Periodic Table of Elements				
Name	**Symbol**	**Atomic Number**	**Atomic Mass**	**Clue**
Hydrogen	H	1	1	The lightest element, contains only a single proton, can lose or gain only 1 electron
Helium	He	2	4	The lightest noble gas, filled outer shell with only two electrons, named for the Greek word for sun because first discovered in spectral analysis of sunlight
Lithium	Li	3	7	Active alkali metal from Group I with three protons, forms 1^+ ions in a salt
Beryllium	Be	4	9	Alkaline earth metal with four protons used in forming strong lightweight alloys with copper
Boron	B	5	11	Metalloid in Group III combines with silicates to form heat-resistant glassware, forms acid used in eardrops and as a pesticide
Carbon	C	6	12	Basis for all organic chemicals, essential for life as we know it on earth, element with four outer-shell electrons that undergo sp^3 hybridization to form four bonding orbitals with tetrahedral structure
Silicon	Si	14	28	The second most abundant element in the Earth's crust; a metalloid with four outer shell electrons used in solar cells, microprocessor chips, and ceramics
Germanium	Ge	32	73	Group IV metalloid used in doping computer chips and transistors
Nitrogen	N	7	14	Most abundant element in the Earth's atmosphere, an element that is relatively non-reactive at normal temperatures, essential for protein formation in living tissues
Phosphorus	P	15	31	Group V element with three allotropes: white that reacts with air at 30^{o} C and red that is less active; element that is essential to strong root development in plants; element used in fertilizers, explosives, and detergents
Arsenic	As	33	75	Poisonous Group V metalloid used in making semiconductors and in pesticides
Oxygen	O	8	16	Most abundant element on Earth making up 48% of the Earth's crust, atmosphere, and surface water; highly reactive element that supports combustion with many other substances; essential for respiration in most living organisms; ozone is a common allotrope; six outer shell electrons cause it to form 2^- ions
Sulfur	S	16	32	Common Group VI element with 3 different allotropic forms, widely used in industry as a component of sulfuric acid, used as a dehydrating agent in paints and plastics
Selenium	Se	34	79	Metalloid in Group VI used in making photocells

Fluorine	F	9	19	Most reactive nonmetal that is never found free in nature. Member of Group VII, the halogen family; forms 1^- ions; organic compounds containing this element are used as nonstick cookware and refrigerants; forms compounds used to prevent tooth decay
Chlorine	Cl	17	35	Halogen used as a bleaching agent, component of common table salt, used as a disinfectant and water purifier
Bromine	Br	35	80	Halogen, which is a brownish liquid at room temperature, used in medicines, dyes, and photography
Iodine	I	53	127	Halogen used as a disinfectant, in photography and as a salt additive that prevents goiter
Neon	Ne	10	20	Inert gas in Group VIII which produces a red glow in lights.
Argon	Ar	18	40	Noble gas used in welding active metals, denser than air
Krypton	Kr	36	84	An inert element which produces a whitish glow in lights..
Xenon	Xe	54	131	First noble gas to form a compound by stripping away electrons, used in photographic lamps
Radon	Rn	86	222	Radioactive noble gas used in treating cancer, can collect in some buildings producing a health hazard
Sodium	Na	11	23	Highly reactive alkali metal of Group I that forms 1^+ ions and reacts violently with water, never found free in nature and reacts violently with Chlorine of the halogen family to form common table salt, required in the body for proper transmission of nerve impulses
Potassium	K	19	39	Highly reactive member of Group I that reacts violently in water and is required to allow proper transmission of nerve impulses
Cesium	Cs	55	133	Highly reactive Group I metal that is a liquid at warm room temperature (28.5°C), silvery white metal used in making photocells
Rubidium	Rb	37	85	Soft lustrous metal with one electron in its outer shell, reacts violently with moisture, used in spacecraft engines and photocells
Francium	Fr	87	223	Extremely rare radioactive Group I metal, contains 136 neutrons and only 87 protons
Magnesium	Mg	12	24	Lightweight member of the alkaline Earth metals of Group II, forms 2^+ ions, reacts slowly with water and rapidly with steam, used in making lightweight alloys, found in hydroxide compounds used as antacids
Calcium	Ca	20	40	Alkaline earth metal found commonly in the Earth's crust, a limestone used in making cement or concrete, often found in pipes or boilers as a result of hard water, forms 2^+ ions
Barium	Ba	56	137	Massive Group II element, a radioisotope of which is used as a radioactive tracer in medicine
Radium	Ra	88	226	Radioactive Group II element used to treat cancer and in

				medical research

Aluminum	Al	13	27	Lightweight metal that forms 3^+ ions, the third most abundant element in the Earth's crust, more valuable than gold or silver prior to development (1886) of the Hall Perot process for extracting it from bauxite
Tin	Sn	50	119	Stable metal used in making cans, forms 2^+ and 4^+ ions, alloy with copper forms bronze
Lead	Pb	82	207	Stable metal once used for plumbing, symbol comes from Latin name *plumbum*, forms 2^+ and 4^+ ions.
Titanium	Ti	22	48	Light transition metal used in making strong lightweight alloys, oxidation numbers 4^+ and 3^+
Chromium	Cr	24	52	Shiny transition metal used in electroplating steel, oxidation numbers 6^+, 3^+ and 2^+
Manganese	Mn	25	55	Transition metal used as catalyst for oxidation-reduction reactions; oxidation numbers 7^+, 6^+, 4^+, 3^+ and 2^+, used in making alloys
Iron	Fe	26	56	Fourth most abundant element in the Earth's crust; used in manufacturing, building materials, and dietary supplements; oxidation numbers 3^+ and 2^+; main component of steel
Cobalt	Co	27	59	Transition metal used to make alloys used to make magnets and heat-resistant tools, oxidation numbers 2^+ and 3^+, often used to make blue pigment for paints
Nickel	Ni	28	59	Transition metal used in making coins, batteries, jewelry, and electroplating; oxidation numbers 2^+ and 3^+
Copper	Cu	29	64	Transition metal used in cooking utensils, wiring, plumbing and electric motors; oxidation numbers 2^+ and 1^+
Silver	Ag	47	108	Shiny lustrous metal; best conductor of heat and electricity; oxidation number 1^+; used in jewelry, ornaments, mirror backing, and dental fillings
Gold	Au	79	197	Valuable metal used as base for many money systems; used in jewelry, coins, and dentistry; oxidation numbers 3^+ and 1^+
Cadmium	Cd	48	112	Transition metal used to make yellow pigments in paint, electroplating, batteries, and as control rods in nuclear reactors
Mercury	Hg	80	201	Toxic transition metal, which is a liquid at room temperature; used in thermometers, barometers, electric switches, and paint pigments; alloy with silver that produces dental amalgam
Platinum	Pt	78	195	Transition metal used as catalyst, in electronics, lab ware, and jewelry
Tungsten	W	74	184	Transition metal used in making light-bulb filaments and alloys with high density and high melting point
Vanadium	V	23	51	Transition metal used to make shock resistant steel and used as catalyst
Zinc	Zn	30	65	Transition metal used to galvanize iron, forms alloy with copper called brass, used in dry cell batteries, oxidation number 2^+

Uranium	U	92	238	Radioactive member of the actinide series used as fuel in nuclear reactors, heaviest natural element