Warm Up

1. What is the rule regarding capitalization of element symbols? 1st capital, 2nd + 3rd lower case.

2. What are the element symbols for:

Tin	- Sn	Hydrogen	- H
Silver	- Ag	Xenon	- Xe
Palladium	- Pd	Copper	- Cu

A. Using your periodic table, determine the name or symbol for the following elements. These are the most common elements used.

	P		Cu
nickel		lead	
magnesium			Be
	B		Cr
chlorine		aluminum	
	Br		Hg
hydrogen			Zn
silver		carbon	
	Ne		Si
argon		helium	
sodium		tin	
	Mn		F
nitrogen		iodine	
	Li	iron	
cobalt			Au
	S	oxygen	
potassium			Ca
barium			

Ar Ba Si Pb Zn As Ne Rn

1. We brought everything but the kitchen ___Zn___.
2. When your pet has died you dig a hole in the backyard and ___Ba___.
3. Are the baby birds still in the nest? No, they ___Ar___
4. Doctors amputated the bottom half of his leg but they left his ___Ne___.
5. A prisoner who acts in a silly manner is called a ___Si___.
6. The crossing guard took the child by the hand and ___Pb___ them across the street.
7. The makers of Raid insect repellent came up with the advertising slogan "Don't go out without your ___Rn___".
8. News reporter Nic asked the fire chief what was the cause of the fire. The fire chief said "It was ___As___".

What is an "atom" ?

- The smallest particle of an element.
- Cannot be broken apart in chemical reactions.

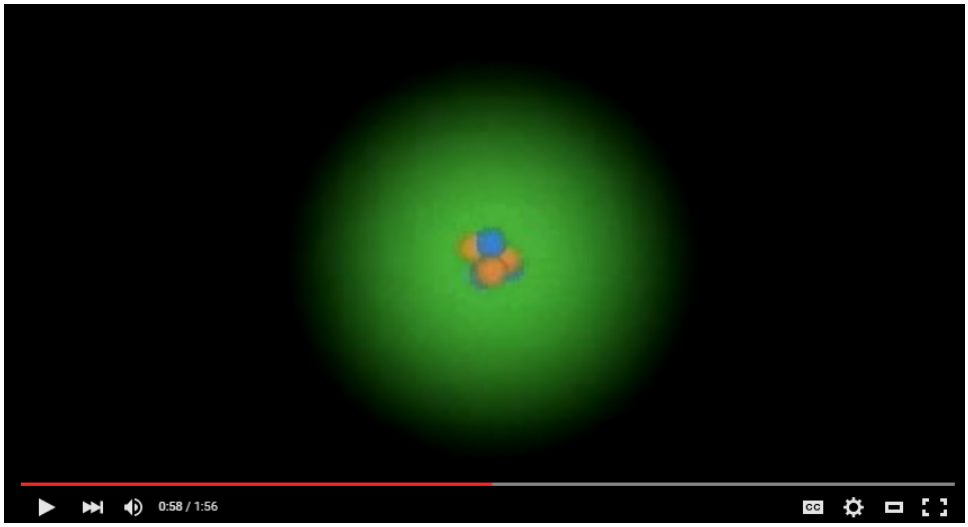
Inside the Atom

3 key points.

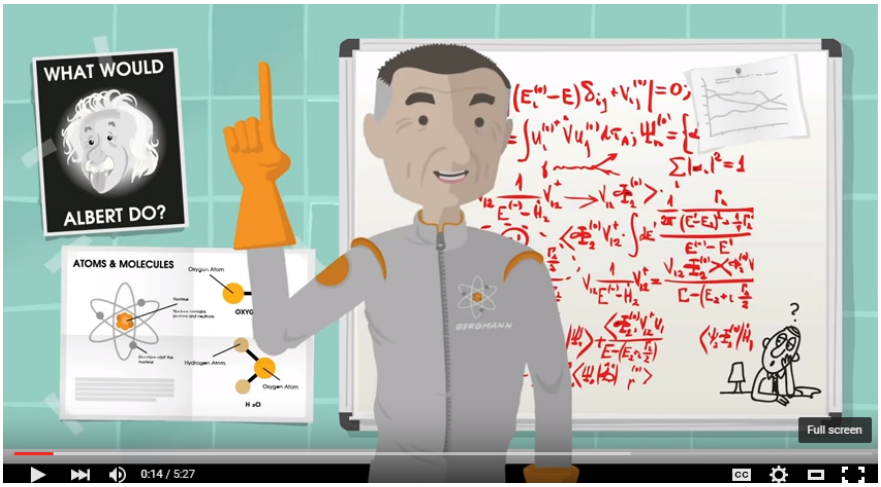
- Most of the atom is empty space.
- The nucleus (center) is tiny compared to the rest of the atom ("grain of sand in football field").
- Almost all of the mass is in the nucleus.

The atom is made of three smaller particles called the **subatomic particles**.

↑ smaller than the atom.



So how small is an atom really?



Summary table

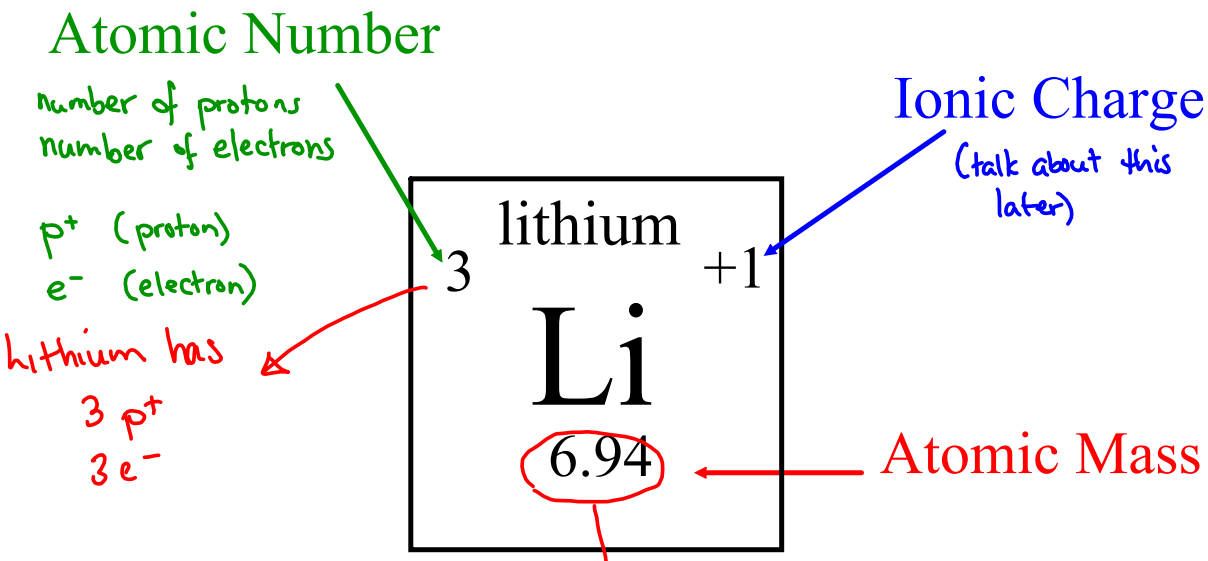
Subatomic Particle	Charge	Relative Mass	Location
proton	+	1	nucleus (center)
neutron		1	nucleus
electron	—		orbiting the nucleus

The *number of protons* are especially important since they determine *which element* the atom will be.

# of
Protons = Atomic Number

# of
Electrons = Atomic Number

# of
Neutrons = Mass Number (round) - Atomic Number



7 (round Atomic Mass)

Mass Number.

Mass # = # p+ + # n° (n° = neutron)

7 = 3 + # n°

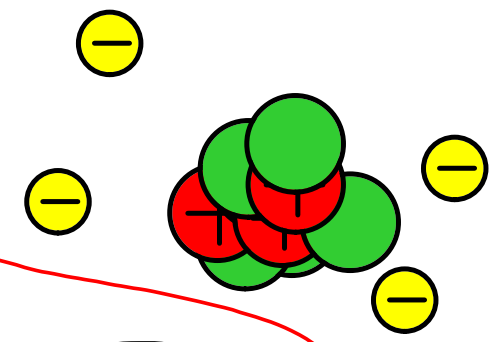
So lithium has 7-3 = 4 neutrons.

Beryllium

Element # 4

$p^+ = 4$

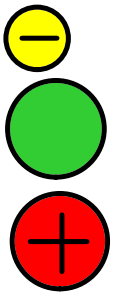
$e^- = 4$



Mass = 9.01

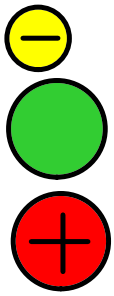
Mass # = 9

n° = 9 − 4 = 5



Neon

Atomic # = 10
Mass # = 20
p^+ = 10
n^0 = 20 − 10 = 10
e^- = 10



arsenic

33 -3

As

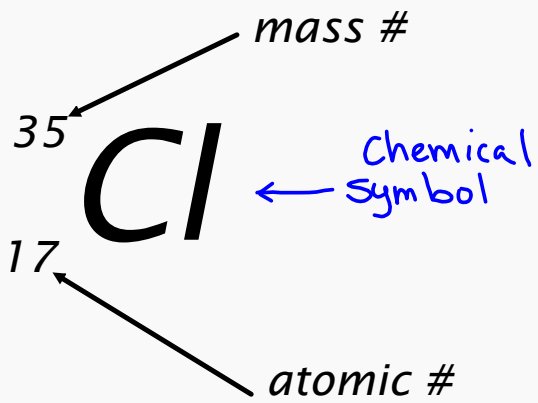
74.92

Protons = 33

Electrons = 33

Neutrons = 75 - 33 = 42

Standard Atomic Notation



Element	atomic number	mass number	standard atomic notation	# of protons	# of electrons	# of neutrons
Titanium	22	47.87 48	$^{48}_{22}Ti$	22	22	48-22 26
Zinc	30	65	$^{65}_{30}Zn$	30	30	65-30 35

Complete Subatomic Particles worksheet for next day.

Attachments

answers - atomic models.pdf

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