

## **The Science of Sound - The Red House, Aldeburgh**

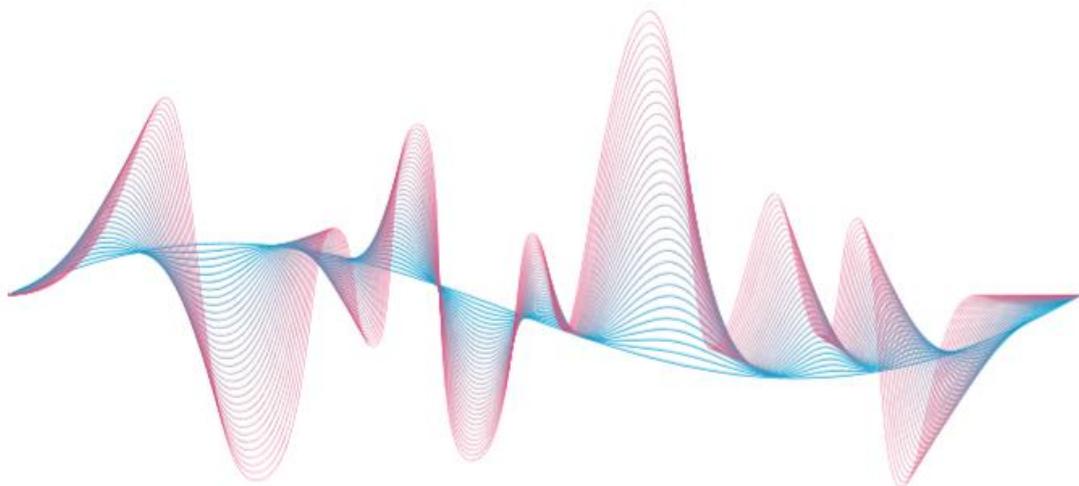
At The Red House, you can explore the science behind the music of Benjamin Britten and the sounds that we can all hear.

Sounds are invisible vibrations that travel through the air. When someone speaks, tree leaves rustle, or a musical instrument is played, a vibration or a sound wave is sent out in all directions.

When our ears capture sound waves, they convert them into messages that our brains can understand.

At The Red House, children can complete our Science of Sound school session, earning a Science Passport by taking part in a number of different exciting sound experiments.

This information pack and film provides an introduction to two of these experiments as well as introducing you to Benjamin Britten and The Red House .



You can access the introductory film at

<https://www.youtube.com/watch?v=31UV8bzl928&feature=youtu.be>

## Information Sheet- Chladni Plate Pictures

The Chladni Plate was invented by Ernst Florens Friedrich Chladni, a German physicist and musician.

Sound consists of vibrations of molecules. We cannot see this happening although we can hear the results when the vibrations hit our ears!



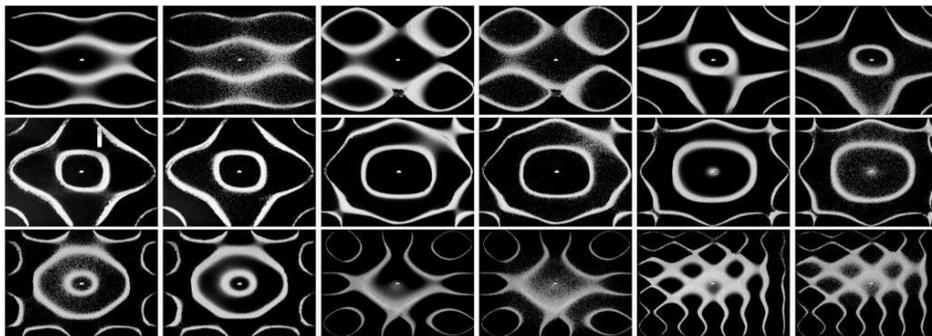
Chladni developed a method of converting these vibrations into a visual representation of the sound.

Explore The Red House Chladni Plate by watching

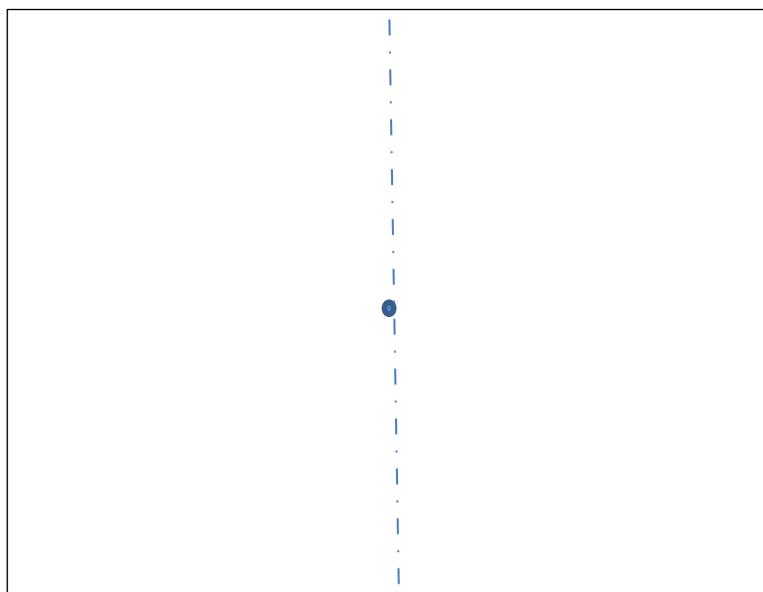
<https://www.youtube.com/watch?v=31UV8bzl928&feature=youtu.be>

These patterns have all been made by a Chladni plate.

**The pictures are all very symmetrical.**

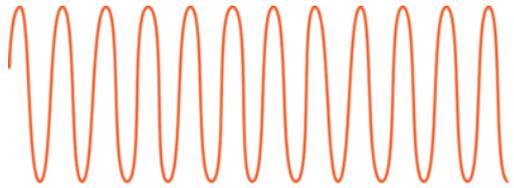


Design your own symmetrical Chladni plate image below.



## Sound waves- Volume and frequencies

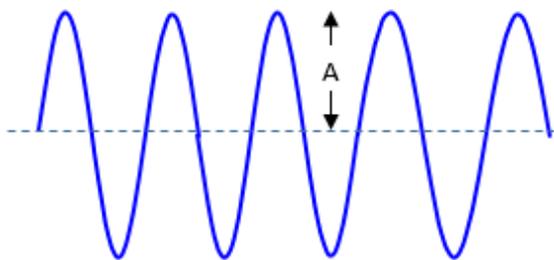
A further experiment at The Red House, allows us to explore the shape and size of the soundwaves that are made by different noises.



Squashed, high frequency sound waves indicate a **high** note. More sound waves travel to our ear per second



Wide, low frequency sound waves indicate a **low** note. Less Soundwaves travel to our ear per second.



A loud sound has taller sound wave (Large amplitude)



A soft sound has smaller sound wave (Small amplitude)

On the graph below, can you draw the soundwave of a...

1. Quiet and high note in red....(hint soundwaves are squashed and smaller in height)
2. Quiet and Low note in blue
3. Loud and High Note in yellow
4. Loud and Low note in green



# Benjamin Britten

Benjamin Britten was a composer born in Lowestoft, Suffolk in 1913.

Many composers in the last century wrote music that was very complicated to listen to and required many highly skilled musicians to play and sing it.

Benjamin Britten wrote music for everyone. He wanted his music 'to be of use to people, to please them, to enhance their lives.' People enjoy his music so much that he is now the most performed British composer in the world.

He wrote music of all kinds and travelled all round the world performing it as a pianist and conductor.

He was so famous that the BBC devoted a whole programme to him for his fiftieth birthday and he was the first musician in history to be made a Lord by the Queen.

When he died in 1976, he left behind 100s of extraordinary pieces of music. This is the fascinating story of a journey from Suffolk schoolboy to great composer.

Explore more online: [brittenpears.org/explore/benjamin-britten/](http://brittenpears.org/explore/benjamin-britten/)



Benjamin Britten and Peter Pears, May 1975  
Photographer: Victor Parker © Britten-Pears Foundation

## The Red House, Aldeburgh



The Red House is where Britten and Pears lived for nearly two decades from 1957. It has been carefully presented as it was back then. Your children will step back in time into a house which feels as though Britten and Pears have just stepped out for a moment.

The Composition Studio is where Britten wrote many of his famous works. His desk, piano and other original items can be found in this room. It was a former hayloft and it was created in 1958.

The Library was built on the site of a disused barn in 1963. The room held Britten and Pears' large book and music collection and also functioned as a rehearsal space.

The Gallery was built in the 1990s over Britten's open-air swimming pool, which is still beneath the floor. The Gallery now displays the amazing collections at The Red House to introduce Britten and his music. There is an audio guide to accompany the exhibition, a dress-up area for children and an interactive screen.

Britten entertained guests, grew vegetables, and even played croquet and tennis in his wonderful gardens. Over 5 acres of garden are available for your children to eat lunch and stretch their legs.