• Electrons jump to another level when it is excited.

Atomic Spectra

• Show only light “colors” where energy released when an e- falls back to ground state is in our visual range

Light is electromagnetic radiation

• Radiation always has an energy
• The different types of light at represented on the electromagnetic spectrum
• Visible light is the only light that human eyes register

Chapter 3: Descriptions of Matter

How elements distributed?

• Metals – shiny, ductile, conduct electricity
• Non-metals – not malleable, or ductile, not shiny ---variable
• Metalloids- shown in green = act as semiconductor
• Groups are also called “Families”
  o Each family of element has its own family traits
• Alkali metals- very reactive metal
• Alkaline earth metals- also very reactive
• Halogen - the reactive nonmetal takes in combined with nature
• Noble gases- extremely unreactive elements existed as lone atoms in nature (DO NOT REACT)
• Transition metals- brightly colored when combined with other elements
• *Elements beyond 92 are human-made*- IMPORTANT

What is a substance?

• Any chemical that has its entire volume made of only one kind of chemical formula (Pure Substance). Ex:
  o – Argon gas --- Ar
  o – Lion pipe --- Fe
  o - Copper fitting --- Cu
  o – Hydrogen peroxide --- H2O2
  o – Glucose --- C6H12O6
• Terms that discriminate a single element substance from a multi-element substance
  o – Compound
    ▪ Chemical with more than one type of element

Categorizing Matters

• Categorization methods overlap