# Georgia Standards of Excellence
## High School Curriculum Map
### Course Title: Physics  District: SCI 375-376  State ID: 40.08100

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit 1:</strong> Kinematics</td>
<td><strong>Unit 4:</strong> Momentum and Impulse</td>
</tr>
<tr>
<td>One and Two Dimensional Kinematics</td>
<td>Wave Characteristics, Sound, Light</td>
</tr>
<tr>
<td><strong>Unit 2:</strong> Dynamics</td>
<td><strong>Unit 5:</strong> Waves</td>
</tr>
<tr>
<td>Newton’s Laws and Gravity</td>
<td>Static Electricity, DC Circuits, Electromagnetism</td>
</tr>
<tr>
<td><strong>Unit 3:</strong> Work and Energy</td>
<td><strong>Unit 5:</strong> E&amp;M</td>
</tr>
<tr>
<td>Work, Energy</td>
<td>Nuclear Physics &amp; Radioactivity</td>
</tr>
<tr>
<td><strong>Unit 6:</strong> Modern</td>
<td></td>
</tr>
<tr>
<td>5 Weeks</td>
<td>3 Weeks</td>
</tr>
<tr>
<td>7 Weeks</td>
<td>9 Weeks</td>
</tr>
<tr>
<td>6 Weeks</td>
<td>3 Weeks</td>
</tr>
<tr>
<td>3 Weeks</td>
<td>3 Weeks</td>
</tr>
<tr>
<td>3 Weeks</td>
<td>9 Weeks</td>
</tr>
<tr>
<td>9 Weeks</td>
<td>3 Weeks</td>
</tr>
</tbody>
</table>

### Standards:

<table>
<thead>
<tr>
<th>SP1.a</th>
<th>SP2.a</th>
<th>SP3.a</th>
<th>SP4.a</th>
<th>SP5.a</th>
<th>SP6.a</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP1.b</td>
<td>SP2.b</td>
<td>SP3.b</td>
<td>SP4.b</td>
<td>SP5.b</td>
<td>SP6.b</td>
</tr>
<tr>
<td>SP1.c</td>
<td>SP2.c</td>
<td>SP3.c</td>
<td>SP4.c</td>
<td>SP5.c</td>
<td>SP6.c</td>
</tr>
<tr>
<td>SP1.d</td>
<td>SP2.d</td>
<td>SP3.d</td>
<td>SP4.d</td>
<td>SP5.d</td>
<td>SP6.c</td>
</tr>
</tbody>
</table>

### Learning Intentions

<table>
<thead>
<tr>
<th>Learning Intentions</th>
<th>Learning Intentions</th>
<th>Learning Intentions</th>
<th>Learning Intentions</th>
<th>Learning Intentions</th>
<th>Learning Intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Intentions</td>
<td>Learning Intentions</td>
<td>Learning Intentions</td>
<td>Learning Intentions</td>
<td>Learning Intentions</td>
<td>Learning Intentions</td>
</tr>
</tbody>
</table>
Focus: How are position, velocity, and acceleration related?

- How can you change an object’s motion?
- How do the conservation laws of energy and momentum affect motion?
- How do waves interact with matter and transfer energy?
- How do electric charges interact, store, and transfer energy?
- How do nuclear processes affect the mass and energy of atomic nuclei?

Essential Vocabulary:
- Kinematics
- Frame of reference
- One-dimensional motion
- Two-dimensional motion
- Position
- Distance
- Displacement
- Average speed/velocity
- Instantaneous speed/velocity
- Scalar
- Vector
- Acceleration
- Motion graph
- Free-fall
- Projectile
- Force
- Inertia
- Acceleration
- Mass
- Free Body Diagram
- Gravitational Force
- Normal Force
- Friction force
- Tensions force
- Spring force
- Centripetal
- Work
- Energy
- Mechanical Energy
- Potential Energy
- Elastic Potential Energy
- Gravitational Potential Energy
- Kinetic Energy
- Work-Energy Theorem
- Conservation of Energy
- Conservative Force
- Non-Conservative Force
- Power
- Frequency
- Wavelength
- Amplitude
- Period
- Transverse
- Longitudinal
- Propagate
- Harmonics
- Simple Harmonic Motion (SHM)
- Resonance
- Angular frequency
- Interference (constructive and destructive)
- Superposition
- Reflection
- Refraction
- Diffraction
- Standing wave
- Node/Antinode
- Doppler Effect
- Pitch
- Decibel
- Speed of Light
- Wave speed
- Color
- Polarization
- Charge
- Coulomb’s Law
- Electric Field
- Potential
- Electric Potential
- Energy
- Voltage
- Current
- Resistance
- Ohm’s Law
- Capacitance
- Current
- Parallel Circuit
- Series Circuit
- Equivalent resistance
- Conductors
- Insulators
- Superconductor
- Induction
- Solenoid
- Right hand rule
- Ammeter
- Voltmeter
- Kirchhoff’s Law
- Faraday’s Law
- Lenz's Law
- Motor
- Generator
- Isotopes
- Strong Nuclear Force
- Radioactive decay (Alpha, Beta, Gamma)
- Binding Energy
- Fission
- Fusion
- Half-life
- Law of conservation of mass
- Law of conservation of energy
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>-Snell’s Law</th>
<th>-Mirror (concave/convex)</th>
<th>-Lens (concave/convex)</th>
<th>-Ray diagram</th>
<th>-Real image</th>
<th>-Virtual image</th>
<th>-Focus</th>
<th>-Magnification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extensions/Reading</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selections:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Each unit integrates laboratory experiences and field work using the process of inquiry. There are several strategies that are common throughout the units such as the use of a laboratory notebook, written lab reports, common teaching strategies, and written assignments relative to technical and seminal documents. Lab safety is stressed in all practical situations. Many standards are recursive in nature and will be revisited in different units throughout the year.

Resources  [www.georgiastandards.org](http://www.georgiastandards.org)