- 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"
    - Each family of element has its own family traits
- Alkali metals- very reactive metals
- Alkaline earth metals- also very reactive
- Halogen- most reactive nonmetals never 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:
    - – Argon gas --- Ar
    - – Lion pipe --- Fe
    - - Copper fitting --- Cu
    - – Hydrogen peroxide --- H2O2
    - – Glucose --- C6H12O6
- Terms that discriminate a single element substance from a multi-element substance
    - – Compound
        - Chemical with more than one type of element

Categorizing Matters

- Categorization methods overlap