



Singing Bowl and Bell & Dorje Resonance

Bell & Dorje

The Tibetan Dorje & Bell (Ghanta) are the symbols of wisdom and compassion, male and female energy. The bell resonates loudly with beautiful harmonic resonant frequency when rubbed with a wooden mallet. (Like a wet finger on the rim of a wine glass). The bell (Ghanta) is made of a three-metal amalgam and the Dorje of brass.



Bell
or
Ghanta

How to play it: Hold the bell in one hand and the mallet in the other. Start rubbing the wooden mallet with **even pressure** against and around the outside edge of the rim of the bell (see photo). Don't speed: One rotation every 2 seconds should do it. Apply light pressure - the friction of the mallet against the rim produces the energetic vibrations that cause resonance in the bell. The resonant sound should build in strength.



Dorje

← The Dorje has no function in the science classroom. But to the Tibetan monks who use them in their prayer ceremonies, the Dorje and Ghanta are inseparable pieces. The Ghanta symbolises 'female' and 'compassion', while the Dorje represents 'male' and 'wisdom'.

Singing Bowl

The hand made singing bowl from Tibet is a musical instrument used in Buddhist meditation, dating back many centuries. The resonant sound of each bowl is unique - some bowls have a strong single tone, whereas others produce a rich combination of several harmonics and overtones. Your bowl tends to produce an almost pure sine wave.



How to play it: Lay the bowl on the palm of your flat hand. Start rubbing the wooden mallet with **even pressure** against and around the outside edge of the bowl (see photo). Don't speed: One rotation every 2 seconds should do it. Apply light pressure - the friction of the mallet against the outer edge produces the energetic vibrations that cause resonance in the bowl. When done correctly, the bowl will produce a continuous resonant harmonic sound.

Resonance

Most bodies have their own **natural frequency of vibration**, like a stretched string, an organ pipe full of air or a swing in the garden. If we give a swing a series of pushes, we can force it to vibrate, but the vibration (movement) will not build in intensity unless the pushes are **in time with** the swing's natural frequency. When this is so, the vibrations grow rapidly in intensity. We then say there is resonance between the pusher (energiser) and the swing (vibrator). Resonance is therefore forced vibration when the **frequency of the energy source** equals the **frequency of the vibrator**. Engineers are very keen on determining the resonant frequency of structures like bridges, skyscrapers and airplane wings to avoid resonance effects that could cause damage.