- string indexing starts at 0
- the use of a loop to traverse the string
- testing combinations of consecutive letters in the string to check if the key word is included, e.g. if the key word has 3 characters, testing letters 0, 1 and 2; letters 1, 2 and 3; letters 2, 3 and 4 until the end of the string
- stopping the loop before there is an error, i.e. if the string has 30 characters and the key word has 3, then the final check should be 27, 28 and 29.

High ability:

- High ability students should be able to tackle the task without additional assistance.
- They should be able to include validating that an entry has been made for both the email and the key word.