Physical Science Study Guide

Chapter 3: Atoms and the Periodic Table

* Objectives
	+ Explain Dalton’s atomic theory, and describe why it was more successful than Democritus’s theory.
	+ State the charge, mass, and location of each part of an atom according to the modern model of an atom.
	+ Compare and contrast Bohr’s model with the modern model of the atom.
	+ Relate the organization of the periodic table to the arrangement of electrons within an atom.
	+ Explain why some atoms gain or lose electrons to form ions.
	+ Determine how many protons, neutrons, and electrons an isotope has, given its symbol, atomic number, and mass number.
	+ Describe how the abundance of isotopes affect an element’s average atomic mass.
	+ Locate alkali metals, alkaline-earth metals, and transition metals in the periodic table.
	+ Locate semiconductors, halogens, and noble gases in the periodic table.
	+ Relate an element’s chemical properties to the electron arrangement of its atoms.
* Vocabulary
	+ Nucleus
	+ Proton
	+ Neutron
	+ Electron
	+ Energy level
	+ Orbital
	+ Valence electron
	+ Periodic law
	+ Period
	+ Group
	+ Ionization
	+ Ion
	+ Cation
	+ Anion
	+ Atomic number
	+ Mass number
	+ Isotopes
	+ Atomic mass unit (amu)
	+ Average atomic mass
	+ Metals
	+ Nonmetals
	+ Semiconductors
	+ Alkali metals
	+ Alkaline-earth metals
	+ Transition metals
	+ Halogens
	+ Noble gasses