



OBJECTIVE OF THIS INVESTIGATION:

Children will develop a greater understanding of how sound is made by exploring the tempo, volume, and pitch of their voice or instruments.

VOCABULARY:

- volume
- tempo
- pitch
- loud/soft
- high/low
- fast/slow

MATERIALS:

- your voice or a pre-recorded song
- a method to play music (e.g., instrument, a spoon and cup, etc.)

PROGRESSION STEPS (SCIENCE: SOUND):

Visit [STEMIE Learning Trajectories](#) for details

- Volume Changer
- Tempo Changer
- Pitch Manipulator

THIS INVESTIGATION:

Volume (**Volume Changer**)

- Provide children with an instrument such as a drum, makeshift drum (a bucket and stick), piano, or other musical instrument.
- Challenge children to play at different volumes
“How can we make a soft sound? How can we make a loud sound?”
- Challenge children to identify different sound volumes.

Tempo (**Tempo Changer**)

- While singing a song, change the tempo of your voice and see if children can match your tempo.
- After the song, ask children to describe the tempo of the song you sang together.
“Tempo is how fast or slow a song is. What was the tempo? Was it fast or slow?”
- Ask children to identify a different tempo and attempt to sing the song at that tempo.

“What tempo should we sing the song now? Fast or slow?”

ADAPTATIONS:

See [A Guide to Adaptations](#) for general ideas and strategies

Environment:

- Choose a space without a lot of echo or background noise, if possible.

Instruction:

- When labeling “deep” or “high” do so in a deep or high voice depending on the pitch





SOUNDS INVESTIGATION: PART 3

SCIENCE: SOUND

Every child is different. Do what works best for encouraging each child's exploration of this suggested activity.

THIS INVESTIGATION (CONTINUED):

Pitch (**Pitch Manipulator**)

- Sing a song with children that involves moving their bodies high and low (e.g., *Wave Your Scarf Up and Down*).
- While singing the song with children, use different pitches for different parts of the song/movements (e.g., a low deep voice when touching the ground, a high shrill voice when reaching for the sky) and encourage children to label the pitch.
- Support children by modeling and labeling:
 - "I'm going to use different pitches when I sing. See if you can match the pitch."**
 - "Can you label the pitch?" "This is a 'high pitch.' This is a 'low pitch.' What pitch did I just use?"**

ADAPTATIONS (CONTINUED):

- If children are singing, have them put a hand on their throat to feel the vibration
- Some pitches and volumes can irritate children. Ask children/notice children's cues to determine if a song, volume, or pitch is irritating

HOW TO CONTINUE THIS INVESTIGATION:

- Try this activity with different songs and instruments to support generalization.
- Challenge children to create their own songs that use different volumes, tempos, and pitches.