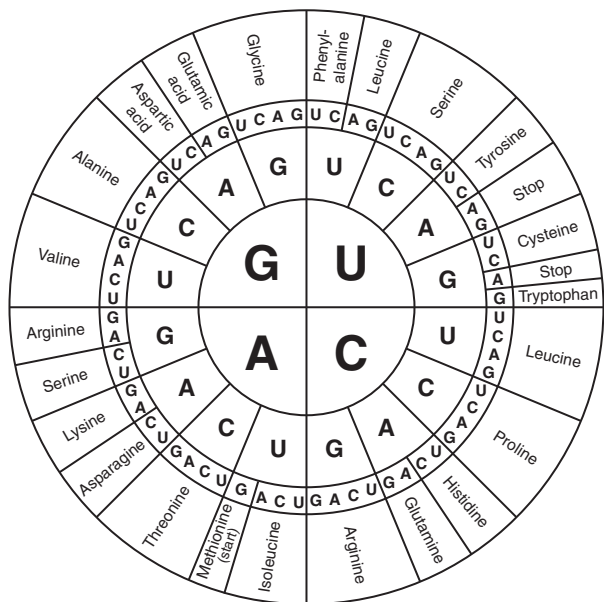
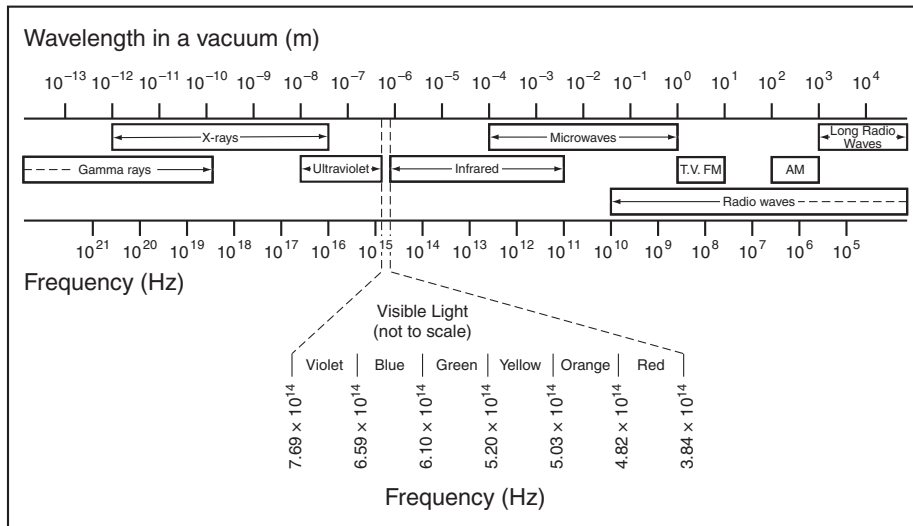


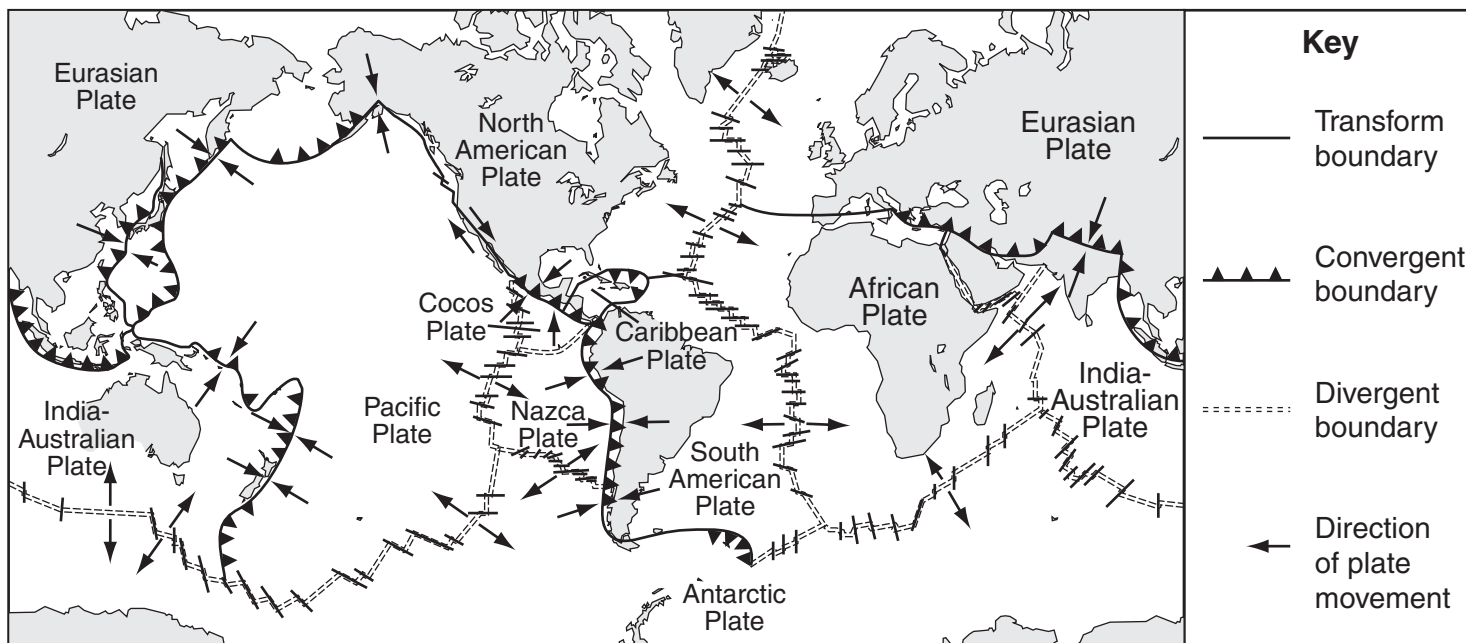
**Genetic Code**



**Electromagnetic Spectrum**



**Plate Movements**



**Key**

- Transform boundary
- ▲ Convergent boundary
- Divergent boundary
- ← Direction of plate movement

**Formulas**

<p><b>Velocity</b></p> $v = \frac{x_2 - x_1}{t_2 - t_1} = \frac{\Delta x}{\Delta t}$	<p><math>v</math> = velocity  <math>x</math> = position (<math>x_1</math> initial; <math>x_2</math> final)  <math>\Delta x</math> = change in position  <math>t</math> = time (<math>t_1</math> initial; <math>t_2</math> final)  <math>\Delta t</math> = change in time</p>	<p><b>Universal Gravitation</b></p> $F_{gravity} = G \frac{m_1 m_2}{d^2}$	<p><math>F</math> = Force  <math>G</math> = Universal Gravitational Constant (<math>6.67 \times 10^{-11} \text{ Nm}^2/\text{kg}^2</math>)  <math>m_1</math> = mass of first object  <math>m_2</math> = mass of second object  <math>d</math> = distance between center of <math>m_1</math> and <math>m_2</math></p>
<p><b>Acceleration</b></p> $a = \frac{v_2 - v_1}{t_2 - t_1} = \frac{\Delta v}{\Delta t}$	<p><math>a</math> = acceleration  <math>v</math> = velocity  <math>\Delta v</math> = change in velocity  <math>t</math> = time  <math>\Delta t</math> = change in time</p>	<p><b>Momentum</b></p> $p = mv$	<p><math>p</math> = momentum  <math>m</math> = mass  <math>v</math> = velocity</p>
<p><b>Constant Acceleration of Free-Falling Objects</b></p> $y = \frac{1}{2}gt^2$ $v = at$	<p><math>y</math> = vertical distance traveled  <math>g</math> = acceleration due to gravity (<math>10 \text{ m/s}^2</math>)  <math>t</math> = time  <math>v</math> = velocity  <math>a</math> = acceleration</p>	<p><b>Heat</b></p> $Q = mc(T_2 - T_1) = mc\Delta T$	<p><math>Q</math> = heat transferred  <math>m</math> = mass  <math>c</math> = specific heat (water = <math>4 \text{ J/g} \cdot ^\circ\text{C}</math>)  <math>T</math> = temperature (<math>T_1</math> initial; <math>T_2</math> final)  <math>\Delta T</math> = change in temperature</p>
<p><b>Force</b></p> $F = ma$	<p><math>F</math> = Force  <math>m</math> = mass  <math>a</math> = acceleration</p>	<p><b>Density</b></p> $D = \frac{m}{V}$	<p><math>D</math> = density  <math>m</math> = mass  <math>V</math> = volume</p>

PERIODIC TABLE OF THE ELEMENTS

Group	→ 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Period	↓ 1 A	2 A	3 B	4 B	5 B	6 B	7 B	8	9	10	11 B	12 B	13 A	14 A	15 A	16 A	17 A	18	
1	Hydrogen <b>H</b> 1.008	<b>II A</b>											<b>III A</b>	<b>IV A</b>	<b>V A</b>	<b>VI A</b>	<b>VII A</b>	<b>VIII A</b>	
2	Lithium <b>Li</b> 6.941	Beryllium <b>Be</b> 9.012											Aluminum <b>Al</b> 26.982	Carbon <b>C</b> 12.011	Nitrogen <b>N</b> 14.007	Oxygen <b>O</b> 15.999	Fluorine <b>F</b> 18.998	Helium <b>He</b> 4.003	
3	Sodium <b>Na</b> 22.990	Magnesium <b>Mg</b> 24.305	<b>III B</b>	<b>IV B</b>	<b>V B</b>	<b>VI B</b>	<b>VII B</b>	←	<b>VIII B</b>	→	<b>I B</b>	<b>II B</b>	Aluminum <b>Al</b> 26.982	Silicon <b>Si</b> 28.086	Phosphorus <b>P</b> 30.974	Sulfur <b>S</b> 32.066	Chlorine <b>Cl</b> 35.453	Argon <b>Ar</b> 39.948	
4	Potassium <b>K</b> 39.098	Calcium <b>Ca</b> 40.078	Scandium <b>Sc</b> 44.956	Titanium <b>Ti</b> 47.88	Vanadium <b>V</b> 50.942	Chromium <b>Cr</b> 51.996	Manganese <b>Mn</b> 54.938	Iron <b>Fe</b> 55.847	Cobalt <b>Co</b> 58.933	Nickel <b>Ni</b> 58.693	Copper <b>Cu</b> 63.546	Zinc <b>Zn</b> 65.39	Gallium <b>Ga</b> 69.723	Germanium <b>Ge</b> 72.61	Arsenic <b>As</b> 74.922	Selenium <b>Se</b> 78.96	Bromine <b>Br</b> 79.904	Krypton <b>Kr</b> 83.80	
5	Rubidium <b>Rb</b> 85.468	Strontium <b>Sr</b> 87.62	Yttrium <b>Y</b> 88.906	Zirconium <b>Zr</b> 91.224	Niobium <b>Nb</b> 92.906	Molybdenum <b>Mo</b> 95.94	Technetium <b>Tc</b> 97.907	Ruthenium <b>Ru</b> 101.07	Rhodium <b>Rh</b> 102.906	Palladium <b>Pd</b> 106.42	Silver <b>Ag</b> 107.868	Cadmium <b>Cd</b> 112.411	Indium <b>In</b> 114.82	Tin <b>Sn</b> 118.710	Antimony <b>Sb</b> 121.757	Tellurium <b>Te</b> 127.60	Iodine <b>I</b> 126.904	Xenon <b>Xe</b> 131.290	
6	Cesium <b>Cs</b> 132.905	Barium <b>Ba</b> 137.327	Lanthanum <b>La</b> 138.906	Hafnium <b>Hf</b> 178.49	Tantalum <b>Ta</b> 180.948	Tungsten <b>W</b> 183.84	Rhenium <b>Re</b> 186.207	Osmium <b>Os</b> 190.2	Iridium <b>Ir</b> 192.22	Platinum <b>Pt</b> 195.08	Gold <b>Au</b> 196.967	Mercury <b>Hg</b> 200.59	Thallium <b>Tl</b> 204.383	Lead <b>Pb</b> 207.2	Bismuth <b>Bi</b> 208.980	Polonium <b>Po</b> 208.982	Astatine <b>At</b> 209.978	Radon <b>Rn</b> 222.018	
7	Francium <b>Fr</b> 223.020	Radium <b>Ra</b> 226.025	Actinium <b>Ac</b> 227.028	Rutherfordium <b>Rf</b> (261)	Dubnium <b>Db</b> (262)	Seaborgium <b>Sg</b> (263)	Bohrium <b>Bh</b> (262)	Hassium <b>Hs</b> (265)	Meitnerium <b>Mt</b> (266)										
<b>Lanthanide Series</b>																			
				Cerium <b>Ce</b> 140.115	Praseodymium <b>Pr</b> 140.908	Neodymium <b>Nd</b> 144.24	Promethium <b>Pm</b> 144.913	Samarium <b>Sm</b> 150.36	Europium <b>Eu</b> 151.965	Gadolinium <b>Gd</b> 157.25	Terbium <b>Tb</b> 158.925	Dysprosium <b>Dy</b> 162.50	Holmium <b>Ho</b> 164.930	Erbium <b>Er</b> 167.26	Thulium <b>Tm</b> 168.934	Ytterbium <b>Yb</b> 173.04	Lutetium <b>Lu</b> 174.967		
<b>Actinide Series</b>																			
			Thorium <b>Th</b> 232.038	Protactinium <b>Pa</b> 231.038	Uranium <b>U</b> 238.029	Neptunium <b>Np</b> 237.048	Plutonium <b>Pu</b> 244.064	Americium <b>Am</b> 243.061	Curium <b>Cm</b> 247.070	Berkelium <b>Bk</b> 247.070	Californium <b>Cf</b> 251.080	Einsteinium <b>Es</b> 252.083	Fermium <b>Fm</b> 257.095	Mendelevium <b>Md</b> 258.099	Nobelium <b>No</b> 259.101	Lawrencium <b>Lr</b> 260.105			

Name	Hydrogen
Atomic Number	1
Symbol	<b>H</b>
Atomic Mass	1.008