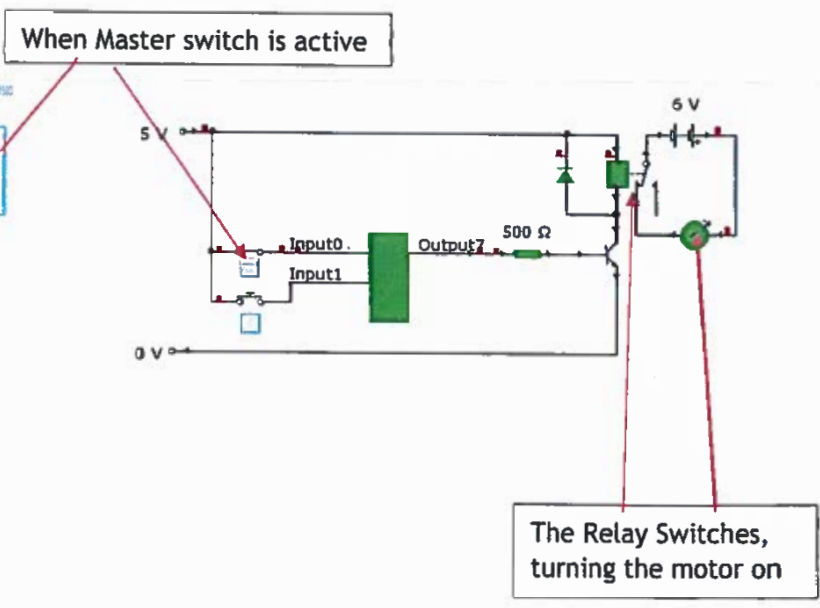
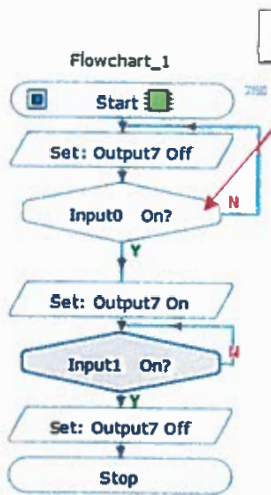
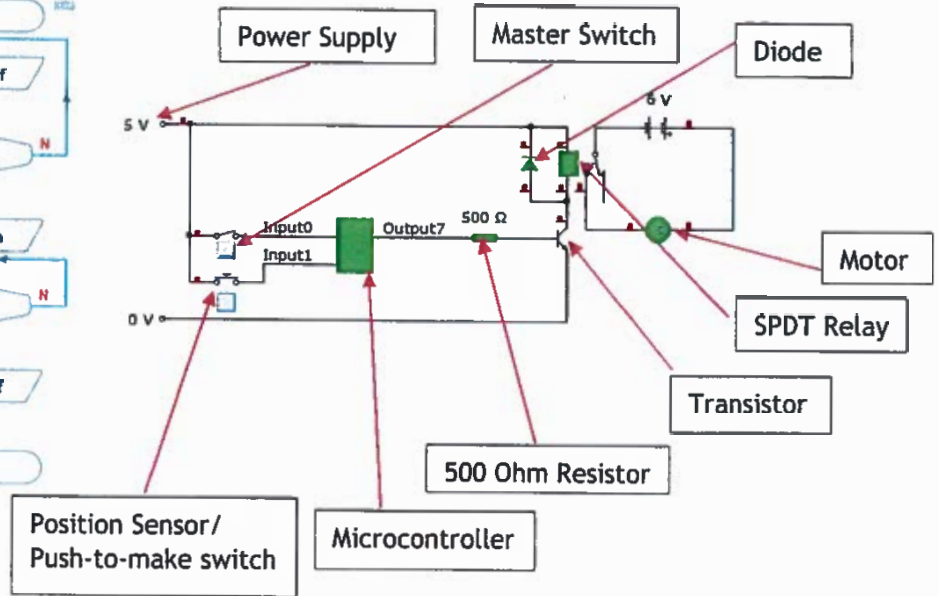
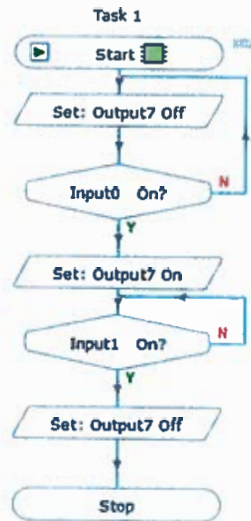


Candidate 2 evidence

Task 1a

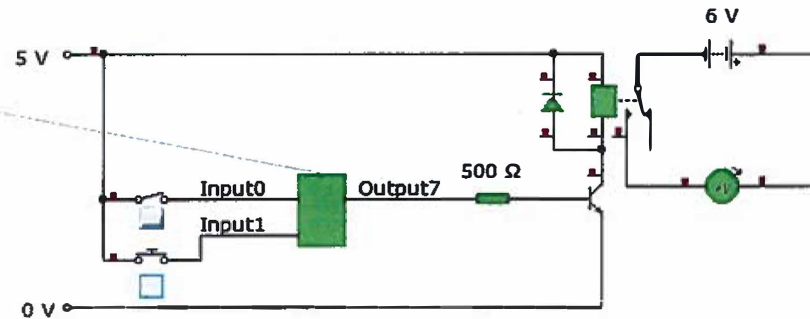
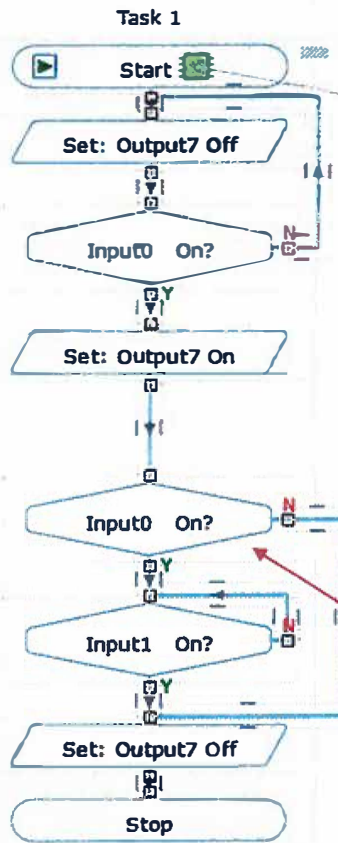


Worksheet 1b

Planned test	Expected result	Initial test result	Amended test result
Test 1 Turn on the master switch.	The relay should activate and the motor should start turning.	The relay activated and the motor started turning.	Nothing to amend due to my initial result was my expected result.
Test 2 Turn on the master switch and then after a few seconds turn on the position sensor.	The motor should start turning then slow down and stop.	The motor started slowing down and then stopped.	Nothing to amend due to my initial result was my expected result.
Test 3 Turn on the master switch and then turn off the master switch.	The motor should start turning then slow down and stop.	The relay activated and the motor started turning.	Please see attached amendment below.

(5 marks)

Task 1c



I have added in a new pin test to test if the master switch is still on, if so, the flowchart will behave as normal, with the push-to-make switch needed to turn the motor off, if the master switch is off before the push to make switch is needed, the flowchart would skip right to the end, bypassing the need for the push to make switch, whilst the master switch is off, turning off the motor.

Version 1.0

Task 1d

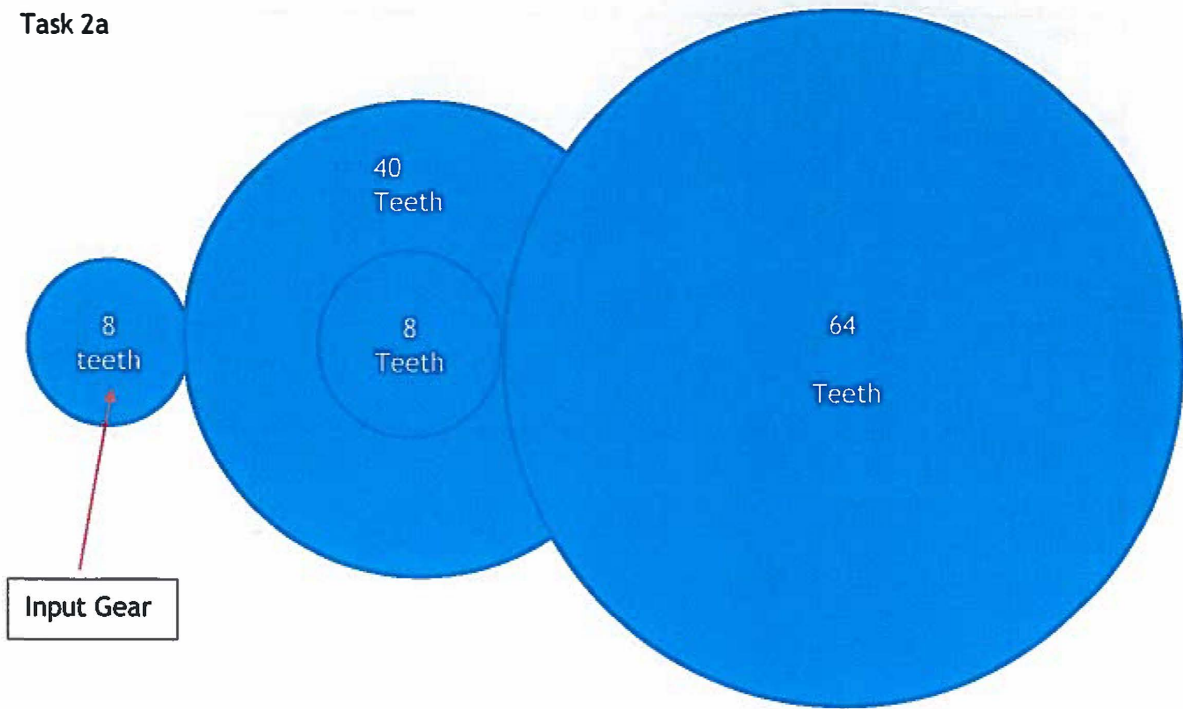
```
1
2 main:
3 label0:
4     Switch off 3
5     if Input0 is On then label1
6     goto label0
7 label1:
8     Switch on 3
9     if Input0 is On then label2
10 label3:
11     Switch off 3
12     end
13 label2:
14     if Input1 is On then label3
15     goto label2
16     goto label3
17
```

Worksheet 1e

Specification point	Met? Y or N	Description
i	Y	When the master switch (SPST) is switched on, a 6 Volt circuit activates, turning on a motor.
ii	Y	Whilst the 6 Volt circuit is active, pressing the position sensor (Push-To-Make Switch) will turn off the 6 Volt circuit, making the motor slow down and stop.
iii	Y	If you turn off the master switch before the position sensor is activated, the 6 Volt circuit would turn off, making the motor slow down and stop.
Improvement		To improve this circuit, we could improve the motor in some way that it stops quicker, as at the moment, the motor takes a few seconds to fully stop.

(4 marks)

Task 2a



Worksheet 2c

Planned test	Input speed	Output speed	Required velocity ratio	Actual velocity ratio
Measure the input speed and output speed of the gear system and calculate the actual velocity ratio.	8 Teeth	64 teeth	At least 40 (40 : 1)	40 : 1

(2 marks)

Worksheet 2d

Specification point	Met? Y or N	Description
f	Y	My gear system has an output speed ratio of 40 (40 : 1), fitting the requirements needed.
ff	Y	My gear system makes effective use of compact gears to effectively fit into smaller spaces, fitting the requirements.

(2 marks)

Worksheet 3a

Specification point	Planned test	Expected result
i	When the stage is down, push the up button whilst the safety guard is active.	The piston should outstroke and the stage will move up.
	When the stage is down, push the up button without the safety guard being activated.	The piston will outstroke, therefore moving the stage up.
ii	When the stage is up (piston is outstroked), press either the down button 1 on the stage, or down button 2 on the ground level, and the piston should instroke, making the stage go down.	The piston should instroke and the stage will move down.
	When the stage is up, activate down button 2 on ground level.	The stage will go down as the piston will instroke.

(4 marks)

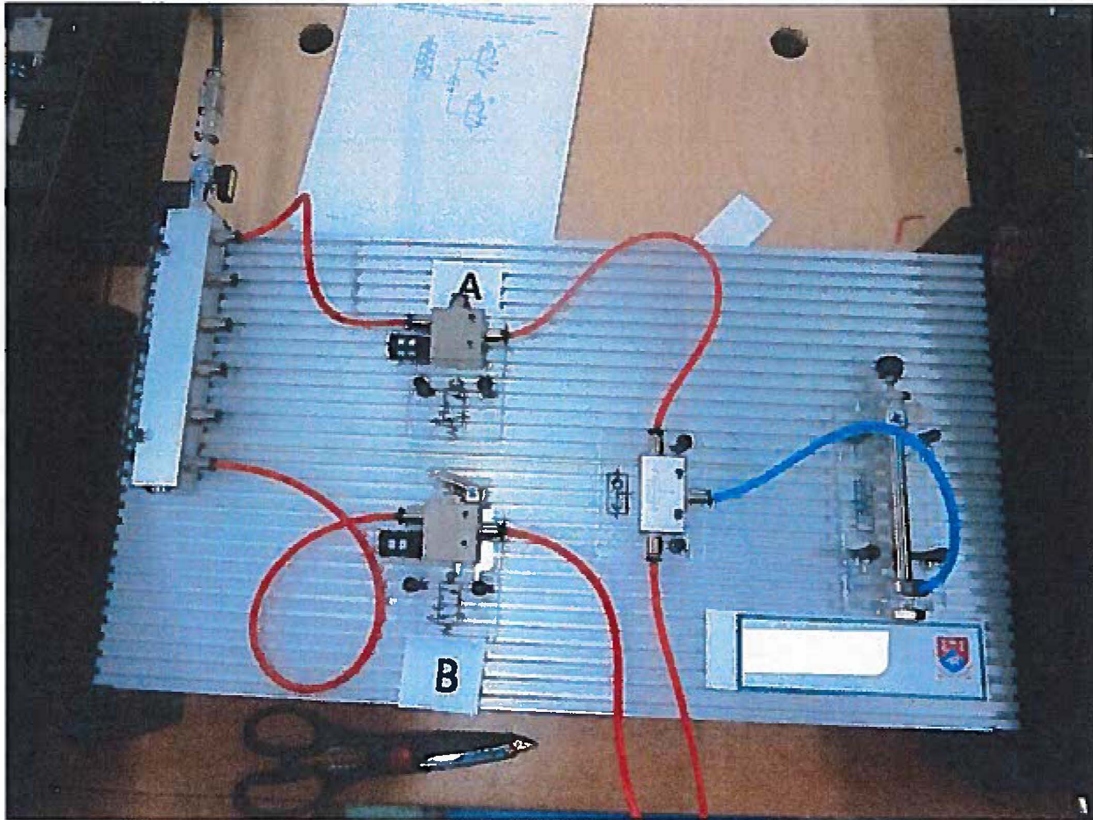
Worksheet 3b

Improvement	Adding safety guards, similar to the one on the up button, on both down buttons.
Justification	So somebody could not accidentally press the down button, causing the stage to go down
Components required	2 spring return, plunger actuated 3/2 valves

(3 marks)

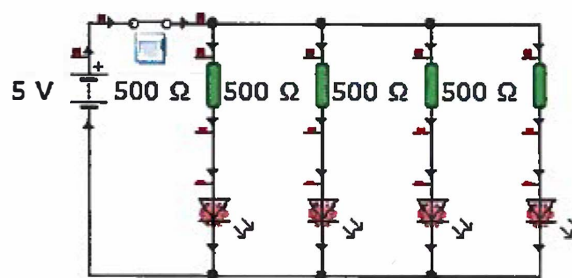
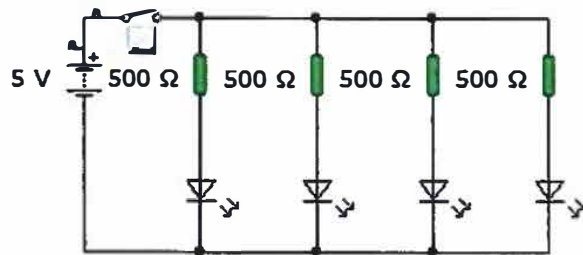
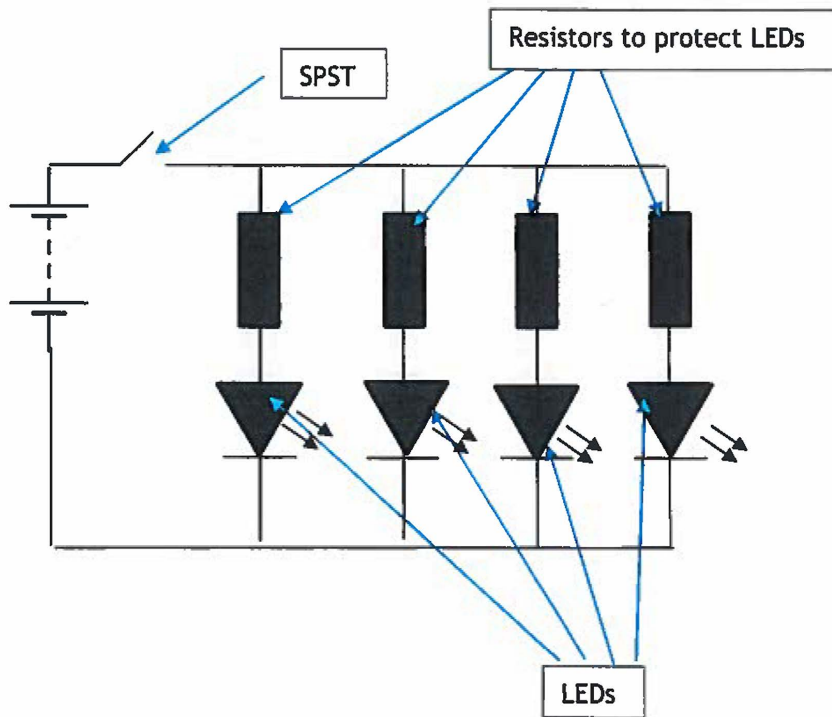
Version 1.0

Task 3c



Version 1.0

Worksheet 4

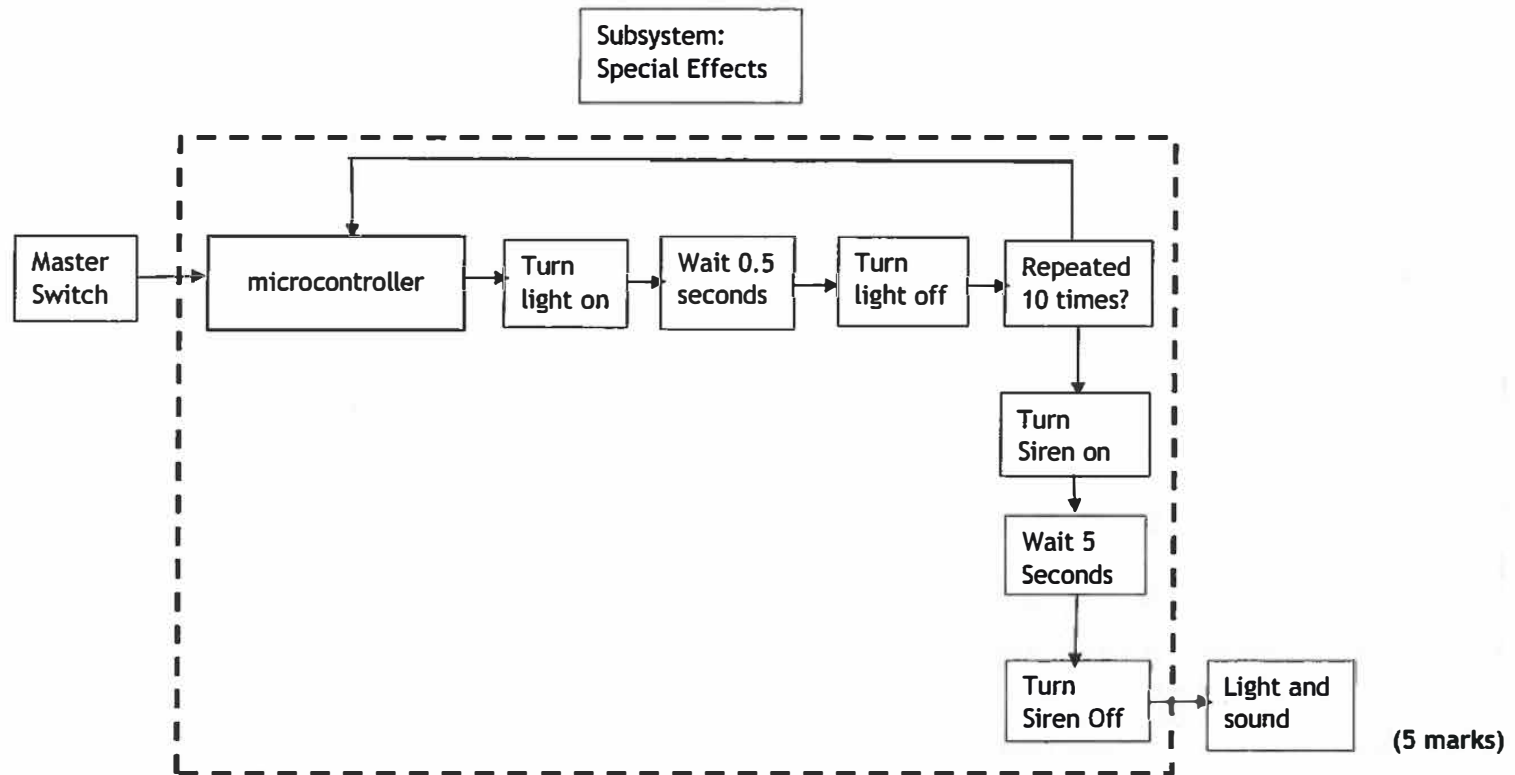


(4 marks)

Version 1.0

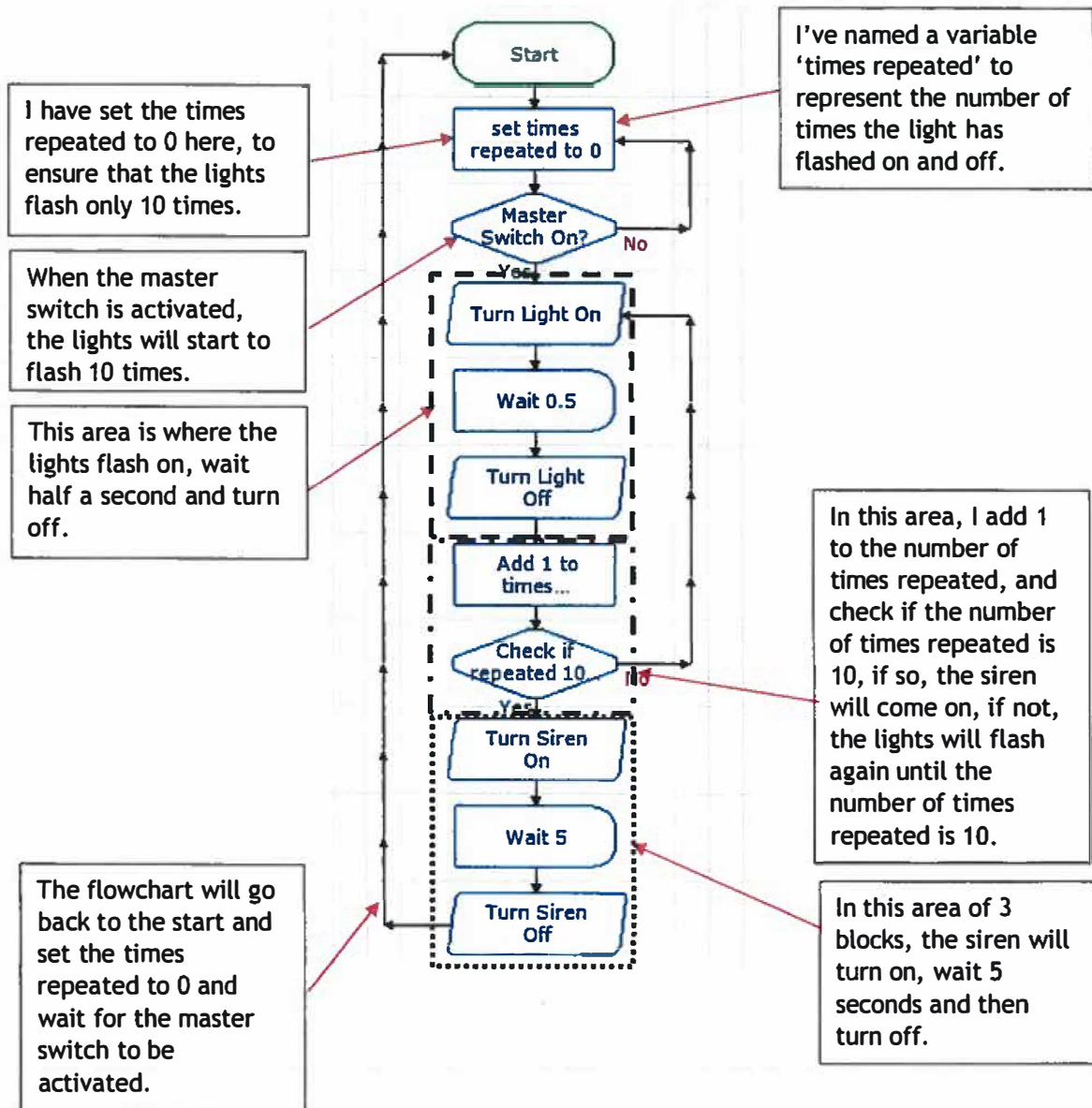
Worksheet 5a(i)**(2 marks)**

Worksheet 5a(ii)



Version 1.0

Worksheet 5b



(4 marks)