

CHM2045
Fall 2017
Week Two

Reading: Zumdahl – Chapter 2

Background: You know it really is an amazing thing that anyone anywhere came up with the idea that stuff is made of stuff. Imagine being an ancient Greek philosopher holding up a rock, and thinking to yourself, “Self, I think this rock is made up of other things.” Considering that, fundamentally, those things are too small to see, somebody somewhere must have had some imagination.

We’ll take that imagination for granted and use it to explore the fundamentals of the atomic world. This will mean that we become familiar with the world’s greatest cheat sheet, the periodic table. Nature made it long before anyone knew how to write it down. We will look at some of the experiments that gave us fundamental information about the structure of the atom.

We will also learn how to start naming simple compounds. This will be a little like learning a new language, since it will involve new words and naming conventions. The goal here is to be able to unambiguously name a chemical compound so that the name describes it accurately. A name should have only one formula. Before you know it, you will be writing the formulas of various chemical preservatives at the grocery store.

Learning Outcomes:

By the end of this week, a student should be able to:

1. Identify key components of the atomic theory of matter.
2. Identify experiments that shed light on the structure of the atom.
3. Determine the number of protons, neutrons, and electrons in atoms and ions.
4. Recognize key trends in the periodic table of the elements.
5. Identify the ways atoms bind to form compounds and molecules.
6. Name various chemical compounds (excluding acids).

Suggested Problems: 2.51, 2.53, 2.57, 2.67, 2.69, 2.71, 2.73, 2.75, 2.77, 2.79, 2.83, 2.85