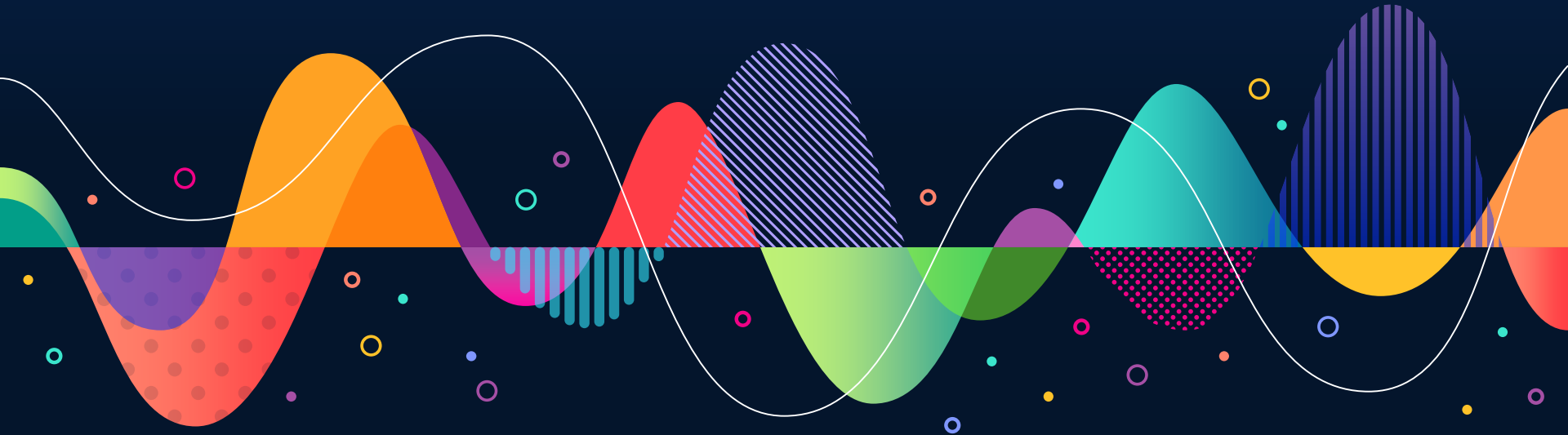


Thursday 25th February

SOUND WAVES



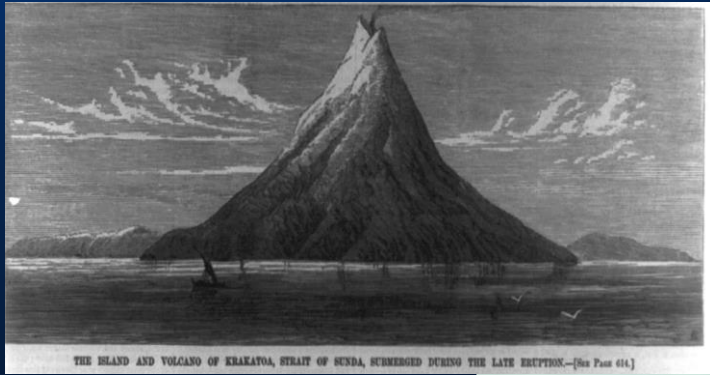
HELLO!



Think about what you already know about sound and hearing.

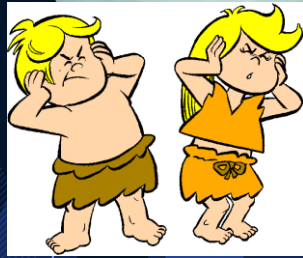
Can you tell someone 10 quick facts ?

4 FACTS ABOUT LOUD SOUNDS



The Loudest Natural Sound ever recorded was in 1883 when the ancient Indonesian volcano **Krakatoa** exploded!

It was 310 decibels.



310 decibels is loud enough to kill you.
Your ear-drums would explode above 200 decibels!




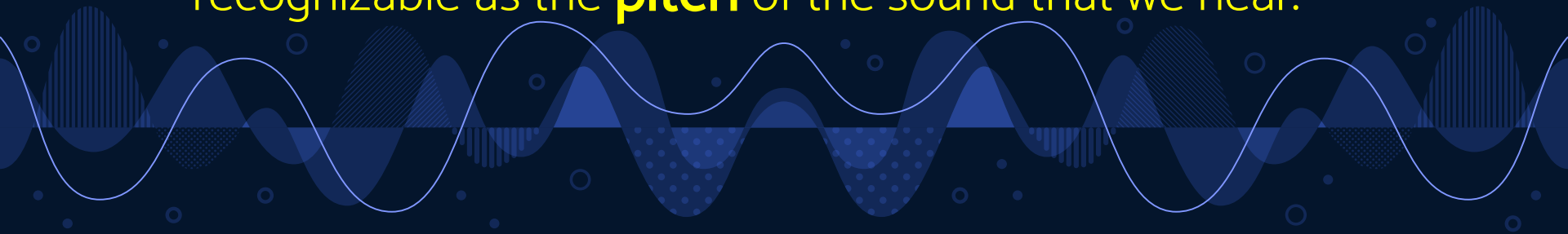
NASA's highest recorded decibel reading was 204 decibels when the **Saturn Five** rocket blasted off to the moon!



The loudest ever man-made sound was 250 decibels. This was created by the detonation of an atomic bomb in World War Two.

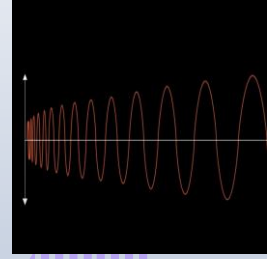
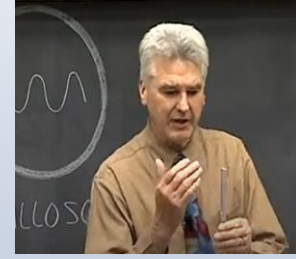
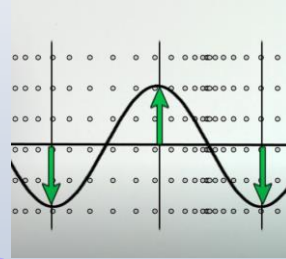
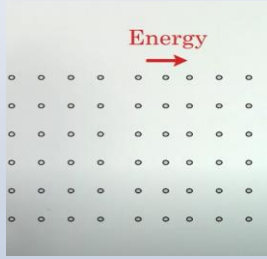
FOCUS FOR THE DAY

- ▶ Knowing that sounds travel in waves.
- ▶ The size (**amplitude**) of a sound wave is proportional to the **energy** and therefore the **volume** of the sound.
- ▶ The rate of occurrence (**frequency**) of a sound wave is recognizable as the **pitch** of the sound that we hear.



Drawing Sound-Waves

What do sounds *look like*? Click on the videos below to find out.



BBC Bitesize
What
is
sound?
video

**Sound
Waves**
Frequency
and
Amplitude
Video

Khan
Academy
**Introduction
to Sound**
video

Khan
Academy
**Wave
Amplitude
and
Frequency**
Video
(lots of
vocabulary!)

Classic
**Frequency
and
Amplitude**
Lecture

Examples
of
Wave-forms

Click in order:

1

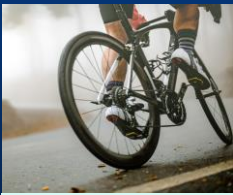
2

3

4

5

6



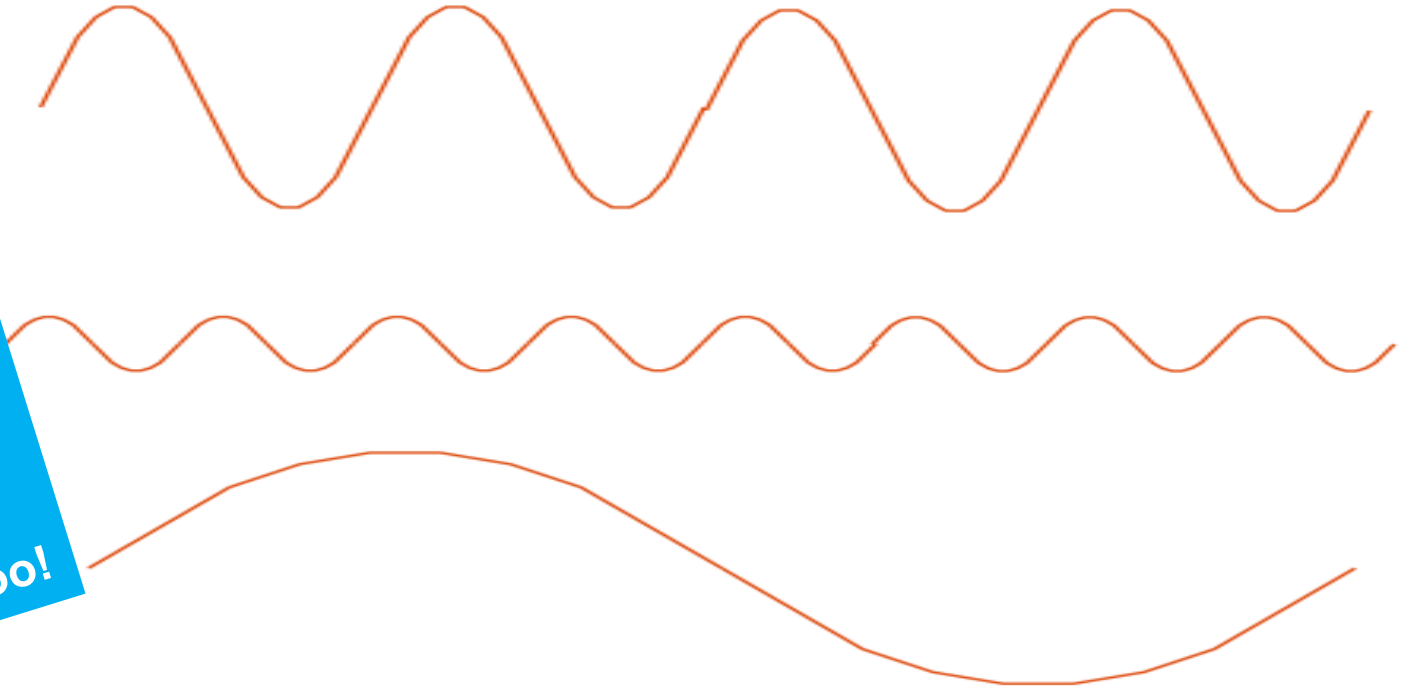
Medium
Frequency



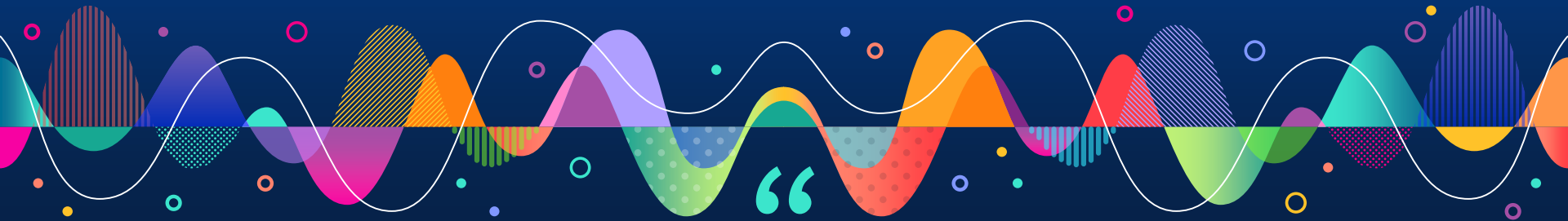
Low
Frequency



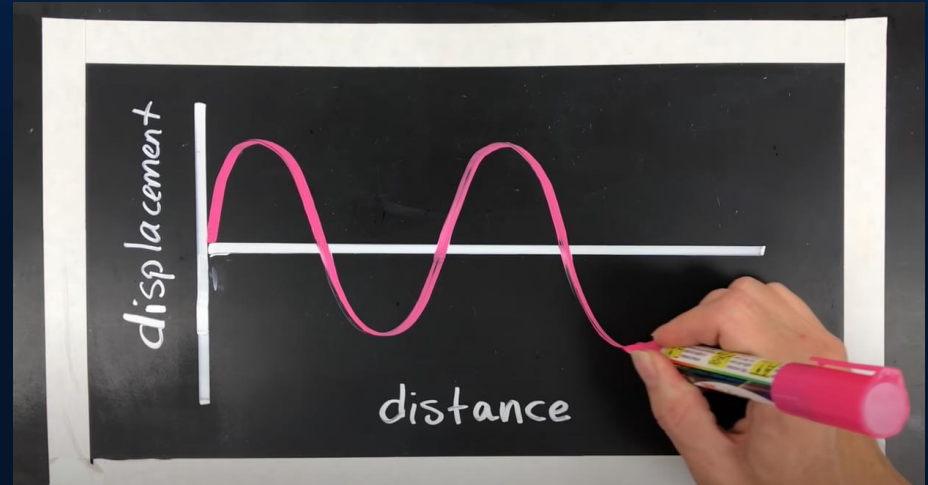
High
Frequency



**Match the
wave to the
object.
HINT: Think
about the
amplitude
(volume) too!**



Today, you are going to have a go at drawing sound waves.

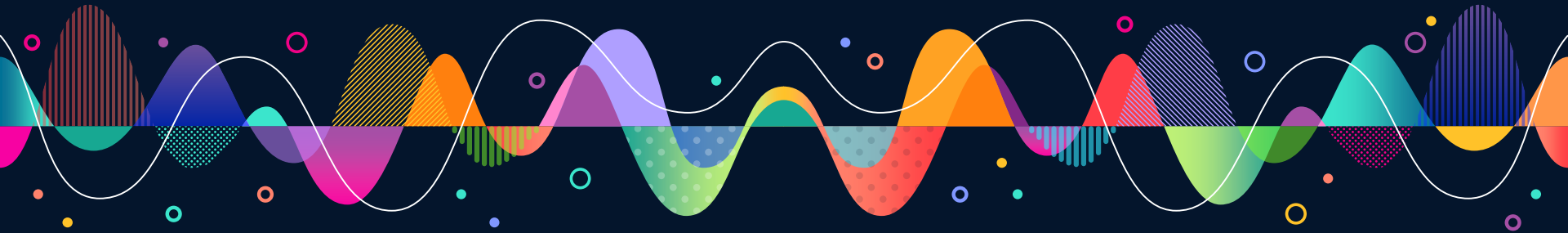


BIG CONCEPT

A wave drawing shows the *movement* of one particle over time.

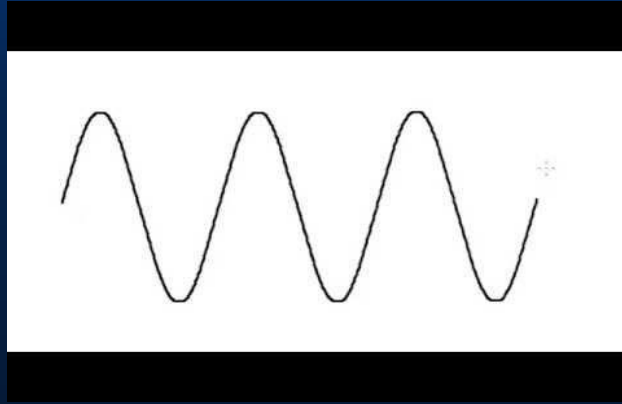


Simple hand-movements are the key to capturing the *motion*!

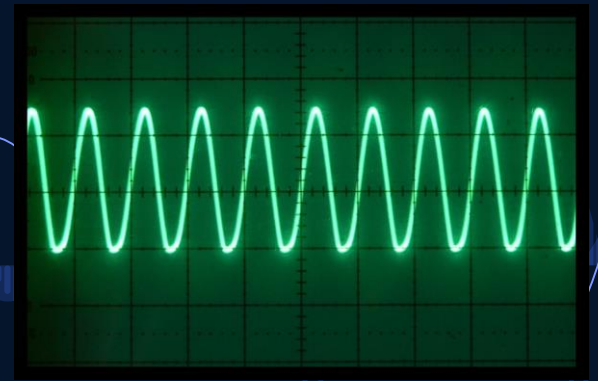
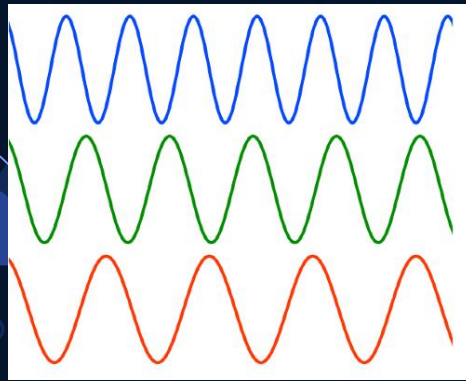
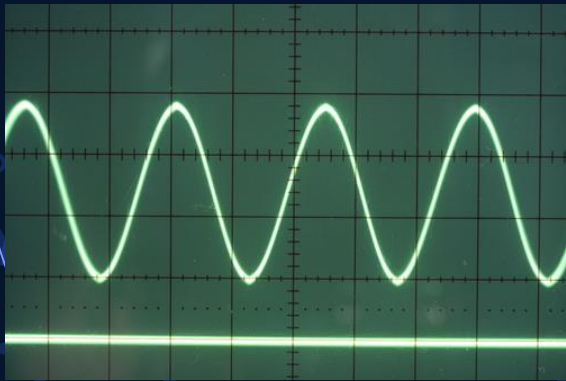


Concentrate on drawing a symmetrical wave.

Use some different colour pens or pencils to practise drawing sound waves.



Remember to use smooth hand-motions.



**How Loud ?
What frequency?**



Take a look at today's experiemtent:



Forms of Energy - Sound
- Experimenting with Pitch



**PITCH
VIBRATION
USING
RULER**



**Plucking a
ruler on a
counter.**

**Sound is
vibration*
Ruler
Demo.**

(US Classroom)

**Pitch
Experiemtent
using a ruler.**

**Vibrations of a
steel ruler.**

Listen to these tunes...

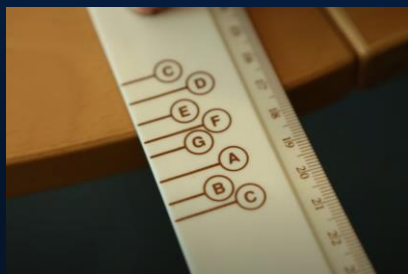
Can you hear the different frequencies?



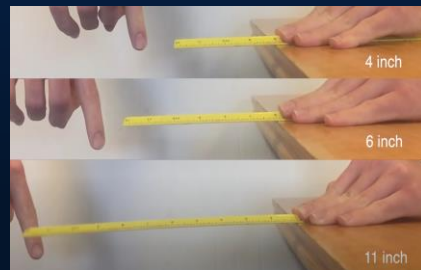
Star Wars - Imperial March played on a coffee stirrer!



Playing Havana on a steel ruler!

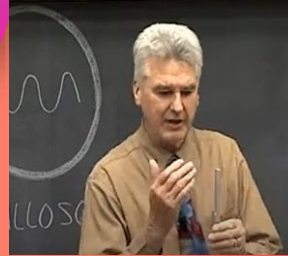


Beethoven on a musical ruler!



Slow Motion Ruler Vibrations

GET READY TO DRAW SOME SOUND WAVES



Classic
Frequency
and
Amplitude
Lecture

Remember this teacher ?

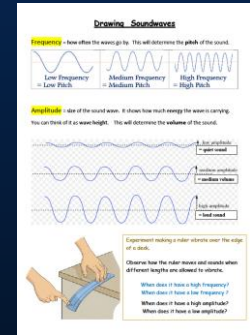
Going Live!

Thursday 25th February 10:45am

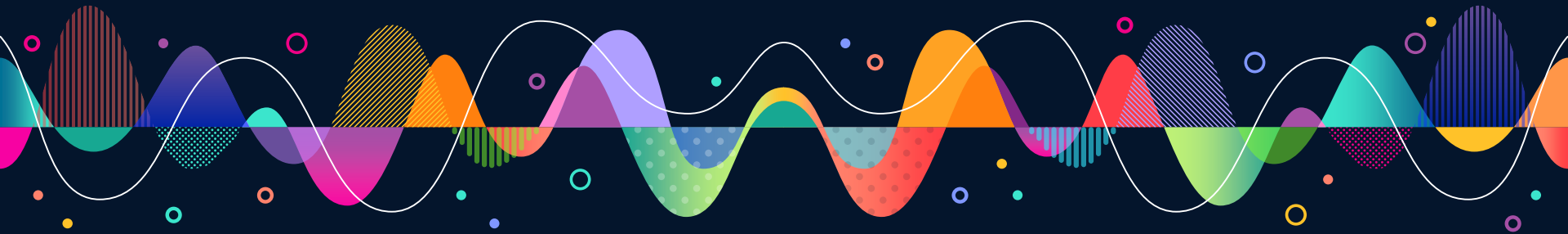
Google Classroom

Join in with our fun wave-drawing activities!

https://heamoor-community.eschols.co.uk/website/science_week_-_sound_wb_22022021/543399



DOWNLOAD
THE
WORKSHEET



Upload a picture!

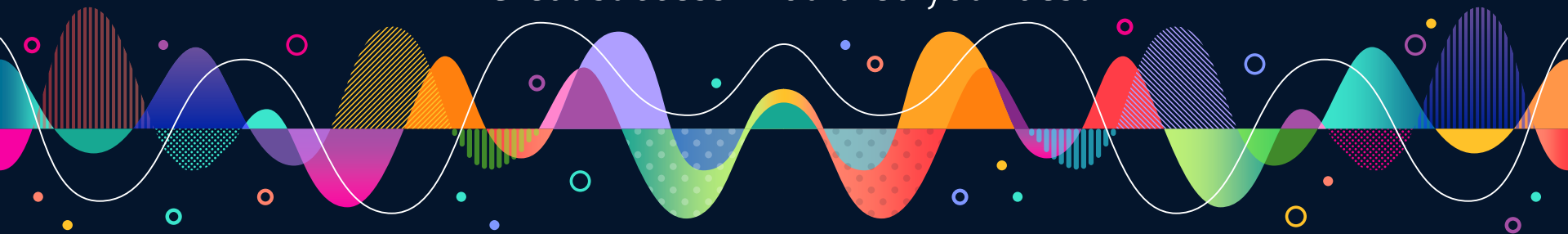
Save your work in your **Portfolio** on [Dojo](#).

Which sound wave is your favourite?

Talk or write about one of the waves you have drawn.

100%

Great success! You tried your best!



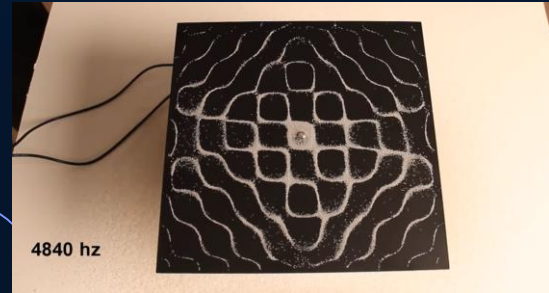
Experiment Two – Seeing Sound Waves Move Objects



Click on each picture to watch a video about moving objects with sound.



Have a go at making your own sound viewer!



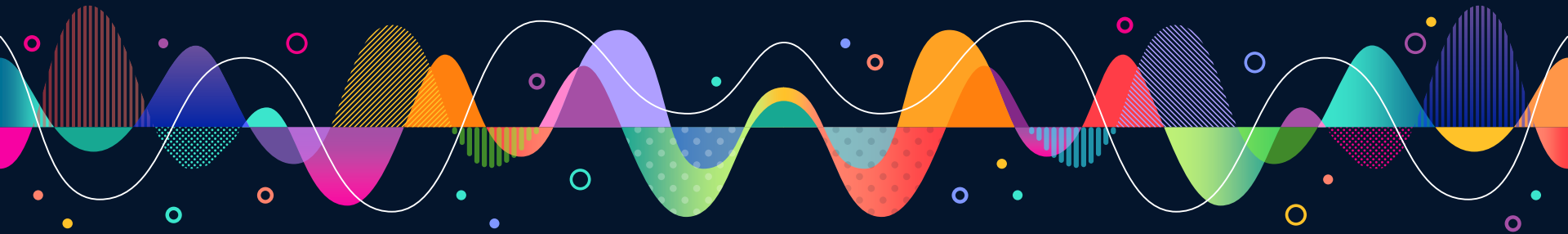
Upload a picture or short video!

Save your work in your **Portfolio** on [Dojo](#).

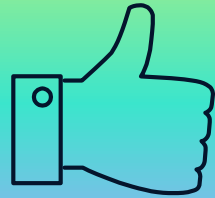
What worked well ?

What would you change ?

Talk or write about the '*seeing sounds*' experiment.



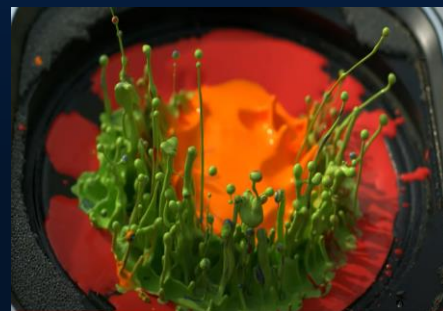
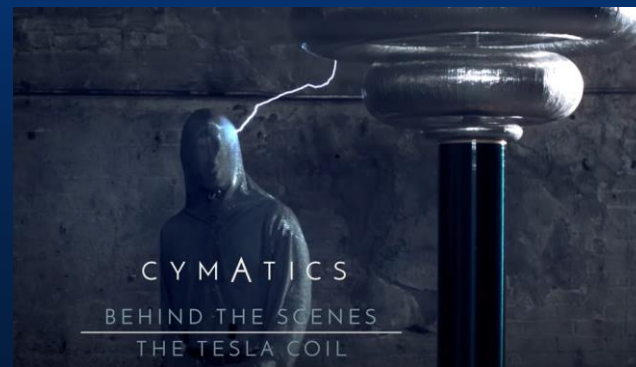
THANKS!



Any questions?

Send Mr. Fletcher a message on Dojo

JUST FOR FUN!





I hope you enjoyed the lesson!

See you tomorrow at 10:45am on Google Classroom