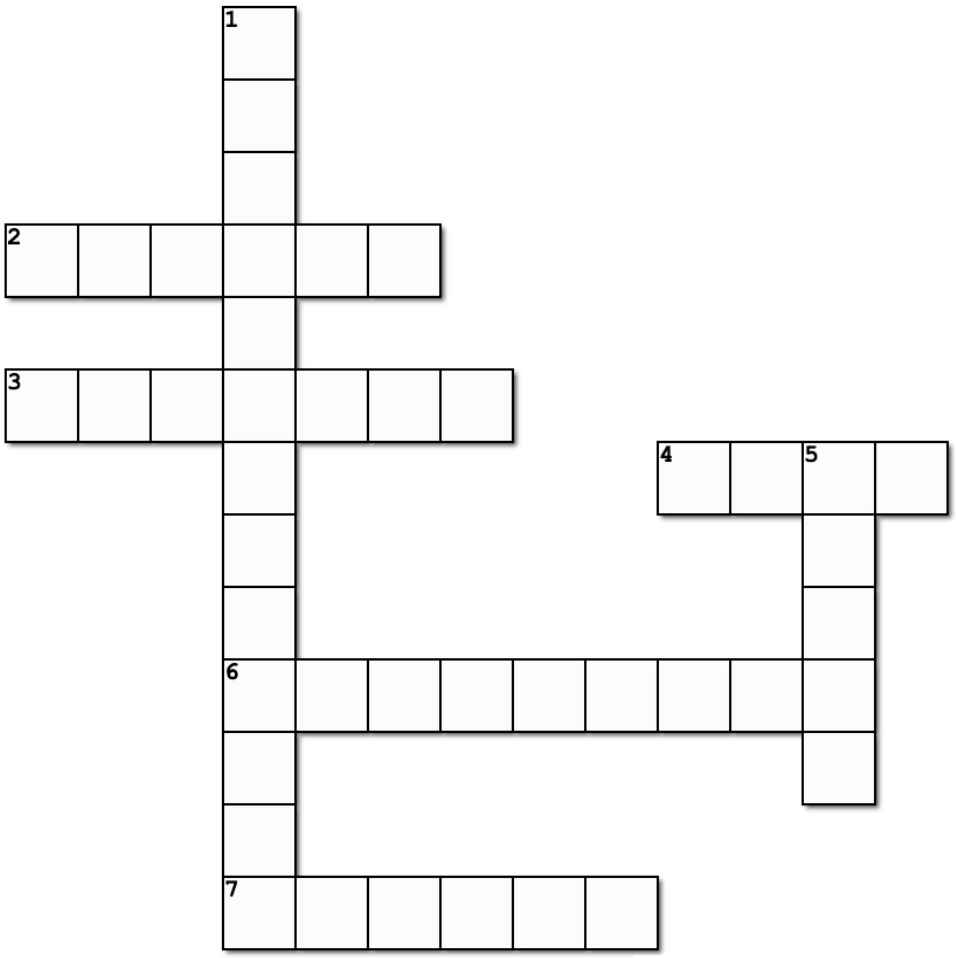
Let's Review

The crossword puzzle below includes terms and ideas we learned about in the YPC video. Complete the puzzle to see what you remember!



Across

2. To hit a note one time on a percussion instrument
3. This percussion instrument has wood bars and metal resonators. It is an IDIOPHONE and has DEFINITE PITCH.
4. To hit a note many times in a row, very quickly on a percussion instrument
6. An instrument that vibrates to make sound
7. Shorter bars or tubes means a _____ pitch

Down

1. A sound with a specific note or pitch
5. Longer bars or tubes means a _____ pitch

Let's Put it into Action!

Below is a brief tutorial on how to build your own paper marimba. Check out THIS VIDEO (https://www.youtube.com/watch?v=KxQOJja9XVM) to see the step-by-step process.

Science: We will better understand how resonators work to amplify a sound.

Technology: This refers to the skills, methods, or processes used to achieve goals. Our processes and methods are outlined in the steps below and in the tutorial video. Our end goal is to create a paper marimba to experiment with different pitches and making music.

Engineering: We will build and assemble a paper marimba.

Arts: We will understand differences between pitches and how length/size determines how low or high a pitch sounds. Plus, we got to see and hear marimbas during the HSO performance!

Math: We will measure the length of each tube and various parts of the instrument.

What You Will Need

1. String
2. Tape
3. Glue
4. Scissors
5. Ruler
6. Pencil
7. Glue stick
8. White paper
9. Construction paper
10. One piece of cardboard

How to Make A Paper Marimba

1. **Make two small tubes:** Place the pencil at the edge of a piece of white paper. Roll the paper into a small tube around the pencil. Remove the pencil and tape the tube shut. Repeat to make two tubes.

2. **Make thick tubes:** Place the glue stick at the edge of a piece of construction paper. Roll the paper into a tube around the glue stick, then tape the tube shut and remove the glue stick. Using the ruler and scissors, measure and cut different sized tubes. Remember, longer tubes mean a lower pitch and shorter tubes mean a higher pitch. Repeat to make at least five tubes.

3. **Tie the instrument together:** Measure and cut ten pieces of string that are each ten inches long. Tie a piece of string near each edge of each tube from step two (two pieces of string per tube). Then, tie the small tubes from step one to each tube of construction paper. Once finished, you will have tied the entire instrument together. Note: make sure to arrange the tubes in order from longest (on the left) to shortest (on the right).

4. **Mount the instrument:** Place a small amount of glue on each piece of string on the small, white tubes. Then, flip the instrument over and glue it to the piece of cardboard.

5. **Try it out!:** Once the glue has dried, play the instrument using two pencils (pens, chopsticks, etc.)! As we learned in the YPC video, notice that the longer tubes make a lower sound, and the shorter tubes make a higher sound.