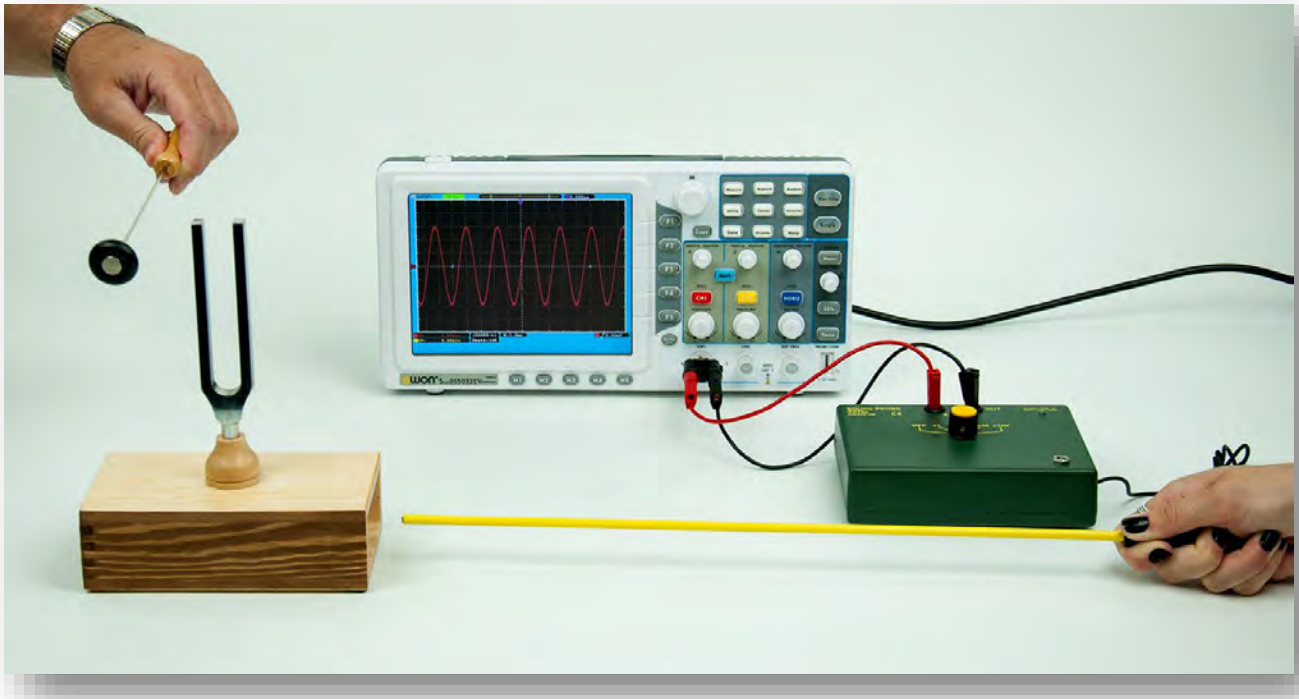
NOTE – SOUND – NOISE - BANG

AKD 01.14



Material:

Item Code	Qty	Description
DE751-3A	1	Oscilloscope, two-channel, 30 MHz, with VGA
DG500-4A	1	BNC to 4-mm socket adapter
DW340-2M	1	Measuring microphone "inno"
DW100-1A	1	Tuning fork, 440 Hz, with resonance box
DW110-1A	1	Tuning fork mallet

Additionally recommended:

	1	VGA – Connection cable
	1	TV or data projector

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Goal:

Let's try to study the sound in more detail by recording it.

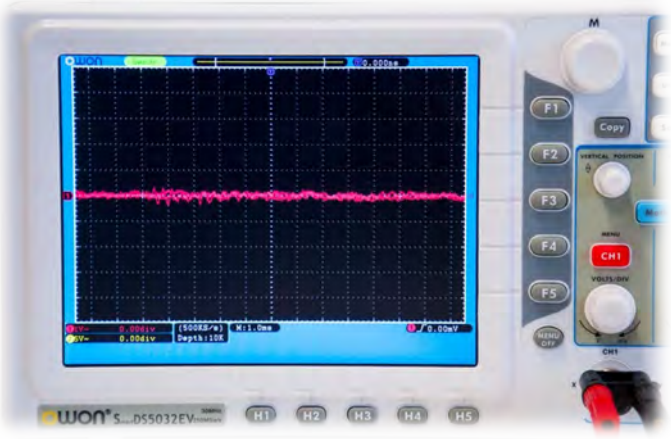
Setup:

- The BNC junction is plugged into the socket of channel 1 of the oscilloscope.
- The amplifier of the measuring microphone is connected to the osci with two cables.

Experiment 1:

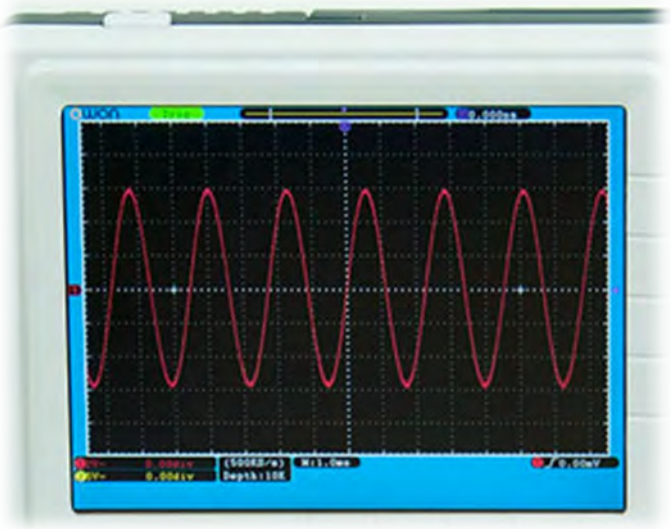
We switch on the oscilloscope.
We switch the microphone amplifier to "10 x".
The measuring microphone is held at a distance of about 5 cm in front of the opening of the resonance box.

The tuning fork is struck with a hammer while watching the oscilloscope screen.



Result:

With optimal settings on the oscilloscope, we get a nice sinusoidal curve.



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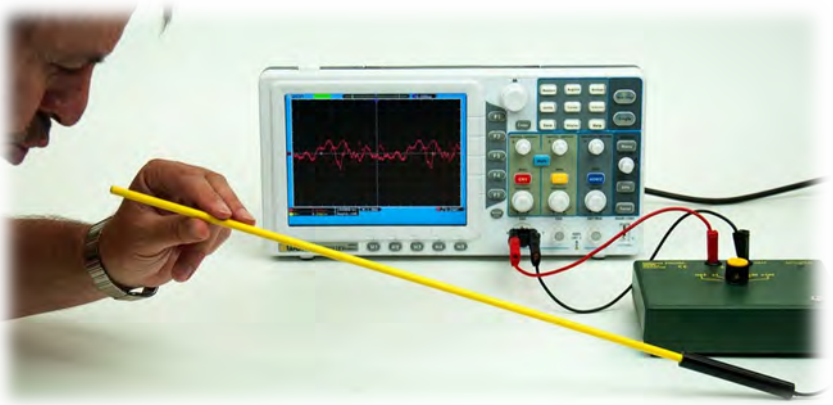
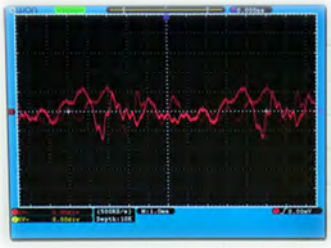
Experiment 2:

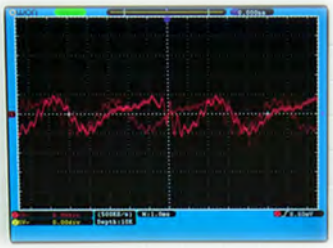
We leave the settings at the oscilloscope.

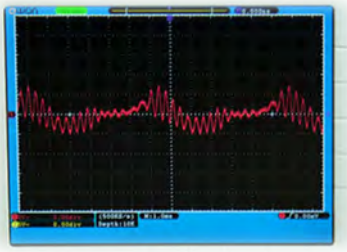
The measuring microphone is held with the hand about 10 cm in front of the mouth.
We now form different vowels.
The voice should be uniformly loud, and the pitch should be as constant as possible.

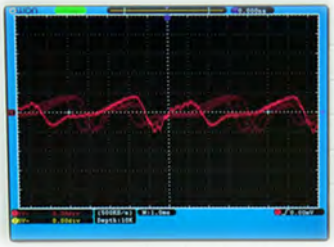


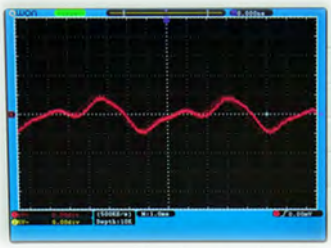
We observe and compare the records.











Write the correct vowel sounds to go with each illustration.

Further test suggestions:

With the same structure we can now record:

a) The sound of a musical instrument (guitar, flute, …..)
b) Various sounds (tearing paper, …….)
c) Bang (clapping hands, bursting balloon, ……)

Again we compare the captured images.