

# Physics of Sound

## Storyline with Essential Questions

<p style="text-align: center;"><b>Investigation One</b></p> <p style="text-align: center;"><b>Dropping In</b></p>	<p style="text-align: center;"><b>Part One</b></p> <p>Can we identify objects by the sounds they make when they are dropped?</p> <p style="text-align: center;"><b>Drop Challenge</b></p> <p>Students discriminate between objects using properties of sound.</p>	<p style="text-align: center;"><b>Part Two</b></p> <p>How accurate can we become at identifying sounds? Can sounds become a source of communication?</p> <p style="text-align: center;"><b>Drop Codes</b></p> <p>Students use different sounds to create a communication code</p>	<p style="text-align: center;"><b>Part Three</b></p> <p>Why are some sounds louder than others?</p> <p style="text-align: center;"><b>Drop Codes</b></p> <p>Students use different sounds to create a communication code</p>
<p style="text-align: center;"><b>Investigation Two</b></p> <p style="text-align: center;"><b>Good Vibrations</b></p>	<p style="text-align: center;"><b>Part One</b></p> <p>What determines the pitch of a vibrating object?</p> <p style="text-align: center;"><b>Vibration and Pitch</b></p> <p>Students experiment with high and low pitches</p>	<p style="text-align: center;"><b>Part Two</b></p> <p>What affect does length have on pitch?</p> <p style="text-align: center;"><b>Length and Pitch</b></p> <p>Students change the length of the sound source to control pitch.</p>	<p style="text-align: center;"><b>Part Three</b></p> <p>What affect does tension have on pitch?</p> <p style="text-align: center;"><b>Tension and Pitch</b></p> <p>Students affect the pitch of a string by changing the tension on the string.</p>
<p style="text-align: center;"><b>Investigation Three</b></p> <p style="text-align: center;"><b>How Sound Travels</b></p>	<p style="text-align: center;"><b>Part One</b></p> <p>Can sound travel through water?</p> <p style="text-align: center;"><b>Sounds Travel through Air and Water</b></p> <p>Students observe sound traveling through air and water</p>	<p style="text-align: center;"><b>Part Two</b></p> <p>Can sound travel through solids?</p> <p style="text-align: center;"><b>Sound Travels Through Solids</b></p> <p>Students observe sound traveling through solids</p>	
<p style="text-align: center;"><b>Investigation Four</b></p> <p style="text-align: center;"><b>Sound Challenges</b></p>	<p style="text-align: center;"><b>Part One</b></p> <p>What can we learn about sound through our own careful observations?</p> <p style="text-align: center;"><b>Sound Challenges</b></p> <p>Students gain new knowledge of sound as they rotate through stations solving a series of sound challenges</p>	<p style="text-align: center;"><b>Part Two</b></p> <p>How can we find answers to our own questions about sound?</p> <p style="text-align: center;"><b>Choosing Your Own Investigation</b></p> <p>Students turn their own sound questions into investigable projects</p>	