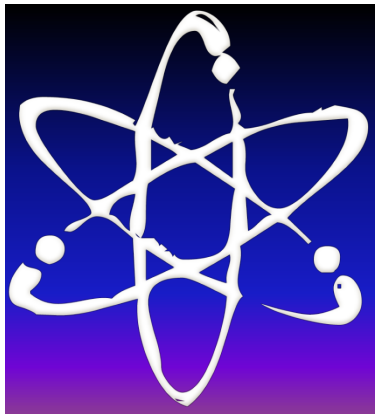
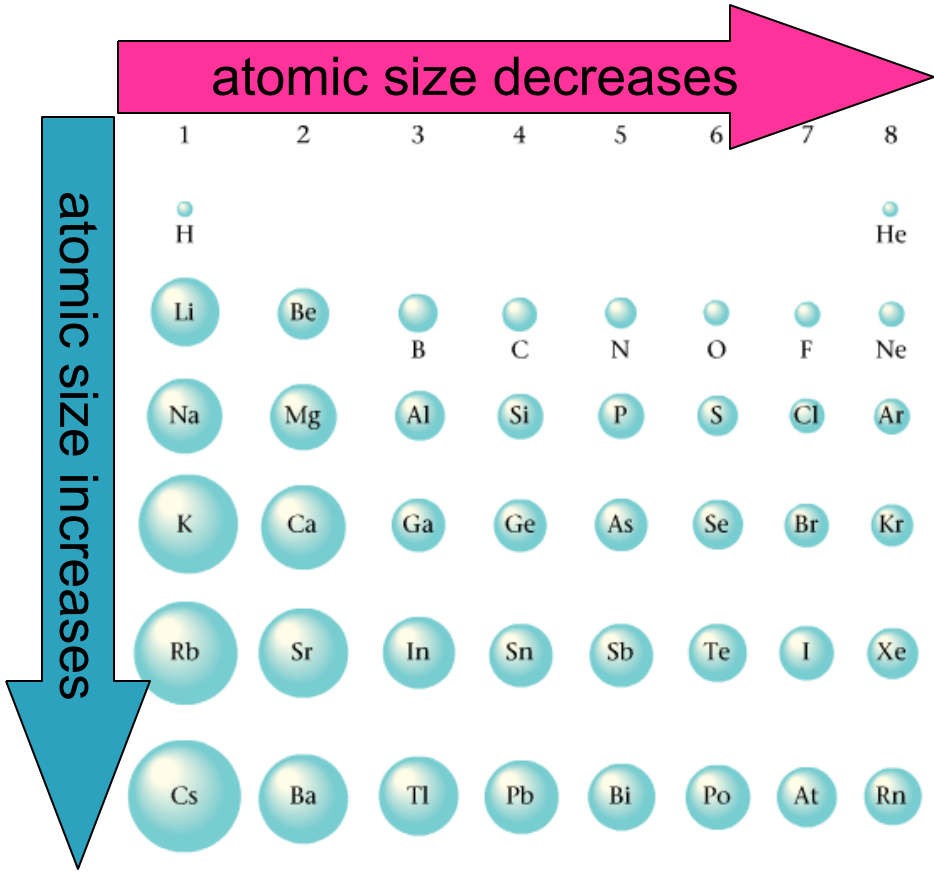


Modern Atomic Theory
Periodic Trends
Ionization Energy

Atomic Properties and the Periodic Table

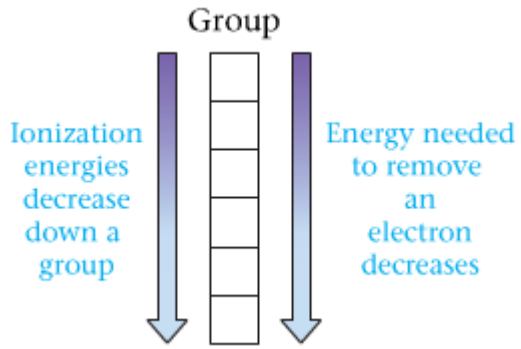
Atomic Size

- The sizes of atoms vary.
- Atoms get larger as we go down a group and get smaller as we go from left to right.



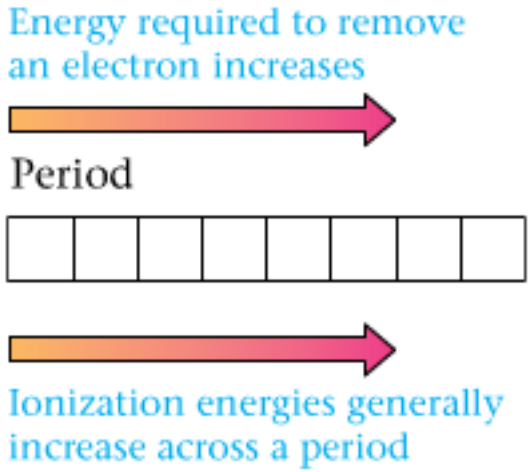
Atomic Properties and the Periodic Table

- **Ionization energy** → the amount of energy required to remove an electron from a gaseous atom or ion.
- Metals have relatively low ionization energies.
  - You only need to input a small amount of energy to remove an electron from a typical metal.
  - Ionization energies tend to decrease going down.

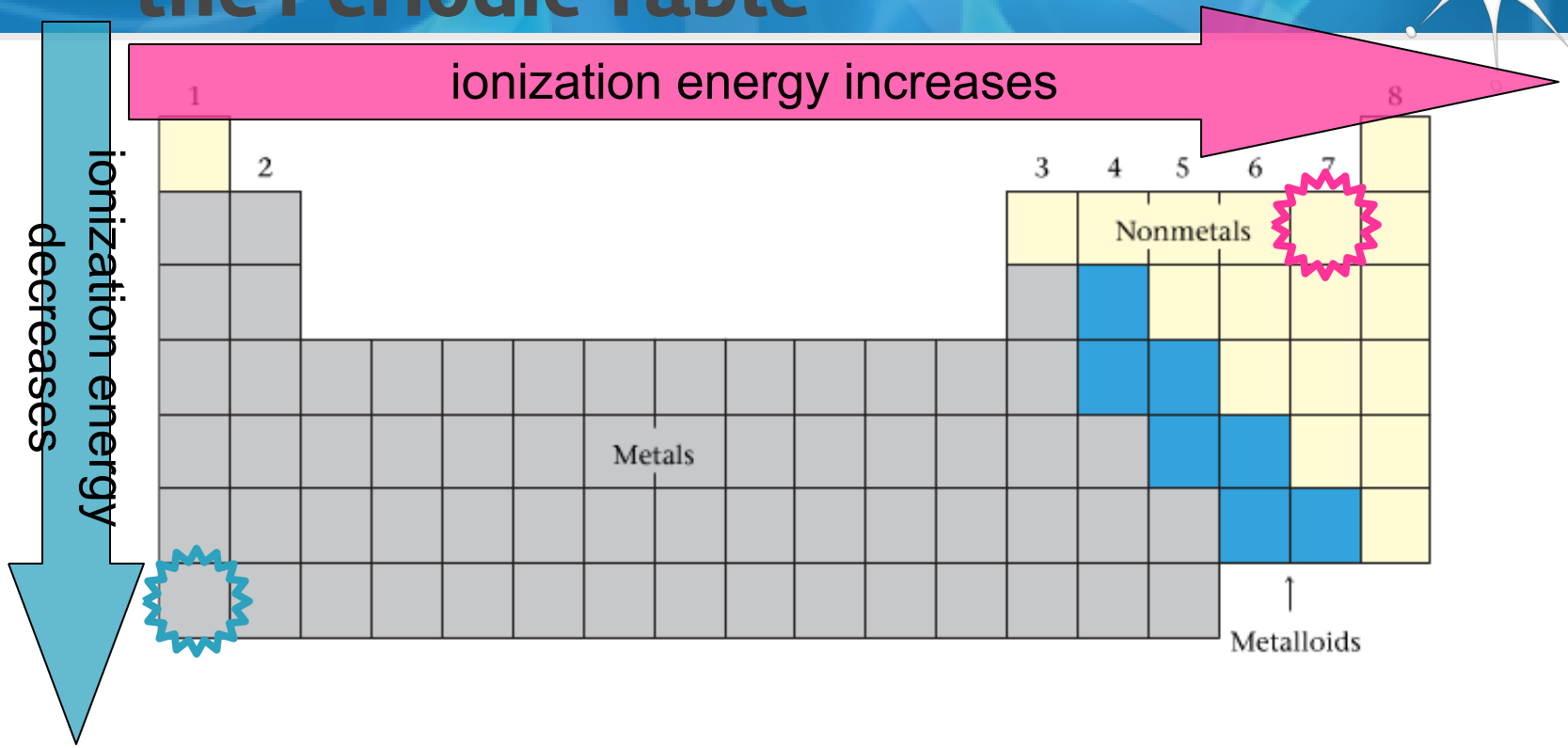


Atomic Properties and the Periodic Table

- Nonmetals have relatively large ionization energies.
  - Nonmetals tend to gain, not lose, electrons.
- Ionization energies tend to increase from left to right across a given period on the periodic table.



Atomic Properties and the Periodic Table



- Lower left region have the lowest ionization energies (most chemically active metals).

The end