

## CHAPTER OVERVIEW

### 4: The Structure of Atoms

Knowledge of chemical reactivity and properties may be approached on both the macroscopic and microscopic levels. Macroscopically this involves what is called **descriptive chemistry**. The person who first carries out a chemical reaction describes what happened, usually in terms of a balanced equation, and lists properties of any new substances. This enables other scientists to repeat the experiment if they wish. Even if the work is not carried out again, the descriptive report allows prediction of what would happen if it were repeated.

#### Topic hierarchy

- 4.1: Prelude to Atomic Structure
- 4.2: Groups of Related Elements
- 4.3: The Periodic Table
- 4.4: Valence
- 4.5: Exceptions to the Periodic Law
- 4.6: Implications of Periodicity for Atomic Theory
- 4.7: The Nuclear Atom
- 4.8: Radiation
- 4.9: The Electron
  - 4.9.1: The Electron Lecture Demonstrations
- 4.10: The Nucleus
- 4.11: Atomic Structure and Isotopes
- 4.12: Isotopes
- 4.13: Transmutation and Radioactivity
  - 4.13.1: Lecture Demonstrations
- 4.14: Average Atomic Weights
  - 4.14.1: Lecture Demonstration- Model Mass Spectrometer
- 4.15: Measurement of Atomic Weights

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