NORTH-EX PUBLIC SCHOOL
(Senior Secondary, Affiliated To CBSE)
School Block, Jain Nagar, Sector-38, Rohini, Delhi – 81
Subject – Science (Physics)
Class - X
Notes with Worksheet 3

*Note- Before attempting the worksheet you must check the links given below which will help you in doing the same correctly.

You can download the worksheets or if you do not have facility to get printout then you can ask your ward to copy the worksheet in a simple notebook and must do exercise and question answers in the notebook.
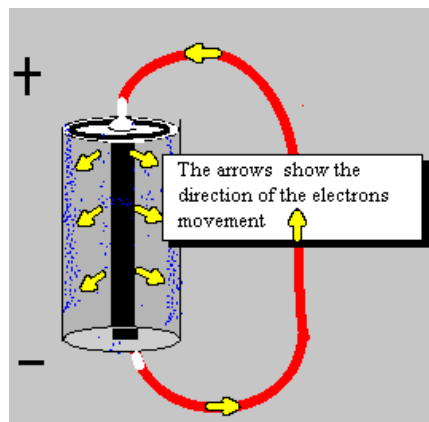
Link- https://youtu.be/OonLRoptTEM

What is electricity?

So electricity is…

movement of charge round a circuit.

We call this electric current.

The arrows show the direction of the electrons movement

Charge, Current & Time

Electric current is given the symbol

I

Electric current is the movement of negative charges (electrons) in a circuit

Charge, Current & Time

Current is the amount of charge flowing per second and is given the unit

Amps (A)

Charge, Current & Time

so a current of 1 A is 1 C of charge transferred in 1 s.

$$I = \frac{Q}{t}$$

Charge transferred in coulombs (C)

Current in Amps (A)

time in seconds (s)

Charge, Current & Time

This can be rearranged as

$$Q = It$$

or

$$t = \frac{Q}{I}$$

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1. Define the unit of electric current.
2. Name the instrument used for measuring electric current flowing in an electric circuit.
3. A current of 0.5 A is drawn by a filament of an electric bulb for 10 minutes. Find the amount of electric charge that flows through any point of the circuit.
4. An electron moves in a circular orbit of radius 10 cm with a constant speed of 4×10^6 m/s. Determine the electric current at a point on the orbit.
5. Show that one ampere is equivalent to a flow of 6.25×10^{18} elementary charges per second.
6. In the Bohr model of hydrogen atom, the electron revolves around the nucleus in a circular path of radius 5.1×10^{-11} m at a frequency of 6.8×10^{15} revolutions per second. Calculate the equivalent current.