

SOUND WAVE

Doodle Notes

Grades : 6 ~ 10

SOUND is caused by **VIBRATIONS** Quick movements of particles.

WAVE is a disturbance that moves through **particles** movements. Waves do not carry particles but it carries **energy** from one place to another.

Characteristics

- SOLIDS**: Fastest. Why? The particles are close together.
- AMPLITUDE**: It is the distance a wave moves from its resting position. Amplitude - High. Frequency - High. Volume - Louder. Pitch - High. Wavelength - short.
- VOLUME**: Volume is measured in decibels (dB) by means of an oscilloscope. Volume more than 85 dB can lead to hearing loss!
- PITCH**: Amplitude - Low. Frequency - Low. Volume - Low. Pitch - Low. Wavelength - Long.

WAVELENGTH: Distance between a point on one wave to the same identical point on the next wave. Position a wave will sit if NO vibration occurred.

CREST: The peak... or highest point on a wave. > Particle movement (distance) at 90 Degrees (right angle) to direction of wave travel.

REST: The valley or lowest point between two crest.

WAVE SPEED: The distance a wave travels in a specific time. It is measured in meters per sec.

High Frequency Wave	Long wavelength Wave	High Amplitude Wave
Low Frequency Wave	Short Wavelength Wave	Low Amplitude Wave

Try: A train blows whistle loudly. Which energy is it? **SOUND energy**.

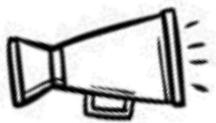
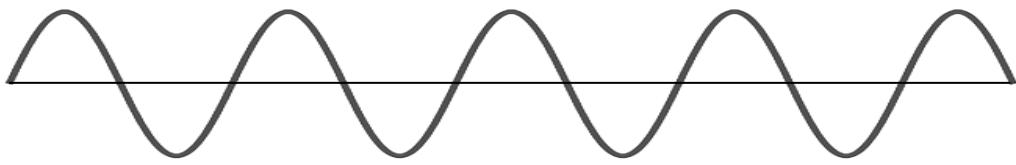
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Name : Date:

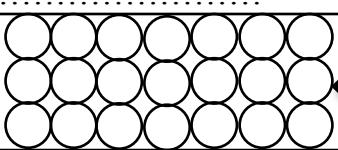
SOUND

is caused by Quick and movements of particles.



☞ SOUND is (in wave form) you can hear.

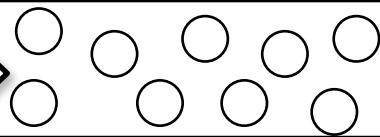
Solids



Sound travels



Gas



Why? The particles are

Why? The particles are

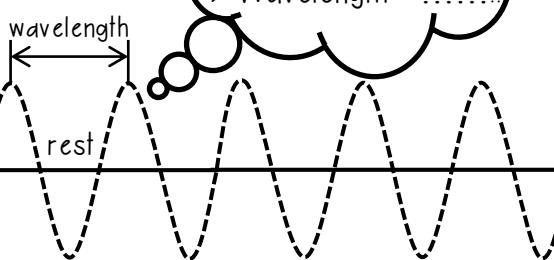
Characteristics

- Travels at speeds through different materials.
- It transfers
- Needs a to travel through.

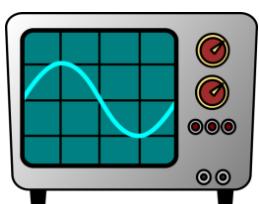
AMPLITUDE

If the distance a wave moves from its position.

- > Amplitude -
- > Frequency -
- > Volume -
- > Pitch -
- > Wavelength -



> Volume is measured in by means of an



How

or

> Volume more than dB,
can lead to hearing loss !

a sound is !

> Can sound travel through space ?

> FREQUENCY is measured in

> 1 Hertz =

> The Average human can hear sounds with frequencies between

FREQUENCY

wavelength

- > Amplitude -
- > Frequency -
- > Volume -
- > Pitch -
- > Wavelength -

of sound.

VOLUME

How

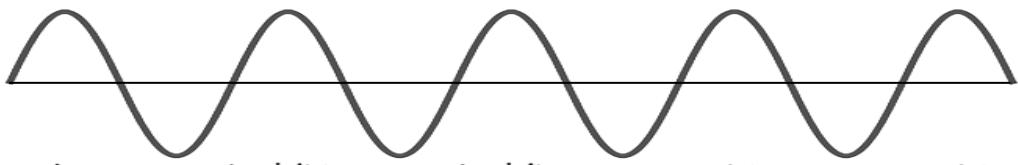
or

PITCH is the

PITCH

SOUND

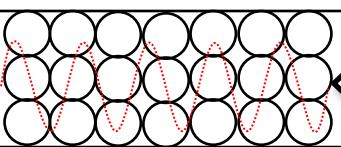
is caused by **vibrations**. Quick **back and forth** movements of particles.



SOUND is **energy** (in wave form) you can hear.

Fastest

Solids

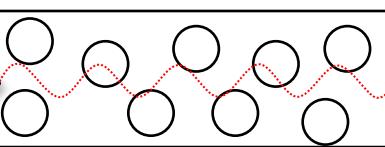


Sound travels



Slowest

Gas



Why? The particles are **close together**.

Why? The particles are **further apart**.

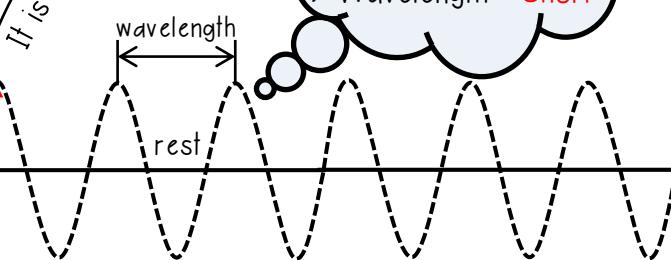
Characteristics

- Travels at **different** speeds through different materials.
- It transfers **energy**.
- Needs a **medium** to travel through.

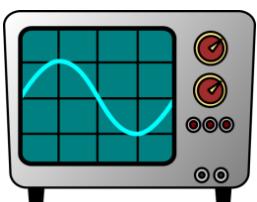
AMPLITUDE

It is the distance a wave moves from its resting position.

- > Amplitude – **High**
- > Frequency – **High**
- > Volume – **Louder**
- > Pitch – **High**
- > Wavelength - **Short**



- > Volume is measured in **decibels (dB)** by means of an **Oscilloscope**.



VOLUME

- > Volume more than **85 dB**, can lead to **hearing loss** !



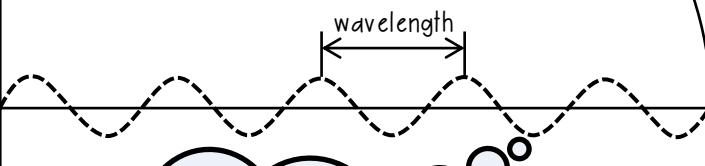
> Can sound travel through space ?

It is the speed of the vibration **> NO**

> FREQUENCY is measured in **hertz**.

> 1 Hertz = **1 wave per second**.

> The Average human can hear sounds with frequencies between **20 and 20000 hertz**.



- > Amplitude – **Low**
- > Frequency – **Low**
- > Volume – **Low**
- > Pitch – **Low**
- > Wavelength - **Long**

PITCH is the highness or lowness of sound.

PITCH

Name: Date:

WAVE

Here, medium for wave travel is

Source of sound



Position a wave would sit if occurred

is a that moves through movements. Wave do not carry particles but it carries from one place to another.

The or point on a wave.

> Particle movement (distance) at to direction of wave travel

The or point between two crest

Try : Distance = 4 meters, Wave travel time = 2 seconds

So wave speed = , Frequency =

Wave length = 1 meter



➤ **WAVE SPEED** : The a wave travel in a specific It is measured in

High Frequency Wave

Long Wavelength Wave

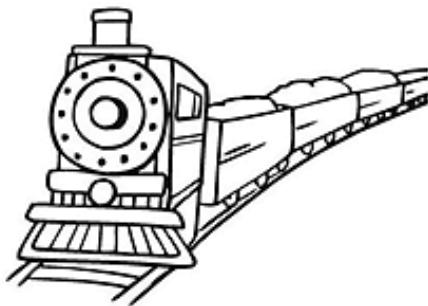
High Amplitude Wave

Low Frequency Wave

Short Wavelength Wave

Low Amplitude Wave

High Pitch Wave



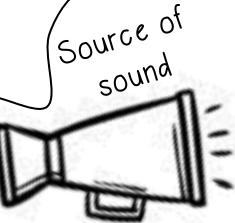
Try :



> A train blows whistle loudly. Which energy is it ?

WAVE

Here, medium for wave travel is AIR



Position a wave would sit if no vibration occurred

WAVELLENGTH

Distance between a point on one wave to the same identical point on the next wave

amplitude

REST

CREST

The peak or highest point on a wave.

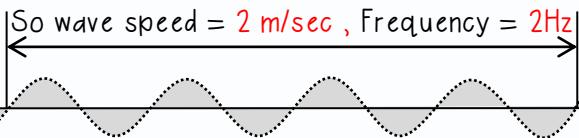
> Particle movement (distance) at 90 Degree (right angles) to direction of wave travel

Wave travel (time)

ROUGH

The valley or lowest point between two crest

Try : Distance = 4 meters, Wave travel time = 2 seconds

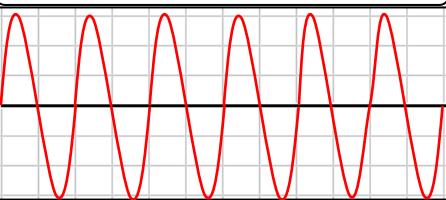


Wave length = 1 meter

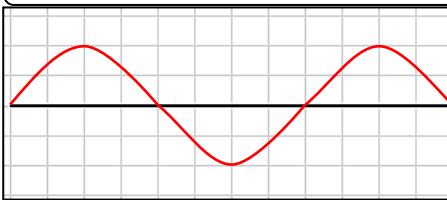


WAVE SPEED : The distance a wave travel in a specific time. It is measured in meters per second

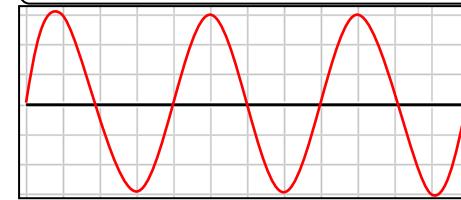
High Frequency Wave



Long Wavelength Wave



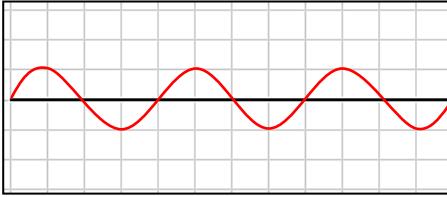
High Amplitude Wave



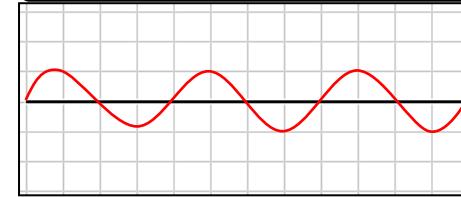
Low Frequency Wave



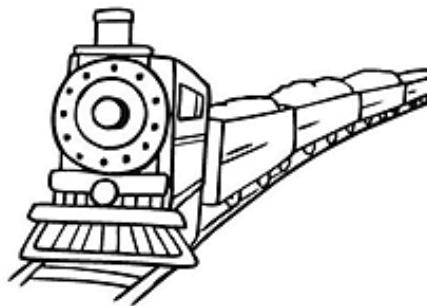
Short Wavelength Wave



Low Amplitude Wave



High Pitch Wave



Try :



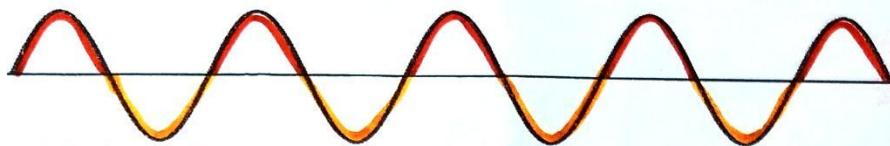
> A train blows whistle loudly. Which energy is it ?

> Sound Energy

Name : SANDRA Date: 31.08.2018.

SOUND

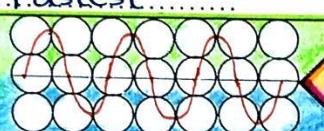
is caused by VIBRATIONS Quick BACK and FORTH movements of particles.



☞ SOUND is energy (in wave form) you can hear.

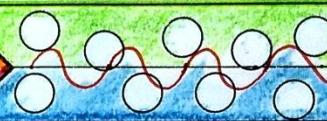
.....Fastest.....

Solids



.....Slowest.....

Gas



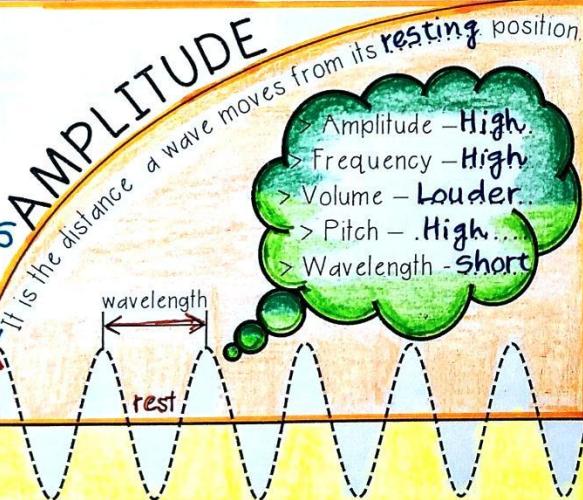
Why? The particles are close together

Why? The particles are further apart.

Characteristics

- Travels at different speeds through different materials.
- It transfers energy.....
- Needs a medium to travel through.

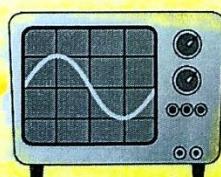
AMPLITUDE



> Volume is measured in decibels (dB) by means of an oscilloscope.

VOLUME

> Volume more than 85 dB, can lead to hearing loss !



> Can sound travel through space ? → No

FREQUENCY is measured in Hertz.

> 1 Hertz = 1 Wave per second
> The Average human can hear sounds with frequencies between 20 and 20.000 Hertz.

FREQUENCY

wavelength

> Amplitude - Low, > Frequency - Low, > Volume - Low, > Pitch - Low, > Wavelength - Long

PITCH is the highness or lowness of sound

Name : SANDRA

Date: 31-08-2018

WAVE

Here, medium for wave travel is air.

WAVELENGTH

Distance between a point on one wave to the same identical point on the next wave

CREST

The peak or highest point on a wave.



REST

Position a wave would sit if no vibration occurred

amplitude

TRough

> Particle movement (distance) at 90 Degree (right angle) to direction of wave travel

Wave travel (time)

The valley or lowest point between two crest

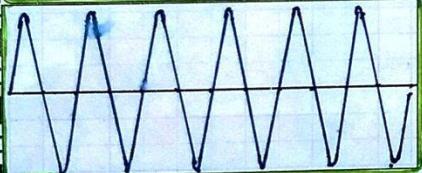
Try : Distance = 4 meters, Wave travel time = 2 seconds

So wave speed = 2 m/sec, Frequency = 2 Hz

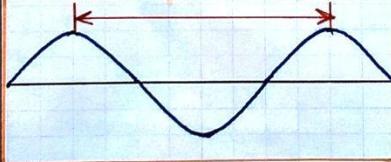
Wave length = 1 meter

WAVE SPEED : The distance a wave travel in a specific time. It is measured in meters per sec.

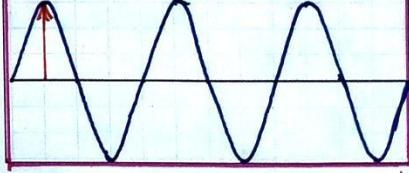
High Frequency Wave



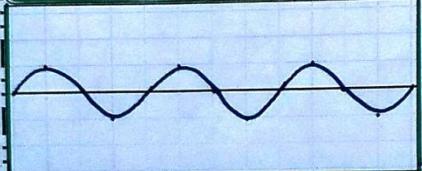
Long Wavelength Wave



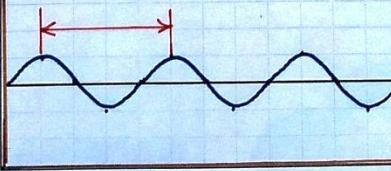
High Amplitude Wave



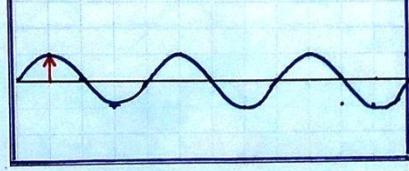
Low Frequency Wave



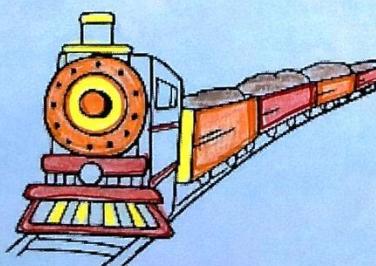
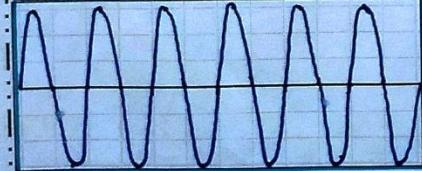
Short Wavelength Wave



Low Amplitude Wave



High Pitch Wave



Try :



> A train blows whistle loudly. Which energy is it ?

SOUND energy



THAnK You !!

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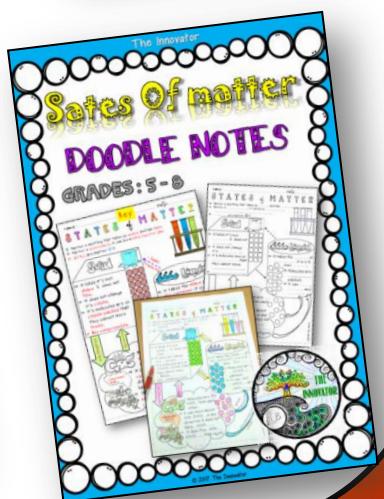
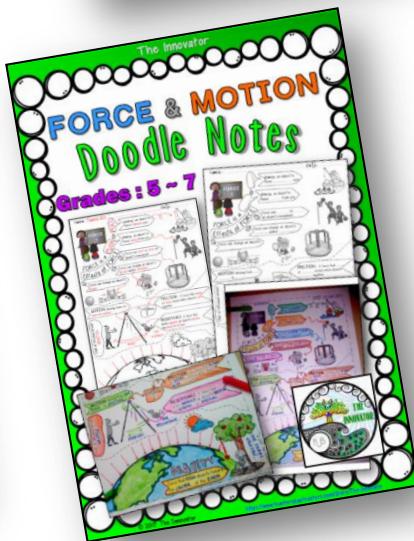
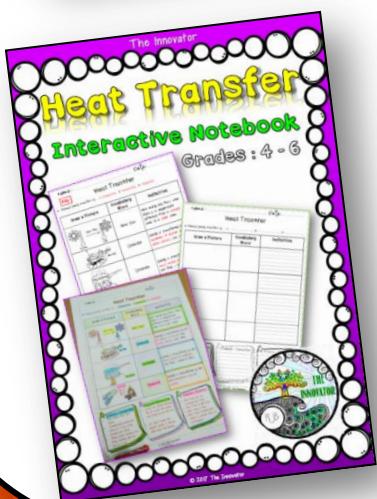
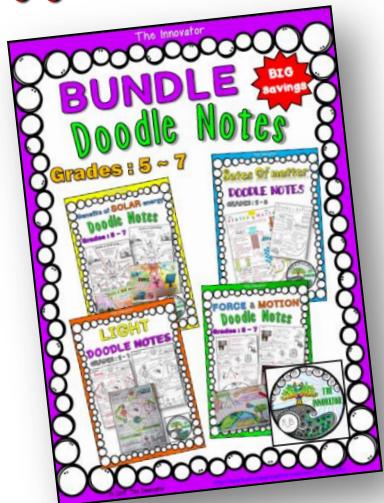
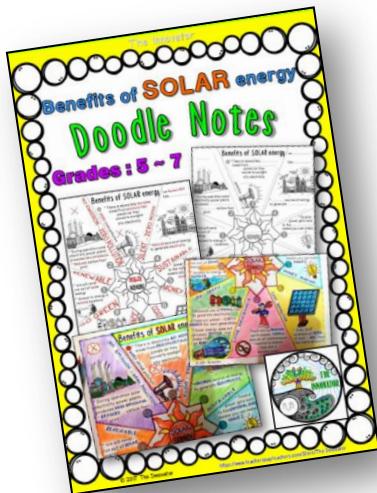
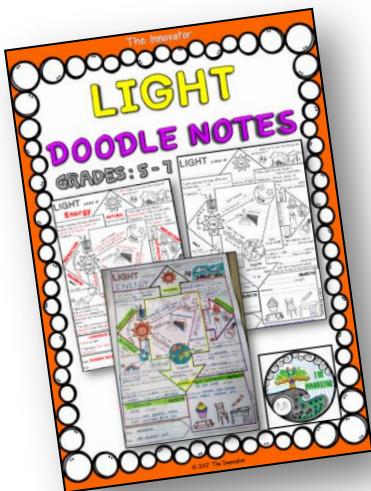


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