

LESSON PLAN

Name of the teacher _____ Date _____

Name of the School _____ Duration of the period :2x40' Subject: Chemistry Topic of the lesson : quantitative aspect of substances
Sub-topic : Atomic mass and the mole concept . Grade : 8

Objectives : By the end of the lesson, the pupils will be able to:

- Reason qualitatively and proportionally the relationship between number of moles, mass and molar mass
- Calculate mass, molar mass and number of moles according to the relationship $n = \frac{m}{M}$

teaching /learning activities	Teaching - learning materials	Evaluation / Exercise
<p>PRK</p> <p>Atomic mass and relative atomic mass.</p> <ul style="list-style-type: none"> • The mole concept. • Avogadro's number. <p>INTRODUCTION(15 minutes)</p> <p>a. learner s will be asked the following questions as introduction</p> <ul style="list-style-type: none"> • how can we express the quantity of substances • what are the uses of symbols and formulas in determining moles of substances ? give examples. • what is the difference between mass of an atom and atomic mass ? <p>the teacher will give corrective feedacks after the students have peresented thier answers on the given questions.</p> <p>TEACHER PRESENTATION.(10 minutes)</p> <p>Teacher explains that the amount of substance is not equal to the mass of the substance, although these quantities are proportional.</p> <ul style="list-style-type: none"> • The relation between mole, mass and molar mass is given by the following formula: $n = \frac{m}{M}$ <p>n is the number of moles: SI unit is mole m is the give/unknown mass: SI unit is gram M= the molar mass</p> <ul style="list-style-type: none"> • The relation between mole, number of particles and Avogadro's number, is given by the formula: $n = \frac{\text{number of particles}}{N_A}$ <p>$N_A = 6,02 \times 10^{23}$ particles.</p> <p>The teacher will show some examples in explaining the concepts.</p>	<p>Balance, spoon, salt(NaCl), sulphur, distilled water, sugar, graduated cylinder , calculator Worksheet,</p>	<p>Home work</p> <p>1. oxygen molecules can exist as O₂ and O₃</p> <p>a. is the mass of one mole of each molecules the same? why?</p> <p>b. is the number of molecules in one mole of each of these molecules the same? Why?</p> <p>c. Is the number of atoms of oxygen in one mole of each molecules the same ? Why?</p> <p>2. giving an exercise from the text book</p>

ACTIVITIES (40 minutes)

1. put pupils in groups of 5 and distributing work sheets and TLMs through group leaders
2. Using worksheets assist pupils to determine moles, molar mass and mass of the given substances and to explain the relation ship between these quantities.
3. pupils will write reflections and it
4. the teacher will give corrective feedbacks on students reflection and correcting misconceptions

CONCLUSION (15 minutes)

The teacher will give chances for the students to ask questions

The teacher will summarize the important aspects of the lesson, reinforcing what needs to be remembered and give individual exercises as a home work

Students' work sheet

Activity 1
procedure

1. take a spoon of salt (NaCl), sulfur powder and sugar separately
2. measure the masses of each substance and record in the table provided below
3. determine the number moles and the number of particles of each substance.

Name of the substance	Molar mass	Measured mass
NaCl		
S (sulfur)		
Sugar(sucrose)		

show your steps for your calculations

Activity 2

1. take 50 ml of distilled water
 - b. calculate the number of moles the water
 - c. determine the number of molecules of water present in it.

Activity 3. suppose you drunk 500 gms water after your launch at your home yesterday, how many moles and molecules of water did you drink?

Reflection notes

TCTP Program