

Subject-Chemistry

Activity-Relative Atomic Mass and Mole Concept

Chapter- Atoms and Molecules

Class-IX

Duration: 40 Mins

Nature of the Activity: Group

Learning Outcome:

Students will be able to explore and understand the concept of Relative mass.

What we have to do?

To experimentally understand the concept of Relative Atomic Mass

What we require?

Red Lentil, Black Lentil, Red Gram, Green Gram, Digital balance and a Cup

What do we need to know?

Determining the mass of an individual atom is a difficult task therefore, Relative Atomic Masses are determined using the Law of Chemical Combination. We know that Relative Atomic Mass of an atom of an element is defined as its average mass of the atom compared to $1/12^{\text{th}}$ the mass of one carbon-12 atom.

How will you proceed?

➤ Teacher's Activity

Teacher will ask the students to recall the definition of Relative Atomic mass, divide the class into groups of four each and make necessary arrangements for the conduct of the activity.

➤ Student's Activity

1. Take the weighing cup from the Activity Kit and record its mass using the Digital balance.
2. Count 50 grains of Red Lentil, put it in the weighing cup and record its mass again.
3. Repeat the above step with each type of Lentil and record their masses.
4. Now use the mass of 50 smallest lentils and divide the mass of all other lentils by this number.
5. Compute the Relative masses compared to the smallest lentil

What have you observed?

Type of Lentil	Symbol	Mass of Empty Cup (g)	Mass of Cup and 50 Grains of each type of Lentil (g)	Mass of 50 Grains of each type of Lentil alone (g)	Relative Mass
Red Lentil	RL				
Black Lentil	BL				
Green Gram	GG				
Red Gram	RG				

What have you learnt?

The Relative Mass of the smallest lentil is:

The Relative Mass of other types of lentils will be:

What would you be interested to know about?

1. For the above activity, what will you observe and conclude if, we put on the Digital balance each type of lentil which would show the mass equal to its relative mass?
2. How was the mass of an atom of each element computed initially?
3. Why was the above element chosen to compute the Relative Atomic Mass?
4. How is the Relative Atomic mass calculated now?