Music Box Mechanism

P7-7330

INSTRUCTIONAL GUIDE

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Background

Sound travels as a longitudinal wave through matter. Sound waves are a result of mechanical energy from a vibrating mass changing the pressure of the medium the sound is traveling through. By placing a vibrating object against a larger resonant object such as a drum head, chalk board, or thin board, the sound is amplified. The larger surface area of the resonant object creates more sound waves than the vibrating object alone.

Instructions

Before Use:

1. Unscrew the small screws on top of the plastic case to separate the top and bottom of the case
2. Pop the metal mechanism out and attach the handle to the winding mechanism.

Demonstrations:

1. Hold the mechanism in your hand (or, better yet, hang it from a string) and wind it. Ask students to listen and describe the loudness of the sound.
2. Amplify the sound with one of the methods listed below.
3. Ask students to predict which amplification method will produce the loudest sound.

To amplify the sound, hold the music box mechanism against:

- Chalkboard
- Desk
- Window
- Piece of paper
- Piece of paper rolled into a cone
- Piece of cover stock rolled into a cone
- Drum
- Guitar body
- Piano cabinet
- Student's temple
- Student's elbow, as they press an index finger against the bone near their ear

Related Products

Sympathetic Tuning Fork Set (P7-6000) Set includes two C Note 256 Hz tuning forks, one fixed and one adjustable, each mounted on a wooden resonance box and a mallet.

Loudspeaker Kit (P7-7800) This DIY speaker kit is all you need to construct 10 loudspeakers so that students can get real, hands-on experience of how the device works.

Piezo Buzzer in Vacuum Chamber (97-6600) A modern replacement for the traditional Bell Jar and Ringer. An acrylic chamber houses a battery-operated, high output piezo sounder. When the end plates are attached and the unit connected to a vacuum pump no sound can be heard but the sound returns when the air is allowed back in.