

# AQA Physics GCSE

## 4.2.2 - Series and Parallel Circuits

### Flashcards

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What are the two ways that a component can be connected in a circuit?



What are the two ways that a component can be connected in a circuit?

1. Series (same loop)
2. Parallel (adjacent loop)



How does the potential difference across two components vary when connected in series and parallel?



How does the potential difference across two components vary when connected in series and parallel?

- Series: Total P.D is shared between each component
- Parallel: P.D across each component is the same



If two resistors are connected in parallel,  
what can be said about their combined  
total resistance?



If two resistors are connected in parallel, what can be said about their combined total resistance?

Their total resistance is **less** than the smallest of the two individual resistances.



If two resistors are connected in series,  
what can be said about their total  
resistance?





If two resistors are connected in series, what can be said about their total resistance?

Their total combined resistance is equal to the **sum** of the two individual resistances.



Describe the current in a series circuit.



Describe the current in a series circuit.

In a series circuit, the current is the same at all positions since the charge only has one path to flow through.



Describe the current in a parallel circuit.



Describe the current in a parallel circuit.

In a parallel circuit, the current is shared between the different branches. When the charge reaches a junction it splits.



How should you connect an ammeter in a circuit to measure current?



How should you connect an ammeter in a circuit to measure current?

Ammeters should be connected in series with the component that they are measuring current through.



How should you connect a voltmeter in a circuit to measure potential difference?





How should you connect a voltmeter in a circuit to measure potential difference?

Voltmeters should be connected in parallel to the component that they are measuring the potential difference of.



Why is it advantageous to connect lamps in parallel?



Why is it advantageous to connect lamps in parallel?

If one lamp blows, the rest will be unaffected and can still receive current (i.e. the circuit is still complete).

