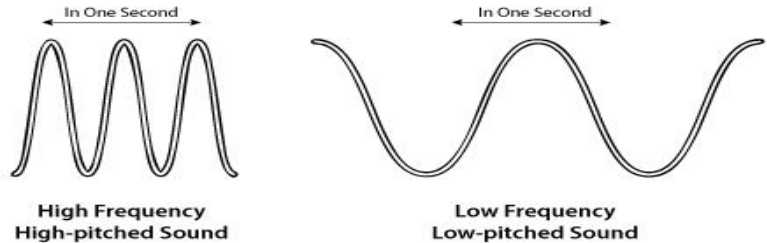


## Vibrations: Building a Bee Buzzer (6-8)

### KEY CONCEPTS:

- Sound is produced by waves of **vibrations**. These waves are not visible, but we can often feel these vibrations or see the effect on a medium, such as the surface of water.
- We hear sound waves that travel into the inner ear canal and vibrate against the eardrum, sending a signal to the brain.
- Low sounds travel on long, slow waves; while high-pitched sounds travel on shorter, faster waves. The **frequency** of a wave is how fast the vibration moves in one second.

Frequency of Sound Waves



### LITERACY CONNECTION:

[Song for a Whale](#) by Lynne Kelly is a great way to connect the physics of sound with the real world through a story about a young deaf girl and a whale. The National Park Service is also an excellent place to learn more about [whale sounds](#) and to hear underwater sound clips.

### ACTIVITY: BEE BUZZER

Materials: 1 note card, 2 eraser caps, 1 popsicle stick, 1 piece of string (~2'), 1 rubber band

1. Fold the note card in half and decorate the OUTSIDE
2. Place one eraser cap on each end of the popsicle stick
3. Place the folded note card over the stick and staple it in place
4. Tie the string next to one eraser
5. Stretch the rubber band around the erasers, end to end
6. Make sure you have space, OR go outside to swing the buzzer



**What is happening?** When you spin the buzzer, moving air causes the rubber band to vibrate. Sound is produced by those vibrations, in the same way that vibrating strings on a guitar or violin produce sound. The sound is amplified - made louder - by the index card.

**EXPLORE:** Try folding or cutting the note card and see how the vibrations change!

For step-by-step instructions, watch the video at: [Bee Buzzer STEM Activity](#)

*This at-home educational activity is from the Literacy Coalition of Palm Beach County's literacy-based Stories & STEM program. Stories & STEM is made possible with support from Prime Time Palm Beach County, Inc., which receives significant funding from the Children's Services Council of Palm Beach County, Inc.*

*Having fun? Send pictures or video links of you and your Stories & STEM projects to [csharkey@literacypbc.org](mailto:csharkey@literacypbc.org)*