Sci-Map Site
Monochord Instrument Exhibit

Name of Activity
Make a monochord

Before, While, or After?
Before You Go

Materials
cardboard Necklace Box (or other long, narrow, thin-walled cardboard box with a lid)
rubber band
paper straw
popsicle stick
double-sided clear tape
scissors or sharp hobby knife
a large round leather punch (optional)

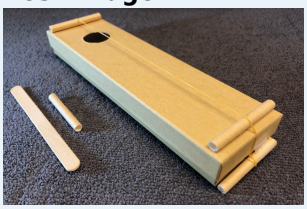
Procedure
PROCEDURE
1. Remove the lid from the box and draw a small circle on the inside at a position approximately 1/4 from an end. This will be the sound hole.
2. Cut out the circle or use a large round leather-punch to cleanly remove the circle.
3. Put the lid back on the box.
4. Cut the straw into 4 equal pieces. Using 2 of the pieces, tape one at each end of the top. These are bridges that raise the string so it can vibrate.
5. Put the rubber band around the long side of the box. This is the string.
6. Pluck the string to hear a tone. You can tune the string with an extra piece of straw by placing it under the string and twisting it. Do this on the side of the box at one of the ends.
7. Play different tones by pushing the string down with your finger at different locations as you pluck the string. You can experiment with other ways to push down or pluck the string, such as another piece of straw, popsicle stick, or any other way you can imagine!

Can you play a low tone? Can you play a high tone? How does the length of the string effect the tone? Can you play two tones at the same time?

The Science Behind It
The monochord is a very old instrument. It was used by Pythagoras in ancient Greece to study chords (two or more notes played together). Chords were played by dividing the string into two different lengths with a movable bridge, then plucking both sides of the string. The chords were described as ratios of string lengths, such as, 2/1 (octave), 5/4 (third), 3/2 (fifth), etc.. Pythagoras considered octaves and fifths as consonant (pleasing) and thirds as dissonant (not pleasing).

The monochord typically had one (mono) string but through the centuries more strings were added. In Medieval and Renaissance times the monochord was used to teach music and play simple songs.

Post Image



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