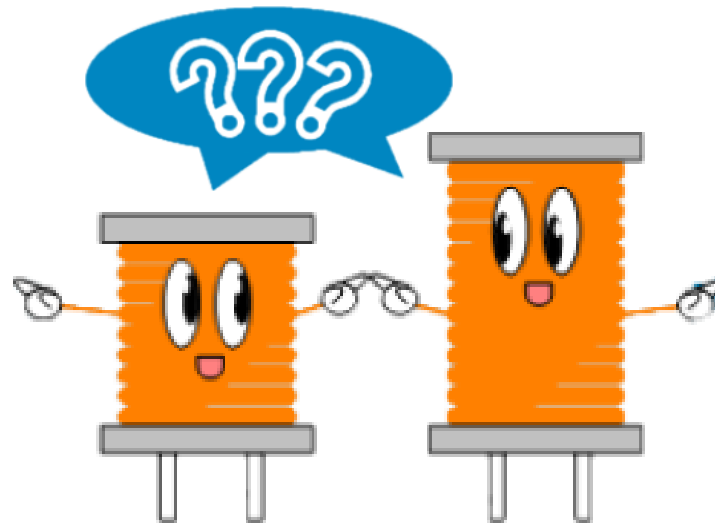


# Dear Rookie of the Coil

## Chapter 4 Coil's Functions 【 Filtering 】



SAGAMI ELEC CO., LTD.

# Coil's Functions "Filtering"

We will explain about one of functions "Filtering" in this time.



What is the **Filtering** ?

It extracts the what you need,  
and discard unnecessary one.



You can image  
the filtering  
generally...

- Ex) Coffee filter⇒ For blocking ground coffee beans to pass through.  
Air filter⇒ For removing dust and dirt and letting clean air to pass through.

# Coil's Functions "Filtering"

**"Filtering" for the Sound means**  
Extracting some components of the sound.

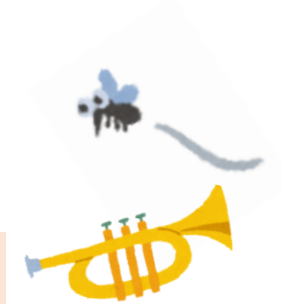


Break down one sound  
into three components using filters.



The Sound  
at High Frequency

Ex) The Mosquito noise, Trumpet



The Sound  
at Mid Frequency

Ex) Female Voice, Violin



The Sound  
at Low Frequency

Ex) Wood Bass



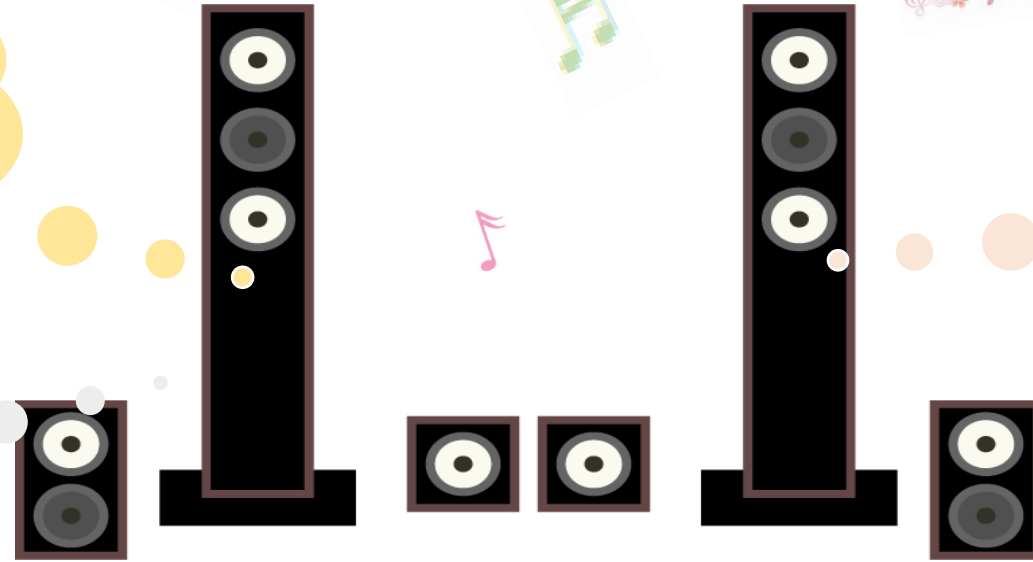
# Coil's Functions "Filtering"

It only passes the specified frequency.

**Band-pass filter(BPF)**  
It passes frequencies within a certain range and rejects frequencies outside that range.

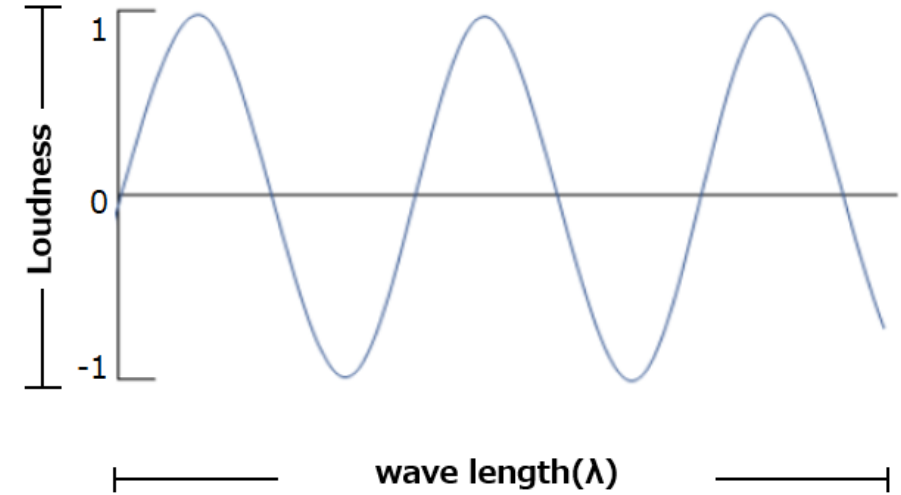
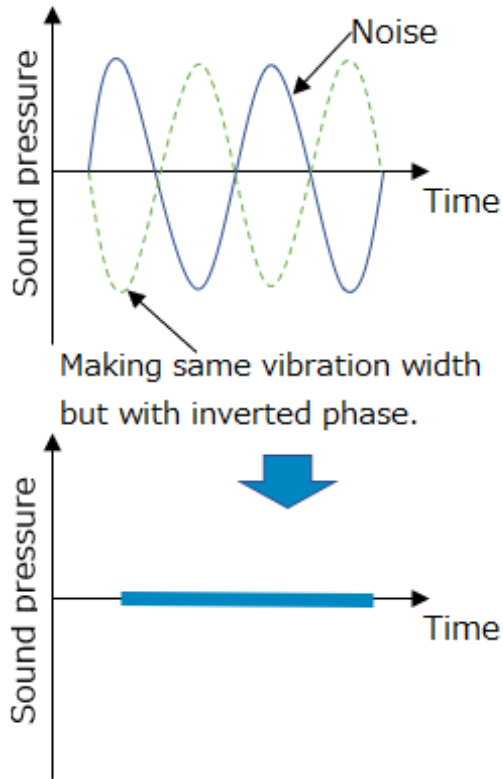
**Low-pass filter (LPF)**  
It passes frequencies within a low range than certain frequencies.

**High-pass filter (HPF)**  
It passes frequencies within a high range than certain frequencies.



# It's a side note from coil...

Sound is figured by a waveform on the right.



The sound can be canceled by overlapping an inverted waveform on the original waveform.  
(See left figure)

This principle is adopted for Noise canceling headphones.



To be continued...

