Flowchart, program and simulation

Core BUILD THE BASICS

C1 **State** 'pause 2000' in seconds. **[1]**

C2 **State** the symbol for 'if input1 is on then ...'. **[1]**

C3 **State** the symbol for 'end'. **[1]**

C4 **State** the flowchart symbol for 'goto main'. **[1]**

C5 State 'pause 750' in seconds. **[1]**

C6 **State** the symbol for 'switch on pin 6'. **[1]**

C7 State the symbol for 'pause 500'. **[1]**

Stretch GO FURTHER

S1 **Complete** the flowchart for this program: **[4]**

```
main:  switch on pin 3
       pause 500
       switch off pin 3
       pause 500
       goto main
```

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S2 A program should flash a lamp 5 times but uses 'if count = 4 then done'. **Describe** the fault and the fix. **[2]**

S3 **Complete** the flowchart for: main: if input2 is off then main · switch on pin 6 · pause 2000 · switch off pin 6 · goto main. **[4]**

S4 **State** the type of loop in S3. **[1]**

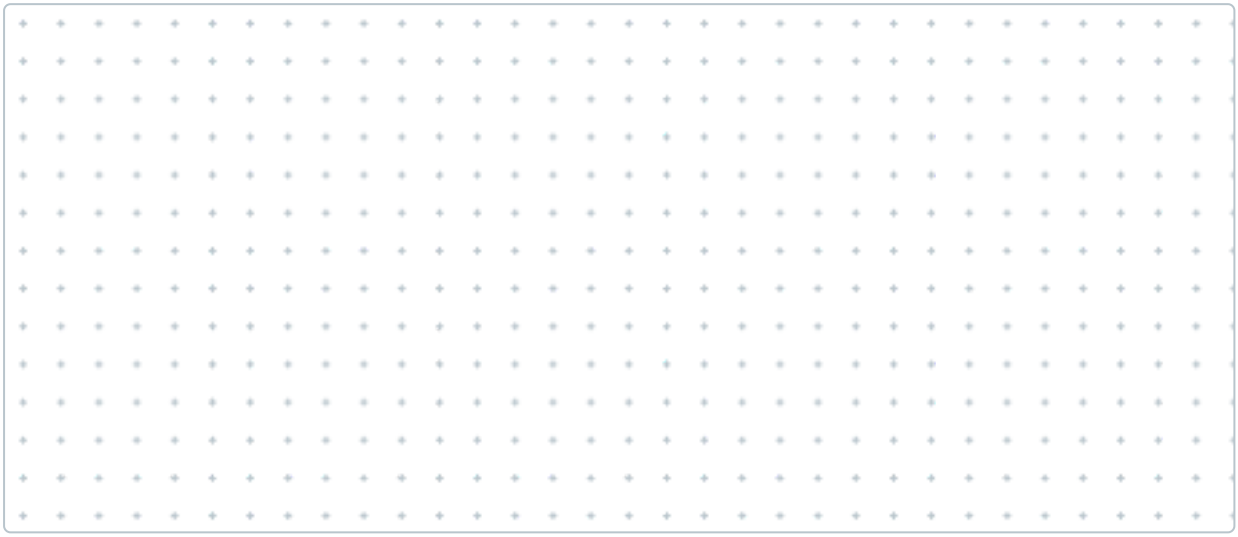
Exam Ready QUALIFICATIONS SCOTLAND STYLE

E1 A simulation of S1 shows the LED flashing twice a second. **Explain** whether this matches the program. **[2]**

E2 **Describe** how you would record test results for a simulated flowchart. **[2]**

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E3 A ski lift (Cairnloch, fictional) stops its motor (pin 7) when the wind switch (pin 2) closes, and restarts when it opens. **Complete** the flowchart. **[5]**



E4 **Describe** a test result for E3 that matches the simulation. **[2]**

Total: 29 marks. Use the Data Booklet. Show your working and give units.