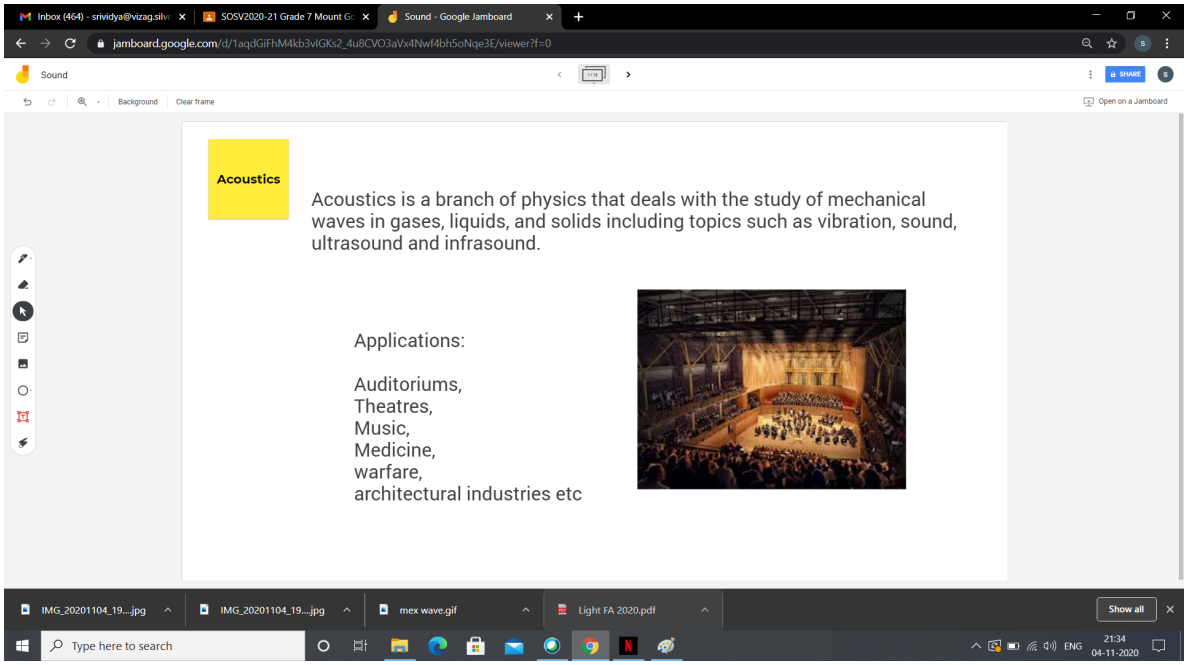
Inbox (464) - srividya@vizag.silv
SOSV2020-21 Grade 7 Mount G
Sound - Google Jamboard
jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=0
Sound
SHARE
Background
Clear frame
Open on a Jamboard
Acoustics
Acoustics is a branch of physics that deals with the study of mechanical waves in gases, liquids, and solids including topics such as vibration, sound, ultrasound and infrasound.
Applications:
Auditoriums,
Theatres,
Music,
Medicine,
warfare,
architectural industries etc
IMG_20201104_19....jpg
IMG_20201104_19....jpg
mex wave.gif
Light FA 2020.pdf
Show all
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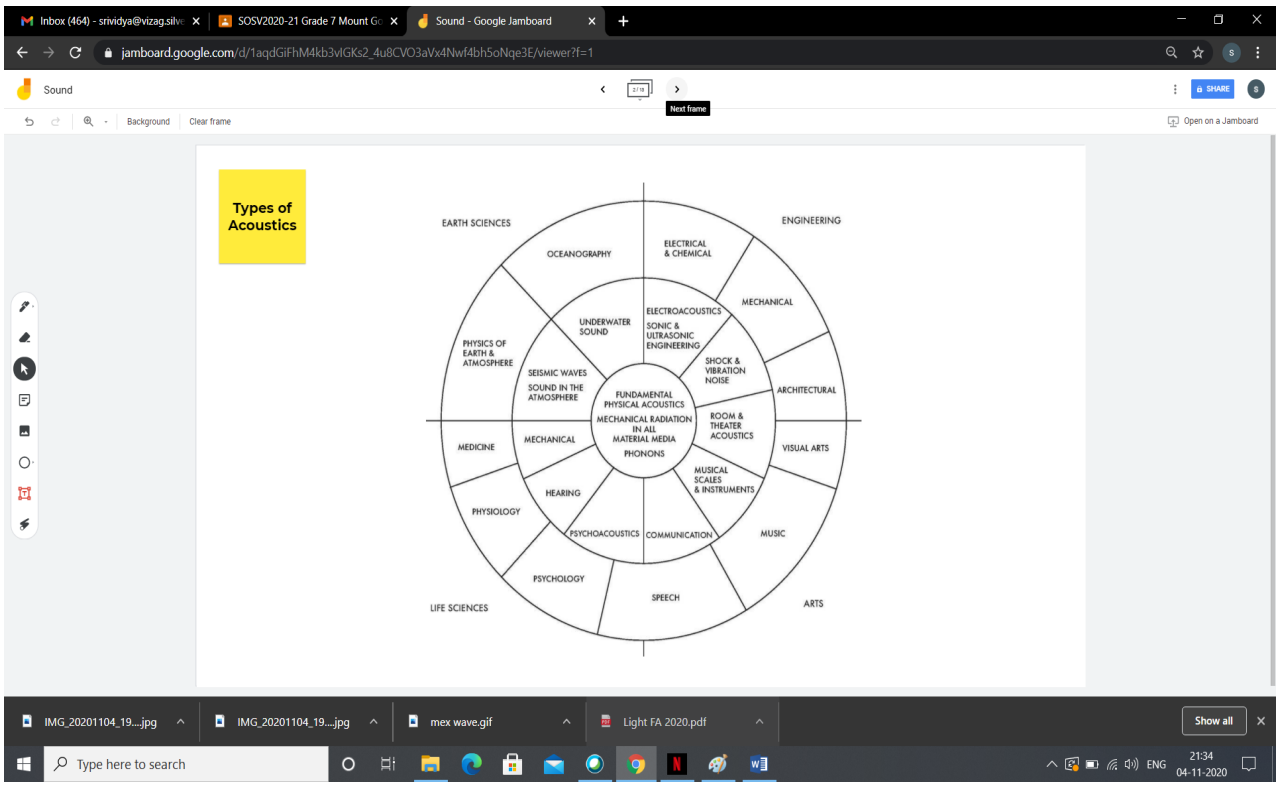
ENG
21:34
04-11-2020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Sound - Google Jamboard
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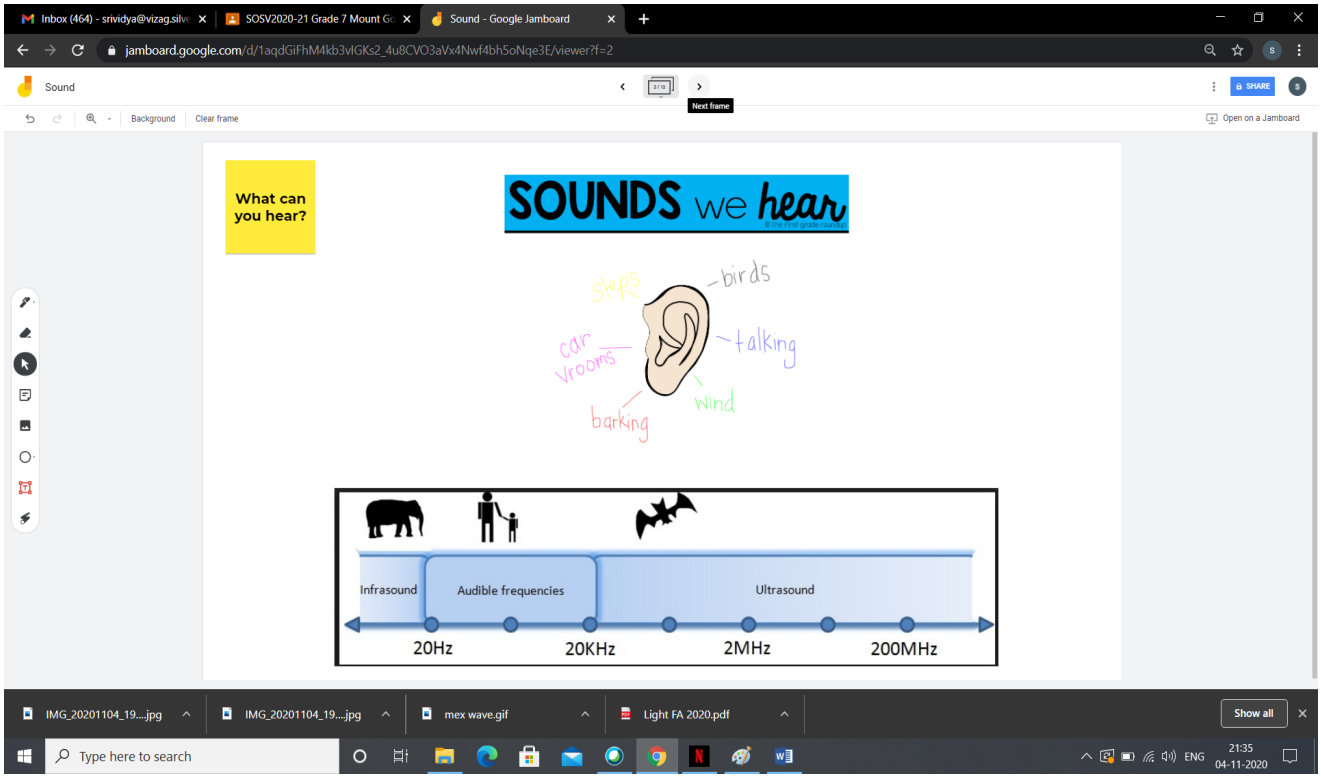
Sound
Next frame
SHARE
Background
Clear frame
Open on a Jamboard
Types of Acoustics
EARTH SCIENCES
ENGINEERING
OCEANOGRAPHY
ELECTRICAL & CHEMICAL
MECHANICAL
ARCHITECTURAL
VISUAL ARTS
MUSIC
ARTS
SPEECH
LIFE SCIENCES
PSYCHOLOGY
PHYSIOLOGY
MEDICINE
PHYSICS OF EARTH & ATMOSPHERE
UNDERWATER SOUND
ELECTROACOUSTICS
SONIC & ULTRASONIC ENGINEERING
SHOCK & VIBRATION NOISE
SEISMIC WAVES
SOUND IN THE ATMOSPHERE
FUNDAMENTAL PHYSICAL ACOUSTICS
MECHANICAL RADIATION IN ALL MATERIAL MEDIA
PHONONS
ROOM & THEATER ACOUSTICS
MECHANICAL
MUSICAL SCALES & INSTRUMENTS
HEARING
PSYCHOACOUSTICS
COMMUNICATION
IMG_20201104_19....jpg
IMG_20201104_19....jpg
mex wave.gif
Light FA 2020.pdf
Show all
Type here to search
ENG
21:34
04-11-2020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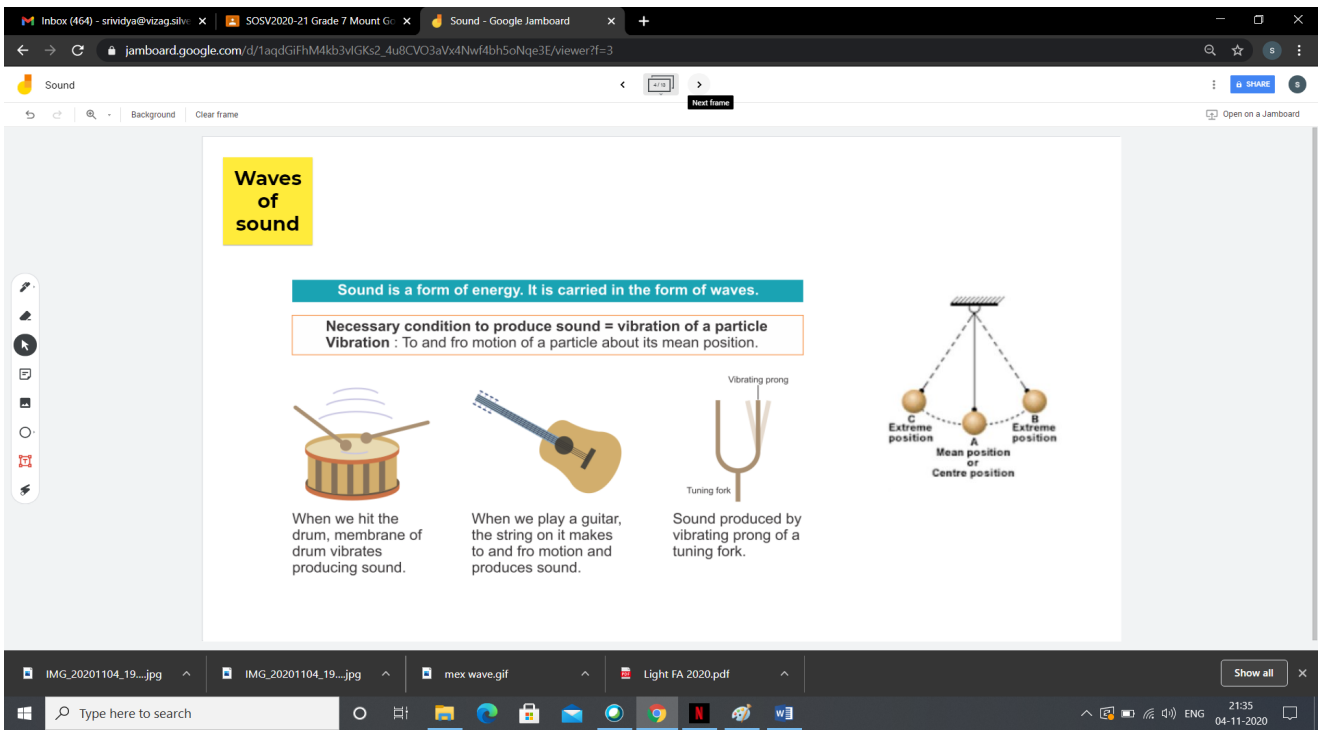
SOSV2020-21 Grade 7 Mount Gr
Sound - Google Jamboard
jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=2
Sound
Next frame
SHARE
Background
Clear frame
Open on a Jamboard
What can you hear?
SOUNDS we hear
steps
birds
car vrooms
talking
wind
barking
Infrasound
Audible frequencies
Ultrasound
20Hz
20KHz
2MHz
200MHz
IMG_20201104_19....jpg
IMG_20201104_19....jpg
mex wave.gif
Light FA 2020.pdf
Show all
Type here to search
ENG
21:35
04-11-2020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SOSV2020-21 Grade 7 Mount Gr
Sound - Google Jamboard
jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=3
Sound
Next frame
SHARE
Background
Clear frame
Open on a Jamboard
Waves of sound
Sound is a form of energy. It is carried in the form of waves.
Necessary condition to produce sound = vibration of a particle
Vibration : To and fro motion of a particle about its mean position.
When we hit the drum, membrane of drum vibrates producing sound.
When we play a guitar, the string on it makes to and fro motion and produces sound.
Vibrating prong
Tuning fork
Sound produced by vibrating prong of a tuning fork.
C Extreme position
A Mean position or Centre position
B Extreme position
IMG_20201104_19....jpg
IMG_20201104_19....jpg
mex wave.gif
Light FA 2020.pdf
Show all
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ENG
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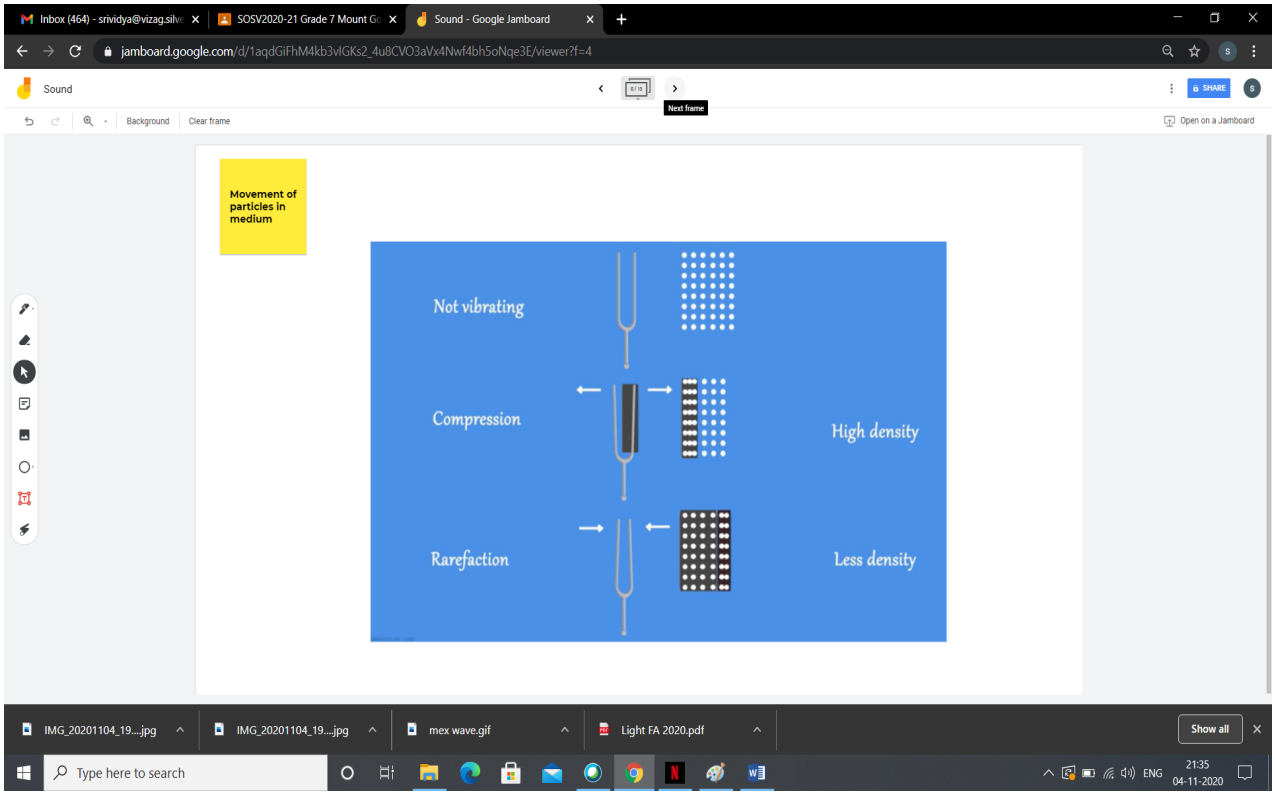
Inbox (464) - srividya@vizag.silv
SOSV2020-21 Grade 7 Mount G
Sound - Google Jamboard
jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=4
Sound
Next frame
SHARE
Background
Clear frame
Open on a Jamboard
Movement of particles in medium
Not vibrating
Compression
High density
Rarefaction
Less density
IMG_20201104_19....jpg
IMG_20201104_19....jpg
mex wave.gif
Light FA 2020.pdf
Show all
Type here to search
ENG
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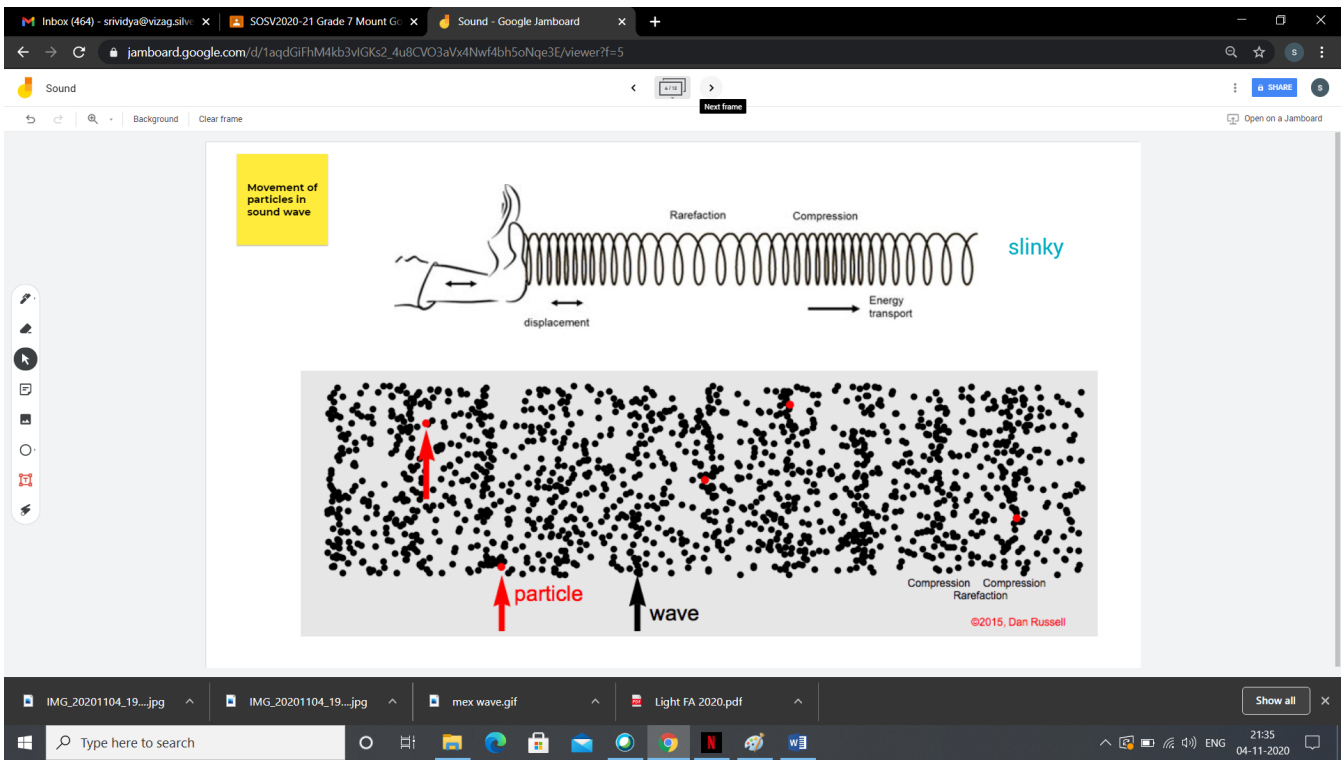
04-11-2020


Inbox (464) - srividya@vizag.silv
SOSV2020-21 Grade 7 Mount G
Sound - Google Jamboard
jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=5
Sound
Next frame
SHARE
Background
Clear frame
Open on a Jamboard
Movement of particles in sound wave
Rarefaction
Compression
slinky
displacement
Energy transport
particle
wave
Compression
Rarefaction
Compression
©2015, Dan Russell
IMG_20201104_19....jpg
IMG_20201104_19....jpg
mex wave.gif
Light FA 2020.pdf
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ENG
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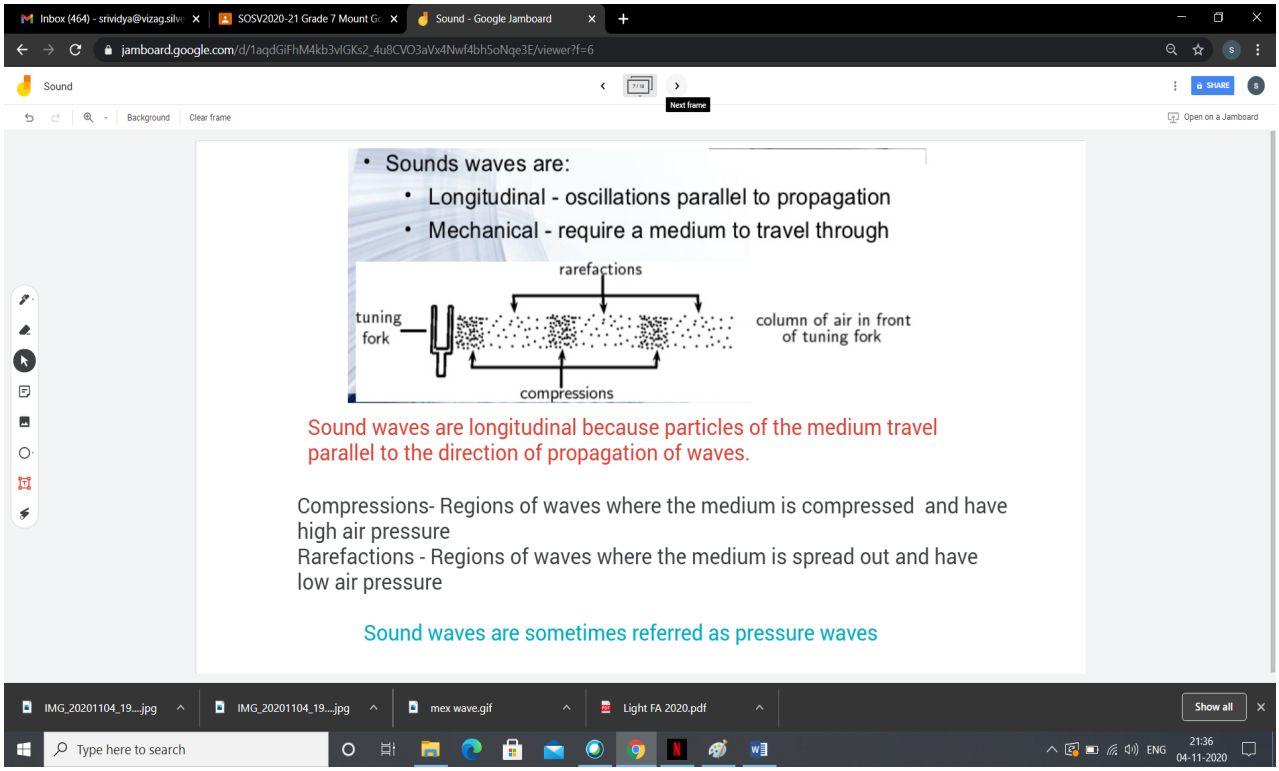
Inbox (464) - srividya@vizag.silv
SOSV2020-21 Grade 7 Mount G
Sound - Google Jamboard
jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=6
Sound
Next frame
SHARE
Background
Clear frame
Open on a Jamboard
• Sounds waves are:
• Longitudinal - oscillations parallel to propagation
• Mechanical - require a medium to travel through
rarefactions
tuning fork
column of air in front of tuning fork
compressions
Sound waves are longitudinal because particles of the medium travel parallel to the direction of propagation of waves.
Compressions- Regions of waves where the medium is compressed and have high air pressure
Rarefactions - Regions of waves where the medium is spread out and have low air pressure
Sound waves are sometimes referred as pressure waves
IMG_20201104_19....jpg
IMG_20201104_19....jpg
mex wave.gif
Light FA 2020.pdf
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ENG
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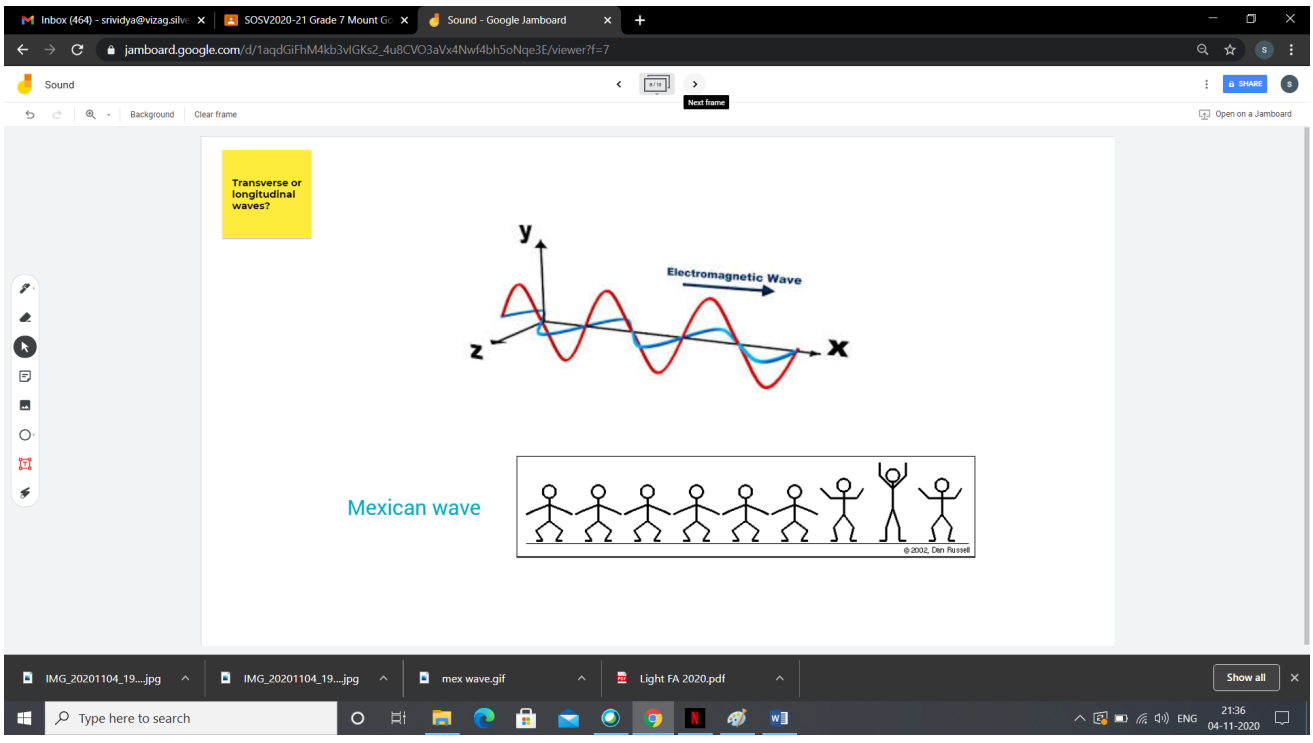
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SOSV2020-21 Grade 7 Mount G
Sound - Google Jamboard
jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=7
Sound
Next frame
SHARE
Background
Clear frame
Open on a Jamboard
Transverse or longitudinal waves?
y
Electromagnetic Wave
z
x
Mexican wave
© 2002, Dan Russell
IMG_20201104_19....jpg
IMG_20201104_19....jpg
mex wave.gif
Light FA 2020.pdf
Show all
Type here to search
ENG
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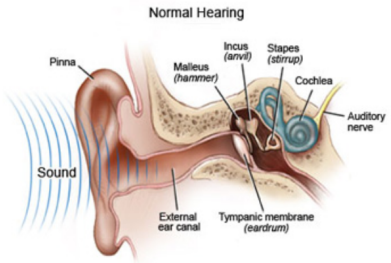
jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=8

Sound | SHARE | Next frame | Background | Clear frame | Open on a Jamboard

How do we hear?



Outer ear: Collects sound and transfers to middle ear.
The eardrum vibrates from the incoming sound waves and sends these vibrations to three tiny bones in the middle ear.

Middle ear: The bones in the middle ear amplify, or increase, the sound vibrations and send them to the cochlea

Inner ear: Converts these vibrations into nerve impulses which are taken up to the brain to be interpreted.

IMG_20201104_19....jpg | IMG_20201104_19....jpg | mex wave.gif | Light FA 2020.pdf | Show all

Type here to search | ENG | 21:36 | 04-11-2020

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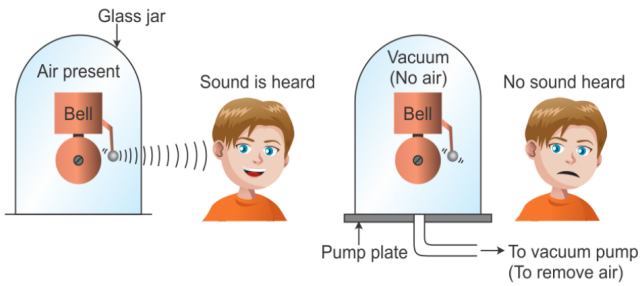
jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=9

Sound | SHARE | Next frame | Background | Clear frame | Open on a Jamboard

Sound needs a medium to travel



(a) Air present in glass jar: Sound of bell is heard

(b) Vacuum in glass jar: Sound of bell is not heard

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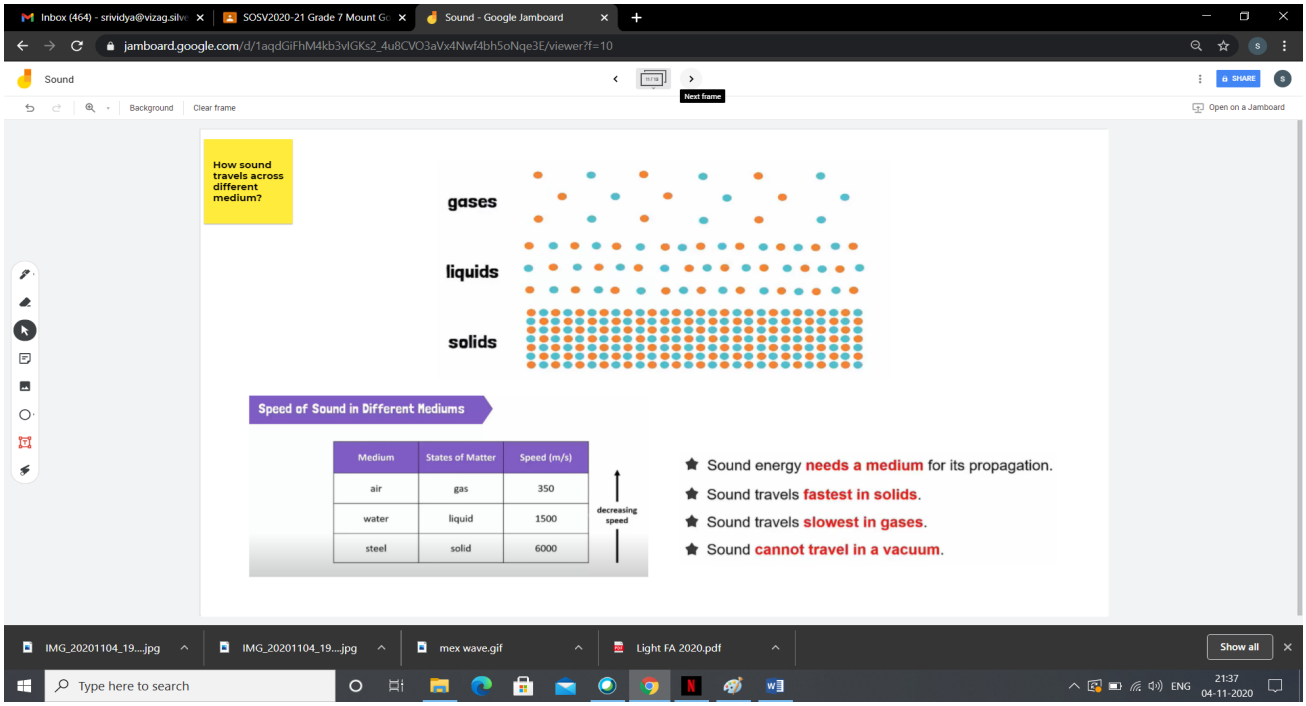
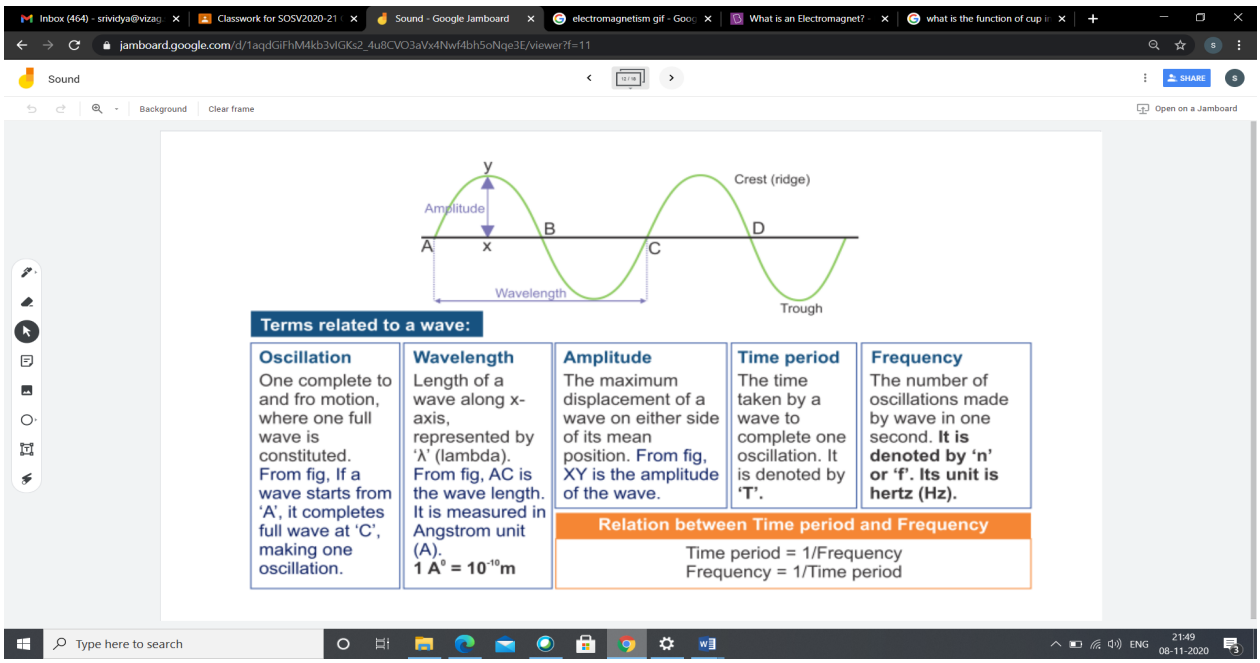

Sound - Google Jamboard
jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=10
Sound
Next frame
Background
Clear frame
Open on a Jamboard
How sound travels across different medium?
gases
liquids
solids
Speed of Sound in Different Mediums
Medium
States of Matter
Speed (m/s)
air
gas
350
water
liquid
1500
steel
solid
6000
decreasing speed
Sound energy needs a medium for its propagation.
Sound travels fastest in solids.
Sound travels slowest in gases.
Sound cannot travel in a vacuum.
IMG_20201104_19....jpg
IMG_20201104_19....jpg
mex wave.gif
Light FA 2020.pdf
Show all
Type here to search
ENG
21:37
04-11-2020


Classwork for SOSV2020-21
Sound - Google Jamboard
electromagnetism gif - Goo
What is an Electromagnet?
what is the function of cup
jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=11
Sound
Background
Clear frame
Open on a Jamboard
y
Amplitude
A
x
B
C
D
Crest (ridge)
Trough
Wavelength
Terms related to a wave:
Oscillation
One complete to and fro motion, where one full wave is constituted. From fig, If a wave starts from 'A', it completes full wave at 'C', making one oscillation.
Wavelength
Length of a wave along x-axis, represented by 'λ' (lambda). From fig, AC is the wave length. It is measured in Angstrom unit (A).
1 A° = 10⁻¹⁰m
Amplitude
The maximum displacement of a wave on either side of its mean position. From fig, XY is the amplitude of the wave.
Time period
The time taken by a wave to complete one oscillation. It is denoted by 'T'.
Frequency
The number of oscillations made by wave in one second. It is denoted by 'n' or 'f'. Its unit is hertz (Hz).
Relation between Time period and Frequency
Time period = 1/Frequency
Frequency = 1/Time period
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jamboard.google.com/d/1aqdGiFhM4kb3vIGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=12

Sound

Next frame

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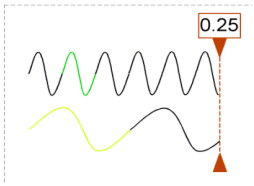
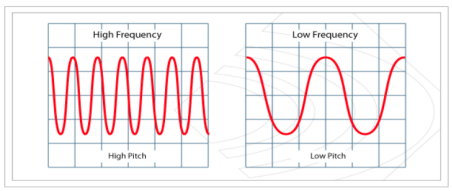
Background | Clear frame | Open on a Jamboard

Frequency

Number of vibrations/oscillations per unit time.

It is also the number of compressons or rarefcations that pass a given point per unit time





As sound waves move through a medium, each particle of the medium vibrates at the same frequency

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Sound

Next frame

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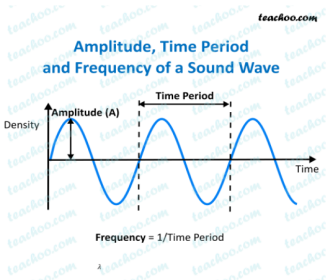
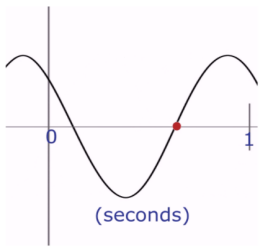
Time period

The time taken for one complete oscillation through a medium





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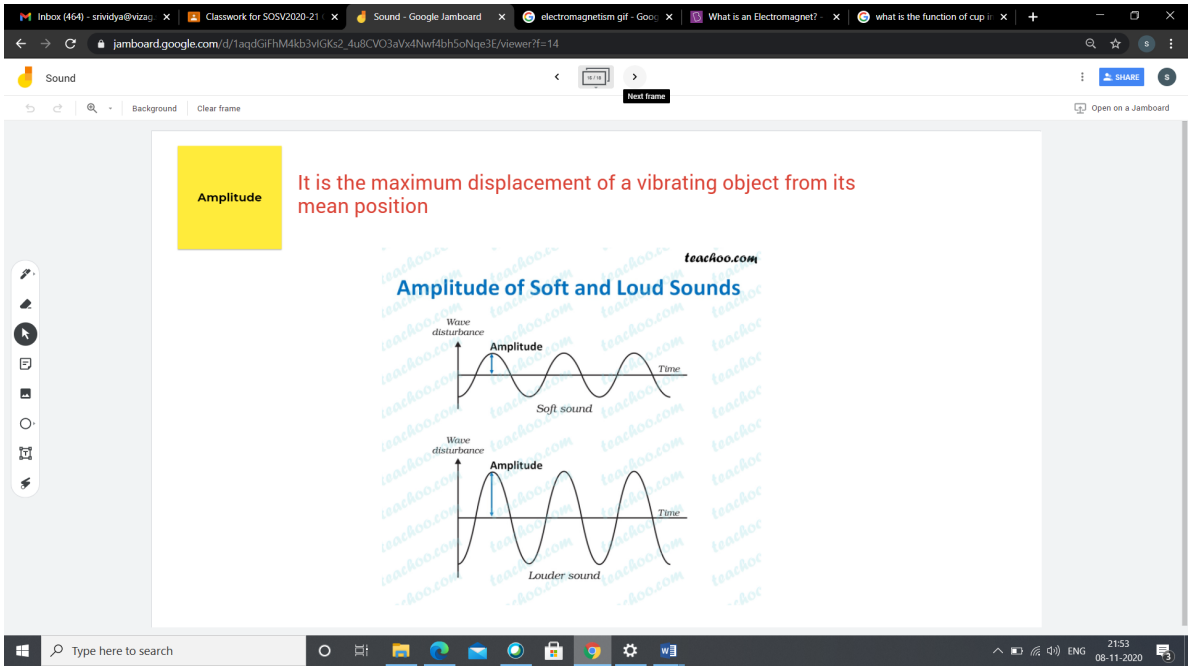
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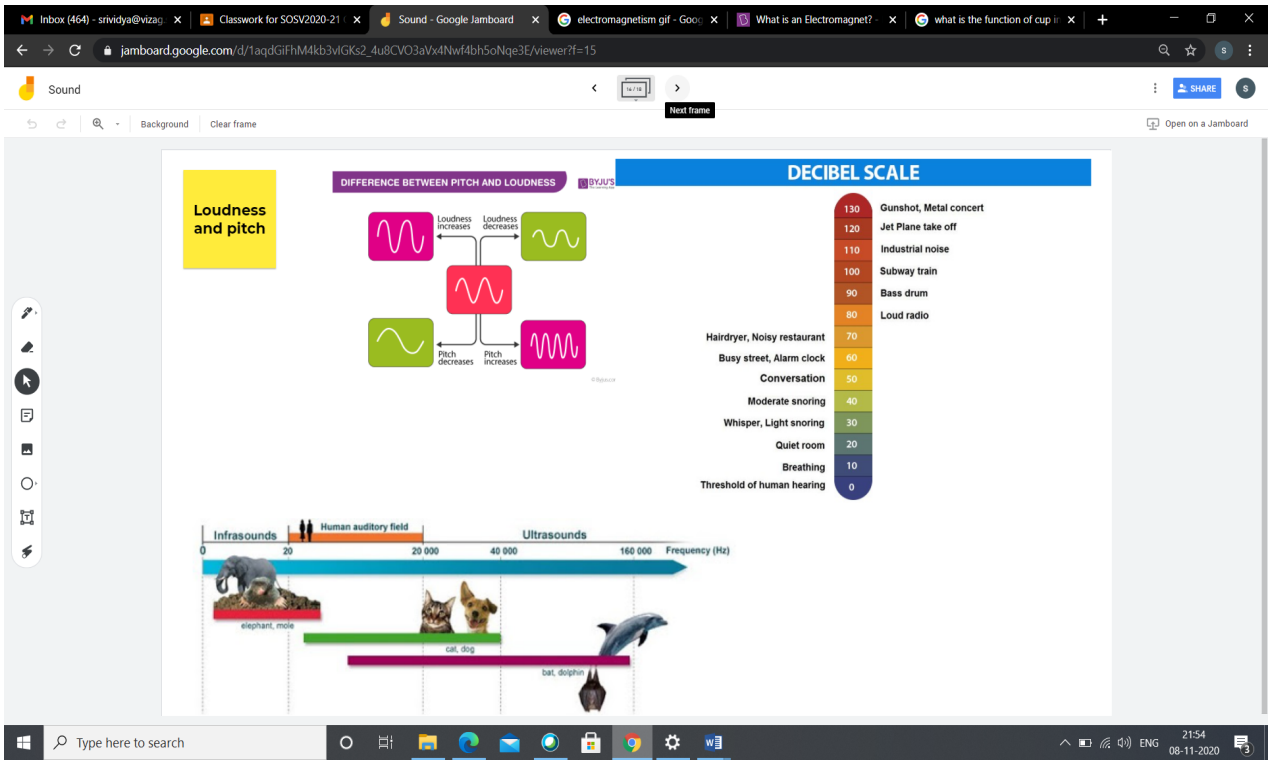
electromagnetism gif - Goog
What is an Electromagnet?
what is the function of cup ir
jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=14
Sound
Next frame
SHARE
Background
Clear frame
Open on a Jamboard
Amplitude
It is the maximum displacement of a vibrating object from its mean position
teachoo.com
Amplitude of Soft and Loud Sounds
Wave disturbance
Amplitude
Time
Soft sound
Wave disturbance
Amplitude
Time
Louder sound
Type here to search
ENG
21:53
08-11-2020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Sound - Google Jamboard
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What is an Electromagnet?
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jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=15
Sound
Next frame
SHARE
Background
Clear frame
Open on a Jamboard
Loudness and pitch
DIFFERENCE BETWEEN PITCH AND LOUDNESS
BYJU'S
Loudness increases
Loudness decreases
Pitch decreases
Pitch increases
DECIBEL SCALE
130 Gunshot, Metal concert
120 Jet Plane take off
110 Industrial noise
100 Subway train
90 Bass drum
80 Loud radio
70 Hairdryer, Noisy restaurant
60 Busy street, Alarm clock
50 Conversation
40 Moderate snoring
30 Whisper, Light snoring
20 Quiet room
10 Breathing
0 Threshold of human hearing
Infrasounds
Human auditory field
Ultrasounds
0
20
20 000
40 000
160 000
Frequency (Hz)
elephant, mole
cat, dog
bat, dolphin
Type here to search
ENG
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jamboard.google.com/d/1aqdGiFhM4kb3vlGKs2_4u8CVO3aVx4Nwf4bh5oNqe3E/viewer?f=16

Sound

SHARE

Background | Clear frame | Open on a Jamboard

Sound is an energy

Solids- Sound travels fast, but due to friction energy is lost and cannot travel long distance

Gas- Sound travles slow, but due to less friction it can travel long distance before all its energy is lost

The sound of music

Acoustic

Electronic

Type here to search

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