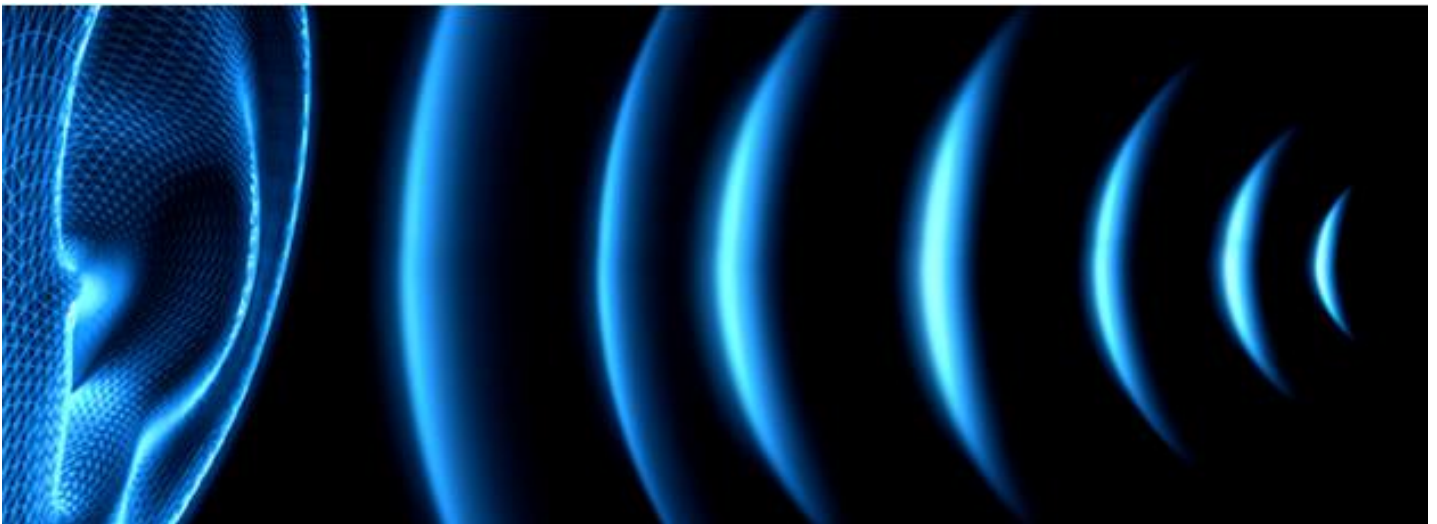# STEM Student Packet
SOUND AND PITCH
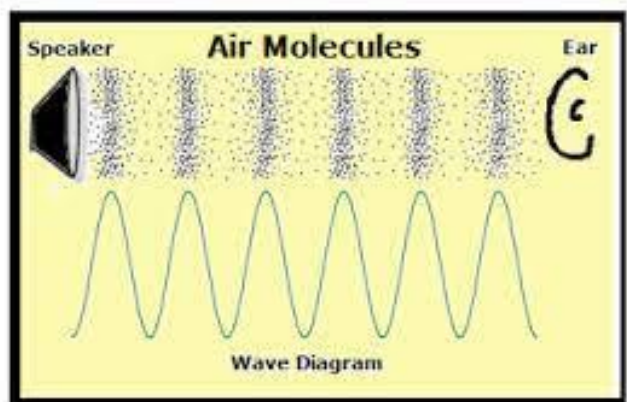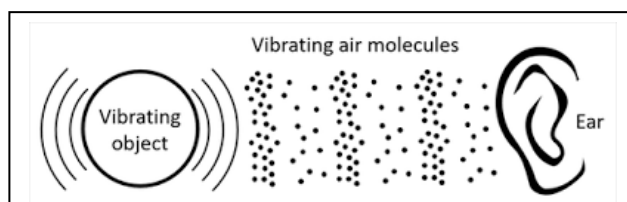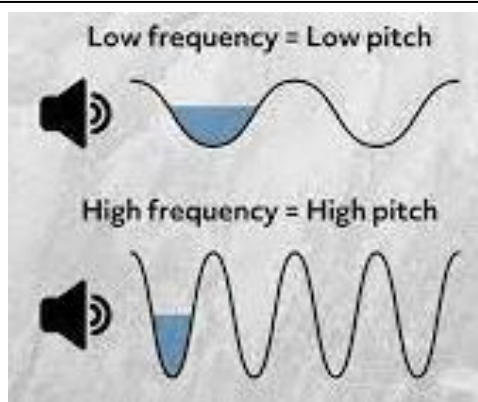

Name _____

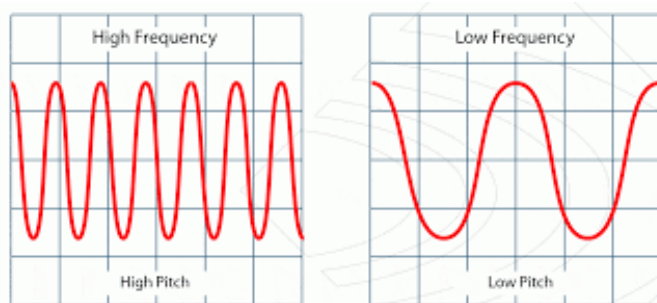**Section** _____

STEM Vocabulary

sound wave
tiny changes in air pressure

vibration
a very fast movement back-and-forth

pitch
how high or low a sound is perceived to be

frequency
how many waves pass through a fixed place in a
certain amount of time

STEM- SOUND AND PITCH

Directions: Watch the videos *Sound Waves* and *Frequency and Pitch* in Discovery Education and answer the questions below

Respond

1. Why can't sound travel in a vacuum?

2. What makes sounds have different pitches?

3. What kinds of waves produce sounds with a high pitch?
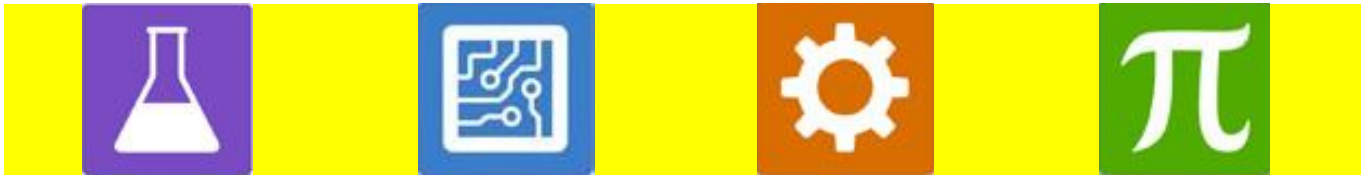
STEM- SOUND AND PITCH

Research	Working Packet

Group #_____   **Section: _____**
Student Name: _____
Partner's Name: _____
_____

Challenge:

Research
(Sources: **Science Notebook**, **Elevate Science Textbook, and/or Discovery Education**. Note the **sources** you used, including **page numbers, titles**, **and/or links** in the provided space below.)

Group #_____   **Section: _____**
Student Name: _____
Partner's Name: _____
_____

_____

Design the Prototype

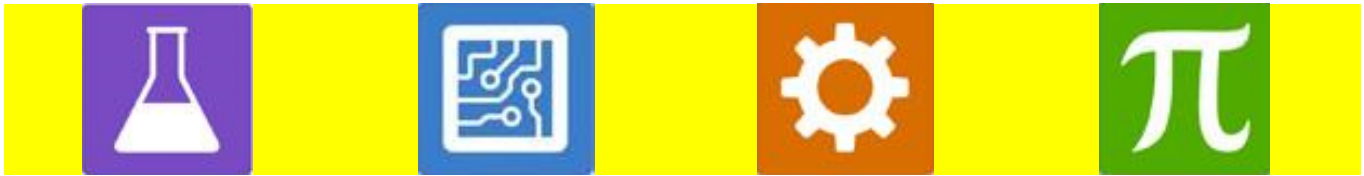(Create a **labeled** diagram of your prototype.)

Materials

CONTAINER:

LIQUID:

UTENSIL:

Group #_____   **Section: _____**

Student Name: _____

Partner's Name: _____

_____

Pitch Measured Using Your App

Standard form	
Expanded form	
Word Form	

Is this a low or high pitched sound?

LOW   **HIGH**

Group #_____   **Section: _____**
Student Name: _____
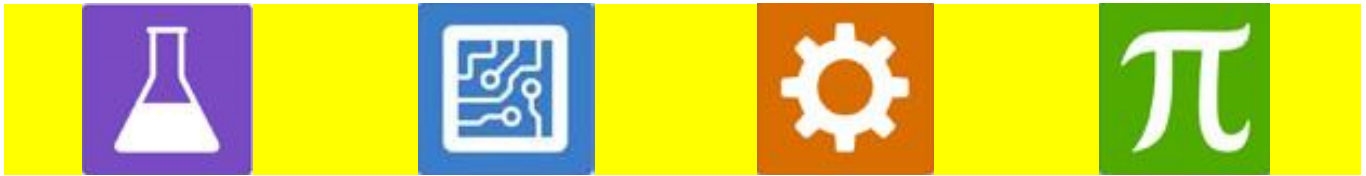**Partner's Name: _____**
_____

<mark>Improve the Prototype</mark>

(Re-design your Prototype. Create a labeled diagram of your new/improved prototype.)

Materials

CONTAINER:

LIQUID:

UTENSIL:

Test your New/Improved Prototype - Collect your Data

Pitch Measured Using Your App

Standard form	
Expanded form	
Word Form	

Is this a low or high pitched sound?

LOW   **HIGH**

Group #_____   Section: _____

Student Name: _____

Partner's Name: _____

_____
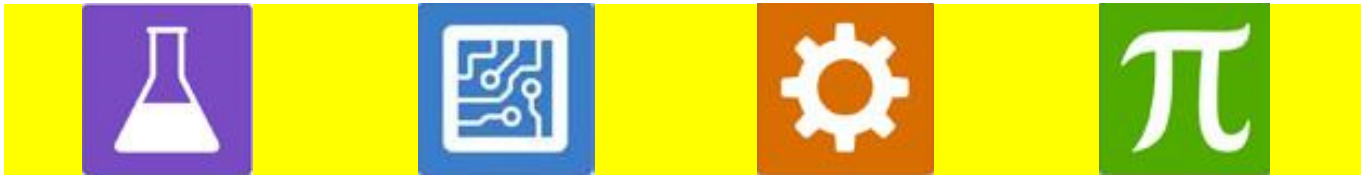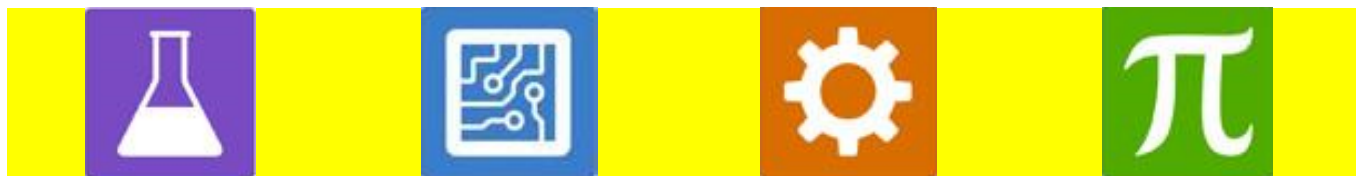
1. Did your first design meet the goal? Why or why not?

2. If you had to do this process again, what would you do differently?

3. What did you learn? Discuss your success or lack of success and reasons for it.

A
A

Engineering Design Process

Step 1 : Ask (Define the Problem)

Make a KeyNOte – Use *Keynote* to create a presentation following the instructions below. Share the movie or presentation on Seesaw.

Instructions: Create a Keynote Presentation that has the following:
- At least 5 slides
- Transitions between the slides
- At title slide (the that you picked for your project)
- Each slide must have at least 1 image or video that conveys the topic
- Include a video of when you tested your first AND your second prototype
- Your presentation should answer these questions:
  1. What was your project about?
  2. What were your findings during the research?
  3. Which materials did you use from the available ones?
  4. Did your prototype pass the challenge?
  5. Why did your prototype pass or did not pass the challenge?
  6. If YES to question #5, skip question #7!
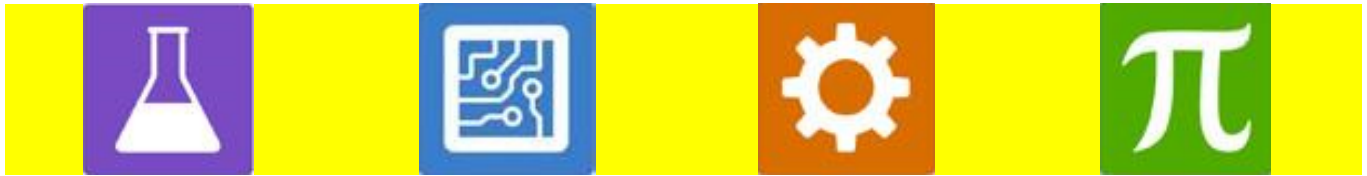
7. If NO to question #5, what changes did you make to your prototype? Did it pass the challenge after you improved it?
8. ==Add pictures and video that you recorded during the project in your presentation.==