

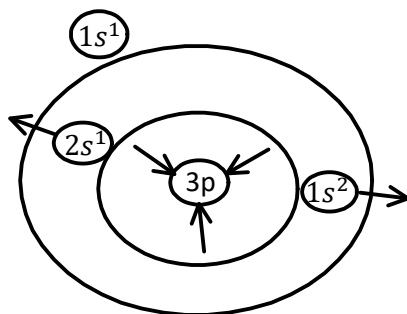
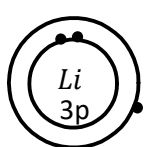
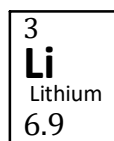
C11 - 5.4 - Attractive Forces/Effective Nuclear Charge

Effective Nuclear Charge - Attractive positive charge of nuclear protons acting on Valence electrons.

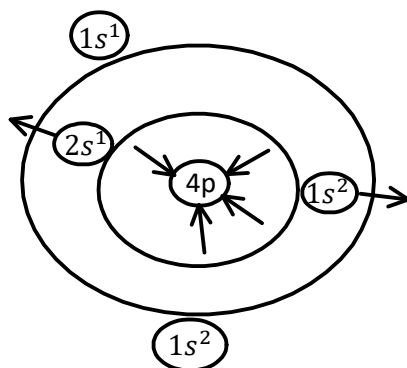
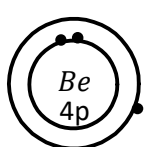
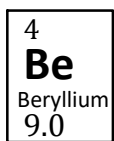
$$Z_{eff} = \text{Atomic \#} - \text{Shielding Electrons (Inner shells)}$$

As you add a new ring all of the rings inside shield so as you go to the right and add more electrons, increasing the Z_{eff} .

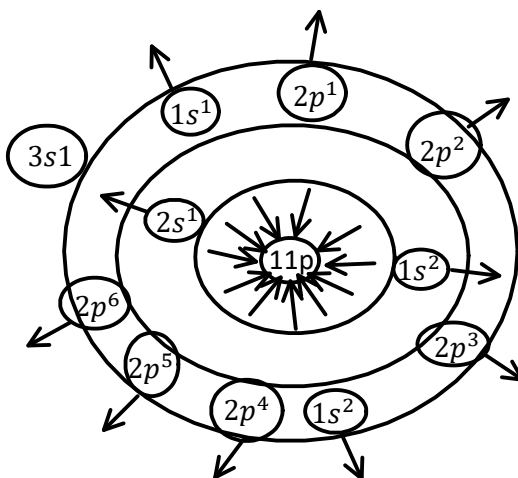
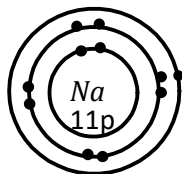
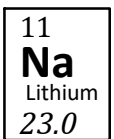
It's going to shrink because each electron is feeling a greater pull from the center.



$$Z_{eff} = 3 - 2$$
$$Z_{eff} = 1$$



$$Z_{eff} = 4 - 2$$
$$Z_{eff} = 2$$



$$Z_{eff} = 11 - 10$$
$$Z_{eff} = 1$$