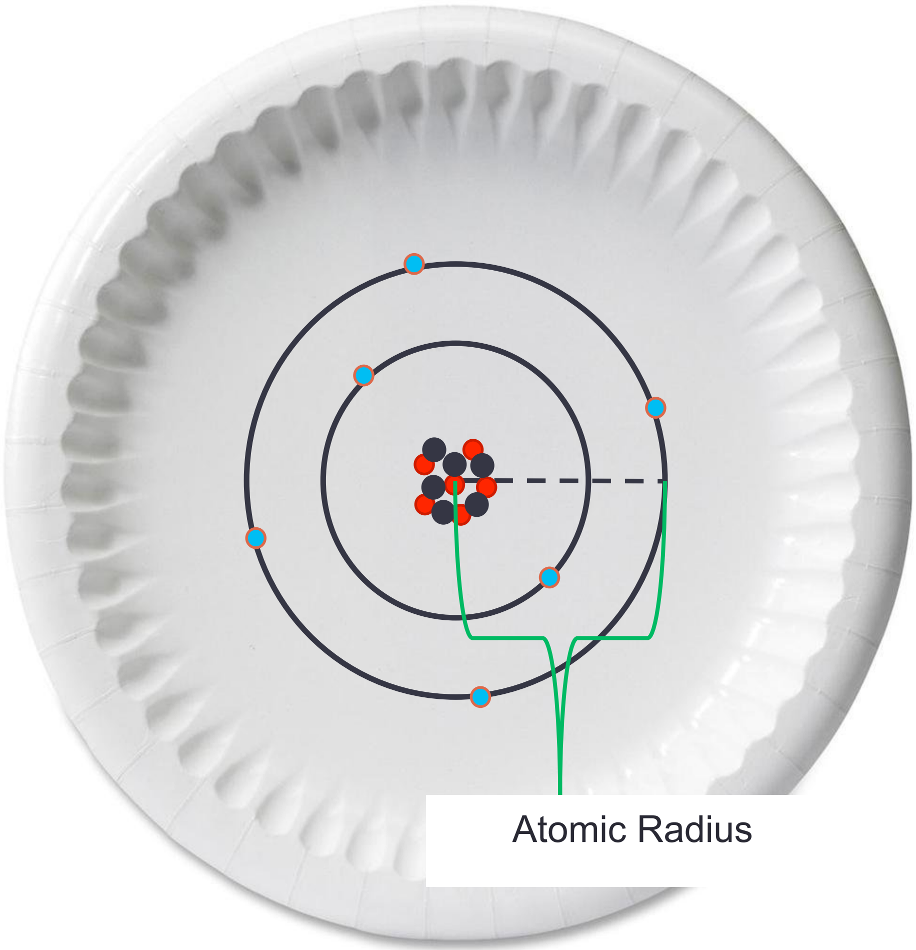
Paper Plate Model of Carbon



Blue = electrons

Red = protons

Black = neutrons

Our scale is:
2 pm : 1 mm

If the actual atomic radius of carbon is **77 pm**, how big should the radius be on this paper plate model?

77 / 2 = 38.5 cm in this model

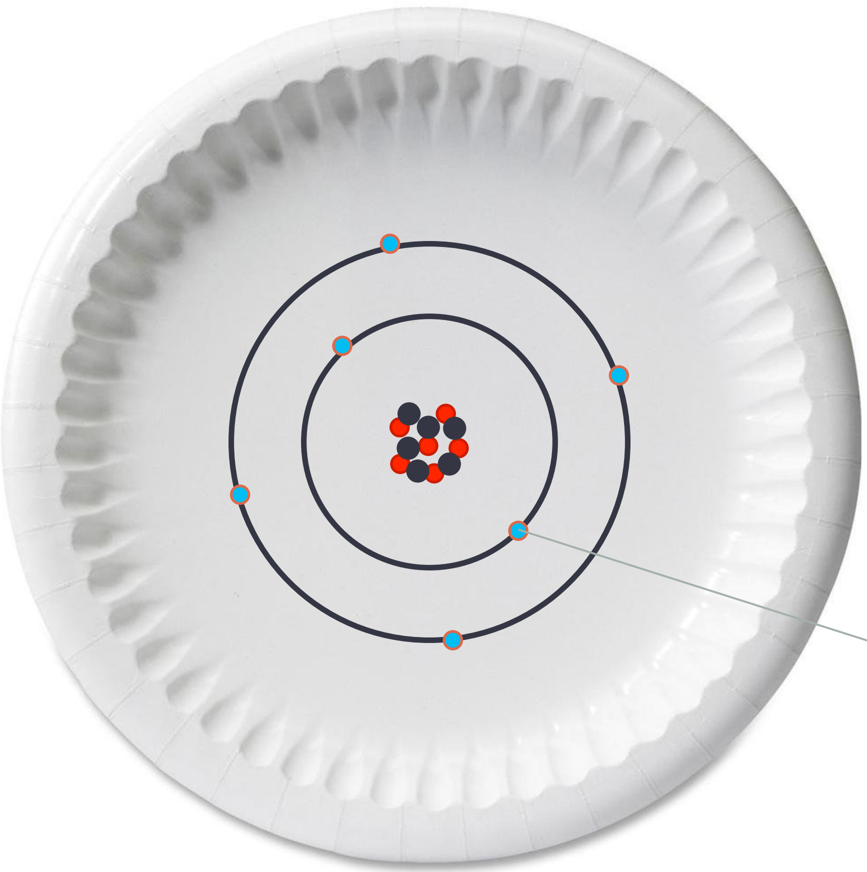
Atomic Radii (all in picometers)

Element	Radius (pm)
H	37
He	31
Li	152
Be	111
B	80
C	77
N	74
O	73
F	72
Ne	71

Element	Radius (pm)
Na	186
Mg	160
Al	143
Si	113
P	110
S	103
Cl	100
Ar	98
K	227
Ca	197

Again, these are all in picometers!!! Remember to scale your model appropriately

The "Shielding Effect"



Carbon

Are electrons attracted to or repelled from each other?

Repelled

Electrons in shells closer to the nucleus reduce the attraction between the protons and the valence (outer shell) electrons

First Ionization Energy