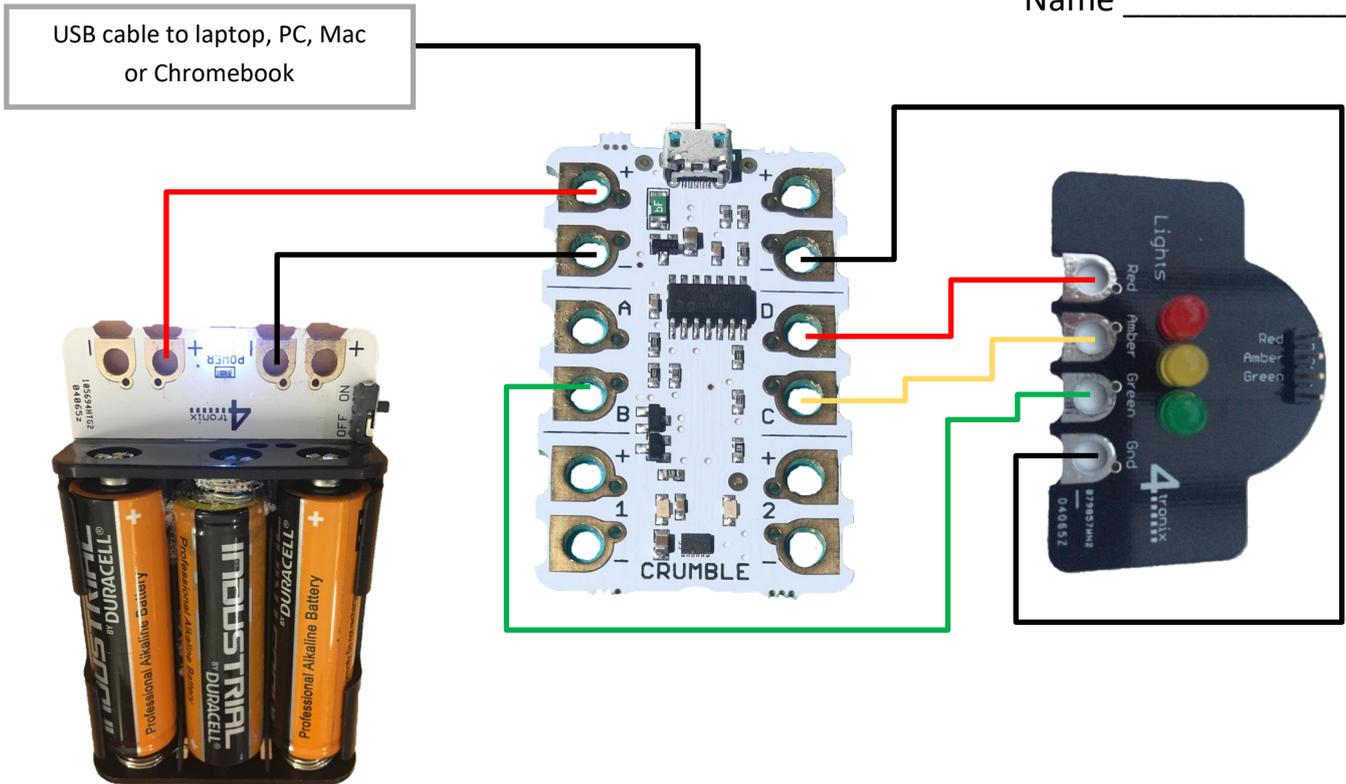


Traffic Lights Module P1

Sequence & Repetition

Name _____



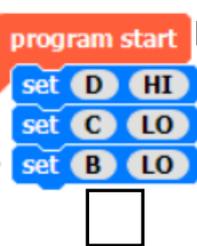
Wiring Checklist

Are any crocodile clips touching each other? Stop them touching each other!

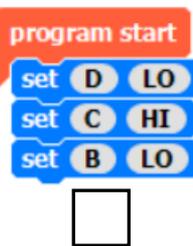
Is the battery pack turned on? If the answer is no turn it on.

Lights Checklist

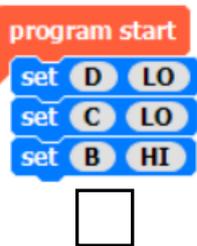
Create this first
Start the program
the red light
should light up



Change the
program to this the
amber light should
light up



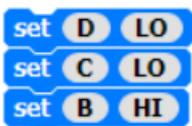
Change the
program to this the
green light should
light up



Now load the program trafficlights1. Run the program but don't change it.

USE Questions (work in pairs to answer these questions on the sheet)

- 1, What letter A, B, C or D is the red light plugged into?
- 2, What does LO do to a light?
- 3, How many seconds does the red light stay on for **on its own**?
- 5, What code block makes the light sequence repeat as long as the battery is turned on?
- 5, Describe in your own words what this sequence of code does to the lights?



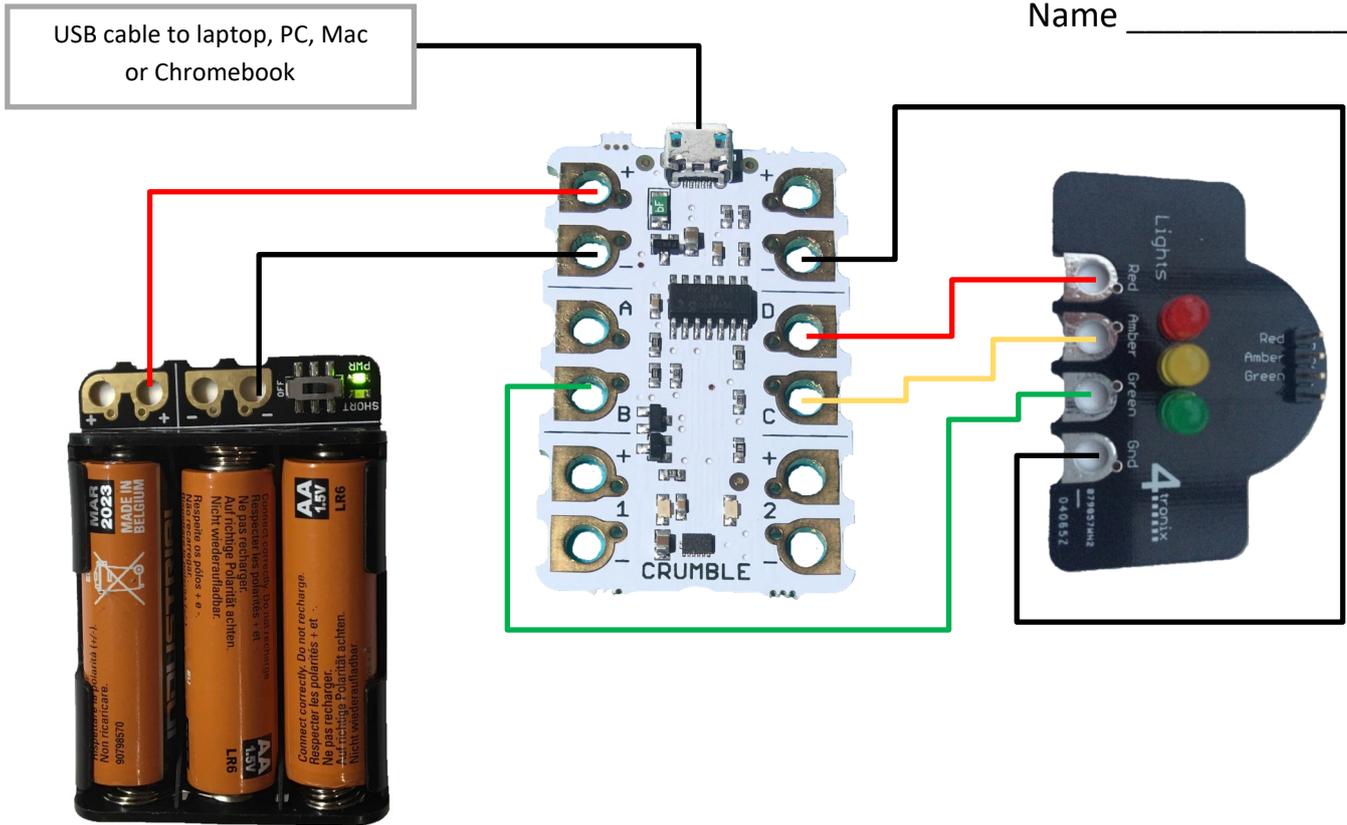
Now mark your work using the Traffic light USE mark sheet



Traffic Lights Module P1

Sequence & Repetition

Name _____



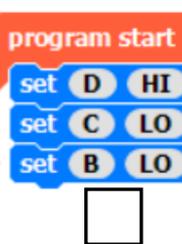
Wiring Checklist

Are any crocodile clips touching each other? Stop them touching each other!

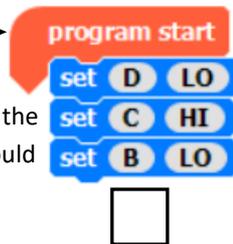
Is the battery pack turned on? If the answer is no turn it on.

Lights Checklist

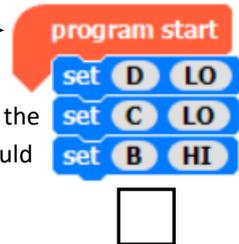
Create this first
Start the program
the red light
should light up



Change the
program to this the
amber light should
light up



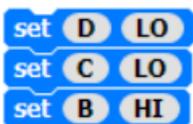
Change the
program to this the
green light should
light up



Now load the program trafficlites1. Run the program but don't change it.

USE Questions (work in pairs to answer these questions on the sheet)

- 1, What letter A, B, C or D is the red light plugged into?
- 2, What does LO do to a light?
- 3, How many seconds does the red light stay on for on its own?
- 5, What code block makes the light sequence repeat as long as the battery is turned on?
- 5, Describe in your own words what this sequence of code does to the lights?



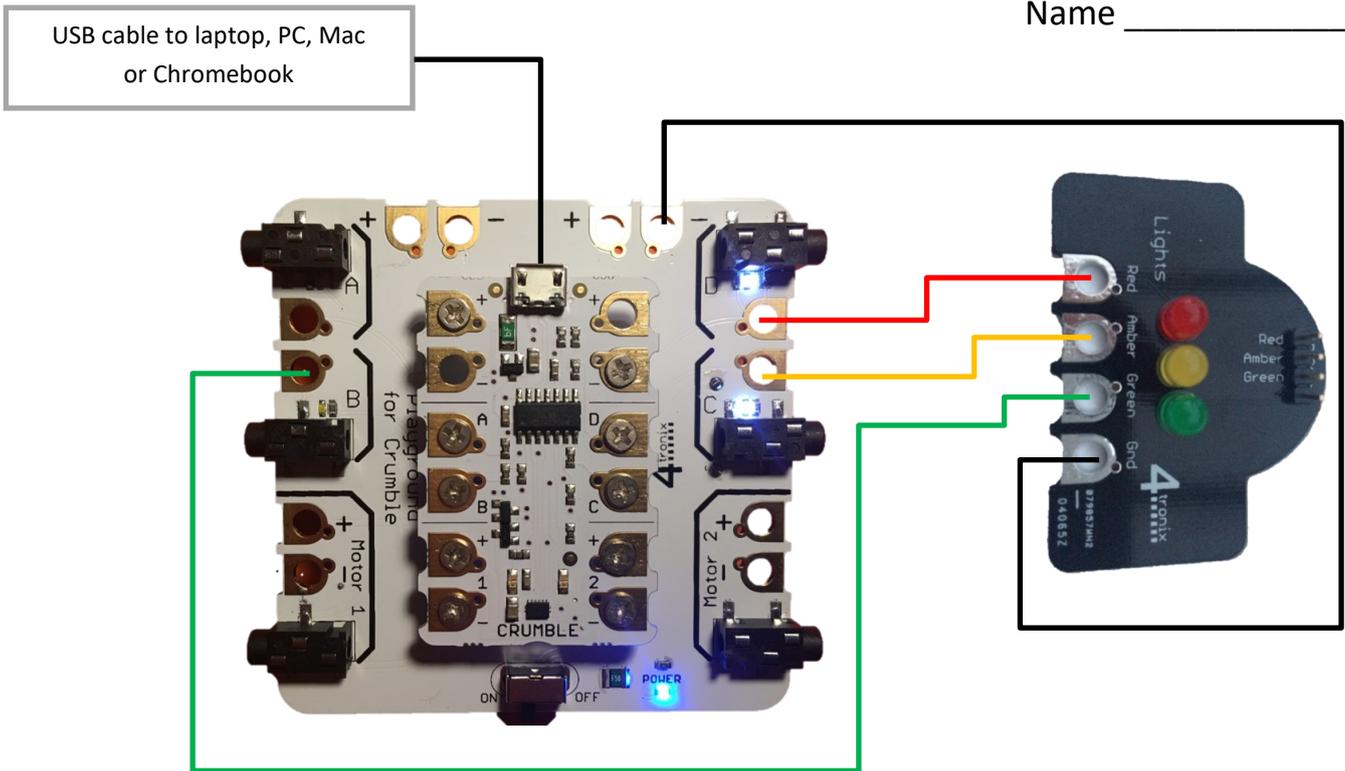
Now mark your work using the Traffic light USE mark sheet



Traffic Lights Module P1

Sequence & Repetition

Name _____



Wiring Checklist

- Are any crocodile clips touching each other? Stop them touching each other!
- Is the battery pack turned on? If the answer is no turn it on.

Lights Checklist

Create this first
Start the program
the red light
should light up

```

program start
set D HI
set C LO
set B LO
    
```

Change the
program to this the
amber light should
light up

```

program start
set D LO
set C HI
set B LO
    
```

Change the
program to this the
green light should
light up

```

program start
set D LO
set C LO
set B HI
    
```

Now load the program trafficlights1. Run the program but don't change it.

USE Questions (work in pairs to answer these questions on the sheet)

- 1, What letter A, B, C or D is the red light plugged into?
- 2, What does LO do to a light?
- 3, How many seconds does the red light stay on for on its own?
- 5, What code block makes the light sequence repeat as long as the battery is turned on?
- 5, Describe in your own words what this sequence of code does to the lights?

```

set D LO
set C LO
set B HI
    
```

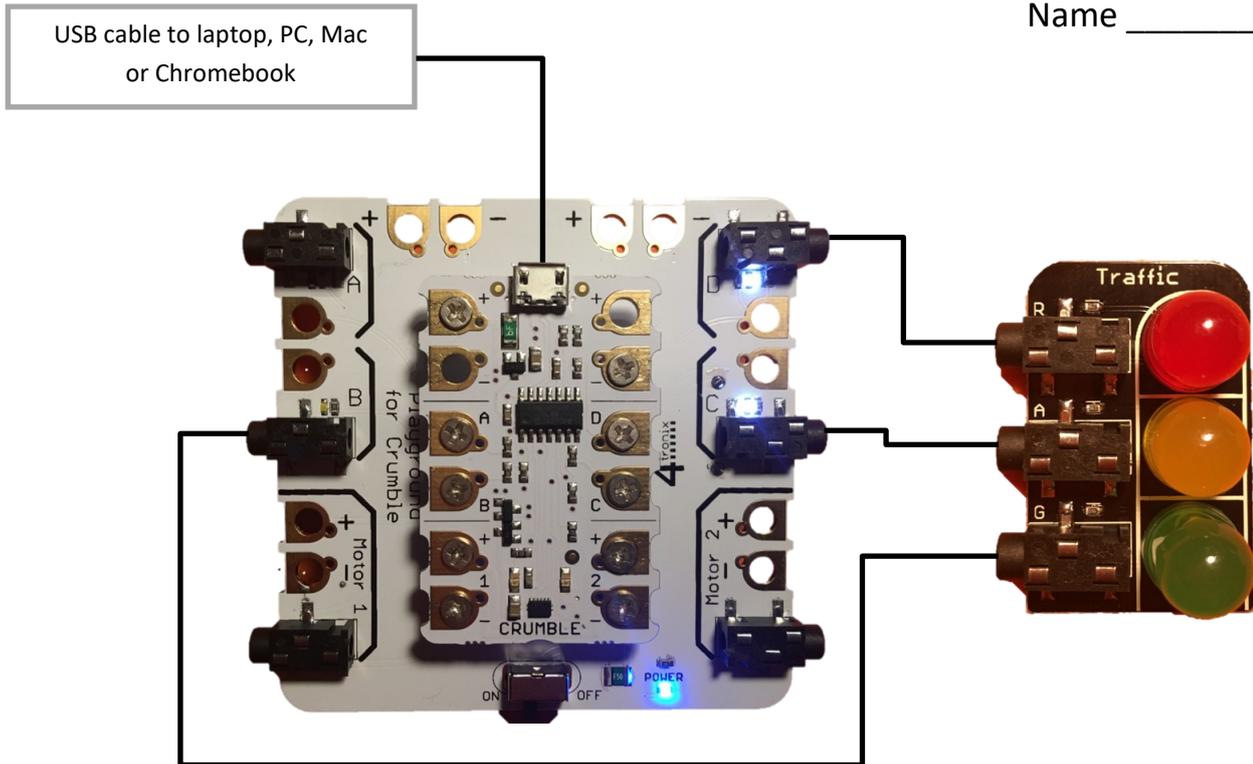
Now mark your work using the Traffic light USE mark sheet



Traffic Lights Module P1

Sequence & Repetition

Name _____



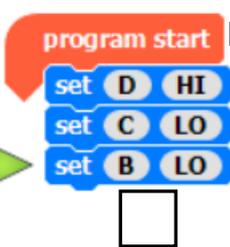
Wiring Checklist

Are any crocodile clips touching each other? Stop them touching each other!

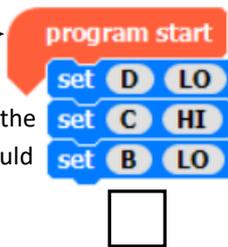
Is the battery pack turned on? If the answer is no turn it on.

Lights Checklist

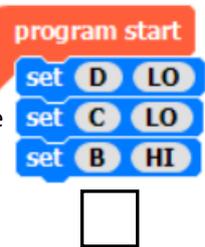
Create this first
Start the program
the red light
should light up



Change the
program to this the
amber light should
light up



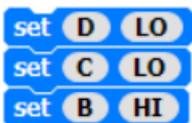
Change the
program to this the
green light should
light up



Now load the program trafficlites1. Run the program but don't change it.

USE Questions (work in pairs to answer these questions on the sheet)

- 1, What letter A, B, C or D is the red light plugged into?
- 2, What does LO do to a light?
- 3, How many seconds does the red light stay on for on its own?
- 5, What code block makes the light sequence repeat as long as the battery is turned on?
- 5, Describe in your own words what this sequence of code does to the lights?



Now mark your work using the Traffic light USE mark sheet



Traffic Lights Module P2

Modify

Run and change the code to solve the questions below

- 1, At busy times traffic managers only want the red light to stay on for 7 seconds on its own.
What did you change?
- 2, At night traffic managers want the green light to stay on for 20 seconds. What did you change?
- 3, On your Crumble the D connection is broken. You have not used the A connection.
What will you have to do to the wiring and to the code to make the red light work again?
- 4, Traffic managers would like the traffic lights to only run six times in the morning.
What did you change?
- 5, Traffic mangers would like the traffic lights to operate on 10 seconds green 10 times followed by 5 seconds green for 10 times. What did you change?

Now mark your work using the Traffic light MODIFY mark sheet

Create

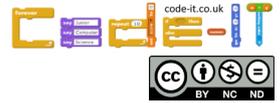
Choose two or more of these projects to create

- 1, Create a fast blinking red light to warn of danger (you must use a loop).
- 2, Create a three colour disco effect with fast flashing lights (you must use a loop or loops).
- 3, Create a single light that blinks slowly to start with and blinks faster and faster (you must use a loop or loops).
- 4, Program all three lights to flash at random times (you must use a loop or loops).
- 5, Program your own light creation that uses these led lights and loops. Plan your project below.

Task Level (What will your program do?)

Design Level (What objects will you use?) What will happen in your program step by step (algorithm)?

CRUMBLE TRAFFIC LIGHTS USE MARKSHEET



USE Questions (work in pairs to answer these questions on the sheet)

- 1, What letter A, B, C or D is the red light plugged into? **D for 1 mark**
- 2, What does LO do to a light? **Switch light off for 1 mark**
- 2, How many seconds does the red light stay on for **on its own?**
10 seconds for 1 mark
- 3, What code block makes the light sequence repeat as long as the battery is turned on?

Do forever for 1 mark

- 4, Describe in your own words what this sequence of code does to the lights?



D turns red light off

C turns amber light off

B turns green light on for 3 marks

Total 7 marks

CRUMBLE TRAFFIC LIGHTS MODIFY MARKSHEET

Modify

- 1, At busy times traffic managers only want the red light to stay on for 7 seconds on its own. What did you change?
Change the top wait 10 seconds to wait 7 seconds for 1 mark
- 2, At night traffic managers want the green light to stay on for 20 seconds. What did you change?
Change the bottom wait 10 seconds to wait 20 seconds for 1 mark
- 3, On your Crumble the D connection is broken. You have not used the A connection. What will you have to do to the wiring and to the code to make the red light work again?
Move the red wire from D to A on the Crumble for 1 mark
Change all the set D blocks to set A blocks for 1 mark
- 4, Traffic managers would like the traffic lights to only run six times in the morning. What did you change?
Replace do forever loop with do 6 times loop for 1 mark
- 5, Traffic managers would like the traffic lights to operate on 10 seconds green 10 times followed by 5 seconds green for 10 times. What did you change?

1 mark for top do 10 times loop, 1 mark for bottom do 10 times loop

1 mark for wait 10 seconds in top loop (see green rectangle)

1 mark for wait 5 seconds in bottom loop Total out of 8

