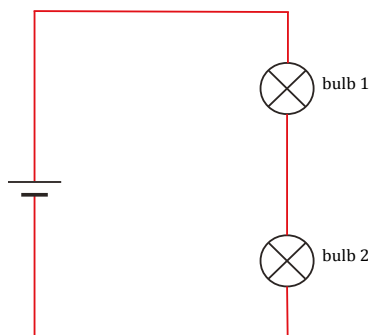


Two bulbs

The two bulbs in this circuit are identical.



How confident are you that your answers to this question are correct?

Tick ONE box (✓)

Very confident Fairly confident Not confident Just guessing

(a) How bright will the bulbs be? Tick ONE box (✓)

Both bulbs are lit. Bulb 1 is brighter than bulb 2.

Both bulbs are lit. Bulb 2 is brighter than bulb 1.

Both bulbs are lit, with the same brightness.

Bulb 1 is lit. Bulb 2 is off.

Bulb 2 is lit. Bulb 1 is off.

(b) How would you explain this? Tick ONE box (✓)

The first bulb uses up all of the electric current, so there is none left for the other one.

The first bulb uses up some of the electric current, so there is less left for the other one.

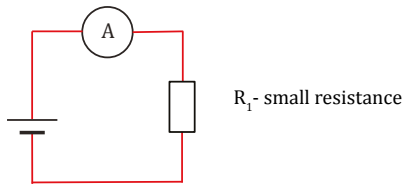
Bulb 2 is closer to the battery, so it gets more electric current.

The electric current is shared equally between the two bulbs.

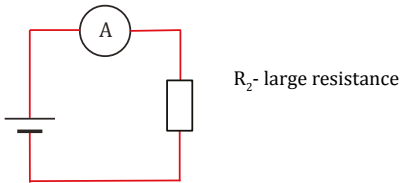
The electric current is the same everywhere in the circuit.

Small and large resistance

The resistor in this circuit, R_1 , has a small resistance. There is a reading on the ammeter.



The resistor is replaced by R_2 , which has a large resistance.



How confident are you that your answers to this question are correct?

Tick ONE box (✓)

- Very confident Fairly confident Not confident Just guessing
-

(a) What happens to the reading on the ammeter? Tick ONE box (✓)

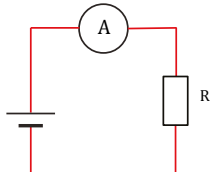
- It gets bigger.
- It stays the same.
- It gets less, but not zero.
- It drops to zero.
- Bulb 2 is lit. Bulb 1 is off.

(b) How would you explain this? Tick ONE box (✓)

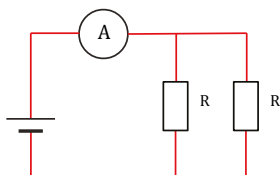
- The battery is not strong enough to push any current through a larger resistor.
- The battery cannot push as big a current through a larger resistor.
- A large resistance needs more current than a small resistance.
- It is the same battery, so it supplies the same current.
- The electric current is the same everywhere in the circuit.

Resistors in parallel

Sam makes this circuit. There is a reading on the ammeter



He then adds a second identical resistor, like this.



How confident are you that your answers to this question are correct?

Tick ONE box (✓)

Very confident Fairly confident Not confident Just guessing

(a) What happens to the reading on the ammeter? Tick ONE box (✓)

- It gets bigger.
 It stays the same.
 It gets smaller

(b) How would you explain this? Tick ONE box (✓) below -one from each group-

- The total resistance is now bigger.
 The total resistance stays the same.
 The total resistance is now smaller.
 The battery cannot push as big a current round the circuit.
 The second resistor provides an extra path for current to flow.
 It is the same battery, so it always supplies the same current.

Choose the best word

In a circuit, a bulb is connected to a battery. The bulb is lit. Here are several sentences about this circuit. Each has a word missing.

For each sentence, choose the best word to fill the gap. Tick one box (✓) to show the word you have chosen.

(a) When the bulb lights, there is ___ going through it.

- electricity
 an electric current
 energy
 voltage

(b) While the circuit is complete, ___ flows all of the way around it.

- electric charge
 energy
 electricity
 voltage

How confident are you that your answers to this question are correct?

Tick ONE box (✓)

- Very confident Fairly confident Not confident Just guessing

(c) This flow is caused by the ___ across the terminals of the battery.

- electric charge
 energy
 electricity
 voltage

(d) While the circuit is switched on, ___ is constantly being transferred by the battery and the bulb.

- electric charge
 energy
 electricity
 voltage

(e) The amount of energy transferred per second from the bulb to surroundings is its ___.

- electric charge
 energy
 power output
 voltage

IOP Institute of Physics

Think again questions

This document is a part of Supporting Physics Teaching, from the Ee topic, episode number 01, and the TA thread.

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The location



<http://supportingphysics teaching.net/>