

Physics Topic P5: Electricity in the home.

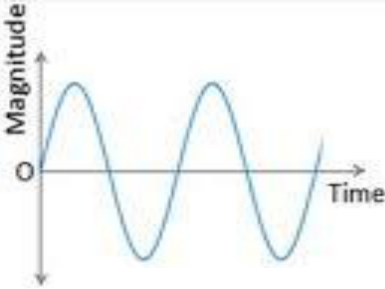
Mains electricity keywords	
1. Earth wire (0V)	Prevents danger from short circuits
2. Fuse	Melts if current gets too high
3. Neutral wire (0V)	Carries the current away from plug
4. Live wire (230v)	Carries current to plug
5. Cable grip	Prevents a loose wire if cable is pulled
6. Double insulated cable	Prevents electric shock
7. Alternating current (AC)	Current which changes direction 50 times a second (50 Hz). Found in the mains.
8. Direct current (DC)	Current that only travel in one direction. Found in batteries.

Period and frequency

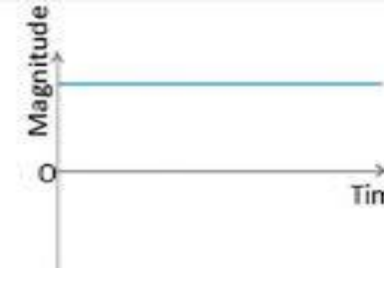
$$T = \frac{1}{f}$$

T	Period (s)
f	Frequency (Hz)

Types of current



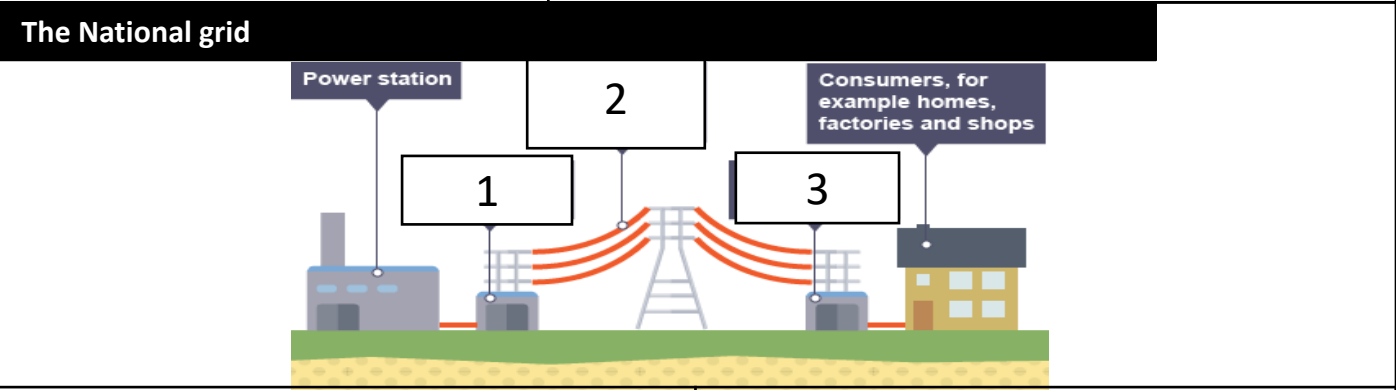
AC



DC

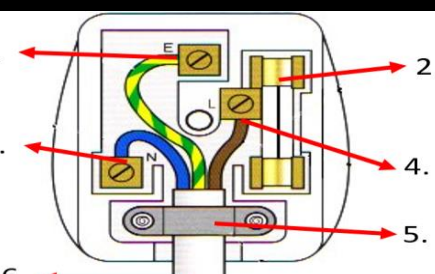
Electrical power

power = current ² x resistance	$P = I^2R$
power = current x potential difference	$P = IV$
energy transferred = charge flow x potential difference	$E = QV$



3 pin plug

1.	2.	1	Earth terminal
		2	Fuse
3.	4.	3	Neutral terminal
		4	Live terminal
	5.	5	Cable grip
6.		6	Insulated cable



1. Step up transformer	Increase the voltage of the AC. Decrease the current
2. High voltage transmission cables	High voltage reduces energy loss
3. Step down transformer	Decreases the voltage of the AC