

0	1
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Figure 1 shows a bubble sort algorithm represented using pseudo-code. The algorithm sorts the data in a list L .

Figure 1

```
PROCEDURE BubbleSort(L)
  N ← LEN(L) - 2
  Count1 ← 0
  WHILE Count1 < LEN(L) - 1
    FOR Count2 ← 0 TO N
      IF L[Count2] > L[Count2 + 1] THEN
        Temp ← L[Count2]
        L[Count2] ← L[Count2 + 1]
        L[Count2 + 1] ← Temp
      ENDIF
    ENDFOR
    Count1 ← Count1 + 1
  ENDWHILE
ENDPROCEDURE
```

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Describe **two** changes that could be made to this bubble sort algorithm that would be likely to result in fewer comparisons being made when sorting the list L . The algorithm should still be a bubble sort algorithm if your suggested changes were made.

[4 marks]

0 2

The shaded row of **Table 1** contains a list of numbers.

A bubble sort algorithm could be used to sort the list of numbers into ascending order.

Complete the unshaded cells of **Table 1** to show the results of completing **three** passes through the list using a bubble sort algorithm.

You should state the values at the end of each pass.

Table 1

	[0]	[1]	[2]	[3]	[4]	[5]
	3	5	8	1	6	4
First pass						
Second pass						
Third pass						

Copy the contents of the unshaded cells in **Table 1** into the table in your Electronic Answer Document.

[3 marks]