Name: _____

Period:_____

Ch. 18:3

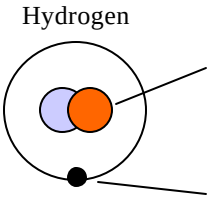
The Atom Board—Making Atoms

# of protons = atomic #

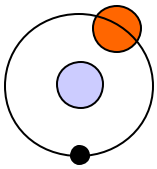
Protons are _____

Electrons are _____

Neutrons are _____



Atomic # = protons = 1



Incorrect! - neutrons belong in the nucleus with the protons.

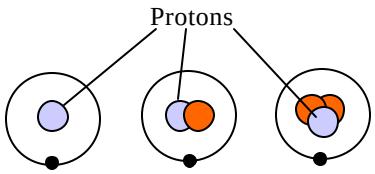
Hydrogen
1
H
1.01
1, 2, 3

Finding number of neutrons

Atomic # = number of _____

Mass # = number of _____

Neutrons = Mass # - Atomic #

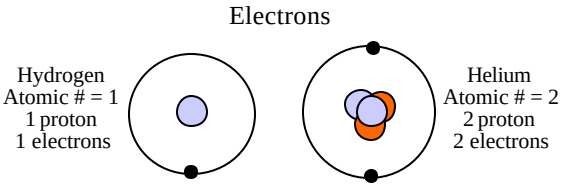


Hydrogen 1
1—1 = 0 n

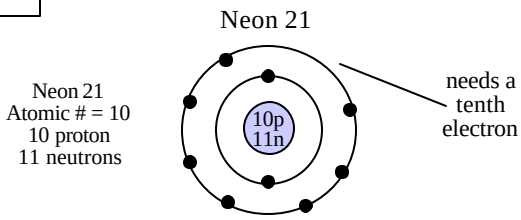
Hydrogen 2
2—1 = 1 n

Hydrogen 3
3—1 = 2 n

# of electrons = # of protons

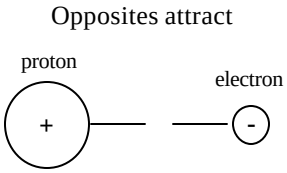


In a neutral atom there is one electron for every proton.

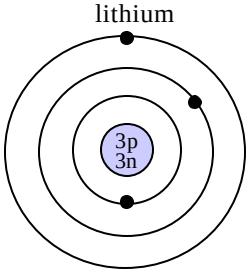


Incorrect! 10 protons attract 10 electrons. There is one electron missing.

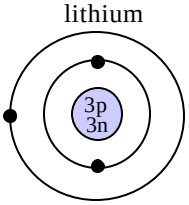
Electrons fill up inner orbits first



So electrons will want to get as close to the nucleus as possible by filling up inner electron levels first.



Incorrect! - The electrons will fill up the inner levels first. First levels takes 2 electrons.



Correct! - Inner orbit is full (with 2); one outer electron.

by C. Stephen Murray, 2003

Name: _____

Period:_____

The Atom Board

Protons - blue marbles. Neutrons - red marbles. Electrons - small marbles.

Make each of the following atoms. Make sure you make the right element and isotope.
Make sure you have the correct number of electrons in the correct orbits (also called levels or shells)..

As you make each atom be sure to observe how each element looks.
With close observation you will begin to see how and why the periodic table is constructed.

Element	Mass #	Atomic #	# of Neutrons	# of Protons	# of Electrons	# of full electron levels	Row on the Periodic Table	# of electrons in outer level	Column on the Periodic Table
Hydrogen 1									
Helium 4									
Lithium 6									
Lithium 7									
Carbon 14									
Oxygen 17									
Fluorine 19									
Neon 20									
Sodium 21									
Magnesium 25									
Chlorine 35									

Questions:

1. How are the electron levels and rows of the Periodic Table related?

2. How are the number of electrons in the outer level and columns of the Periodic Table related?

4. If I have 1 full shell (energy level) of electrons and 2 in the outer shell, what element am I?

5. If I have 3 full shells of electrons what am I?

by C. Stephen Murray, 2003