

Subject-Chemistry

Activity -Static model of electron distribution in an atom in different orbits

Chapter – Structure of Atom

CLASS –IX

Duration-40 min

Nature of activity: Group

Learning outcome:

The students will be able to understand the electronic distribution of electrons in various orbits of an atom.

What we have to do?

To build a static model of electron distribution in different orbits of an atom.

What is required?

Wire, beads, card board and drawing pins.

What do we need to know?

The arrangement and distribution of electrons in different orbits was given by Bohr and Bury. The arrangement of electrons in different shells and sub-shells is known as the electronic configuration of a particular element

How will you proceed?

➤ Teacher's activity.

The teacher will arrange for 10 kits, each with wire, beads, card board and drawing pins and will explain how to arrange the beads to form different electronic configurations.

➤ Student's activity

1. Fix a drawing pin in the centre of a cardboard. This represents the nucleus of the atom of an element
2. Calculate the number of electrons in each orbit of the sodium atom.
3. Make a circular loop of wire with diameter of about 6 cm.
4. Insert two beads and close the ends.

5. This is the first orbit. Fix it on the cardboard so that drawing pin is in the centre of this loop.
6. Make another circular loop of diameter of about 10 cm. Insert 8 beads and close the ends. This is the second orbit.
7. Fix this on the cardboard in such a way that the drawing pin is in the centre of this loop also.
8. Make another loop of diameter, say 16 cm. Insert 1 bead and close the ends. This is third orbit.
9. Fix it on the cardboard so that the drawing pin is again at the centre of this loop.
10. By adding more beads, electronic configurations of Magnesium , Aluminium and argon can be made.



What have you learnt?

In an atom , the number electrons are always equal to number of _____
 The maximum number of electrons which can be accommodated in M shell of an atom is _____

What have you observed?

S.no	Atomic particles	Location in the atom
1.	Electrons	
2.	Protons	
3.	Neutrons	

What would you be interested to know about?

Q.1. What is the electric charge on a proton and an electron?

Q.2. The electrons in the atom are attracted to the protons in the nucleus by which type of force?