

Boy Scout Merit Badge

5. List the four classical divisions of chemistry.
 - Analytical –Recognizes different substances and determines their constituents qualitatively and quantitatively. We are continually finding better ways to determine minute quantities of materials (steroids, lead, mercury, carcinogens, etc.)
 - Inorganic – Studies structures, properties, and reactivities of elements and compounds (not containing C as central element) and they synthesize new materials and imbed them into new products (computer technology, batteries, catalysts, H₂ as fuel, etc.).
 - Organic – Studies compounds containing C as central element can be seen in pharmaceutical/petroleum industries.
 - Physical –Make measurements and calculations of the physical properties of atoms and molecules in the gaseous, liquid and solid states. Physical chemists use these results to characterize systems in chemical equilibrium; to study the energy, rate and direction of chemical transformations; and to understand the atomic and molecular structure of matter. Physical chemists can be found working on solid state chemistry (homogeneous catalysts) or spectroscopy (developing new instrumentation) and biological chemistry is opening up in this area as well.
 - Although Biochemistry is not one of the classical divisions of chemistry it is quickly becoming a major division in most chemistry departments. It studies organic molecules that are used in living systems (pharmaceuticals).

More can be found on these disciplines at:

<http://www.thecanadianencyclopedia.com/index.cfm?PgNm=TCE&Params=A1ARTA0001555>