

**SCIENCE CURRICULUM SUMMARY**

The purpose of the Science Curriculum Summary is to present an overview of the Honors Physics II: Extended Topics in Physics curriculum. Parents are the intended audience of the Science Curriculum.

<b>Electricity</b>
<ul style="list-style-type: none"> <li>•Electrostatic Force</li> <li>•Electric Fields</li> <li>•Electric Potential</li> <li>•Current, Resistance</li> <li>•Electric Energy</li> <li>•Electric Power</li> <li>•Series and Parallel Resistors</li> <li>•Capacitors</li> </ul>

<b>Magnetism</b>
Magnetic Fields Force on moving charges in a magnetic field Ampere’s law Types of magnets Production of EM waves EM Spectrum properties

<b>Unifying Themes</b>
Problem Solving Skills Appropriate use of models Laboratory skills Describe similar patterns of changes Connections to other disciplines

<b>Inquiry and Design</b>
<ul style="list-style-type: none"> <li>•Quantitative and qualitative skills based on observations</li> <li>•Scientific process skills</li> <li>•Theories and laws</li> <li>•Inferences and predictions using scientific information</li> <li>•Tools and technology of physics</li> <li>•Scientific inquiry to solve problems</li> </ul>

<b>Waves: Optics and Sound</b>
Optics: Converging and Diverging Lenses Concave and Convex Mirrors Compound Lens Systems Snell’s Law Diffraction Thin Film Interference Polarization Huygen’s Principle  Sound: Velocity through different media Wavelength, Frequency, Amplitude Intensity and Intensity Levels Open and Closed Tube Resonance

**Heat**

Temperature vs. Heat  
Thermal Expansion  
Specific Heat  
Changes of Phase  
Calorimetry  
Modes of Heat Transfer

**Relativity**

Time Dilation  
Length Contraction  
Relativistic Mass  
Energy  
Twin Paradox