

Name _____

Date _____

Atomic Structure

An atom is composed of protons, neutrons, and electrons. The protons and neutrons are found in the nucleus of the atom. The electrons are found in the electron cloud, which is an area that surrounds the nucleus.

A standard periodic table of elements can provide you with a great deal of insight into the composition of an atom. The atomic number is equal to the number of protons. The mass number is equal to the number of protons and neutrons. In a neutral atom, the number of protons and electrons are equal. When an atom is in a charged state (ion), the charge indicates the imbalance between protons and electrons. Too many electrons produces a negative charge, too few electrons results in a positive charge.

Example:

O^{2-} <div style="text-align: right; margin-right: 20px;"> Mass Number = 16 Atomic Number = 8 </div> 8 protons, 8 neutrons (16-8), 10 electrons (8+2)	Explanation: <div style="text-align: right; margin-right: 20px;"> Protons = Atomic Number Neutrons = Mass Number - Atomic Number Electrons = Charge (+/-) Proton Number. </div>
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Complete the following chart.

Element or Ion	Atomic Number	Mass Number	# of Protons	# of Neutrons	# of Electrons
Li		7			
Ba ⁺²		137			
Al ⁺³		27			
F ⁻		19			
Br		80			
Ru ⁺³		101			
Cr ⁺²		52			
S ⁻²		32			
Si		28			
C		12			
P ⁻³		31			