

The Mole

- 1 dozen = 12 eggs
- 1 ream = 500 sheets of paper
- 1 hat trick = 3 goals
- 1 mole = 6.022×10^{23} atoms. Or 602,200,000,000,000,000,000,000 atoms.
- This number is also known as "Avogadro's Number"

The Mole

- 1.00 g of H contains 6.022×10^{23} atoms
- 12.0 g of C contains 6.022×10^{23} atoms
- 16.0 g of O contains 6.022×10^{23} atoms
- 197 g of Au contains 6.022×10^{23} atoms
- 40.0 g of Ca contains 6.022×10^{23} atoms
- See the pattern?

The Mole

- We say that the atomic weights, in grams, equal one mole of that element
- We call these masses "molar masses"
- Molar masses have units of g/mol
 - Ex.: Zinc has a molar mass of 65.409 g/mol
- Also note: Avogadro's # has units of atoms (or molecules) / mol

