

Name : _____

Target grade: _____



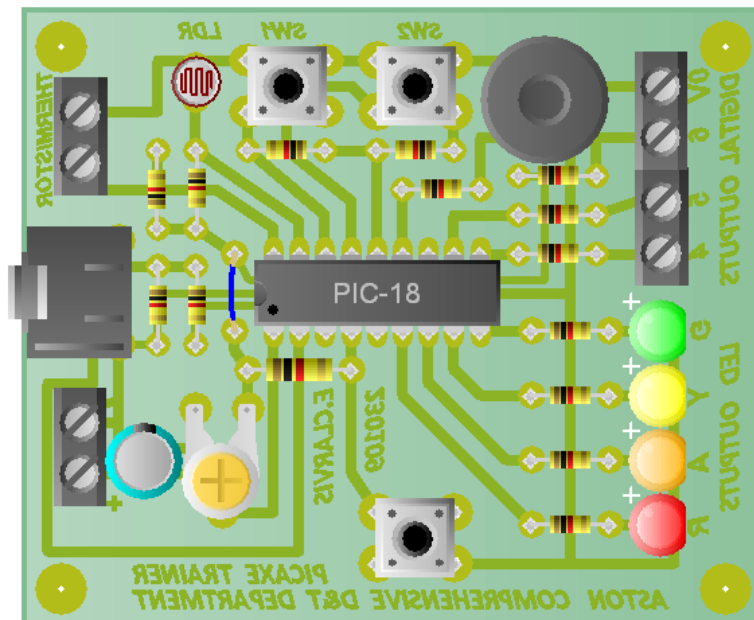
Design and Technology Department

PICAXE

Peripheral Interface Controllers

Assessment

Mr. Clarvis



Task number 1

Explain seven advantages of using a PIC chip to replace a conventional circuit containing a number of chips and components:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

Task number 2: Controlling Outputs

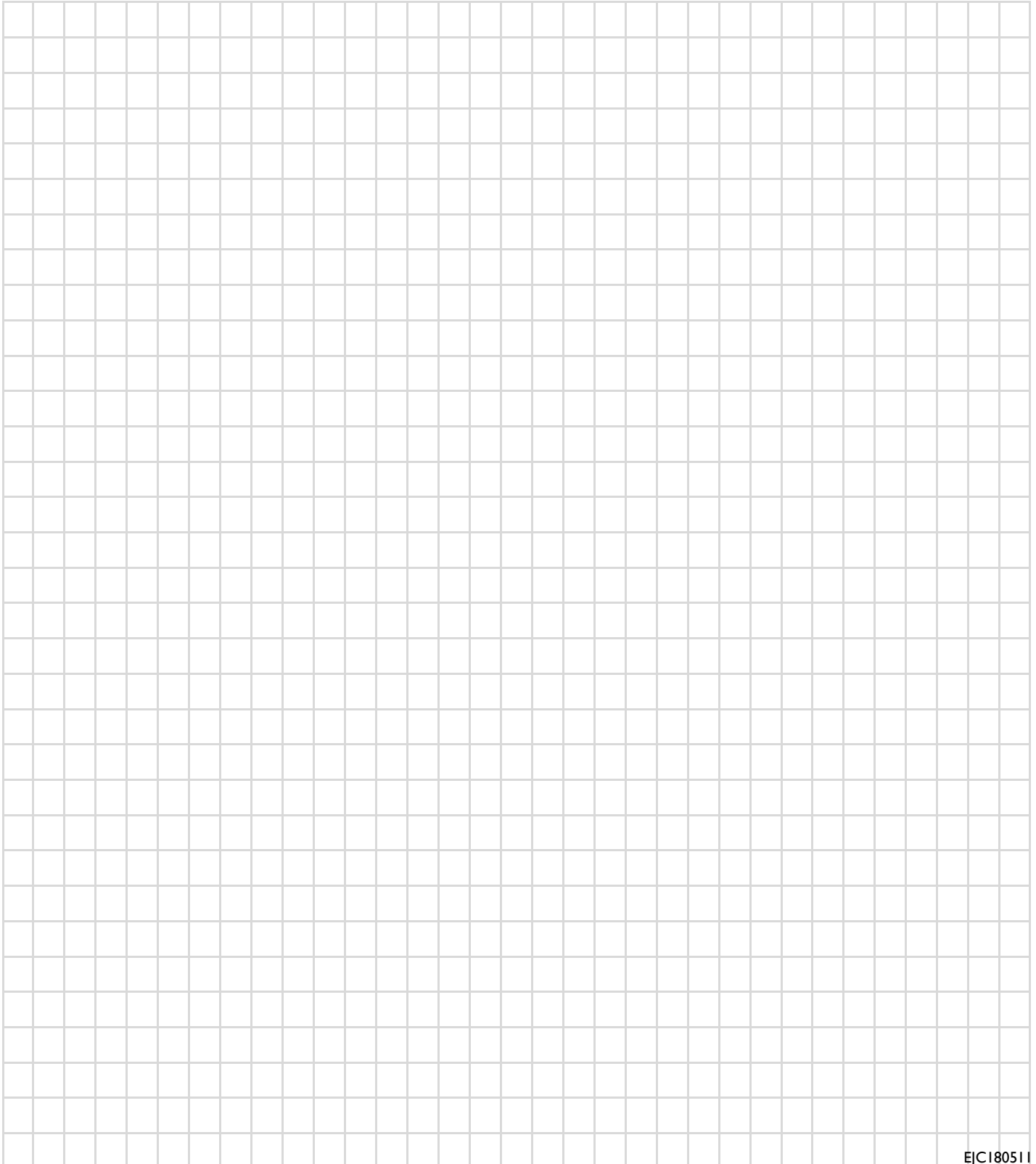
A PICAXE chip is wired up as follows:

- A Red LED is connected to output 0
- An Amber LED is connected to output 1
- A Green LED is connected to output 2

Write a programme that will:

- Flash all LEDs once a second continuously.

(Tip: You will need to use the commands HIGH, LOW and PAUSE)



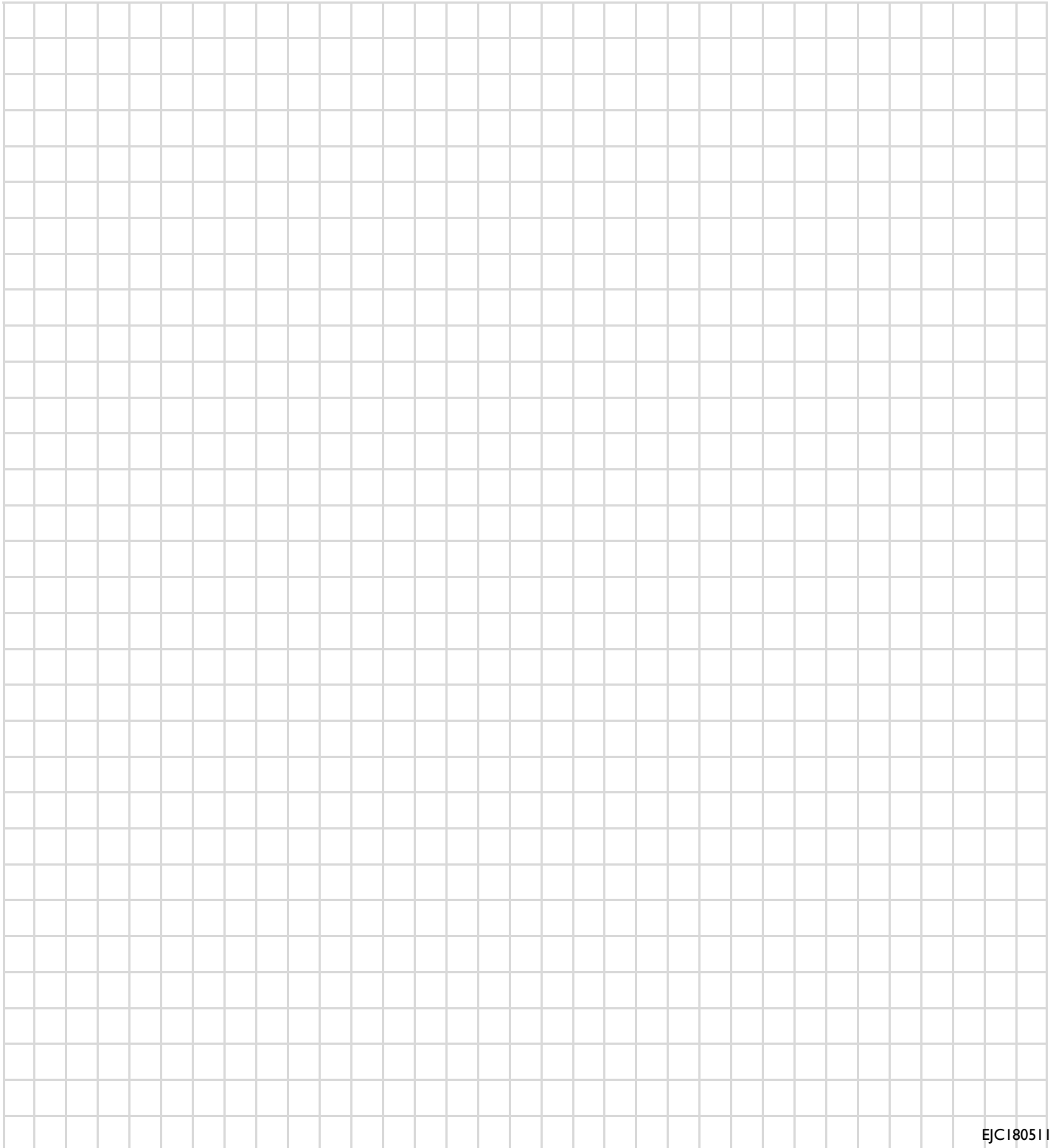
Task number 3: Controlling Outputs

A PICAXE chip is wired up as follows:

- A Red LED is connected to output 0
- An Amber LED is connected to output 1
- A Green LED is connected to output 2

Write a programme that will:

- Turn each LED on in turn with a delay of 1 second between them
- Turn off all of the LEDs
- Repeat



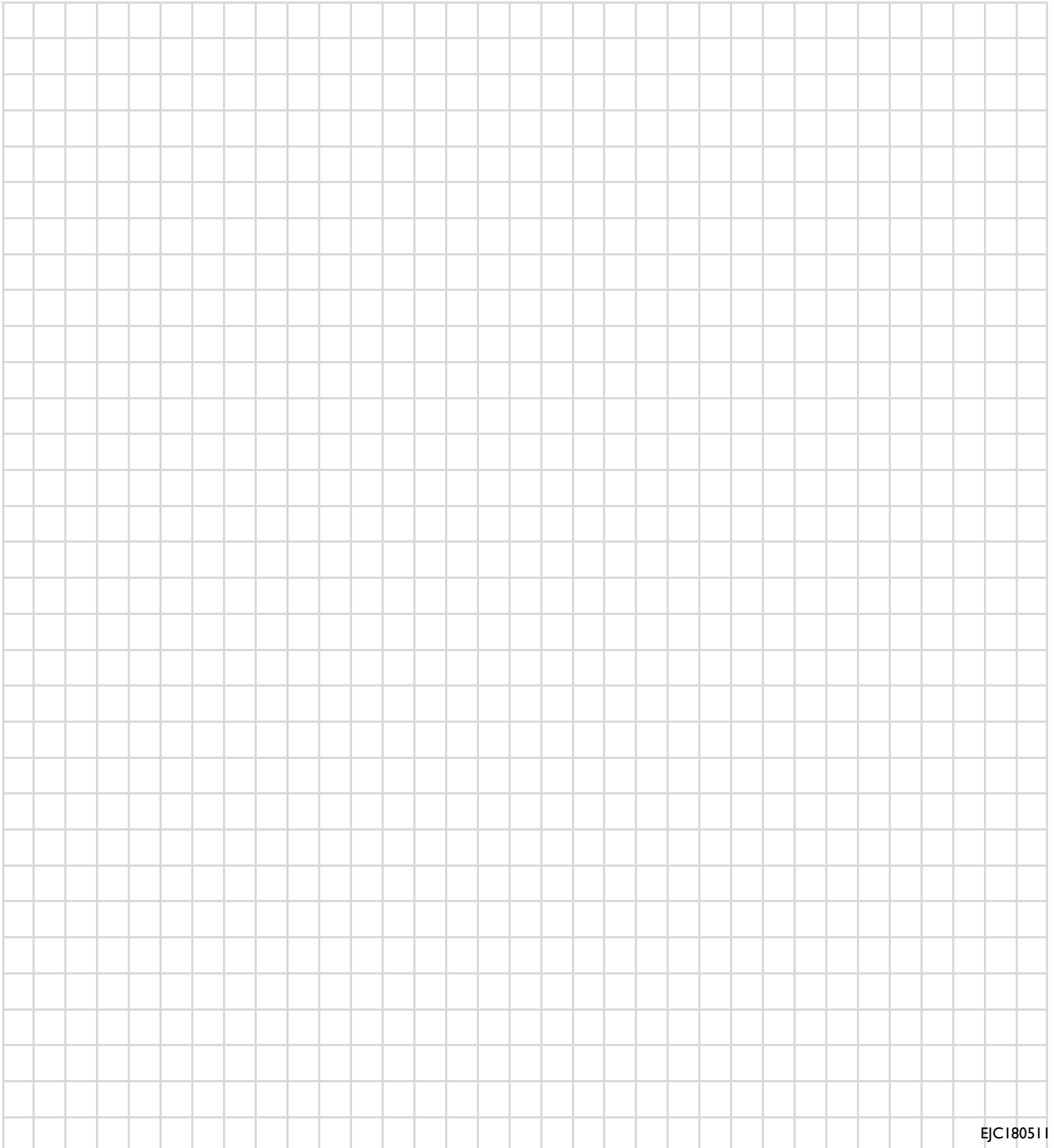
Task number 4: Controlling Outputs

A PICAXE chip is wired up as follows:

- A Red LED is connected to output 0
- An Amber LED is connected to output 1
- A Green LED is connected to output 2

Write a programme that will:

- Turn each LED on in turn with a delay of 1 second between them **but** only one LED may be on at a time
- Turn off all of the LEDs
- Repeat

A large grid for writing a program, consisting of 30 columns and 30 rows of small squares.

Task number 5: Making Decisions

A PICAXE chip is wired up as follows:

Outputs:

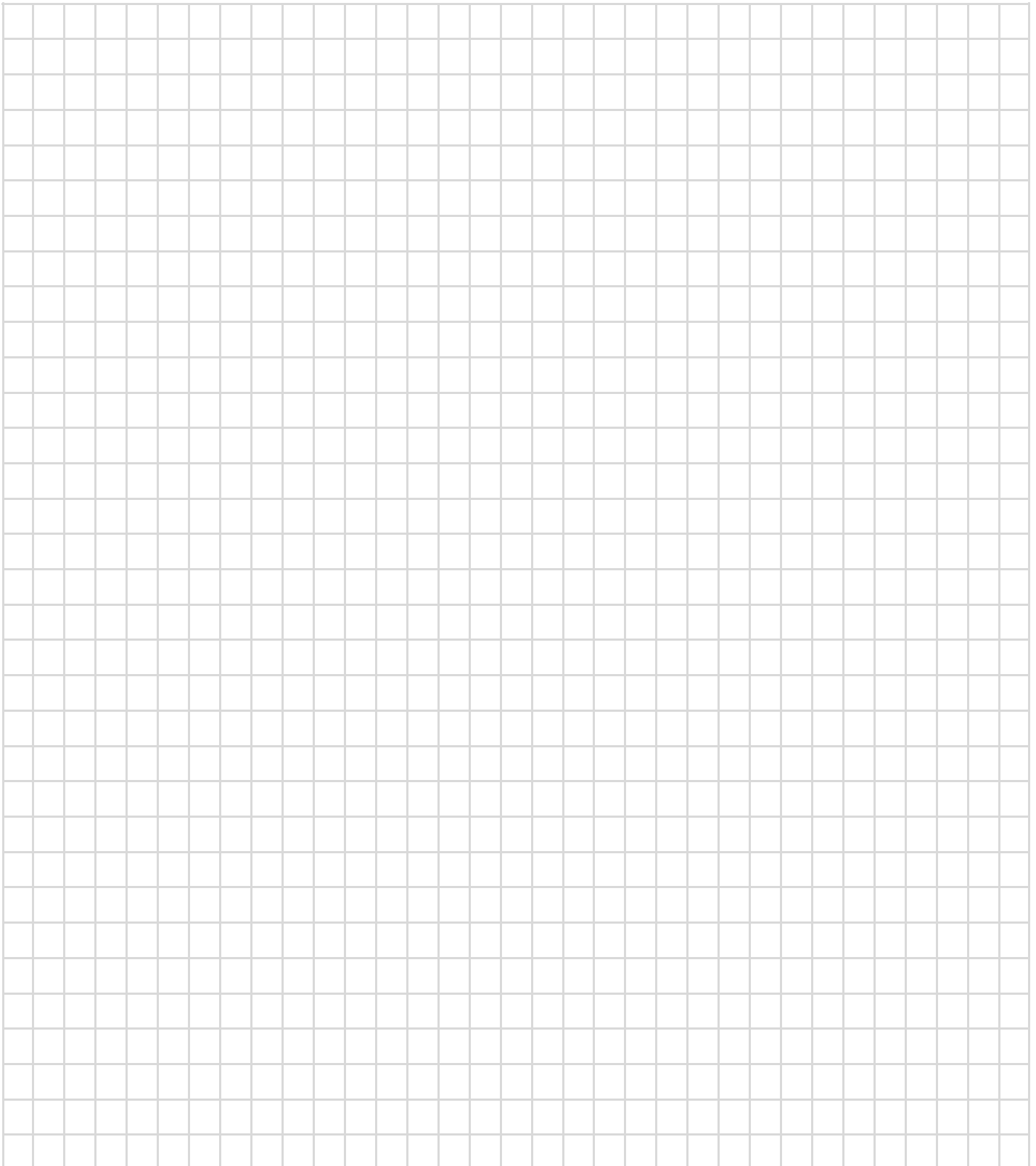
- An Amber LED is connected to output 1
- A Green LED is connected to output 2

Inputs:

- Switch 1 is connected to input 1 and goes high when pressed.

Write a programme that will:

- Turn the amber **and** green LED on when Switch 1 is pressed and turn it off when released.



Task number 6: Making Decisions

A PICAXE chip is wired up as follows:

Outputs:

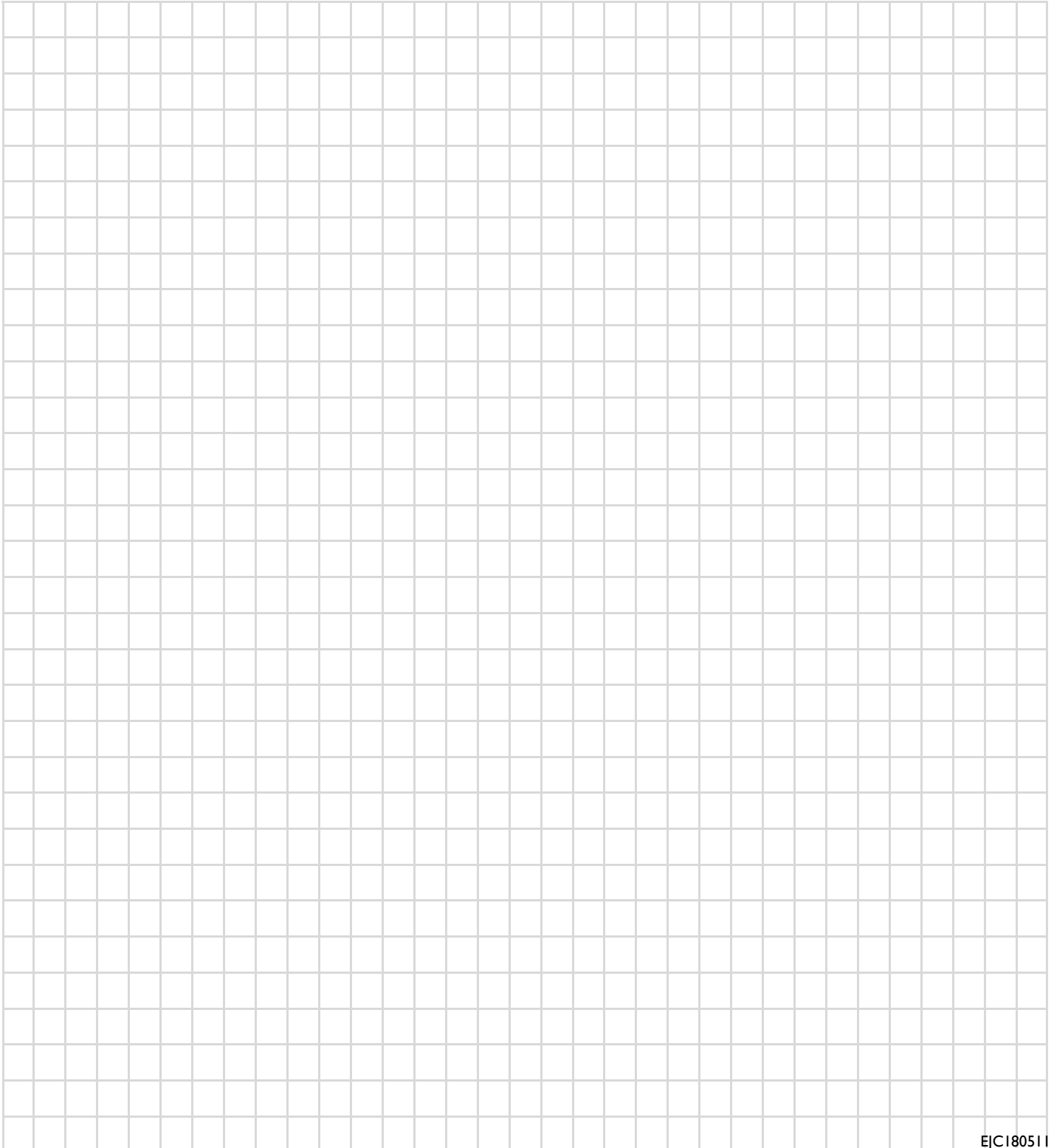
- An Amber LED is connected to output 1
- A Green LED is connected to output 2

Inputs:

- Switch 1 is connected to input 1 and goes high when pressed.
- Switch 2 is connected to input 2 and goes high when pressed.

Write a programme that will:

- Turn the amber LED on when Switch 1 is pressed and turn it off when it is released
- Turn the green LED on when switch 2 is pressed and turn it off when it is released



Task number 7: Making Decisions

A PICAXE chip is wired up as follows:

Outputs:

- An Amber LED is connected to output 1
- A Green LED is connected to output 2

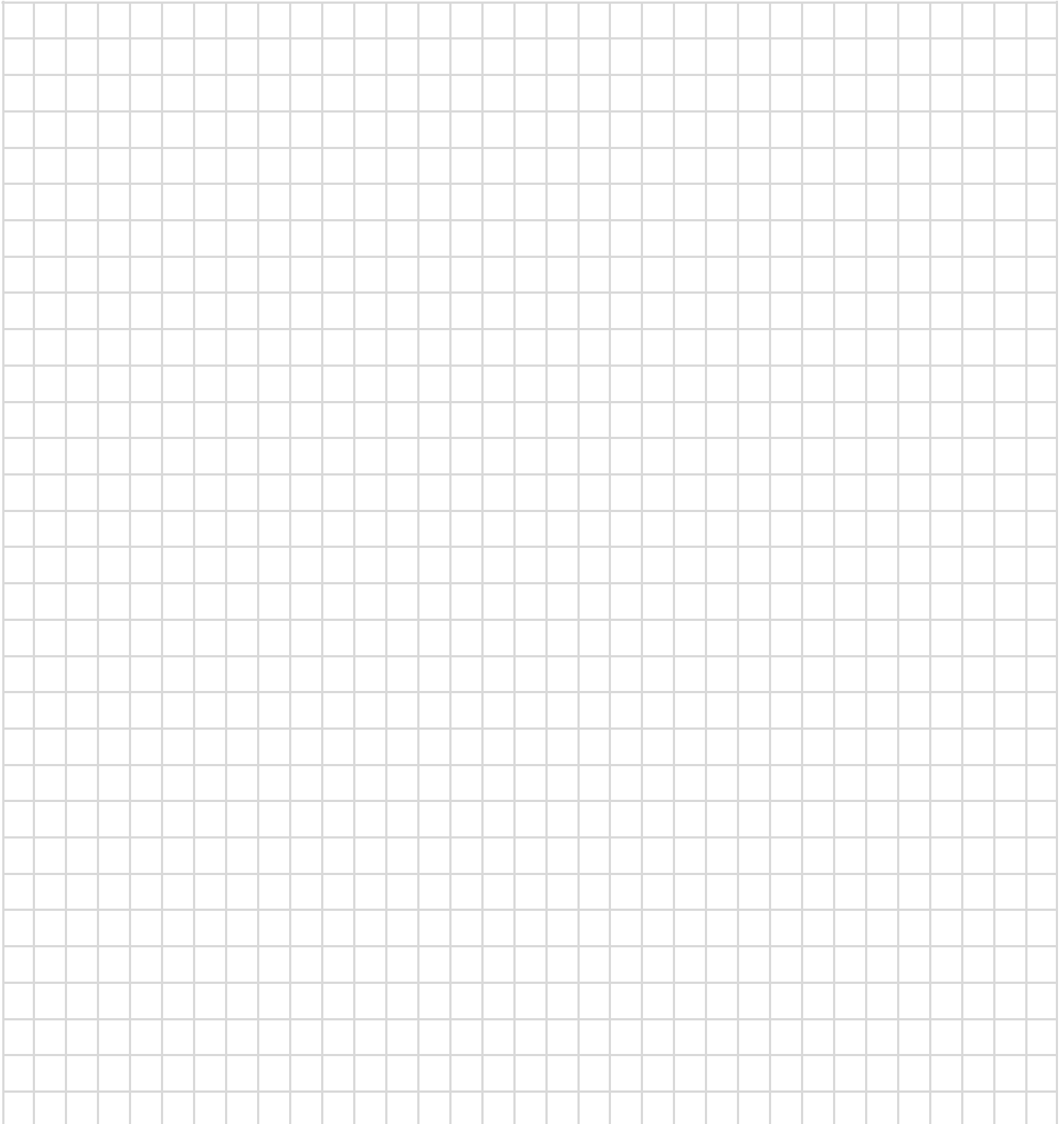
Inputs:

- Switch 1 is connected to input 1 and goes high when pressed.
- Switch 2 is connected to input 2 and goes high when pressed.

Write a programme that will:

- Turn the amber LED on for 3 seconds when Switch 1 is pressed
- Turn the green LED on for 10 seconds when switch 2 is pressed

(Tip: You can modify the programme you wrote in the previous task)



Task number 8: Repeating Tasks (Subroutines)

A PICAXE chip is wired up as follows:

Outputs:

- An Amber LED is connected to output 1
- A Green LED is connected to output 2

Inputs:

- Switch 1 is connected to input 1 and goes high when pressed.
- Switch 2 is connected to input 2 and goes high when pressed.

Write a programme that will:

- Flash the amber LED on and off 3 times
- Flash the green LED on and off 2 times
- Flash the amber LED on and off 3 times
- Flash the green LED on and off 4 times

(Tip: You will need to use GOSUBs and SUBROUTINES)

