

**EDEXCEL**



# 10.2: ELECTRICITY AND CIRCUITS

**Detecting circuits**  
Circuits designed to detect changes in their environment

**Heating systems**  
Resistance decreases as temperatures increases

**Thermistors**

**LDRS**  
Resistance decreases as light intensity increases

Used in street lamps

**Circuits**

**Voltmeter**

Measures the P.D. over a circuit component

The total resistance is lower than the lowest resistance

$$1/R = 1/R_1 + 1/R_2$$

**Parallel resistors**

Connected in parallel

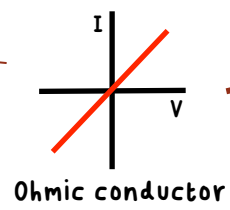
**Parallel circuits**

Components in different loops

Current split between loops

Voltage same in each loop

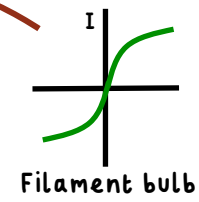
**I-V Characteristics**



Current directly proportional to P.D.

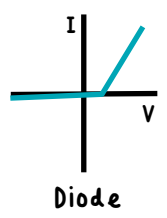
Resistance stays constant with current

Only if temperature constant



As temperature increases, ions gain K.E. and vibrate more

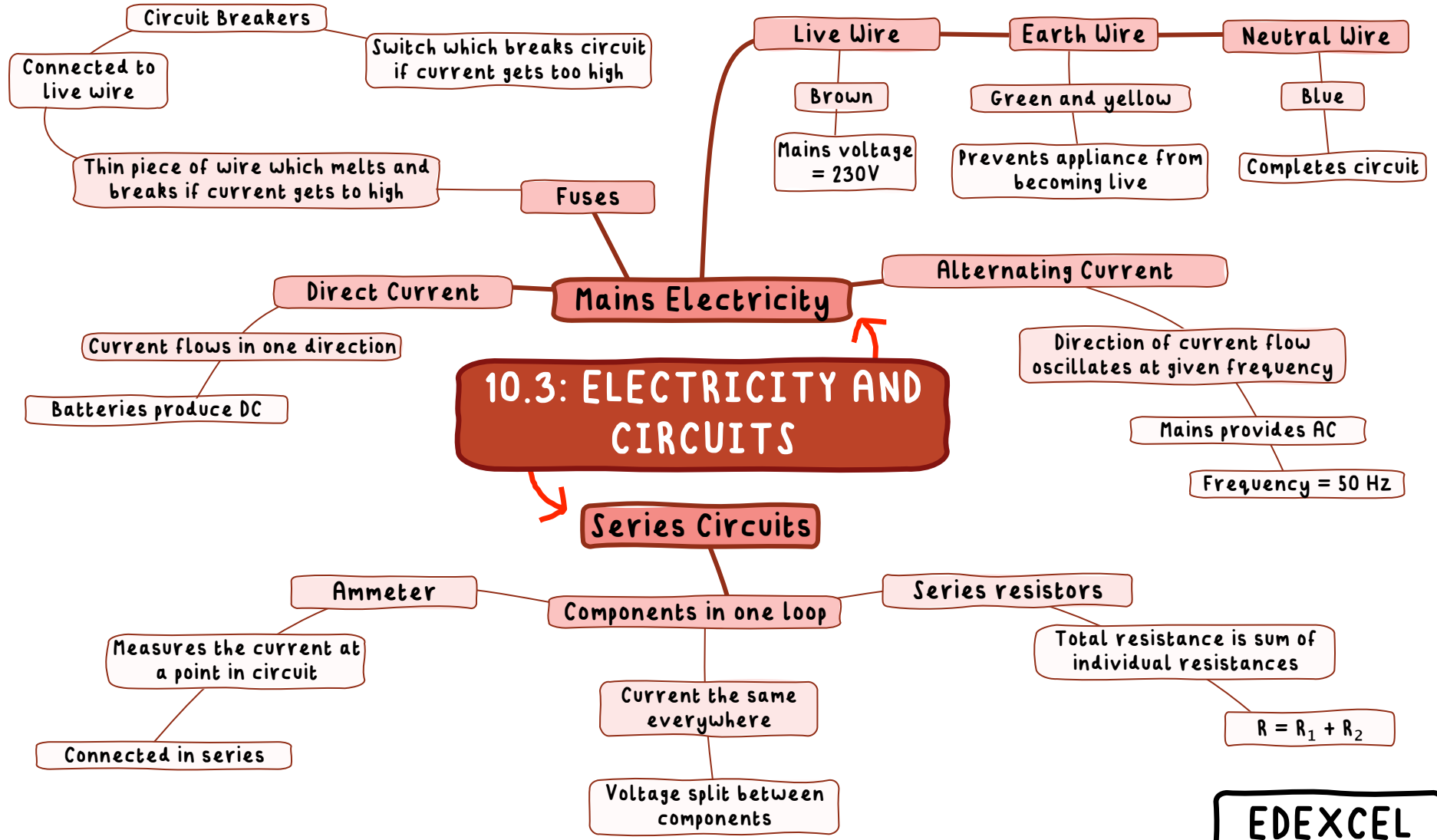
Harder for electrons to pass



Current can only flow in one direction

**EDEXCEL**

# 10.3: ELECTRICITY AND CIRCUITS



**EDEXCEL**

