

Study Guide – Ch 3: Atoms & Periodic Table

1) Atoms

- Atomic number** – What does it tell you? Where is it?
- Atomic mass** – What does it tell you? Where is it?
- Counting Atoms** – be able to count atoms in a chemical formula (coefficients & subscripts) [from Ch 2]
- Ions** – What are they? How are they formed? Be able to determine P, N, E for ions & draw Bohr Models of these.

2) Atomic Structure

- What is in the nucleus?
- Where are the electrons?
- Shells / orbitals / energy levels – how many electrons in each?
- How has the model of the atom changed over time?

3) Bohr Models & Lewis Dot Diagrams

- Determine how many P, N, E
- Be able to draw Bohr models of neutral atoms & ions

4) Periodic Table

- General trends – reactivity, **valence electrons**
- Metals vs. Non-metals vs. Metalloids / semiconductors (location & properties)
- Major families: (*similar characteristics: location in table, valence e-, reactivity*)
 - Alkali metals
 - Alkaline earth metals
 - Halogens
 - Noble Gases
- Oxidation numbers** & Valence electrons (be able to determine oxidation numbers)

5) Isotopes

- What are they?
- How do you calculate the average atomic mass of isotopes?
(1) Bean Lab
- Isotopes vs. Different elements – What is the determining factor that distinguishes between them? Be able to distinguish an isotope from a different element.

Teacher Recommendations:

- For extra review see sections 3.1-3.3 in your textbook.
- At the end of each section in your textbook is a **SUMMARY** in a blue box beside the section review. Read through these for some of the main ideas for the section.
- ASK QUESTIONS before the day of the test.
- Bring **PERIODIC TABLE** for the test.