

Dulcimers

OVERVIEW:

In this activity, students will build a dulcimer and learn to play a well-known tune on the instrument.

CONCEPTS:

National Science Foundation Standards:

Standard B: Physical Science

(Transfer of Energy)

- Energy is a property of many substances and its association with heat, light, electricity, mechanical motion, sound, atomic, nuclei, and nature of a chemical.

Benchmark 4: The Physical Setting

F: Motion

- Vibrations in materials set up wave like disturbances that spread away from the source. Sound and earthquake waves are examples. These and other waves move at different speeds in different materials.

OBJECTIVES:

Students will:

- Have a basic understanding of dulcimers and tension.
- Build a dulcimer
- Play a recognizable tune (Happy Birthday) on the dulcimer.
- Define the terms sound and tension

PROCEDURES:

- Allow 2 hours to present the background information and to complete the activity.
- Present the background information.
- Complete the activity (Part A.)
- Follow up activity with discussion questions (see Part B). These questions may be used for assessment purposes

MATERIALS:

- Background information
- Cardboard parts of a dulcimer
- Fret board
- Strings
- Screw drivers
- Hammers
- Plectrums
- Dulcimer music books
- Forrest and Eileen Smith's Windy River Dulcimer Shop:
<http://www.windyriver.org/>
Windy River Dulcimer Shop. 27 Highway 364, Booneville, Ms. 38829
662-728-5448 or forsmith@bellsouth.net

BACKGROUND:

A Dulcimer is a stringed musical instrument that can possibly be classified in the guitar family. It is an American instrument that traces its origin from the Appalachia. One major difference in how it is played is that unlike a guitar, that is played when it is leaning against your tummy or when it is in a sort of standing position on your lap, a Dulcimer is placed across your lap. Also, instead of holding the fret board on your palm, you move your fingers up and down across the fret board but still pressing them down.

By challenging the students to build their own instrument, fundamentals of engineering and acoustics were taught. This way using the instrument as a non-threatening medium, gave the students a chance to do hands-on problem solving.

ACTIVITY:

Part A:

Activity 1:

1. Divide the girls in two's and have them go to the different work stations that have been set up.
2. Check with each of them, if they have all the parts you have set out.
3. Explain to them that the packet has directions to making the dulcimer and which item to begin with.
4. Have the girls begin by screwing the tuner onto the fret board.
5. Then, let them work on putting together the cardboard which makes the “amplifier” of the guitar.
6. Once that is complete, then have them place the fret board right in the middle of the cardboard “amplifier”, pressing it on to make sure that it is well secured.
7. The next step is putting the strings on the dulcimer.

Activity 2:

The students receive a lesson on tension and sound as the strings are tightened. By varying the tension and the string material, they could see how these affected the resulting tone. The Dulcimers are tuned to the solfa notation D-A-D, where the low D is the thick string and the high pitched D, was the smallest of the strings. The hanging string pieces are cut off for safety purposes.

After all the Dulcimers are tuned, teach the girls how to play a simple song on the Dulcimer, and then let them figure out how to play the ‘Happy Birthday’ song.

Part B:

Ask the following questions and allow time for discussion.

What kind of an instrument is a Dulcimer?

Where did it originate from?

What is a fret board and how is it used?

How do we play a Dulcimer?

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For information on lessons:

- Appalachian Dulcimer
Maureen Sellers
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