

The Molecule Activity

On his 16th birthday, Ali decides to invite all his Grade 10 friends (including the chemistry teacher) to a birthday party. After having a nice dinner, cutting the cake, and opening the gifts, Ali gives each friend a bag containing one Oreo biscuit, and 2 white Hershey's chocolate bars (Ali gave the chemistry teacher 2 bags).



The following figure shows the bag that Ali prepared to give to his friends at the end of the party:



1) Ali prepares two dozens of this bag. How many bags did he prepare?

2) How many Hershey's bars did Ali use to prepare the two dozens of bags?

3) What is a possible relation between one of Ali's bags and a water molecule?



4) Give the formula that relates the number of moles to the number of molecules.

5) How many hydrogen atoms are there in 5 moles of water?

- 6) In your opinion, what is the best way that can be used to find the mass of one dozen of the bags?

- 7) If the mass of a dozen of Hershey's bars is $1\text{g}\cdot\text{dozen}^{-1}$ and the mass of a dozen of Oreo Biscuits is $16\text{g}\cdot\text{dozen}^{-1}$. Calculate the mass of one dozen of bags (neglect the mass of the bag alone).

- 8) If the mass of one mole of hydrogen (molar mass) is $1\text{g}\cdot\text{mol}^{-1}$ and the mass of one mole of oxygen is $16\text{g}\cdot\text{mol}^{-1}$ (molar mass). Calculate the mass of one mole of Water (Molar mass of water).

- 9) Ali prepared two dozens of bags. What is their mass?

- 10) Give the formula that relates the number of moles to the mass of a compound.

- 11) What is the mass of 5 moles of water?
