

SOUND

YEAR 3

SPRING 1



LESSON 4

What do we mean by amplitude of sound?



Do Now – Retrieval

1. What is an example of a high pitched sound?

2. Do smaller or bigger objects make a higher pitched sound?

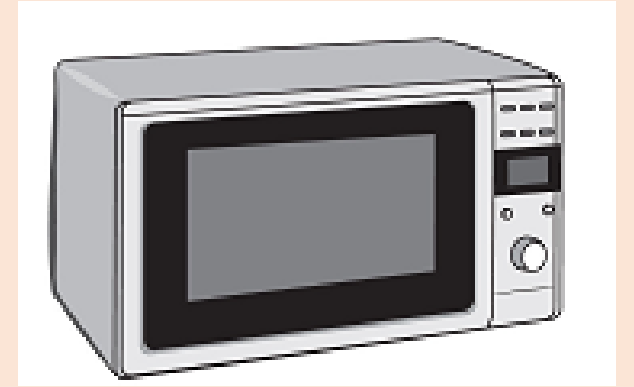
3. What do we measure frequency in?

4. When something makes a sound what happens to the particles in the air? Circle the correct answer.

- i) They stop moving
- ii) They wobble and vibrate
- iii) They change size

From previous topic:

1) **What is a synthetic material?** A synthetic material is made from a r_____ material that has been ch_____.





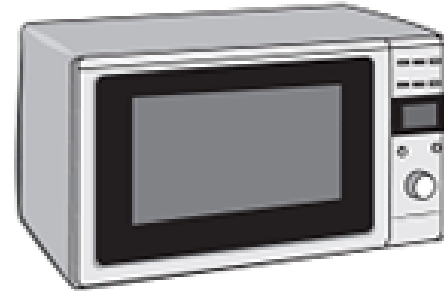
Put the numbers 1-6 next to each picture below to suggest which sounds would be the loudest (1) and which would be the softest (6)



Aeroplane engine _____



A shout _____



Microwave cooking _____



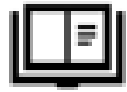
A whisper _____



A laugh _____



Car horn _____



Read the following passage about amplitude

The amplitude of a sound simply means how loud it is. The louder the sound is, the higher the amplitude is. The softer the sound, the lower the amplitude is.

with a lot of force. This means the sound it produces is very loud. A whisper causes air to be pushed very gently so it does not move with much force. Therefore the amplitude is low and the sound is quiet.

Answer the questions



Complete the sentence below:

The louder the sound, the _____ the amplitude.

Sounds with higher amplitude are made by using more force when you create the sound. For example, when you hit a drum softly, it makes a quiet sound which means it has a low amplitude. If you hit a drum hard with a lot of force, it will make a loud sound which means that the sound has a high amplitude.



Circle the correct words in the sentence below:

To create a louder sound you have to use more/less force. To create a softer sound you have to use more/less force.

Another example of a loud sound with a large amplitude is a car horn. This horn is powerful and can push air



Circle the correct words in the sentence below:

A car horn creates a sound with a **high/low amplitude**. A whisper creates a sound with a **high/low amplitude**.

When we use more force to make a sound with higher amplitude when are making the particles in the air jiggle and vibrate with more force. So we would say that amplitude is low.

Amplitude is measured in a unit call **decibels** (can also be written as **dB**). The more decibels a sound has, the larger the amplitude and the louder the sound.



Which unit do we use to measure the amplitude of a sound?



Watch the demonstration of sounds with different amplitudes

You can check the amplitude of sounds by using:

<https://youlean.co/online-loudness-meter/>

Complete the observations below:

- 1) What reading did the meter show for a loud sound? _____ dB
- 2) What reading did the meter show for a quiet sound? _____ dB
- 3) What happens to the reading of the amplitude if the sound is made further away from the microphone on the computer?

When the sound is made further away from the computer, the reading



Look at the diagram below and answer the questions below

Fill in the gaps in the table below:

Level of noise	Decibel level
Extremely loud	110 dB
Very loud	
Loud	
Moderate to quiet	60 dB
Faint	

What is the amplitude of the following sounds:

a) hairdryer:

b) Whisper

c) Jet engine

c) conversation

Which one is louder – a truck or a helicopter? How do you know?





Discuss why ears must be protected from loud sounds. How can ears be protected from loud sounds?



Return to page 4 to complete the learning review