

All Nail Review

Post-visit activity connection to Nickelodeon PlayLab

Grade level/standards: 1st grade NGSS 1-PS4-1, CCSS SL.1.1; 4th grade NGSS 4-PS3-2, 4-PS3-3, 4-PS3-4, CCSS 4.OA.A.1

Concepts: Sounds from vibration, pitch

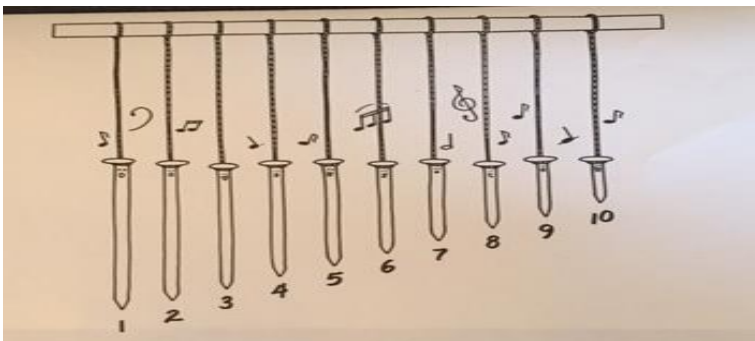
Materials needed: (per group of four)

1. String
2. 10 nails each a different length; ruler; 1 "stricker" nail

Procedure:

[*Prepare the nails ahead of time for younger students. Each nail will need a piece of string tied to the top of the nail with a three inch length extension with a loop tied at the opposite end that will fit over a ruler. Each nail should hang approximately three inches from the ruler. All nails should hang the same distance from the ruler.]

1. Start the activity by demonstrating the sounds that various objects create when struck with a "stricker" nail. Use things such as an empty bottle, a metal vase, etc.
2. Have the students tie a five inch string around each nail.
3. Tie the nails to a ruler according to length, shortest nail to the longest nail. The nails should each hang three inches from the ruler.
4. Hang the ruler between two chairs or desks.
5. Have the students predict what pitch they expect from each nail. Will it be higher or lower than the nails next to it?
6. Have the students strike the nails with the "stricker" nail and check if their hypotheses are correct.
7. Have the students compose a song using the nails.



What's Happening:

According to the [American National Standards Institute](#), pitch is the auditory attribute of sound according to which sounds can be ordered on a scale from low to high. Since pitch is such a close proxy for frequency, it is almost entirely determined by how quickly the sound wave is making the air vibrate and has almost nothing to do with the intensity, or amplitude, of the wave. That is, "high" pitch means very rapid oscillation, and "low" pitch corresponds to slower oscillation

Book List:

1. Music Hit the Right Note by Dan Green
2. Sound by Natalie Rosinsky
3. Music is a Rainbow by Stephen Earl

Extension Activities:

1. Have the students experiment with other objects such as coins or glasses to determine pitch.
2. Have the students create other instruments to demonstrate pitch. Have the students compose a song that will utilize all the student-created instruments.
3. Create a stop motion video of the student-created orchestra.
4. Choose an instrument and write a story featuring the instrument as the main character. Provide illustrations.
5. Have the students blow across the top of the bottles to create a different sound than made when tapping. Have them write hypothesis of why and then research to prove or disprove their hypothesis.