

# Unit 5: Reactions and the Mole

## Objectives

1. Write and interpret chemical equations for observed reactions.
2. Correctly use the diatomic elements in chemical equations.
3. Predict products of and write balanced formula equations for the main types of reactions.
4. Develop general rules of solubility through investigations with aqueous solutions.
5. Predict whether or not a potential single replacement reaction will occur by use of an activity series.
6. Identify and label the phases of matter (s, l, g, aq) for reactants and products in an equation.
7. Define the mole, and state the value of Avogadro's number.
8. Calculate the molar mass for an element or a compound.
9. Calculate the mass, number of particles or number of moles of an element or compound given one of the three.
10. Determine the percent composition of element(s) in a compound.
11. Determine the empirical formula of a compound.
12. Determine the molecular formula of a compound.