ELECTRICAL GROUP TRAINING

Induction Hand Skills Manual ADVANCED

REMEMBER
Quality & Pride
=
Good Workmanship

Apprentice Name: _____

Date: _____/_____/202__

Project 1

Step 1

Collect all mounting blocks from the shelves & return to your workspace.

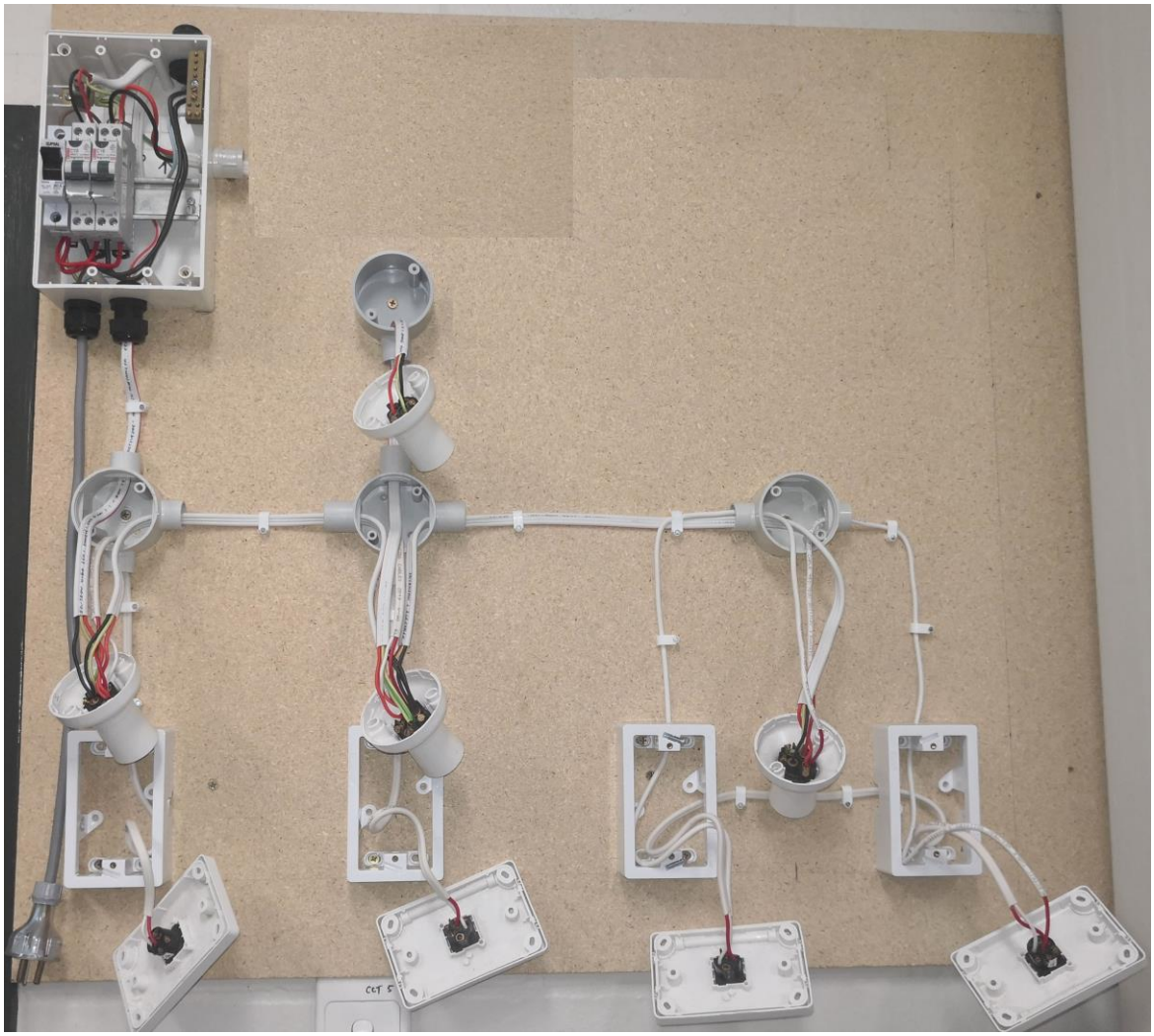
Step 2

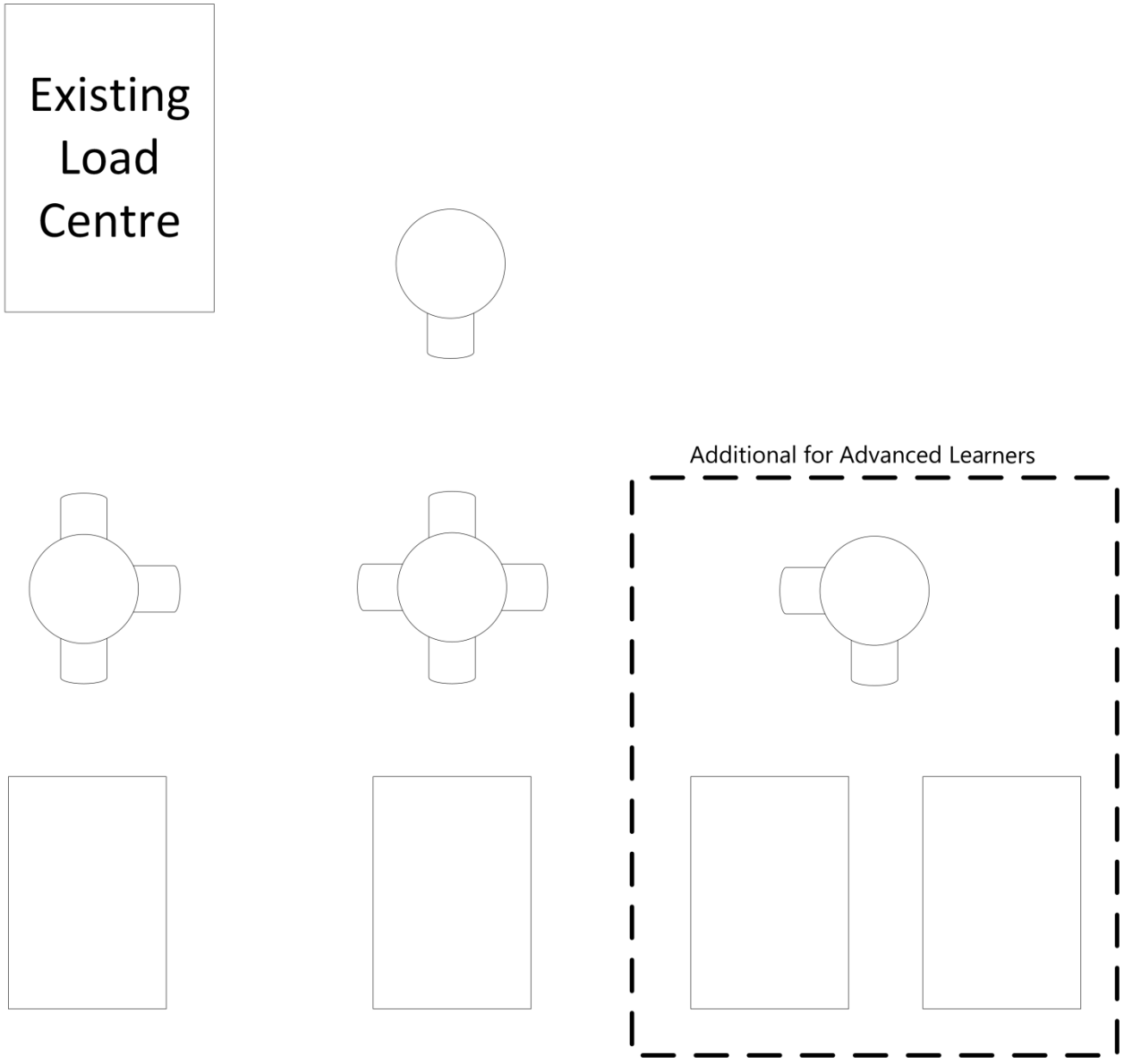
Fix all mounting brackets onto your board, as per diagram over page. Your Trainer will inform you if you are to include the advanced section as indicated.

Ensure to use the correct screws as demonstrated by your trainer on each mounting block.
Ensure all mounting blocks are evenly spaced and level.
(Refer to example project board).

Step 3

Have your Instructor check your work and move onto the next project.




Existing Load Centre
Additional for Advanced Learners

Project 2

Step 1

Gather the following materials:

- A Length of 1.5mm Single active
- 1 batten holder
- 2 single switches

Step 2

Disconnect your batten holder and lighting socket separating all the actives (you can leave the Neutral and Earths twisted together) & Remove the twin actives from the circuit.

Step 3

Using one of the twin active cable's wires in your strappers between your 2 light switches. Run in 1 single SDI cable from the first switch to your batten holder & from the second switch to the lighting socket.

Step 4

Clip your cables into place using the right sized clips ensuring the cables stay neat and straight.

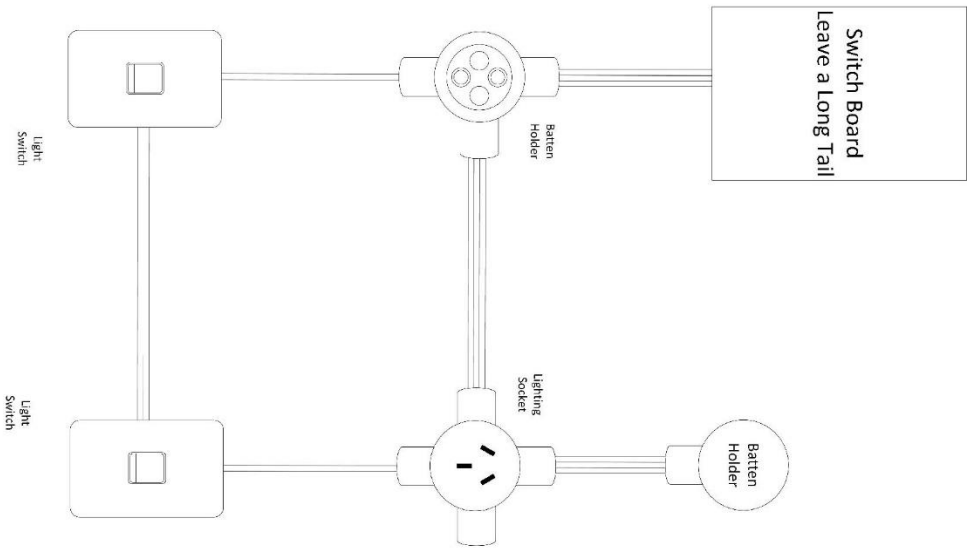
Step 5

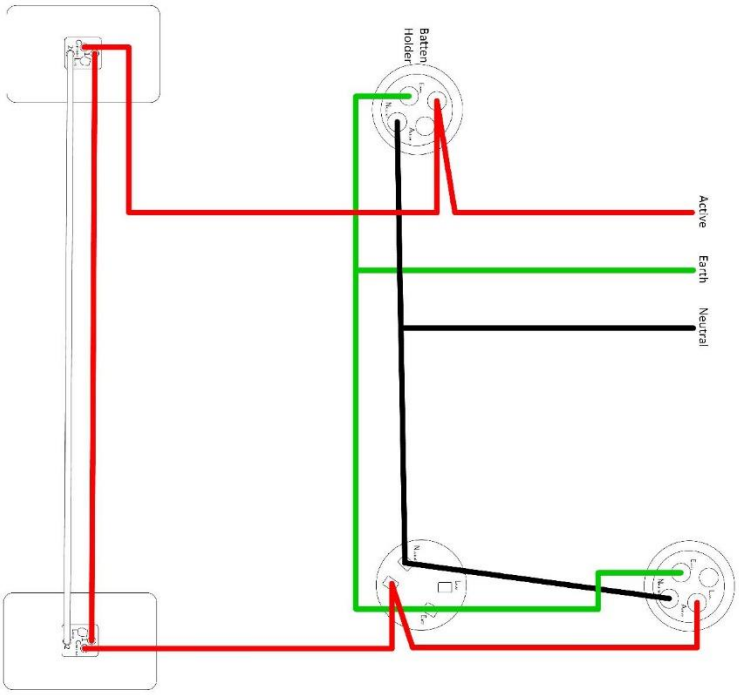
Terminate your batten holder, lighting socket and switches into one 2-way circuit. Ensure you strip and twist your cables neatly, have no insulation crimped and do not have copper protruding the terminals.
(Refer to diagram over page).

Step 6

Have your Instructor check your work and pack down your workstation.

NOTE: Have your instructor check your work at each step.


Switch Board
Leave a Long Tail
Batten Holder
Light Switch
Lighting Socket
Batten Holder
Light Switch


Batten Holder
Active
Earth
Neutral

Project 3

Using the mounting brackets in the indicated section on Project 1.

Step 1

Gather the following materials:

- A Length of 1.5mm TPS 2 core & E
- A Length of 1.5mm Single active
- A Length of 1.5mm TPS twin active
- 1 batten holder
- 2 single switch's

Step 2

Using your twin active cable wire in your strappers between your 2 light switches.
Run in your single SDI cable from each switch to your batten holder & 1.5mm TPS 2 core & E from the existing lighting socket to your new batten holder.

Step 3

Clip your cables into place using the right sized clips ensuring the cables stay neat and straight.

Step 4

Terminate your batten holder and switch's. Ensure you strip and twist your cables neatly, have no insulation crimped and do not have copper protruding the terminals.
(Refer to diagram over page or example board).

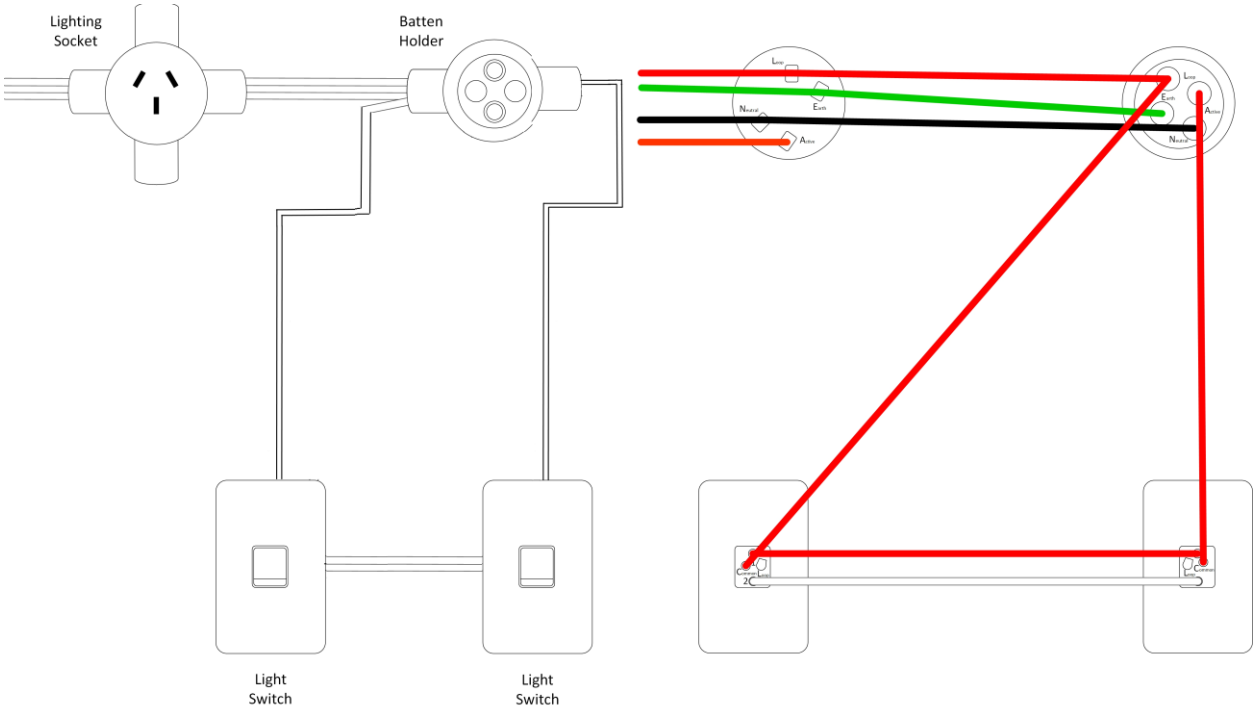
Step 5

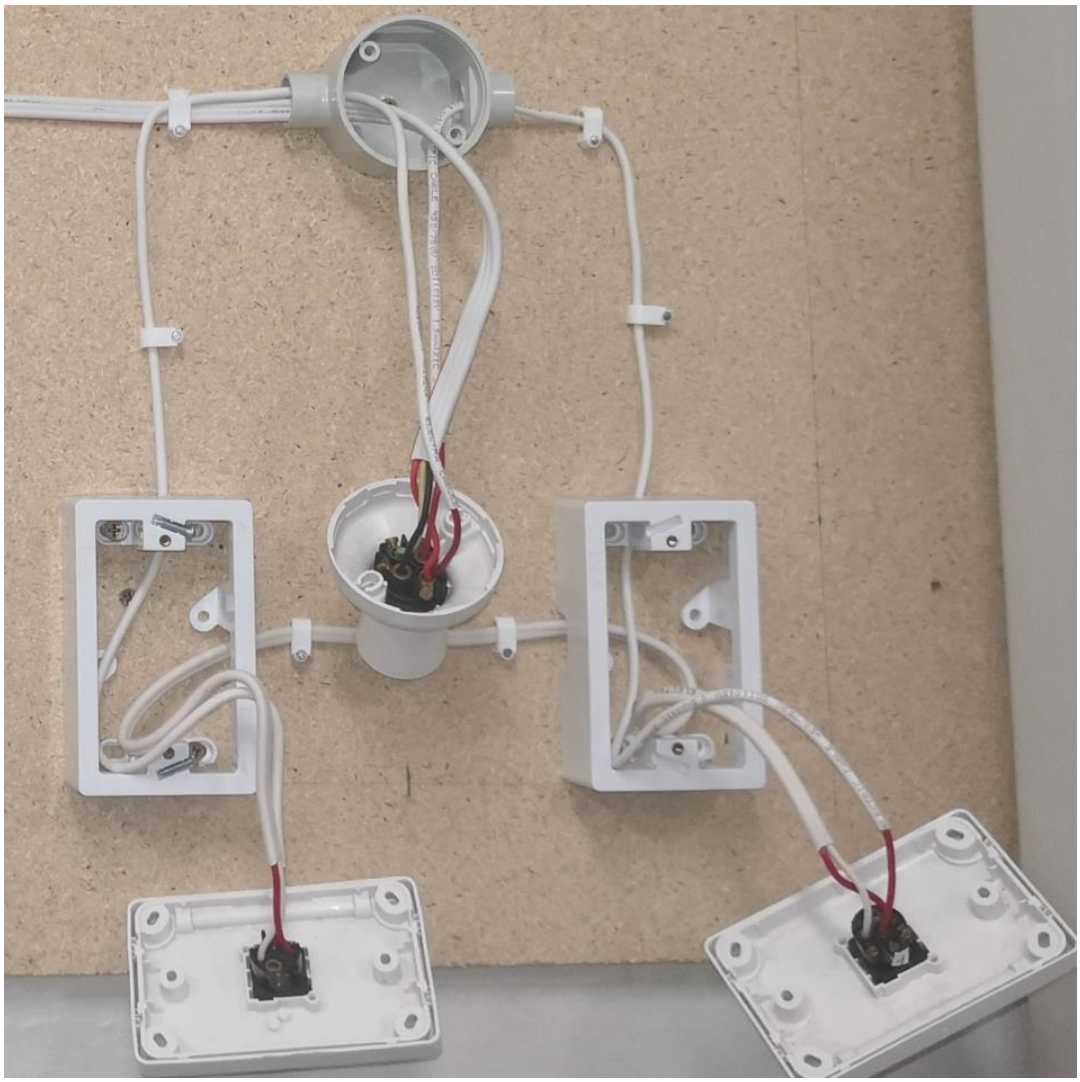
Take apart your Lighting socket from Project 2. Re-terminate this time incorporating the feed cable for the two-way circuit you have just completed.

Step 6

Have your Instructor check your work and pack down your work station.

NOTE: Have your instructor check your work at each step.


Lighting
Socket
Batten
Holder
Light
Switch
Light
Switch

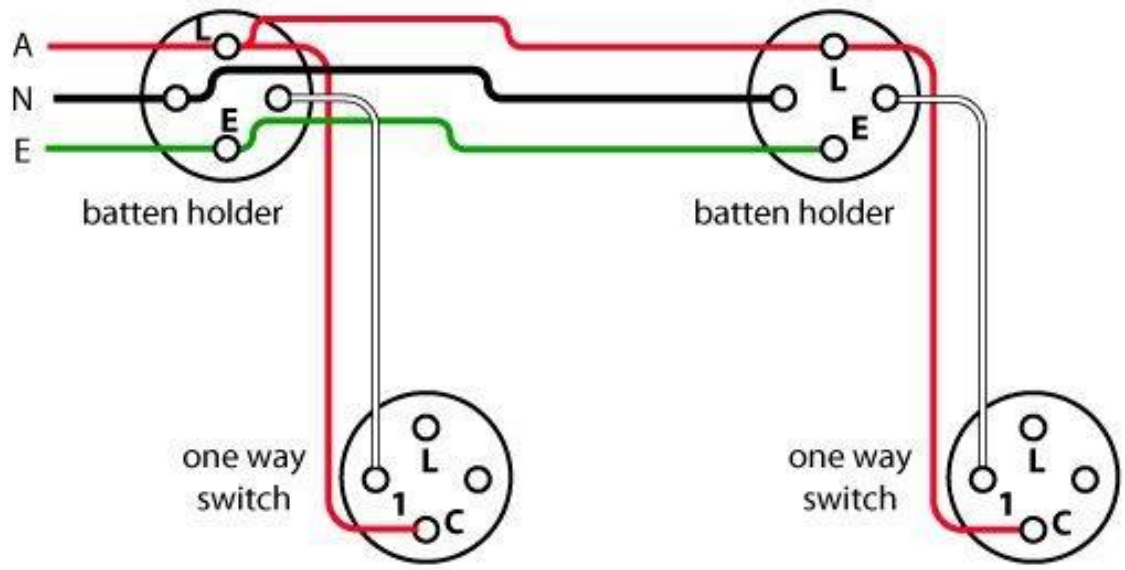


Lighting circuits

Loop at the light

The main method of wiring lights is to use the 'loop at the light' method. Batten and rose light mountings provide additional blank terminals used to join (loop) wires. In most lighting installations 3 core thermoplastic sheath (TPS) cable is used to supply power directly to the light mounting. The active is directed from a loop terminal to the switch via one conductor. Then the switched circuit is directed back to the lamp in a second conductor. Either two single core, or one double core TPS cable is used for this function.

From the light mounting, power can then be looped to other lights in the same circuit or to other separately switched lights. The following diagram shows an example of two lights that share the same supply cable but each have their own switch. Both have been wired with the loop at the light method.



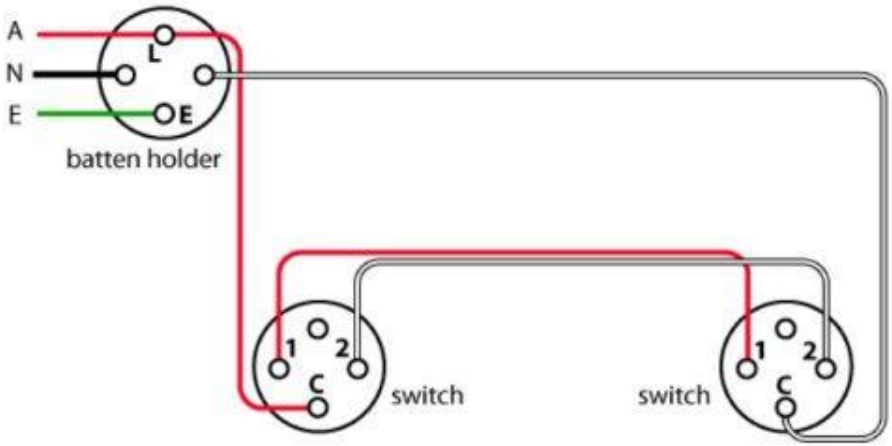
Looping at the light

Lighting circuits

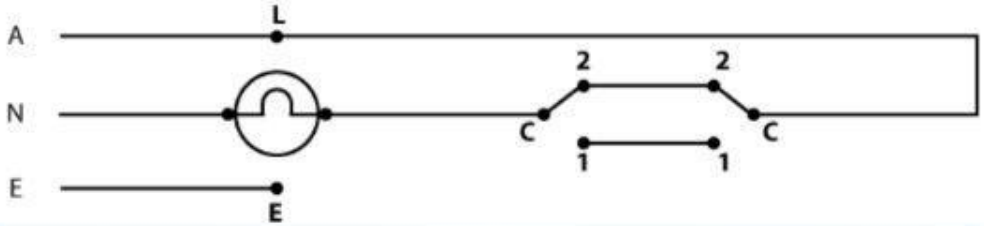
Two way

A two way lighting circuit enables one circuit to be turned on or off by either of two switches. The circuit may have one or more lights in it. This type of circuit uses two of the two way switches.

A wiring diagram and a circuit diagram are shown below.



Two way lighting wiring diagram

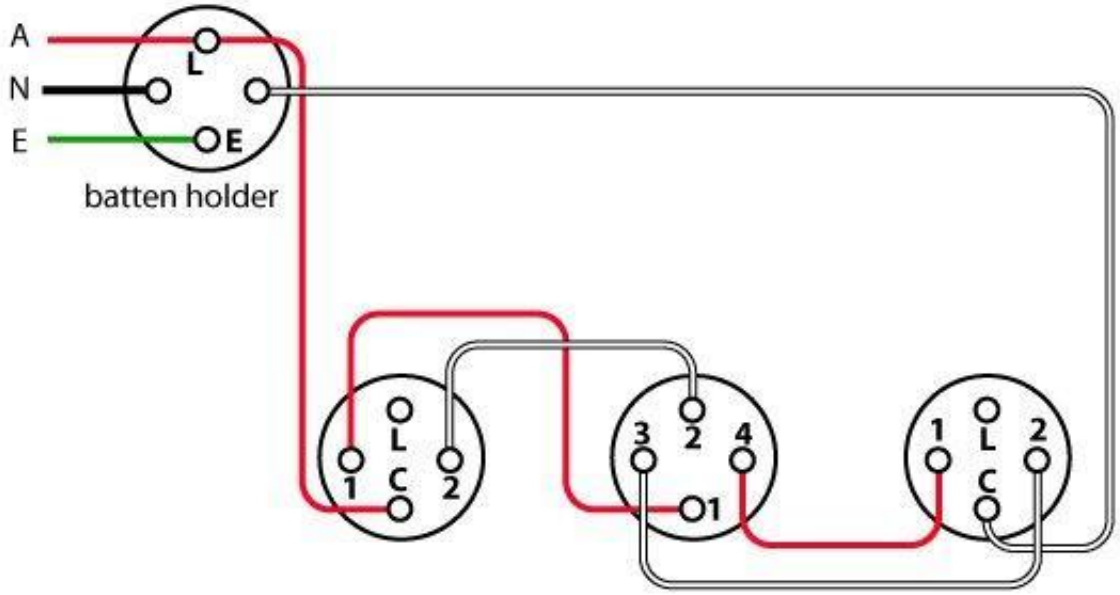


Lighting circuits

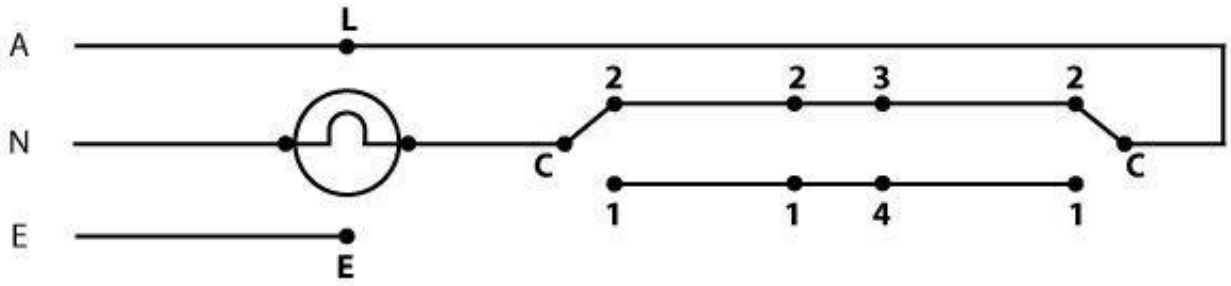
Intermediate

An intermediate lighting circuit is used when one circuit is to be turned on or off by three or more switches. The single circuit may have one or more lights in it. This type of circuit uses two of the two way switches and one or more of the intermediate switches.

A wiring and circuit diagram is shown below.



Intermediate lighting wiring diagram



Intermediate lighting circuit diagram

Apprentice Name: _____

I acknowledge that the following procedures were explained and demonstrated during Electrical Group Training's (EGT) Induction.
I acknowledge that it will be my responsibility to follow these procedures in the workplace.

Ear Plugs

- ☐ I was shown a video demonstrating how to insert and remove ear plugs
- ☐ Field Officer explained the use and when to use ear plugs
- ☐ I participated in a practical in inserting and removing ear plugs
- ☐ Ear plugs were issued with the Uniform provided by EGT

Gloves

- ☐ Field Officer has explained the importance of gloves at all times in the workplace
- ☐ Gloves were worn during workshop activities
- ☐ Gloves were issued with the Uniform provided by EGT

Safety Glasses

- ☐ Field Officer explained the importance of Safety Glasses in the workplace
- ☐ Safety Glasses were worn during workshop activities
- ☐ Safety Glasses were issued with the Uniform provided by EGT

Uniform

- ☐ It was explained that the EGT Uniform Policy is Long Pant, Long Sleeve Shirt, Lace up Steel Cap Boots
- ☐ Uniform was worn during workshop activities
- ☐ EGT's Apprentice Uniform & PPE Policy is in the Induction Manual and Uniform & PPE was provided during the EGT Induction

Apprentice Signature: _____ Date:___/___/20___

Apprentice Name: _____

I acknowledge that I will purchase a circuit breaker lock out tool from EGT during the Induction.

I have been instructed in the use of the circuit breaker lock out tool and understand that it is to be used as part of the process for isolating circuit breakers. I acknowledge that it will be my responsibility to purchase a padlock for the circuit breaker lock out tool.

The isolation process is described below and must only be carried out once a risk assessment has been completed.

- Notify the customer of the pending isolation.
- Ensure that the testing equipment is working correctly and is safe to use. Check test leads and settings, and test on a known live source.
- Identify the correct circuit to be isolated and any other possible sources of energy and hazards.
- Isolate the circuit **with the tradesman**.
- If applicable the tradesman may choose to remove the load tails from the circuit breaker and make them safe.
- Both the apprentice & tradesman MUST attach their own personal danger tag to the isolation point using the circuit breaker lock out tool.
- Secure the circuit breaker lock out tool and padlock.
- Test for correct isolation, test to a reliable earth or neutral. Don't assume it is **"Dead" Prove it.**
- Retest the testing equipment after the isolation process is complete to ensure that it is still functioning.
- Proceed with caution and continual to use your volt stick before cutting cables, or working on exposed terminals or conductors.
- Treat all isolated cable and equipment as if they are live and potentially dangerous.

Remember that there is a no live working policy for all EGT Apprentices and that the new Code of Practice Safe Low Voltage work by Electricians does not allow live work on domestic electrical installations other than testing. This may require the main switch to be turned off before work is commenced.

UNDER NO CIRCUMSTANCES ARE APPRENTICES TO WORK ON – OR BE EXPOSED TO 'LIVE' CIRCUITS.

I understand that I am obliged to use the circuit breaker lock out tool and padlock, and replace it if lost or damaged.

Apprentice Signature: _____ Date:___/___/20___

Apprentice Name: _____

TASK: **Place an X in the box if the cable is safe to work on.**

	Red	White	Blue
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Field Officer Signature: _____ **Date:___/___/20___**