

Ames Public Library @HOME Activities

Science of Wind Chimes

Wind chimes have been used since ancient times as a sign of welcome, and even good luck. Wind chimes are made from many materials including natural materials like bamboo and wood, and manmade materials like metal, plastic, and glass. The sound of the chimes depends on the materials it is made from. To learn more, see a related video on the Library's YouTube Channel at <http://bit.ly/APLvideos>.

Books and Media:

Title	Author / Performer	Call Number
<i>Science Projects About Sound</i>	Gardner, Robert	J 507.8 GAR
<i>Sound</i>	Gregory, Josh	J 534 GRE
<i>Sound Waves</i>	Marsico, Katie	J 534 MAR
<i>The Science of Music</i>	Pinto McCarthy, Cecilia	J 534 MCC
<i>Sound All Around</i>	Pfeffer, Wendy	J 534 PFE
<i>Make It Yourself!: Collages & Sculptures</i>	Hove, Carol	J 680 HOV
<i>Cool Outdoor Arts & Crafts: Great Things To Do in the Great Outdoors</i>	Kuskowski, Alex	J 745.5 KUS
<i>52® Boredom Busters for Kids</i>	Gordon, Lynn	e-resource
<i>Max Axiom. Adventures in Sound</i>	Sohn, Emily	J GR NOVEL MAX
<i>The Way Things Work. Sound</i>	(DVD)	J 534 (DVD) WAY
<i>Bill Nye the Science Guy: Sound</i>	Nye, Bill	J 534 (DVD) NYE

Websites:

URL	Notes
www.youtube.com/watch?v=TsQL-sXZOLc	A Youtube video about sound

Take Away Kit: Wind chimes

Bag Contents:

- 1 Wind chime
- 1 Marker

You can decorate your wind chime with the marker provided, and/or with other decorating supplies you may have in your home. Wind chimes can be hung indoors near a door or a window, and outdoors in gardens. As the wind chime in the kit is rather delicate, indoor use is recommended.

The science of wind chimes –

Wind chimes produce inharmonic (as opposed to harmonic) sounds. Chimes are made of many materials, and the tone of the chime depends on the material it is made from. Wind chimes are unique, because unlike a whistle or a pipe organ where the pitch and sound is determined mainly by the column of air vibrating inside the pipe or tube, in a wind chime the sound is created by the chimes striking each other, or when the clapper hung in the center strikes the chimes.

There are three different types of wind chimes:

- A cluster of similar objects that are hung from a central support.
- A cluster of objects with a clapper suspended usually in the middle.
- A bell with a long clapper attached that plays as the wind strikes the clapper against the bell.

Wind chimes are considered to bring good luck in some countries and may be hung by a window.

Sources: [How wind chime is made - material, history, used, product, machine, History, Raw Materials, Design \(madehow.com\)](#)

Vocabulary

Amplitude – (here), the loudness of sound.

Decibel – Unit of measurement to indicate the volume of a sound.

Echo – A reflection of sound.

Frequency – The speed of the vibration; this determines the pitch of the sound. The unit used to measure frequency is Hertz (Hz).

Harmony – Harmony occurs when two or more differently pitched notes are played at the same time.

Inharmonic – Lacking in harmony.

Pitch – The highness or lowness of a tone. Objects that vibrate quickly produce a higher pitch sound.

Pulse – A single vibration or short burst of sound.

Resonance – Reflection that prolongs the sound.

Sound Waves – Vibrations in air, water, or solid that can be heard.

Tone – A steady, periodic sound.

Vibration – Vibration happens when an object moves or shakes back and forth. This causes the molecules in the medium (water, air etc.) around it to also vibrate. Sound is produced when such vibrations happen.