(1) **Today**

Attendance

<u>Review Syllabus</u>

Sections 1.1 – 1.3
atomic structure
electrons, valence vs core electrons

Reviewing Periodic Trends

Section 1.4
Introduction to Chemical Bonding Theories
octet rule etc

Next Class (2)

Reviewing Periodic Trends

Section 1.4
Introduction to Chemical Bonding Theories
octet rule etc

Sections 1.5-1.10
Valence Bond Theory

(3) **Second Class from Today**

Sections 1.5-1.10
Valence Bond Theory

Third Class from Today (4)

Sections 1.5-1.10
Valence Bond Theory

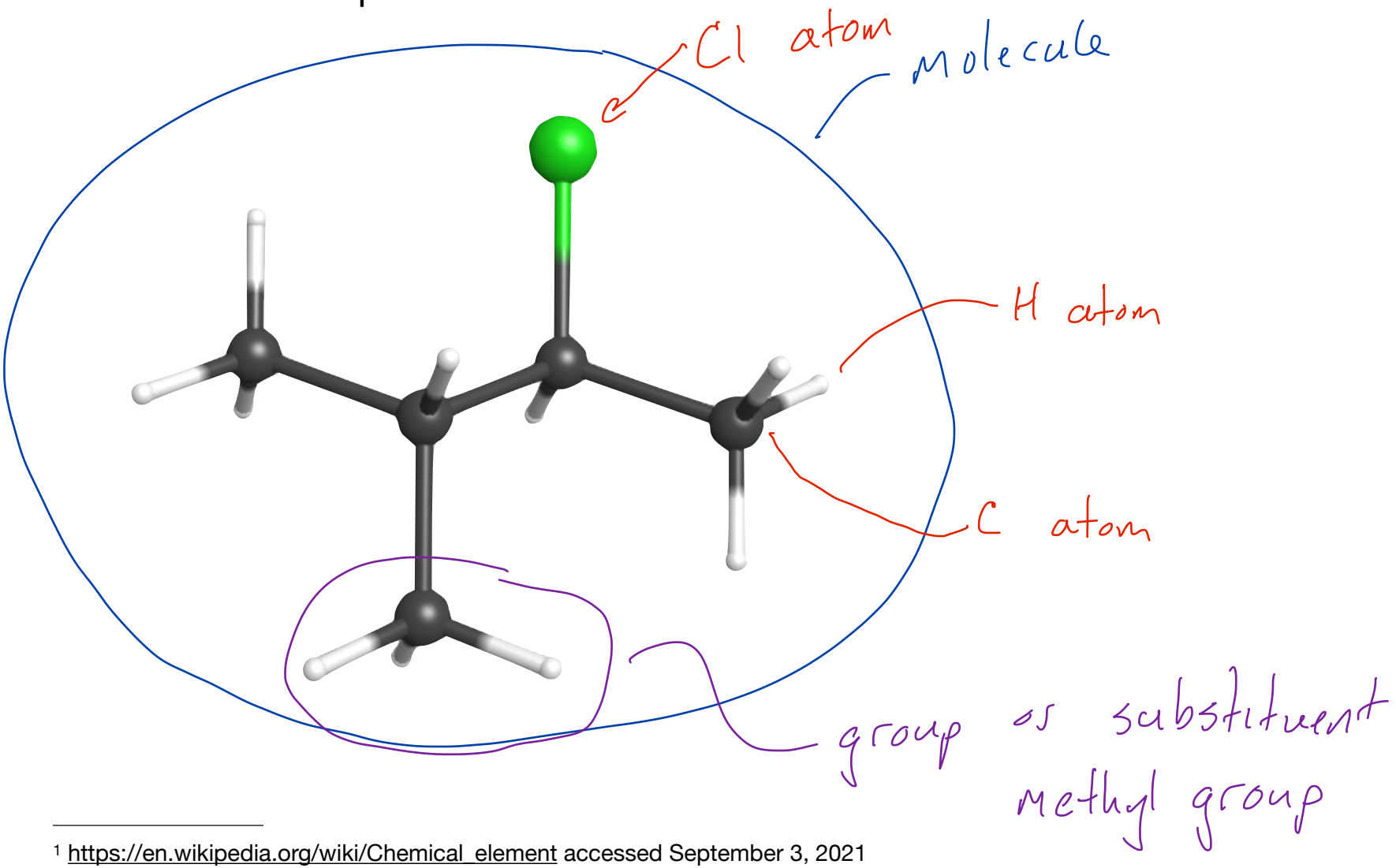
Skipping Section 1.11 for now
An introduction to Molecular Orbital Theory

LAB STARTS THIS WEEK……PLEASE GO TO YOUR REGULARLY SCHEDULED LAB

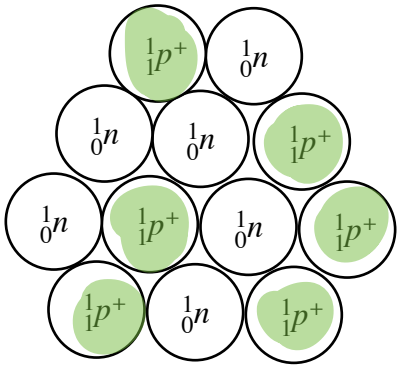
Atoms, Elements, Molecules, and Substituents or Groups

A diversion into the language of chemistry…

"In chemistry, an element is a pure substance consisting only of atoms that all have the same numbers of protons in their atomic nuclei."[1]



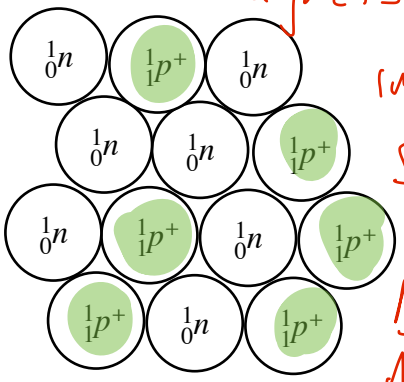
[1] https://en.wikipedia.org/wiki/Chemical_element accessed September 3, 2021



6 protons
6 neutrons

^{12}C

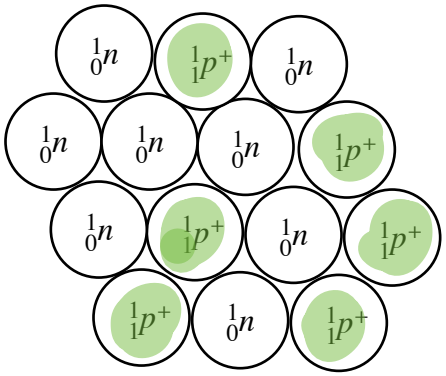
98.89 %



6 protons
7 neutrons

^{13}C

1.01 %



6 protons
8 neutrons

^{14}C

radioactive

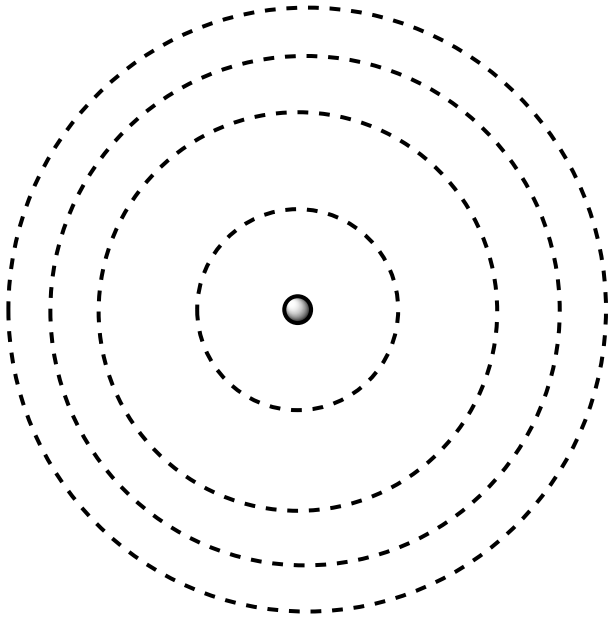
tiny little magnets important for Nuclear Magnetic Resonance Spectroscopy NMR

C naturally abundant carbon

chemistry is very similar ... heavier isotopes react more slowly

Remember the structure of an atom

Bohr



Bohr was the first to model electrons in quantized energy shells (having specific allowed energies)

Only works for atoms with 1 electron :-(

Also it is physically impossible for electrons to orbit a nucleus like the Moon orbits the Earth… the electrons would radiate energy and crash into the nucleus.

Despite Bohr's success modeling the H atom, treating the electron using particle mechanics failed…