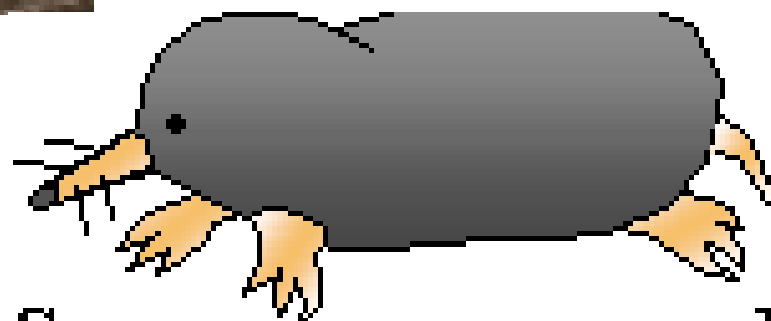


The mole and its simple conversions into different units of measurements. \div = Division, \times = Multiplication



Amount of Substance

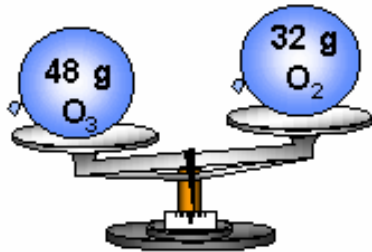
2 molecules
of ozone



3 molecules
of oxygen



same mass
different amounts of substance



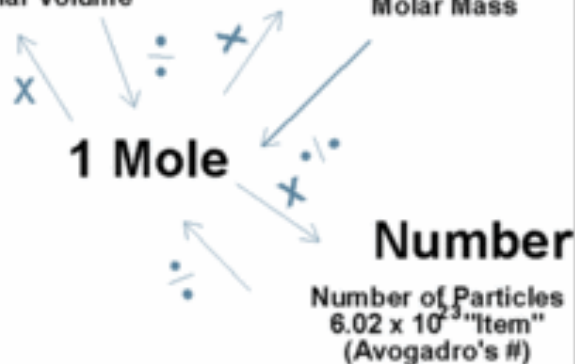
different mass
same amount of substance

Volume

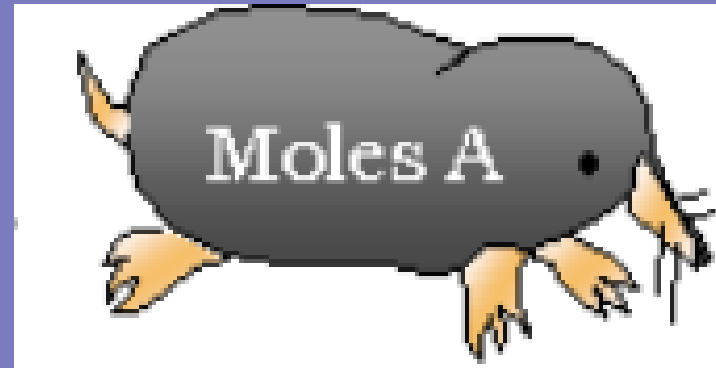
(For Gases at STP)
22.4L = Molar Volume

Mass

Mass of the
Particles/Items = the
Molar Mass



The mole and its simple conversions into
different units of measurements. ÷ = Division,
X = Multiplication



Standard temperature: $0^{\circ}\text{C} = 273.15\text{ K}$

Standard pressure = 1 atmosphere = 760 mmHg =
101.3 kPa

Standard volume of 1 mole of an ideal gas at STP:
22.4 liters

The Mole

- ❖ SI unit for amount of substance

$$1 \text{ mole} = 6.02 \times 10^{23} \text{ particles}$$

$$1 \text{ mole} = 1 \text{ gram-molecular weight}$$



Avogadro's number

$$N_A = 6.0221367 \times 10^{23} / \text{mol}$$

$$\# \text{ of moles of an element} = \frac{\text{mass of that element in the sample}}{\text{molar mass of the element}}$$

How many  ?

12 g C

36.0 g N

71.4 g Cl₂

48.0 g of NaCl

