

SOLUTIONS EXPERIMENTS

SENSE OF HEARING

1. „Vibrations becoming sound waves“

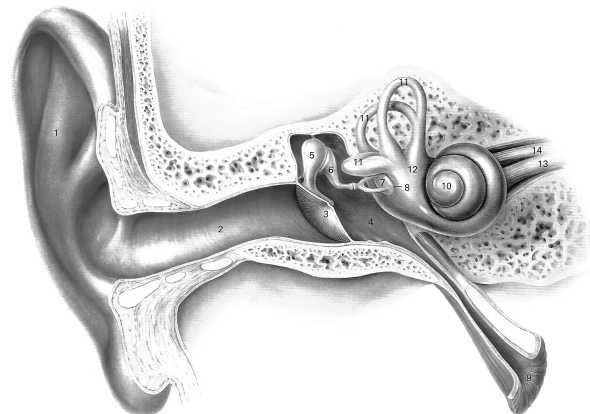
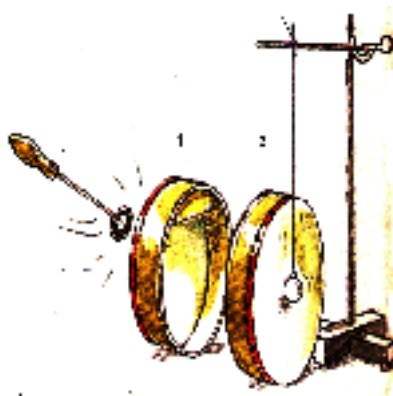
Theoretical background:

Sound waves spread as differences in air pressure. But sound waves can also be transmitted by solid material, i.e. rail tracks or by water. The more particles (density!) the medium, the faster it transmits the sound waves. Fill in (gas, solid, liquid)

Generally: solid faster than liquid faster than gaseous.

Without particles there is no sound. In space there is absolute quiet, since there is a vacuum.

Hit the tambourine (gong) and observe the ball in front of the second tambourine.



a) *What do you observe?*

The ball starts" jumping"

b) *Which are the corresponding structures in the human ear?*

1st tambourine (gong):

Source of sound (vibrating object)

Space between 1st and 2nd tambourine:

Sound source → pinna → ear canal

2nd tambourine:

Eardrum

Ball:

Hammer (Ear bones)