

Noise is sound being a nuisance or causing ear damage but sound proofing against this is difficult. This is because all sorts of materials vibrate and transmit sound. Having sound absorbers, such as carpets and curtains helps to absorb sound. Also, when a sound is made the vibrations in the air cause surfaces to vibrate and to reflect sound. Materials such as insulating felt and foam do not reflect sound well nor do they vibrate very well. In contrast a sheet of metal or wood does vibrate well and does not insulate sound well.

In this activity children 'do an investigation' and use a sound sensor to measure sound levels.

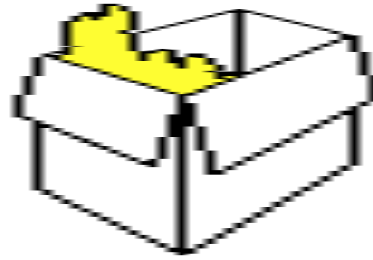
## You will need

A consistent sound source such as a buzzer, bell or tape recording. A few of these materials: cotton wool, foam, cork, newspapers, card, wood, polystyrene, an inflated balloon, a cushion, a blanket, thick or padded clothing; cardboard egg-boxes. Also: computer, monitor, sound sensor, interface, cable and software.

## Starting points

When is sound useful? When is sound called music?  
When is sound called noise?

How do they shut out sound when there is a lot of noise next door?



## Investigate

Make a steady sound. Measure its sound level with the sensor covered with different materials in turn. Or place the sound sensor in a shoe box and line the box with various materials. Note: Sound can easily 'leak' around the sound insulator.