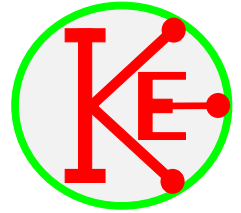


## 18 Sounds



### EQUIPMENT

- Loudspeaker with cone visible.
- Loudspeaker to pass round.
- Aluminium foil ball.
- Signal generator and amplifier
- Picoscope/oscilloscope
- dB meter
- Slinky spring
- Plastic cups with hole in base.
- String + match sticks
- Cloths for screechers
- Scissors for cutting string.

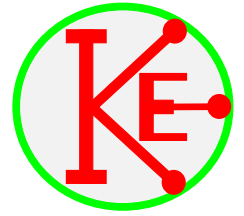
### RISKS

Cuts from scissors

Loud noises from screechers.

### SESSION

- 1). Students put their hands on their throat and make a noise.  
What do they feel?
- 2). Signal generator to loudspeaker - look at cone.  
Small ball of aluminium foil on loudspeaker cone.
- 3). Explain frequency - units  
Hearing range.
- 4). Microphone to oscilloscope. Picoscope.  
Look at speech, whistle.  
With signal generator and loudspeaker.
- 5). Loudness of sound - dB meter  
Students make as little noise as possible and maximum noise.
- 6). How does sound travel?  
Slinky spring.
- 7). Students make string telephone - plastic cups and 2m of string - match sticks?
- 8). Student cut string in telephone and make screechers to take home.



**NAME:** .....

## 18 Sounds

What is a loudspeaker?

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What is 'frequency'?

.....

What are the units of frequency?

.....

What is the frequency range of our ears?

.....

What is a microphone?

.....

What is an oscilloscope?

.....

Draw a diagram to show what 'sound' look like on an oscilloscope?

What are the units of loudness for sound?

.....

How does sound travel?

.....