

Core Ideas, Topics and Titles	Established Goals	Understanding of Concepts	Essential Questions	Student Outcomes
<b>GRADE TWO</b>				
<p><b>Core Idea:</b> <b>Electromagnetic Radiation PS4B, ES-3</b></p> <p><b>Topic: Air and Weather</b></p> <p><b>Title: <i>Recording the Weather</i></b></p>	<ul style="list-style-type: none"> <li>Obtain and communicate information that very hot objects give off light.</li> <li>Describe the weather changes from day to day.</li> </ul>	<ul style="list-style-type: none"> <li>There are many ways to measure light and heat coming from the sun in energy waves.</li> <li>Heat from the sun warms the air and creates our weather.</li> </ul>	<ul style="list-style-type: none"> <li>Where does heat come from?</li> <li>How can the heat be measured?</li> </ul>	<ul style="list-style-type: none"> <li>Keep weather charts for two weeks showing how temperature changes.</li> <li>Describe and give three examples of the ways that energy from the sun affects our lives.</li> </ul>
<p><b>Core Idea:</b> <b>Electromagnetic Radiation PS4B</b></p> <p><b>Topic: Mirrors and Prisms</b></p> <p><b>Title: <i>Reflecting Light</i></b></p>	<ul style="list-style-type: none"> <li>Investigate and describe how mirrors and prisms can be used to direct a light wave beam.</li> </ul>	<ul style="list-style-type: none"> <li>Light travels in a straight line until it strikes an object.</li> <li>Difference between reflection and refraction.</li> </ul>	<ul style="list-style-type: none"> <li>How can mirrors and prisms be used to reflect and refract light?</li> <li>Why do we see colors?</li> <li>What causes a rainbow?</li> </ul>	<ul style="list-style-type: none"> <li>Demonstration examples of redirecting light using mirrors.</li> <li>Explain how a rainbow is created using a prism.</li> </ul>
<p><b>Core Idea:</b> <b>Wave Properties, PS4A</b></p> <p><b>Topic: Sound Waves In Our Lives</b></p> <p><b>Title: <i>VVVibrations</i></b></p>	<ul style="list-style-type: none"> <li>Carry out investigations to provide evidence that vibrating matter creates sound and sound can cause matter to vibrate.</li> </ul>	<ul style="list-style-type: none"> <li>Sounds can make matter vibrate and vibrating matter can make sound.</li> </ul>	<ul style="list-style-type: none"> <li>How is sound produced?</li> <li>How does sound travel from one place to another?</li> <li>How do we hear?</li> </ul>	<ul style="list-style-type: none"> <li>Give three different examples of sound, and how it is created by vibration of air.</li> <li>Create a diagram demonstrating how we hear.</li> </ul>
<p><b>Core Idea:</b> <b>Information Technologies and Instrumentation, PS4C</b></p> <p><b>Title: Communication</b></p> <p><b>Title: <i>Show Me A Sign</i></b></p>	<ul style="list-style-type: none"> <li>Design a device that uses light or sound to send a message over a distance.</li> </ul>	<ul style="list-style-type: none"> <li>Students can use the concept of message sending and use of codes to understand systems concepts and their application.</li> <li>Students will explore hand signals required to send a successful message of their intentions.</li> </ul>	<ul style="list-style-type: none"> <li>How do we communicate?</li> <li>What devices do we use to communicate?</li> <li>How have communication devices changed over time?</li> </ul>	<ul style="list-style-type: none"> <li>Create a code using hand signals to send a message without talking, and use it with other students.</li> <li>Describe a successful message system and identify the parts that must be in place to connect the sender and receiver of a message.</li> </ul>