Elements

What is an element?	Substance consisting of atoms that are the same / have same atomic #.
What do atomic number and mass number tell us?	Atomic # equals number of protons in nucleus (and number of electrons in energy levels); atoms are therefore neutrally charged overall. Mass # equals number of protons PLUS neutrons in the nucleus (most of mass of atom is in the nucleus)
What particles make up $^{7}_{3}Li$*?*	Lithium $^{7}_{3}Li$ has 3 protons, 3 electrons and 4 neutrons
What are the parts of the periodic table called?	Rows of elements = period. Atoms are arranged by their atomic number. Columns of elements = group. Mg is in group 2, period 3.
How do electrons fill energy levels around a nucleus?	Electrons are arranged in energy levels surrounding nucleus: 1st shell fills first. 1st shell can hold up to 2 electrons 2nd shell can hold up to 8 3rd shell can hold up to 8
What's the electron arrangement of Li?	Electron arrangements can be written e.g. Li 2 , 1

SUMMARY: Atomic # = # of protons and electrons. Atoms are neutrally charged overall. Mass # = # of protons plus neutrons. Periodic table arranges elements in order of increasing atomic number; horizontal rows are called periods and columns are called groups.

Patterns of the Periodic Table

How are atoms arranged in the periodic table?	Atoms are arranged in order of increasing atomic number in rows, from left to right. This means the # of protons (+) and electrons (-) increase by 1 each time.
What are valence electrons and where are they found?	Electrons are arranged in energy levels. The outermost energy level (highest energy level) is called the valence shell and holds the valence electrons.
What do some group numbers tell you about the # of valence electrons?	An element in group 1 has one valence electron. An element in group 2 has two valence electrons. An element in group 13 has three valence electrons. An element in group 14 has four valence electrons. Etc. IMPORTANT: This doesn't work for groups 3-12. Note - elements in group 18 have full valence shells (2 electrons for He and 8 electrons for Ne, Ar, K etc)
What is special about full valence shells?	A full valence shell is a stable arrangement.
What does the period tell you about the number of energy levels / shells?	An element in period 1 has its outermost (valance) electron(s) in its 1st shell (energy level). An element in period 2 has its outermost (valence) electron(s) in its 2nd shell (energy level etc.

SUMMARY: Atoms are arranged in order of increasing atomic number. Valence electrons are electrons found in the outermost / highest energy level. The group number (of some groups) indicates the number of valence electrons. The period indicates the number of energy levels / shells. A full valence shell is a stable arrangement.

SUMMARY: