

# Sound Concept Storyline

## Unifying Concept

Sound is generated by a kinetic disturbance.

## Unit Concept

Sound varies in frequency (pitch) and loudness (volume).

## Grade-Level Concept

Sound is produced by vibrations that move through objects and the air. Pitch and volume are important properties of sound.

### Subconcept 1

**Sound is a form of kinetic energy that may be generated by a variety of means. Sound travels as kinetic waves through different media.**

Lesson 1: Pre-Unit Assessment: Thinking about Sound  
*Students discuss sound and explore tuning forks.*

Lesson 2: How Sound Travels  
*Students investigate how sound produced by a tuning fork travels through different media.*

### Subconcept 2

**The pitch of sound varies with the frequency of vibration of the generating mechanism.**

Lesson 3: Making Sounds with Nails  
*Students investigate the difference between pitch and volume.*

Lesson 4: Making Sounds with Rulers  
*Students investigate length as a variable that affects pitch.*

Lesson 5: Exploring Pitch  
*Students continue to explore the relation between frequency of vibrations and pitch.*

Lesson 6: Vibrations We Can't See  
*Using a sound whistle, students investigate the sounds generated by a column of vibrating air.*

### Lesson 7: Designing a Reed Instrument

*Students use a vibrating reed to examine the characteristics of pitch.*

### Lesson 9: Making Sounds with String

*Students examine how a vibrating string makes sound and how the length of a vibrating string affects pitch.*

### Lesson 10: Changing Pitch by Changing Tension

*Students study how the tightness of a vibrating string affects pitch.*

### Lesson 11: Tuning a Stringed Instrument

*Students experiment with varying the length and tension of strings on a harp.*

### Lesson 12: How Do Different Strings Sound?

*Students discover how the thickness of strings affects pitch.*

### Subconcept 3

**The volume, or loudness, of sound is dependent on the amplitude of the vibration.**

Lesson 13: Making Louder Sounds from Strings  
*Students examine how to vary the volume of the sound.*

### Subconcept 4

**Humans can both hear and produce sound.**

### Lesson 8: Making a Model Eardrum

*Students discuss vibrations of the human eardrum.*

### Lesson 14: Making Sounds with Air and Strings: The Human Vocal Cords

*Students use rubber bands to model the sounds produced by humans.*

### Subconcept 5

**Sound may be generated by a variety of types of instruments.**

### Lesson 15: What Have We Learned about Sound?

*Students plan how to design a musical instrument.*

### Lesson 16: Sharing What We Have Learned

*Students complete their instrument design, test and improve it, and present their results to the class.*

### Lesson 17: Post-Unit Assessment: Sharing What We Have Learned about Sound

*Students discuss and reflect on what they have learned.*