

Name: _____

Date: _____

MAKING A GUITAR

Humans have developed many ways to use sound. It helps with communication, advertising, and even safety. We have also learned to use sound as a form of entertainment. Music, both vocal and instrumental, is a big part of most cultures around the world. Today we will try our hand at creating some music, but building our own instrument.

Equipment:

- Plastic Yogurt Container (or similar)
- Thick Cardboard
- Paper Clips
- Block of Wood
- Elastics

Procedure:

1. Cut a slot that is about 5 cm wide, about the same thickness as the cardboard, near the bottom of the plastic container.
2. Cut an identical slot on the other side of the container, so that they are directly opposite.
3. Cut a piece of cardboard 5cm wide by about 25 cm long.
4. Slide the cardboard through the two slots.
5. Attach a paper clip to each end of the cardboard, such that they are in line.
6. Attach an elastic to one of the paperclips.
7. Stretch the elastic over the bottom of the container and attach it to the other paperclip.
8. Repeat steps 5 through 7 two more times, using different elastics.
9. Slide the block of wood under the elastics, on top of the container.



Observations:

In the space below, write down anything you observed while playing your guitar.

Discussion:

1. Do all of the guitars in the class sound the same? Why do you think they sound different? Explain your reason.

No, they do not all sound the same. This is because they were made differently. By making them differently the elastics are stretched differently. Also, different elastics were used. The sound is made by the vibrating elastics, so when they are different, they vibrate differently (cannot vibrate as much, can vibrate more, vibrate at different speeds.)

2. Why did we add the blocks of wood? Talk to a partner to help you form your detailed answer.

The wood helps stretch the elastics more. This allows them to vibrate more. If the elastics were touching the container it would slow or stop the vibrations, which would mean that there is not as much sound.

3. Were you able to make different pitches sounds? If so, what did you do to accomplish it? Why did it work?

The different pitches were made by the different elastics. The tighter the elastic the smaller the vibration, thus changing the pitch. The pitch could also be changed by changing the position of the wooden block, again changing how tight the elastics were.