MOLE, what is it?? (It is not a furry creature.)

1. The formula mass of any substance expressed in grams equals one mole of that substance.
2. A mole is a very specific number, a quantity: $6.022 \times 10^{23}$. This is the number of particles, ions, molecules, etc. in one mole of any substance, regardless of that substance. One mole of [X] has the same number of particles in it as one mole of [Y], but may have different masses. (Because each molecule has a different mass.)
3. The ratio of substances, or the *coefficients*, in a balanced chemical equation.