Complete this unit daily in a block or try a couple of challenges each week - you decide.
Read it all before you start.
Do what you can with materials you may have at home. You might have ideas for alternative materials.
Remember to ask an adult before you use resources/equipment from around your home.
Learn safely!

Click on link to watch:
https://www.bbc.co.uk/teach/class-clips-video/music--science-ks2-what-is-

How many different sounds can you make? Use your voice, body parts, objects… anything suitable that you can find.
Challenge the other people in your household: who can make the most sounds?
Then sort the sounds into loud or soft noises. How might you record these?

HUM a favourite song or tune. Then squeeze your nostrils together and continue humming. How does this change the sound? Why do you think this is?

SOUND SURVEY:How many different sounds can you hear today?

Make a list of sounds around you .
Can you hear the same sounds at different times of the day?
Draw a chart like the one below.
Record the sounds that you can hear at two times (am/pm)
Afterwards, explain the results of your survey

What can you hear?	Is it high or low?	Is it loud or quiet?

VIBRATIONS How sound moves.

RULER TWANGING

I can record my observations using diagrams and explain my observations.

Equipment: different rulers or lolly sticks.

What is the loudest/quietest sound you can make with each ruler/stick? Then find out what the shortest/longest sound you can make with each one.

Record observations using **labelled diagrams.**

Explain your diagrams. Use **because** in your explanation.

SAFETY: KEEP YOUR FACES AWAY FROM THE RULERS/STICKS.

Make a drum using a pot with a paper 'skin'

Use a rubber band, hair bobble or tape to keep in place - make sure the paper can move slightly. OR you might have already have a drum.

BANG THE DRUM

I can say what I think will happen and explain my predictions.

Equipment: homemade drum assorted beaters (pencil, wooden spoon, fingers) grains of rice or other, a range of small objects of different sizes - maybe lego bricks or dice, beads, even dried peas.

How high can you make the objects (dried rice) ' jump' without breaking the drum?

What will you need to do to make the objects 'jump'?

Which object will 'jump' the highest? Make a **prediction.**

Now change beaters, How might changing beaters affect the vibrations? Use **because** in your answer.

SAFETY: BEAT THE DRUM SENSIBLY, WITHOUT BREAKING IT!

EXTRA if you have the resources

LOLLY STICK VIBRATIONS

I can use diagrams to record my ideas.

Equipment : lolly sticks rubber bands straws

Make an instrument using 2 lolly sticks some straws and 2 bands.
How will you change the sound?
Record your ideas. Use **diagrams.**

SAFETY: KEEP THE BANDS AWAY FROM FACES AND EYES. BREAKING IT!

Vibrations Game to print and play pin pages 19 - 21

VIBRATING BANDS

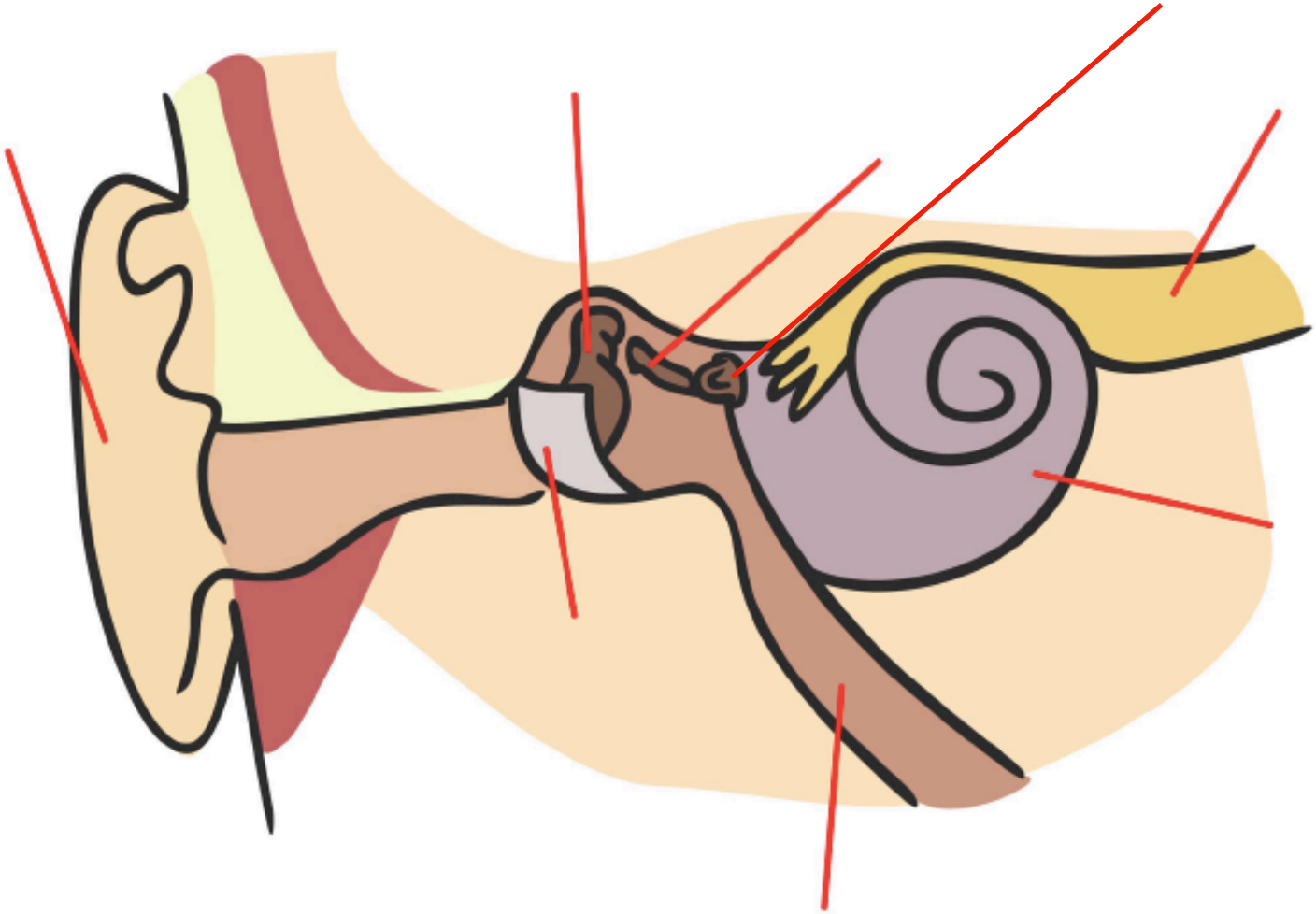
I can say what I think will happen and explain my predictions.
I can use diagrams to record my ideas.

Equipment : tubs empty boxes rubber bands

Put different sized bands around a hollow container/box.
Before you test, make a **prediction** - which band will make the loudest sound? Which band will make the longest vibration ? Draw a **diagram.**

SAFETY: KEEP THE BANDS AWAY FROM FACES AND EYES.

The Ear



The Ear

Draw a diagram of the ear and label the parts :

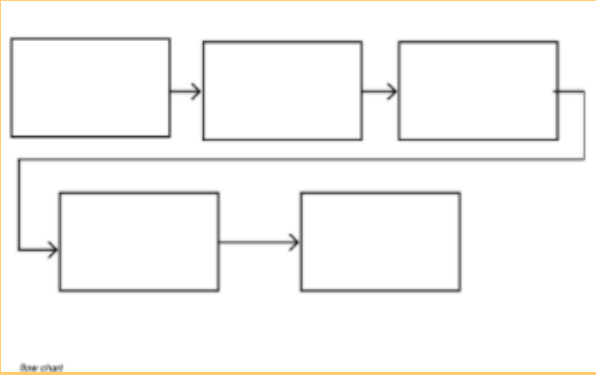
Anvil Cochlea Ear Drum Eustachian Tube

Hammer Nerve Pinna Stirrup

Then find out about the function of each part.

How do we hear?

Use a flow map to explain how we hear a sound.



Watch video: https://www.youtube.com/watch?v=3yqB2KFwJCo

Make a String Telephone

1. Cut a long piece of string, you can experiment with different lengths .
2. Poke a small hole in the bottom of each cup. (**Ask an adult to help you with this part.)**
3. Thread the string through each cup and tie knots at each end to stop it pulling through the cup (alternatively you can use a paper clip, washer or similar small object to hold the string in place).
4. Move into position with you and a friend holding the cups at a distance that makes the string tight (making sure the string isn't touching anything else).
5. One person talks into the cup while the other puts the cup to their ear and listens, can you hear each other?

Try changing the length of the string - how does this affect your ability to hear the sounds?

Try repeating your conversation at the same distance apart without the telephone. Which is easier to hear- with the telephone or without?

Can you make your telephone work around a corner?

What happens if you the a knot in the middle of your string? Explain your observation.

Jot down the difference in the sound when the string is tight compared to when it os loose.

Draw a labelled diagram of your telephone

How else could you investigate how sound travels?

Listen Up!

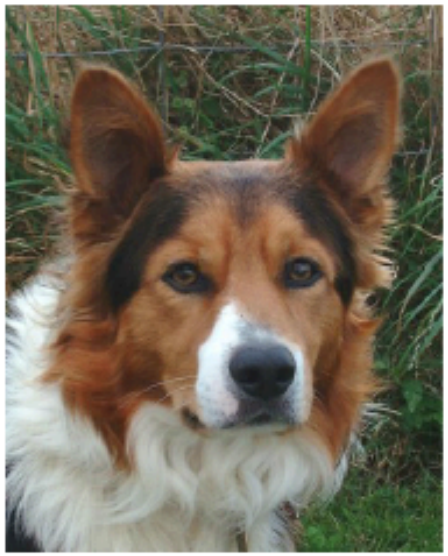
Animal ears – position

Look at the pictures of animals. Discuss the following questions with a partner.

Why do you think animals prick up their ears?

Do animals move their ears in any other way?

Explain why you think this is.



I think animals prick up their ears because…

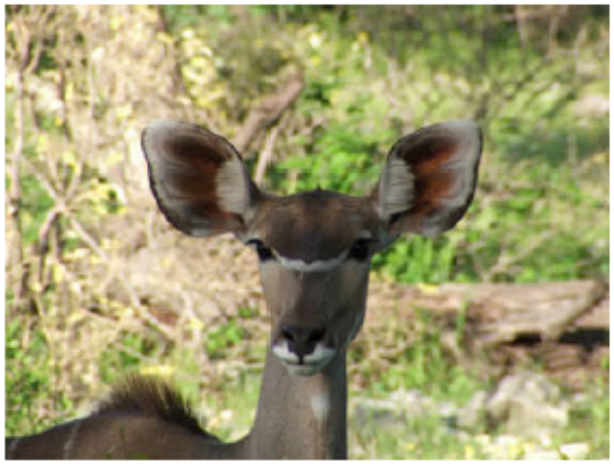
Animal ears – shape

Look at the pictures of animals. Discuss the following questions with a partner.

What do you notice about their ears?

Explain why you think their ears are this shape.

Can you suggest any other uses of ears?



I have noticed that animals' ears are ….
I think this is so….

Amplifying Sounds

- **Statement: all cones help you to hear more clearly.**
- Make some cones of different sizes.
- Plan an investigation using the questions below, then carry out your investigation.
- Explain what you found out. How do the cones affect the volume of the sound?

INVESTIGATION

WHAT EQUIPMENT WILL YOU USE?

HOW WILL YOU TEST?

HOW WILL YOU MAKE IT A FAIR TEST?

HOW MANY TIMES WILL YOU TEST?

WHAT WILL YOU KEEP THE SAME?

WHAT DO YOU THINK WILL HAPPEN?

WHAT WILL YOU CHANGE?

WHAT AND HOW WILL YOU MEASURE?

HOW WILL YOU RECORD?

Sound

e	m	w	a	v	e	l	j	b	u	p	a
s	a	b	s	o	r	b	o	i	k	u	p
y	t	q	t	v	y	w	f	l	o	w	u
a	n	u	r	o	o	p	n	v	h	m	c
p	b	i	a	l	j	k	r	u	d	v	s
g	p	e	v	u	d	l	m	e	z	m	o
o	e	t	e	m	p	e	c	n	p	i	u
a	a	x	l	e	e	j	e	e	j	i	n
u	l	s	s	p	l	u	j	r	x	u	d
h	i	g	h	b	g	w	x	g	p	q	k
i	x	j	m	u	s	i	c	y	e	a	r
j	o	y	l	o	u	d	h	s	d	q	l

music
sound
volume
loud
quiet
travel
wave
ear
high
low
absorb
energy

Complete the Word-search.
Then, create your own Sound Word-search using the scientific words below(find out what any unfamiliar words mean) :

amplify
anvil
audiology
cochlea
ear drum
echo
eustachian tube
hammer
inner ear
pinna
pitch
sound wave
stirrup
transmitted
vibrations

LOUD NOISES can damage our ears, causing hearing loss. Some people protect their ears whilst at work by using ear protectors.
Make a list of jobs that require ear protection.

Plan an investigation to find out:
What is the best material to muffle sound?
Change the question into a statement that you can test .
On the next page there is a chart to complete.
You may want to change the materials. (bubble wrap, cotton wool, kitchen roll, a clean dish cloth)
Think about what you will use to test. Perhaps, make a muffler from two small pots and cover or fill with each material in turn.

Name: Date:

Soundproofing investigation

Our question	What is the best material to muffle a sound?
Equipment needed	
Method	
These factors will be kept the same (fair test)	
Measurement	
Prediction	I predict
Results/findings	
Evaluation	Next time I do this investigation I would
Conclusions	I recommend

This is an example of a chart. Copy it but you might need to change the materials and the number of rows.

Material used to muffle sound	My prediction	What happened
My fingers	I predict that my fingers won't muffle the sound of my partner's voice at all because they are small and skinny.	My fingers did muffle some of the sound. My partner's voice was quieter when I used my fingers to muffle the sound.
Newspaper		
Toilet roll paper		
Cotton		
Aluminium foil		

EXTRA: MUSICAL INSTRUMENTS

Try making some instruments from junk materials. Here are a few ideas.

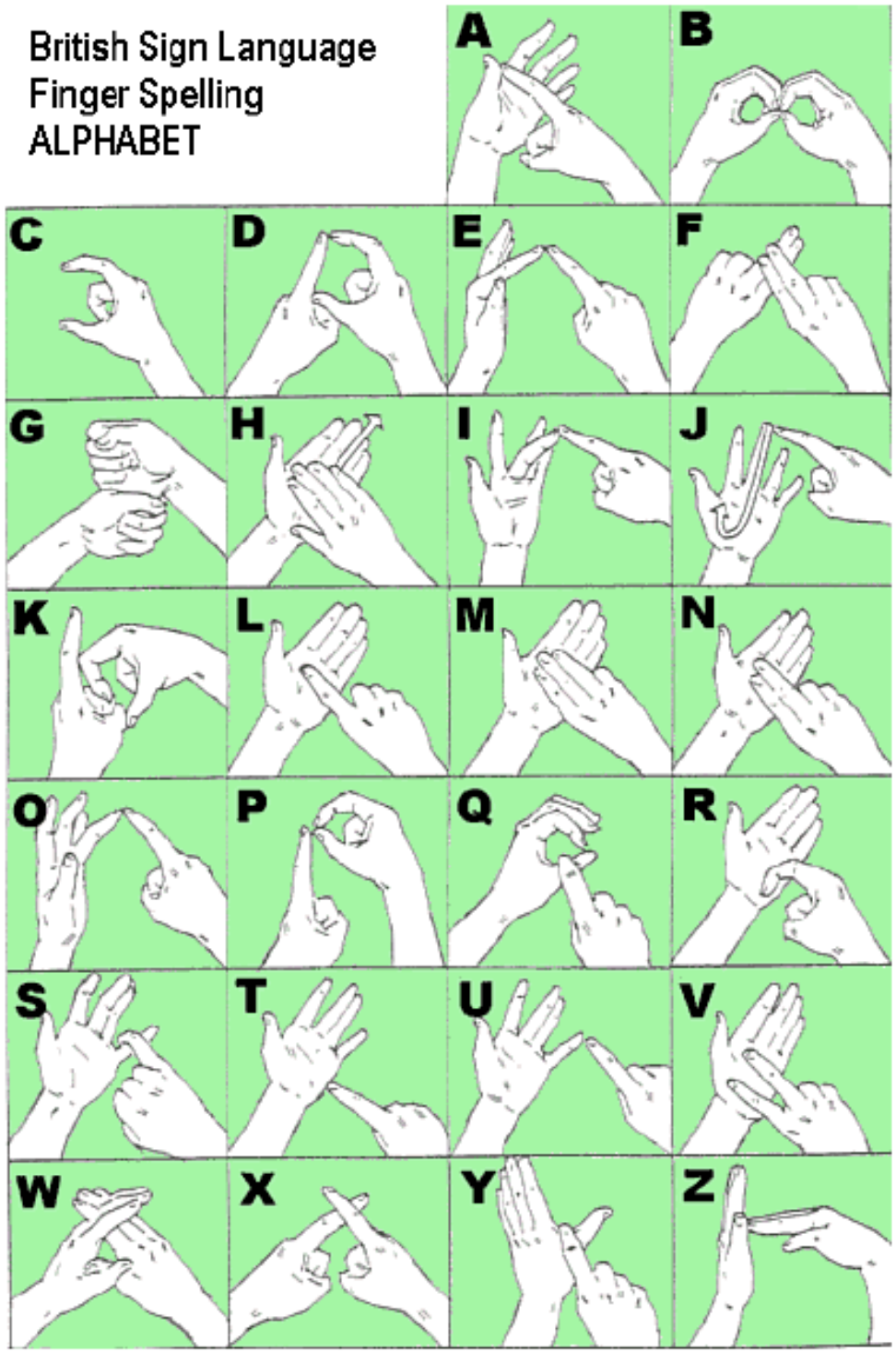
Easiest Cardboard Rainmakers Ever!

1. Grab a paper towel roll.
2. Fold up your paper bag circle over your cardboard roll. ...
3. Pull out a box of aluminum foil.
4. Mix up a bunch of corn and rice.
5. Pour your rice/corn mixture into your cardboard tube. ...
6. Now it's time to decorate your **rainmaker**! ...
7. Once we finished, we taped the artwork on around our tube.

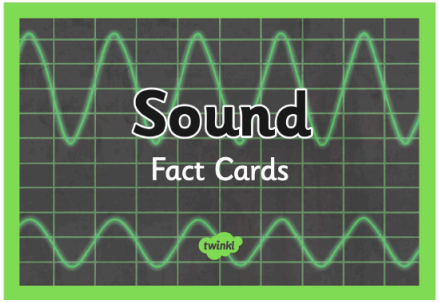
You could try making a water xylophone with adult help Type in **Water Xylophone** and watch some of the videos. You don't have to use food colouring - plain water will do.

DIY Craft Kalimba - Homemade Instruments for Kids ... https://www.bingobongokids.com › blog

Use the guide to spell your name. Then try to spell out a simple sentence for a partner (they might need to jot th
letters down to work out the words).



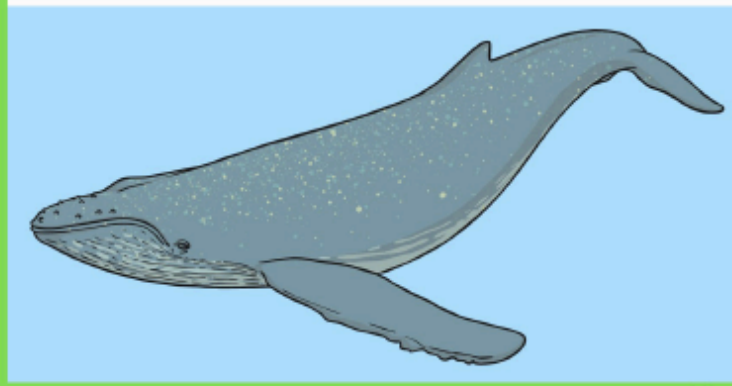
For your information



Sound moves through the air at 340 metres per second, or around 760 miles an hour.

Very loud sounds can cause pain and damage our ears. This is why people who do noisy jobs wear ear defenders, such as builders or the line crew who work on airport runways.

The sound of whale song can travel a distance of 800 kilometres (or around 500 miles) underwater.



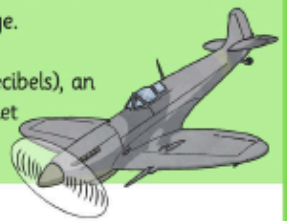
The loudest natural sounds ever made on Earth are probably massive volcanic eruptions. The 1883 eruption of Krakatoa generated a sound reported to be 180 decibels.

Dogs can hear sound at a higher frequency, or pitch, than humans, allowing them to hear noises that we can't.

The loudness of sound is measured in decibels. A quiet sound , like the ticking of a watch, is about 20 decibels.

The sound of a normal conversation is about 60 decibels. Sounds louder than 90 decibels can cause ear damage; a lawn mower, chainsaw or truck could make sounds of 100 decibels. 130 decibels will cause immediate pain and ear damage.

These sounds include artillery fire (140 decibels), an aircraft taking off (180 decibels) or a rocket taking off (195 decibels).

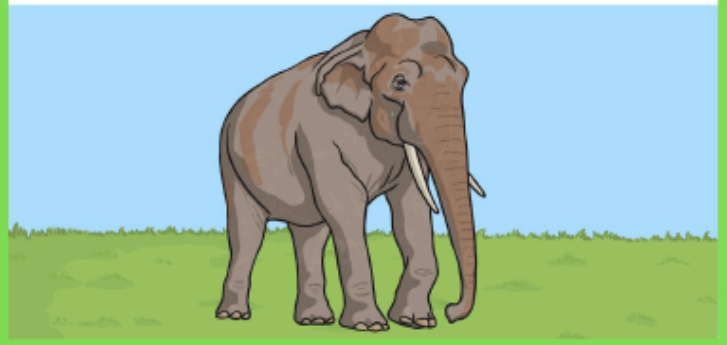


A baby's cry is louder than a car horn! A car horn measures about 100-110 decibels while a baby's cry can reach 115 decibels.

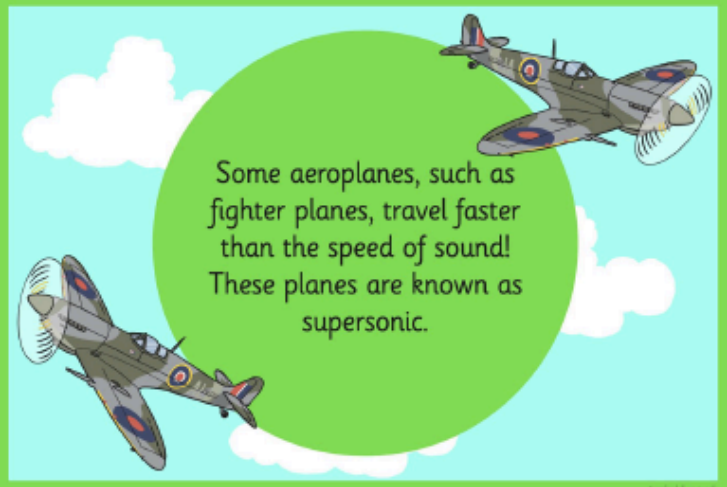
Sound is used by many animals to detect danger. Often, these animals have large ears so that they can hear sounds easier.

Sound cannot travel in space! There is no air or any other matter, so there are no particles to pass the vibrations on.

Elephants can make and hear sounds lower than the human hearing limit. Low sounds can travel farther than high sounds, so the elephants can communicate over longer distances.



During a thunder storm you see lightning flash before you hear the thunder. This is because light travels faster than sound.

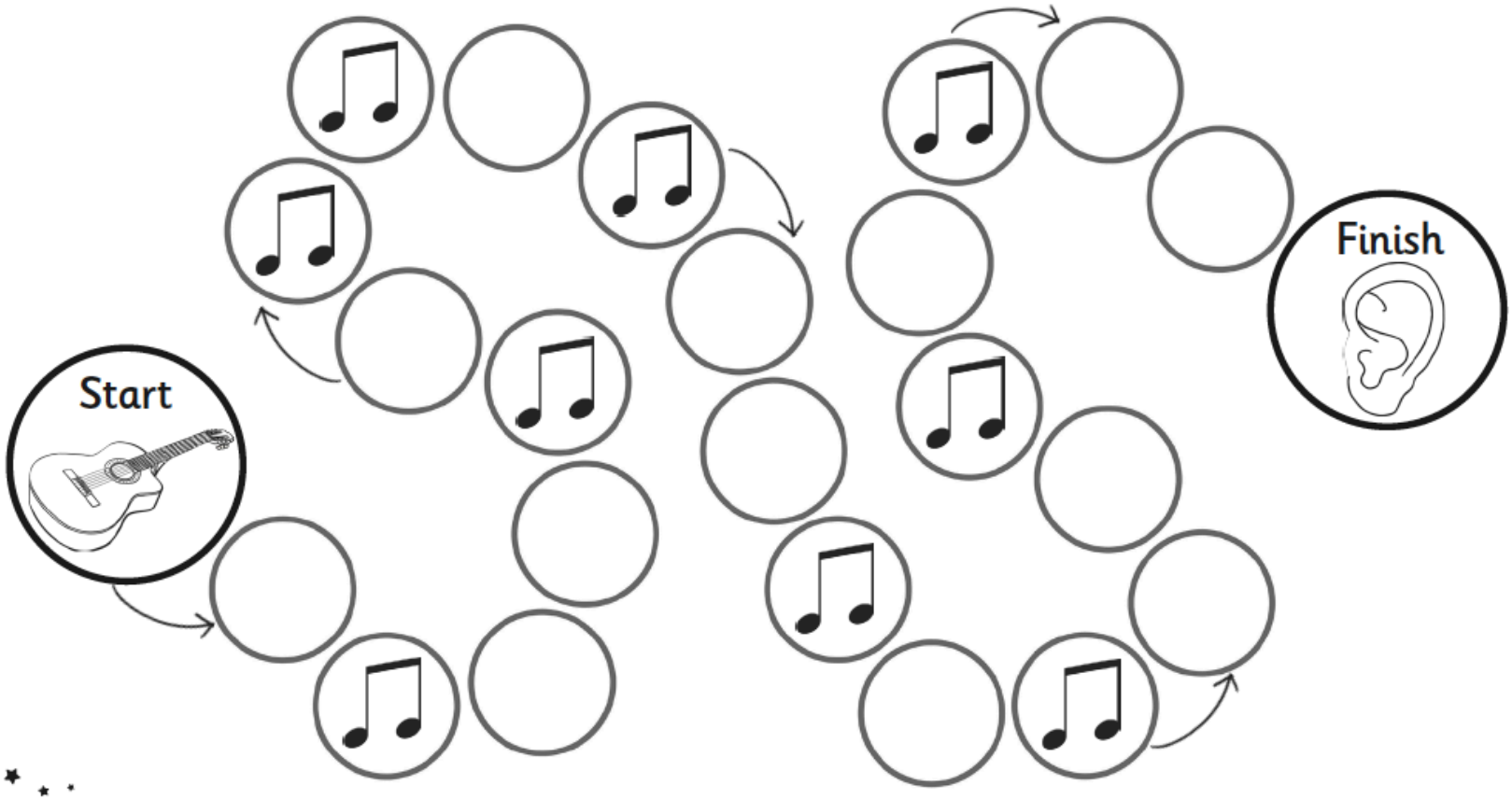


Good Vibrations

How much do you know about sounds and how we hear them? Play this game with friends or family to find out!

The aim of the game is to travel from the guitar to the ear, moving from particle to particle as you travel. If you land on a musical symbol, another player has to take a question card and ask you the question. If you answer correctly, you can choose to move yourself one space ahead or move another player one space back. The first player to reach the ear is the winner!

You will need one counter per player and a 6-sided die. Cut out the question cards before you play



Good Vibrations

How much do you know about sounds and how we hear them? Play this game with friends or family to find out!

 Hitting a drum harder will produce a... a) louder... b) quieter... sound. louder twinkl.co.uk	 Which part of our body interprets the electrical signals from the ear, so that we understand the sounds we hear? The brain twinkl.co.uk	 The smaller the drum, the _____ the sound. higher twinkl.co.uk	 True or false: sounds cannot travel in space. True twinkl.co.uk
 Pitch is a measure of how _____ or _____ a sound is. high or low twinkl.co.uk	 Why do the line crew working on noisy airport runways wear ear defenders? To protect their ears from the loud sounds. twinkl.co.uk	 In a wind instrument, what vibrates to create the sound? The air inside the instrument. twinkl.co.uk	 How can you make a percussion instrument make a quiet sound? Hit it gently. twinkl.co.uk

Good Vibrations

How much do you know about sounds and how we hear them? Play this game with friends or family to find out!

 The shortest string on a guitar will the... a) highest... b) lowest... sound. highest twinkl.co.uk	 Do sounds get **louder** or **quieter** as you move away from the sound source? quieter twinkl.co.uk	 What is vibration? A very fast movement back and forth. twinkl.co.uk	 What causes a sound? Vibrations twinkl.co.uk
 Which part of our body do we hear with? Ears twinkl.co.uk	 The longer the bar on a xylophone, the _____ the sound will be. Lower twinkl.co.uk	 What is it called when you use materials to absorb sound to make a room or space quieter? Soundproofing twinkl.co.uk	 Does sound travel fastest through a solid, liquid, or gas? Solid twinkl.co.uk

At the end of the unit about SOUND show what you have learnt by making a poster or a thinking map.
If you have an i-pad, you could create a Pic-Collage .
How else could you show others your learning?