



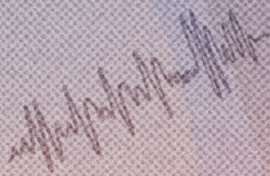
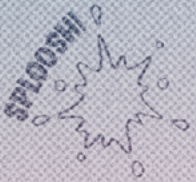
HISTORIC
ENVIRONMENT
SCOTLAND

ÀRAINNEACHD
EACHDRAIDHEIL
ALBA



Sounds of Scotland

Activity book



Get inspired by the past



Welcome to our Sounds of Scotland activity book. These resources will help you explore Scotland's history through the theme of sound. From medieval music to factory noises try out the activities to discover more and learn about the science behind them.

This book belongs to: 

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Contents

1. Harp and seek!
2. Sound scavenger hunt
4. Acoustic archaeology
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There are 7 Dupplin Cross harpers hidden throughout this activity book. Can you find them?

The Dupplin Cross once stood near the palace of Pictish kings at Forteviot, Perth and Kinross.
Can you spot the carved musician playing the harp?

What colours do you think the cross was painted?

Harp and seek!



Front

Side

Sound scavenger hunt

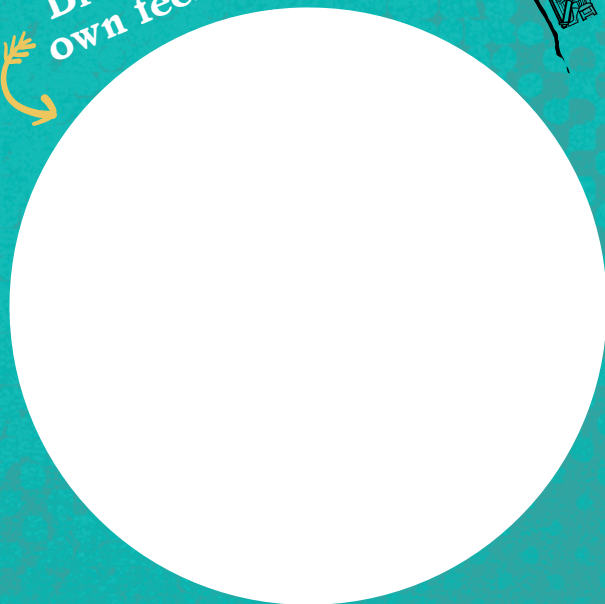
Sounds are all around us. Even in quiet spaces there are always little sounds: the buzzing of an electrical device, the rustle of the wind through the trees. Listening carefully can calm your mind and body.

Head outdoors and find a safe place to stop for a moment ... Close your eyes and just listen. What noises do you hear?

How do these sounds make you feel?



Draw your own feeling...



Going on a sound hunt...

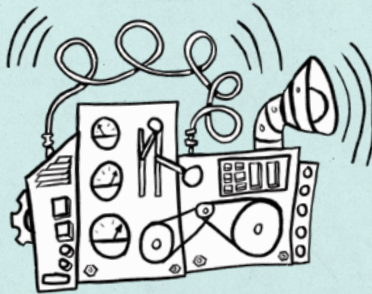


Go for a walk to look and listen for sounds. What sounds can you find?

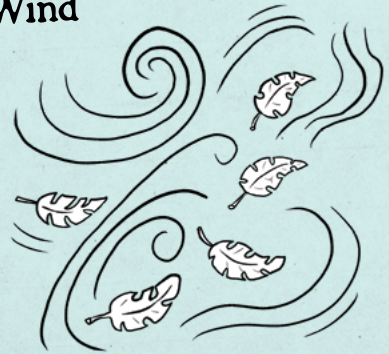
Footsteps



A noise from a machine



Wind



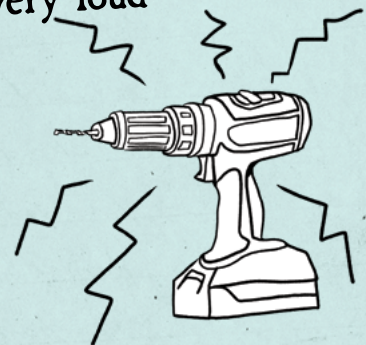
Water



Voices



Something very loud



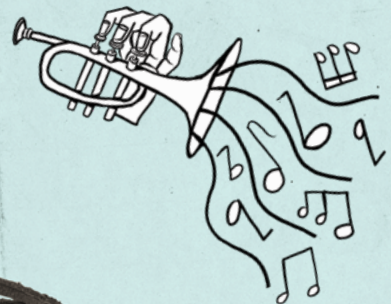
Something very quiet



An echo



Music



What sounds did you enjoy the most?
Colour them in.

Did any sounds make you feel strange or annoyed?
Cross those out.



Believed to be around 4,500 years old, Orkney's silent and mysterious Ring of Brodgar is Scotland's largest stone circle.

Acoustic archaeology

Why was it built?
What was it used for?

Due to its location, we think one of its uses was as a meeting place for public ceremonies. Crowds of people could gather in the large space, with the stones creating good acoustics by reflecting sound.

Acoustics and buildings

Acoustics is the study of sound waves created by vibrations travelling through the air before reaching our ears. They can help tell us what a building was designed for. Buildings with soft surfaces that absorb sound are often quiet places, like libraries. Those with hard surfaces to reflect sounds can be louder places, like concert venues.

Causeway

Outer Ditch

What do YOU think happened in the Ring of Brodgar 4,000 years ago?
Draw or write it above.

Did you know?

Archaeologists are like time detectives. They investigate how people lived in the past by exploring the clues left behind.

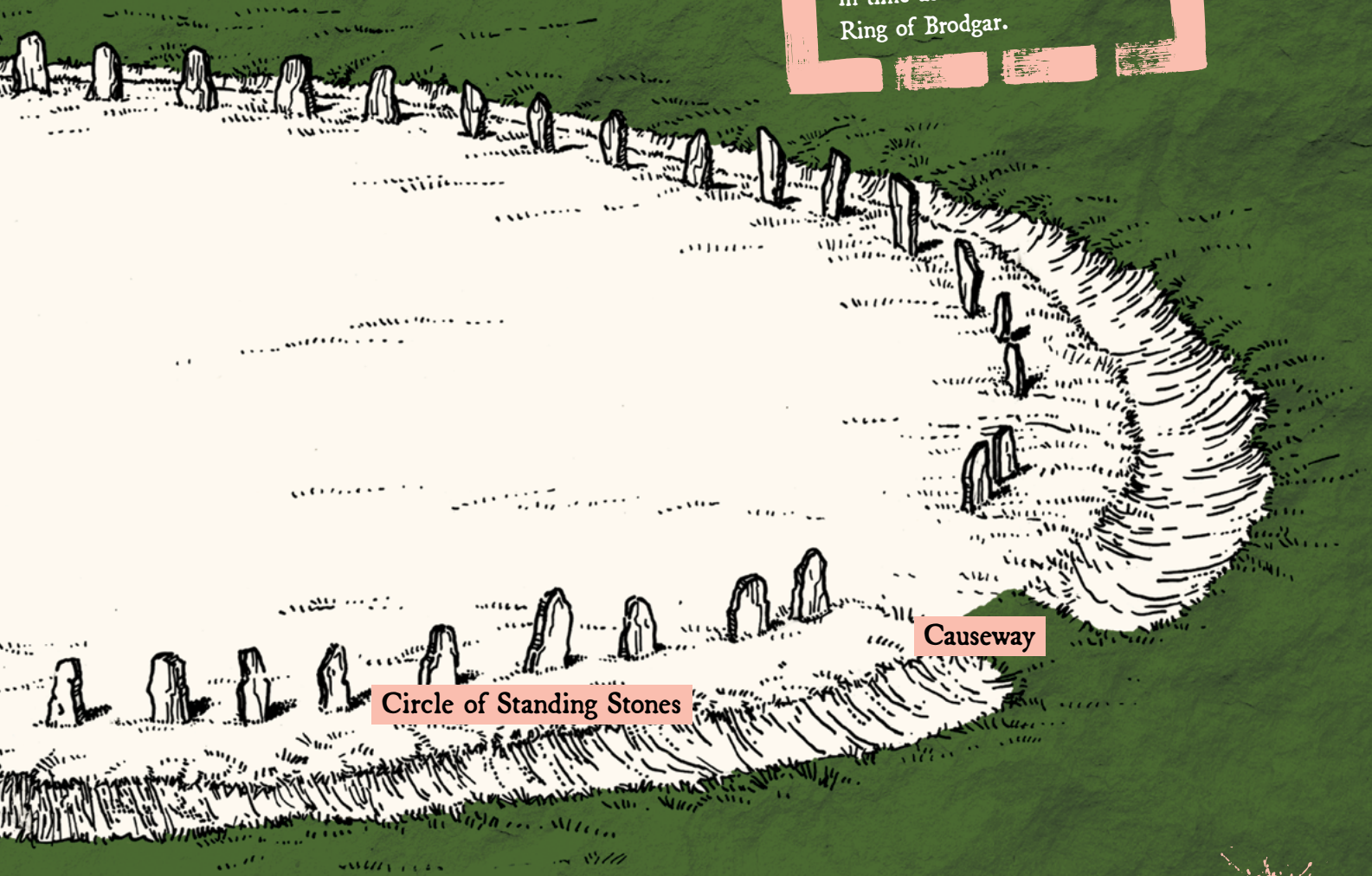


Acoustics at the Ring of Brodgar

The weather can affect acoustics. In an experiment, handclapping and voices were heard across the circle in calm weather. But drums could be heard even in the wind and rain! Sounds made in the centre echo back from the stones around the edge creating a surround sound effect.*

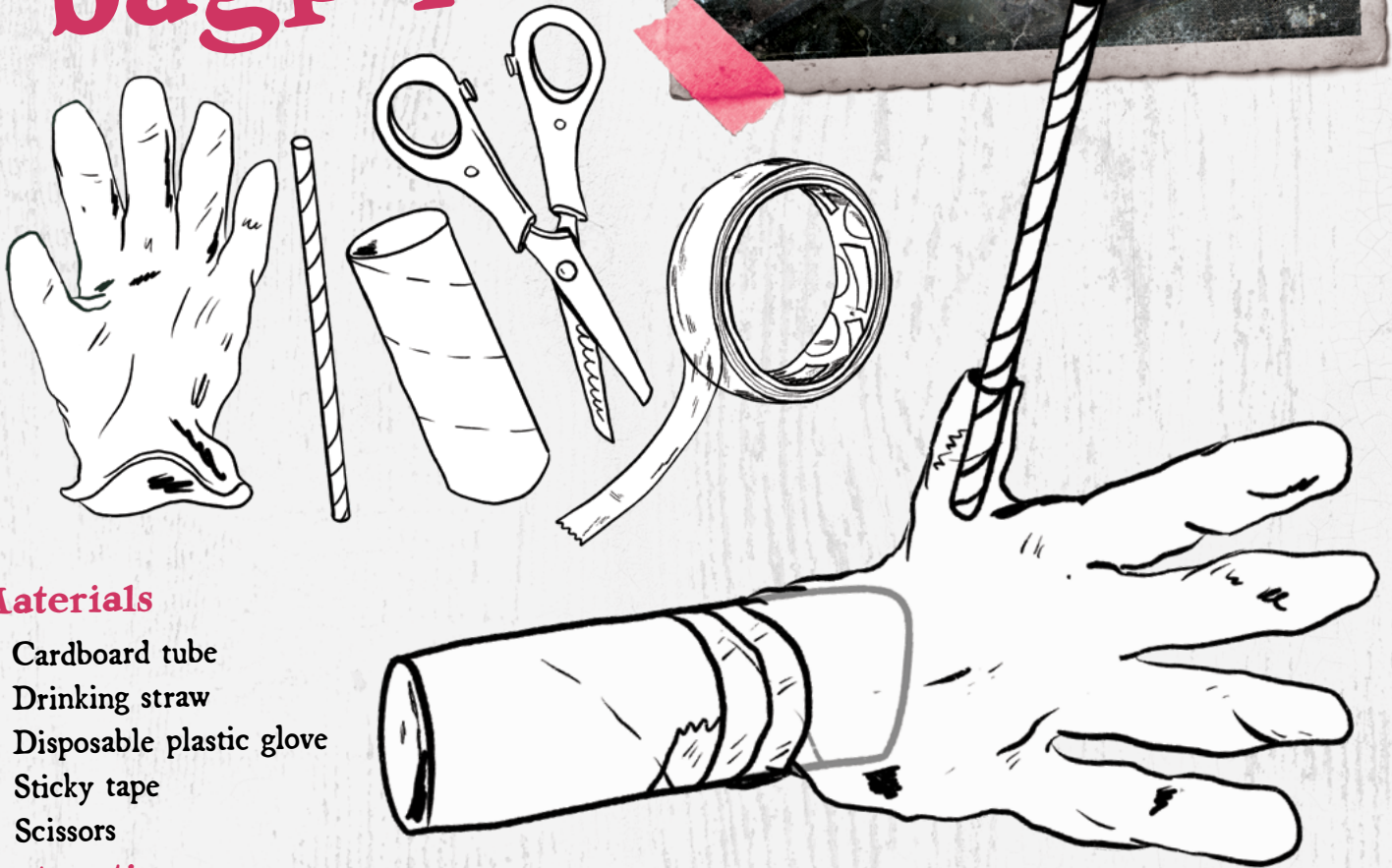
Dancing giants

Folklore tells of a band of fearsome giants gathered in a field by night dancing to the sound of a fiddle. Forgetting to watch for sunrise they were caught by the first rays of daylight and instantly turned to stone. They remain frozen in time as the stones of the Ring of Brodgar.



Spot this wee pig playing the bagpipes at Melrose Abbey.

Make your own bagpipes



Materials

- Cardboard tube
- Drinking straw
- Disposable plastic glove
- Sticky tape
- Scissors

Instructions

- 1 Cut the tip off the glove's thumb, insert the straw and secure tightly with sticky tape.
- 2 Place the glove over one end of the cardboard tube and secure tightly with sticky tape.
- 3 Pull the glove tight over the opening of the cardboard tube. Make sure there are no creases.
- 4 Blow hard into your straw and inflate the glove, then allow the air to slowly release as you blow. It should make a droning sound, like bagpipes!

Did you know?

Bagpipes are one of Scotland's most iconic instruments.

In British Sign Language (BSL), the sign for 'Scotland' is moving a bent arm in and out twice, as if playing the bagpipes!



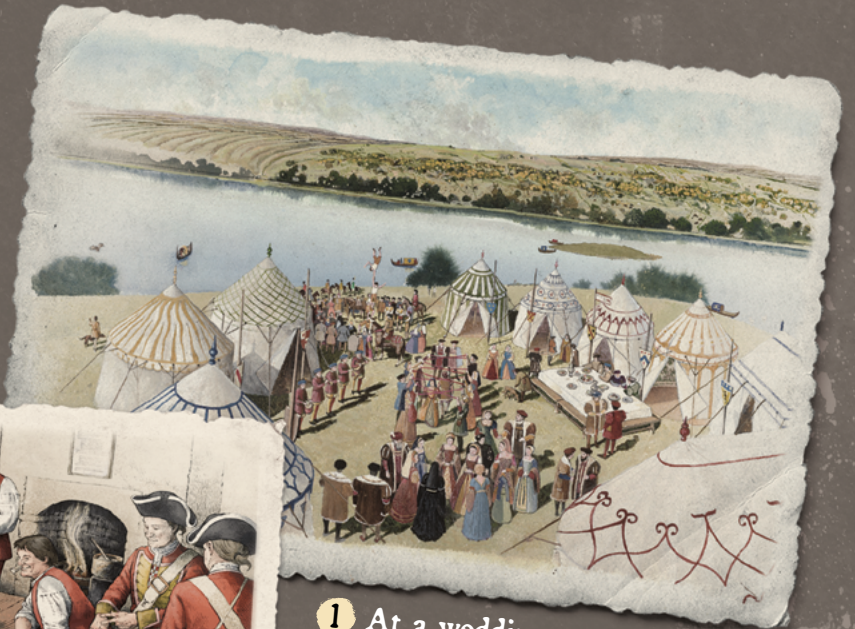
Hearing the past



Many historic places are no longer filled with the people or things which would have made sound. We can create a sound picture, or soundscape, using different sound effects to bring these places to life!

Where are you?

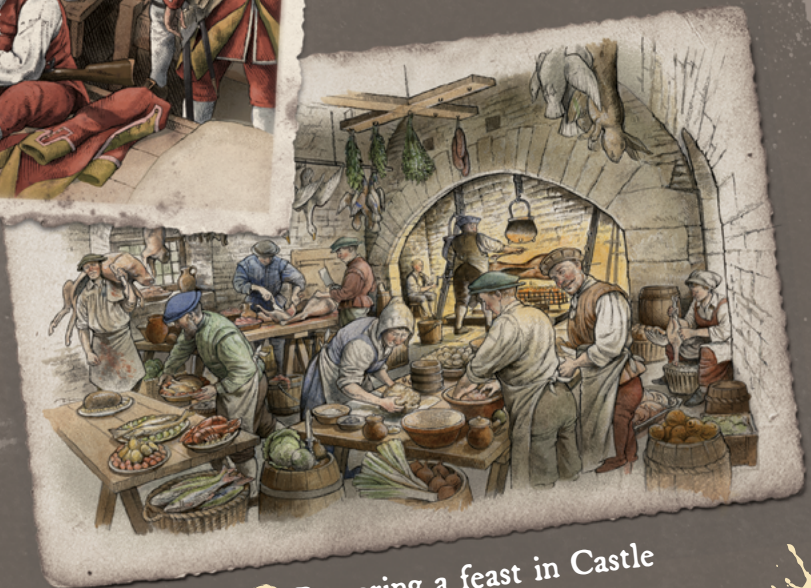
Listen to this soundscape and guess the place from its sounds (22s).



1 At a wedding at Linlithgow Palace?



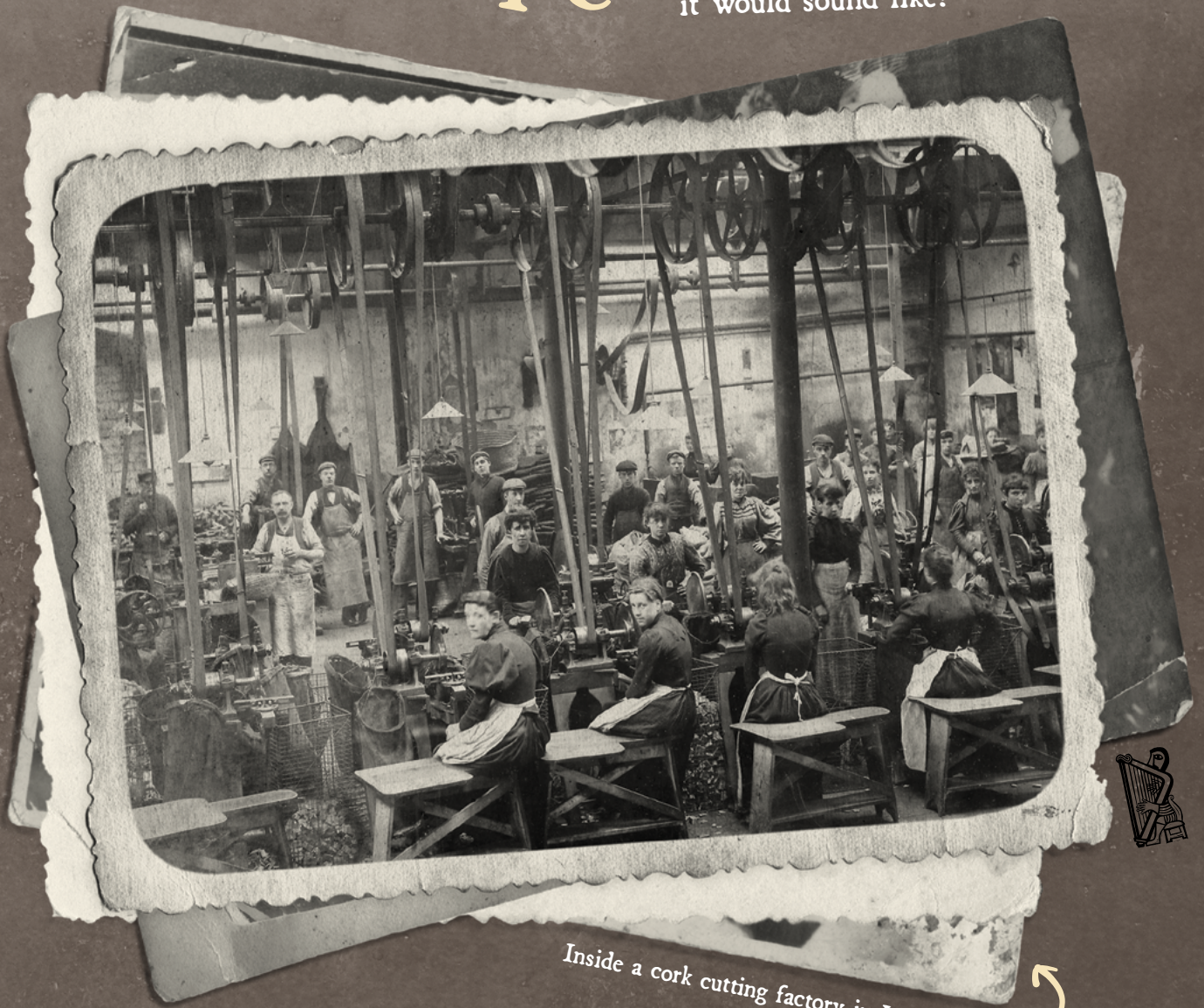
2 Chatting with soldiers in Ruthven Barracks?



3 Preparing a feast in Castle Campbell's kitchens?

Let's create a soundscape

Imagine you are standing inside this picture of a factory. Look around and notice everything that might make a noise. What do you think it would sound like?



Inside a cork cutting factory in Leith, 1895. ↷

- What might the workers hear or not hear?
- How could you re-create these noises?
- What sounds can you make using your mouth or body?
- What different materials can you find around your home and what sounds do these make?

Jingling army!

Sound effects are often made with unexpected items. In some films, a marching Roman army was created by a jingling set of keys!



How time flies



Since 1861 a gun has been fired every day* at Edinburgh Castle to mark one o'clock.

*except on Sundays, Good Friday, and Christmas Day.

Why?

Sailors used time to help navigate the seas. If navigational instruments were out, even by a minute, they could end up miles off course! The sound of the gun firing travelled to the port of Leith so sailors could set their instruments accurately.

People with hearing loss can experience sound with different senses. Standing near the One o'Clock Gun, you can feel the sound vibrations through the ground.



Boom time!

[Hear the gun \(15s\).](#)



Painting of a galleon in Leith, 1710.

Dancing sailors

The gun sends a message using sound. Sound is caused by tiny back and forth movements called vibrations.

When an object vibrates, the vibrations travel in waves through the air or water before reaching our ears when we hear them as sound.

Try this experiment and use sound to send a message to the sailors on their ship in Leith.

Materials

- A bowl (*the ship*)
- Cling film (*the ship's deck*)
- Rice (*the sailors*)
- Something to make noise – a speaker or metal tray and wooden spoon (*the One o'Clock Gun*)



Instructions

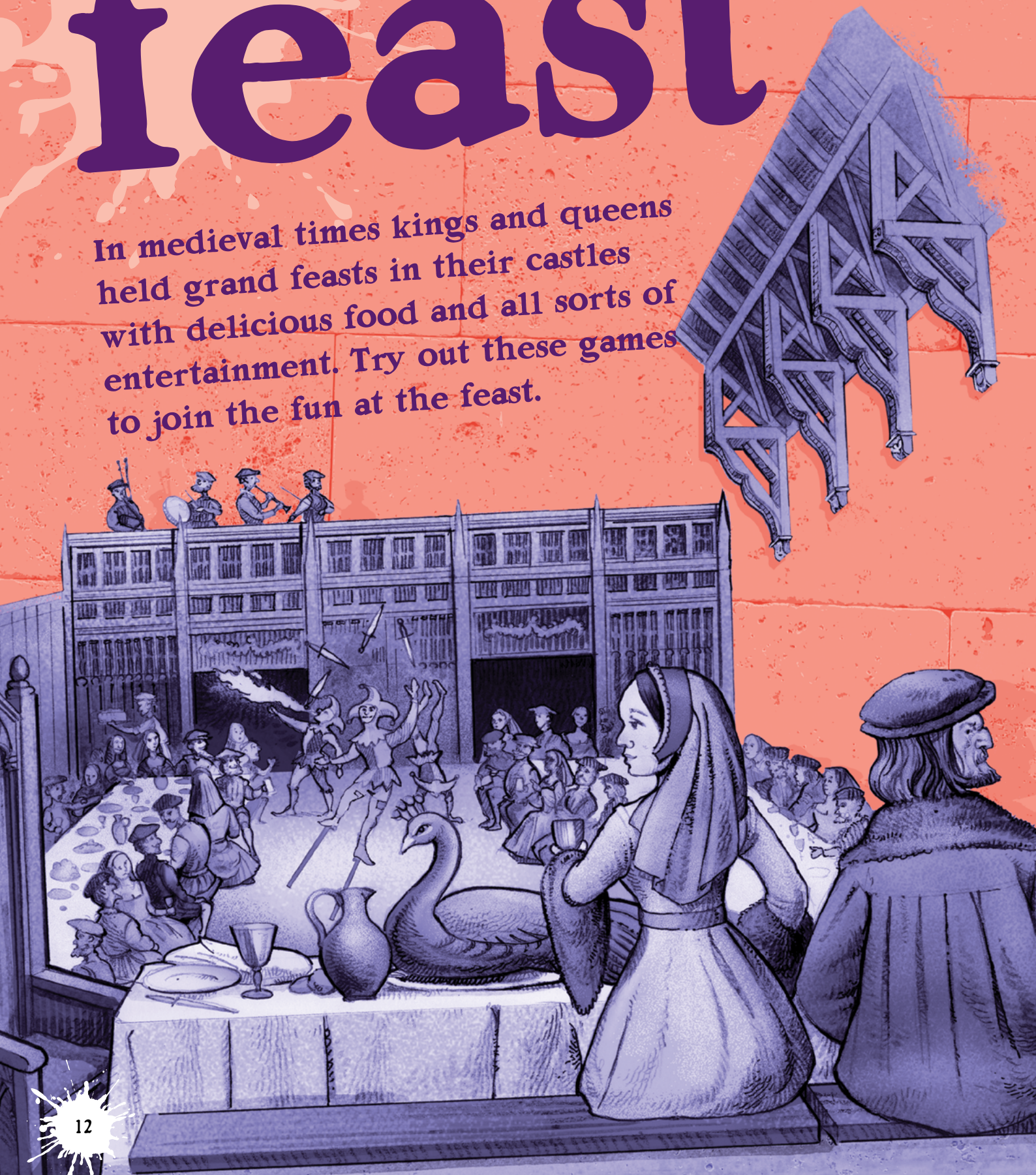
- 1 Cover your bowl tightly with cling film to create the ship's deck. Put a few rice grains on top, these are your sailors!
- 2 Fire your gun by making a loud noise next to the bowl. Play music or bang your tray with the spoon.
- 3 Make it LOUD to see your rice sailors dance up and down!

How did it work?

Vibrations from the sound you made travelled through the air to the cling film. This caused it to vibrate and the rice on top to dance around.

Fun at the feast

In medieval times kings and queens held grand feasts in their castles with delicious food and all sorts of entertainment. Try out these games to join the fun at the feast.





The jester's job was to make everyone laugh by telling jokes and acting silly. Have a go at telling these jokes...

Jester japes

Why were medieval times called the dark ages?

Because there were so many knights.



How did the knight know how much the dragon weighed?

Easy – it came with scales.



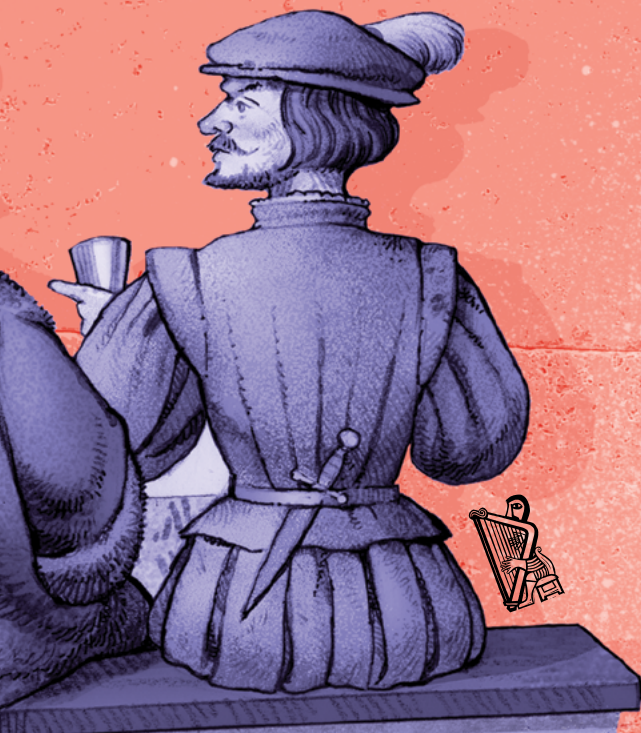
Colour the jester's bright clothes

Mind bending riddles

As well as jokes, a jester might tell mind bending riddles. Can your friends guess the answer to this one?

One *night*, a king and a queen went into a castle. There was nobody in the castle, and no one came out of the castle. In the morning, three people came out of the castle. *Who were they?*

Find the answer on inside back cover!



Medieval music

Kings and queens hired the best musicians and instruments from around the world. Records show there were Spanish guitars, Islamic lutes, Italian musicians and a "Moorish" drummer.

"Moor" was a word used to describe people of African ancestry; this means we sadly don't know exactly where the drummer came from. Then, as now, Scotland's musical influences came from around the world.

Colour the lute



The musicians are playing at the royal court. Can you spot 10 differences between the two pictures? Colour them in!



Spot the difference

Laird's lug

The laird's lug is Scots for the lord's ear. It was sort of like a medieval listening device within a building.

The lords of castles would install them to secretly listen in to their guests' conversations. What do you think they overheard?



Find the hidden whispers in this wordsearch:

- Plot
- Traitor
- King
- Queen
- Friend
- Foe
- Dungeons
- Secret

R	A	M	R	S	Y	Q	L
K	F	F	O	E	S	U	D
J	I	R	Y	C	U	E	R
M	H	N	I	R	G	E	L
D	U	N	G	E	O	N	S
S	D	C	O	T	N	G	C
P	L	O	T	N	M	D	X
F	T	R	A	I	T	O	R

Crack the code

There's a hidden musical secret on a ceiling decoration in Stirling Castle. Spot the pattern of O, I, II around the edge? A musician cracked the code and turned it into music.



Listen to the code
(1m 23s).



Using a code wheel

- 1 You need a secret cipher to crack the code.
- 2 Our cipher is four – move the wheel four spaces.
- 3 'A' now lines up with 'E', 'B' with 'F' and so on.

Can you crack these codes?

^a Jiewx
^b Wxmvpmrk
^c Qywmng

Answers below...

Credits

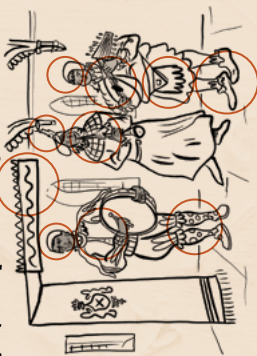
All images are © Historic Environment Scotland or Crown Copyright HES except for: cover: pig illustration © Allistair Burt, other images Shutterstock; inside front cover: lute player, Shutterstock; p3: scavenger hunt illustrations, © Chelsea Frew; other images Shutterstock; p5: giant illustration, Shutterstock; p6: craft activity illustrations, © Chelsea Frew; p7: gramophone, Shutterstock; p8: factory photo © National Museums Scotland; keys, Shutterstock; p11: experiment illustrations, © Chelsea Frew; p13: illustrations, Shutterstock; p14: lute, Shutterstock; spot the difference illustrations, © Chelsea Frew; back cover: illustrations © Allistair Burt. Inserts: code wheel, Shutterstock; stickers, Shutterstock. Design and illustration: stand.agency.

Answers

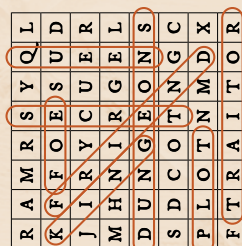
p13 – *Mind bending riddle:*

One knight, the king, and the queen!

p14 – *Spot the difference:*



p15 – *Wordsearch:*



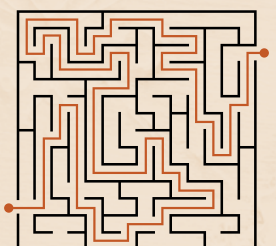
Inside back cover – *Crack these codes:*

a. Jiewx = Feast

b. Wxmvpmrk = Stirling

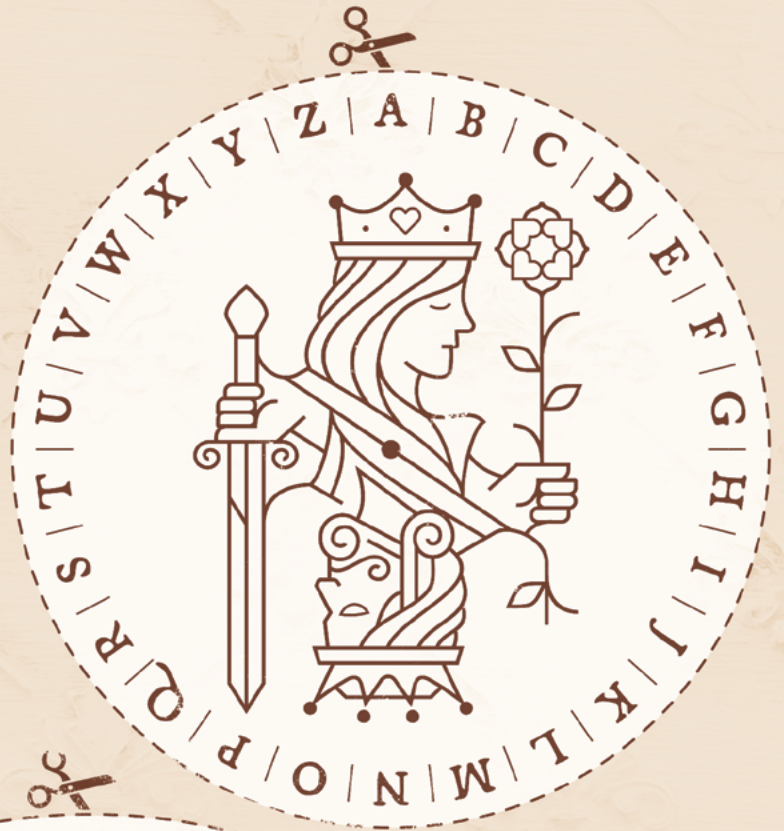
c. Qywmng = Music

Back cover – *Find the bagpipes maze:*



Make your own code wheel

- 1 Cut out the two code wheel templates.
- 2 Place the smaller wheel on top of the larger wheel.
- 3 Carefully make a hole through the centre of each wheel.
- 4 Secure them together with a paperclip or split pin.



Colour your code wheel

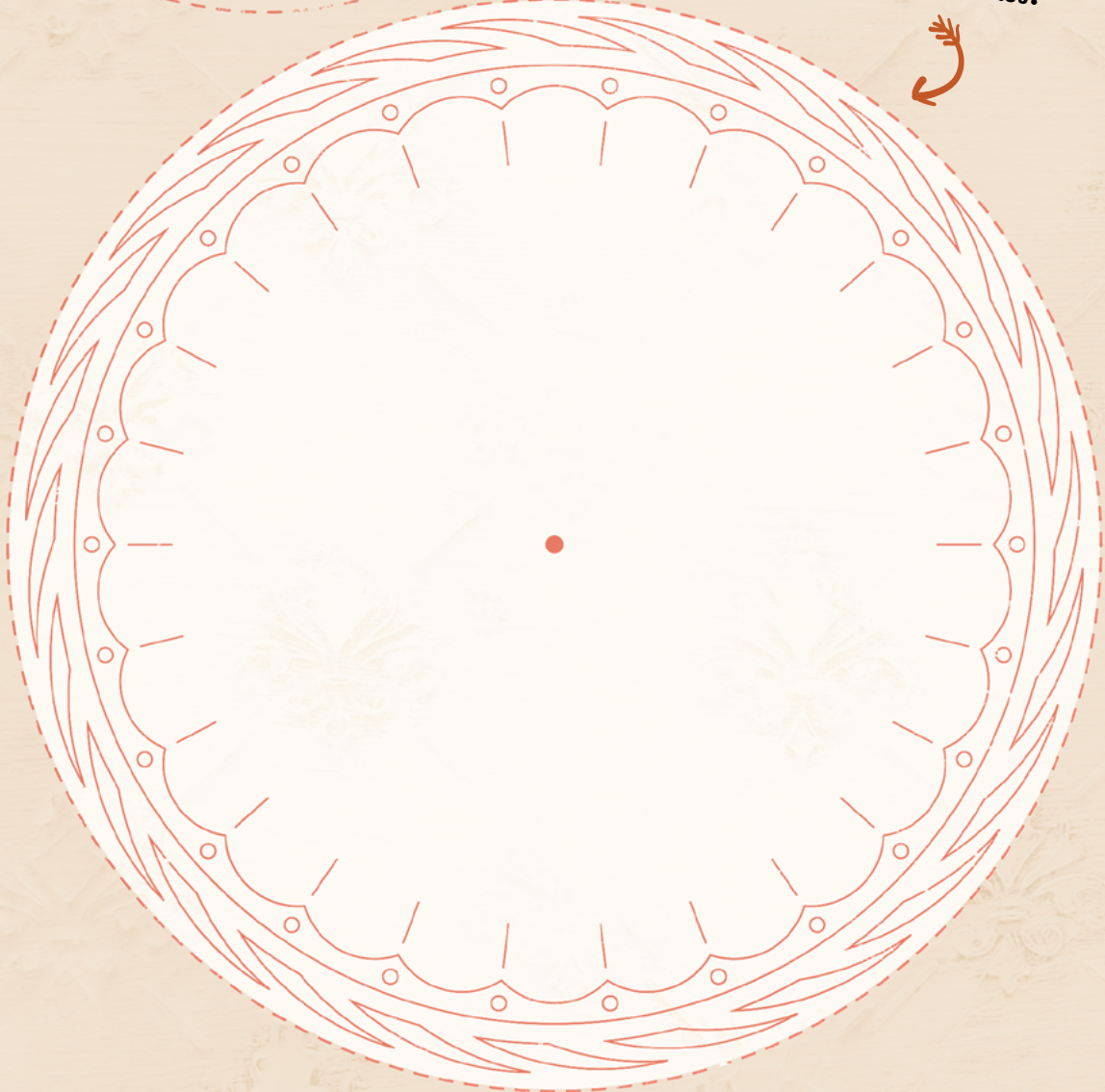
Try setting your own code:

- choose your cipher number;
- write a secret message;
- ask a friend to try and crack your code.

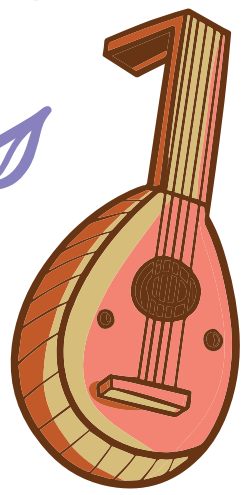
Experiment with different ciphers!
Try using a sum, for example,
the cipher is 3x6.

Or, make your own big wheel

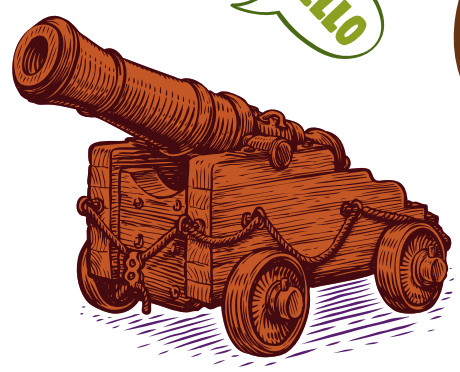
Draw your own pictures
and symbols to set codes.



CRASH!



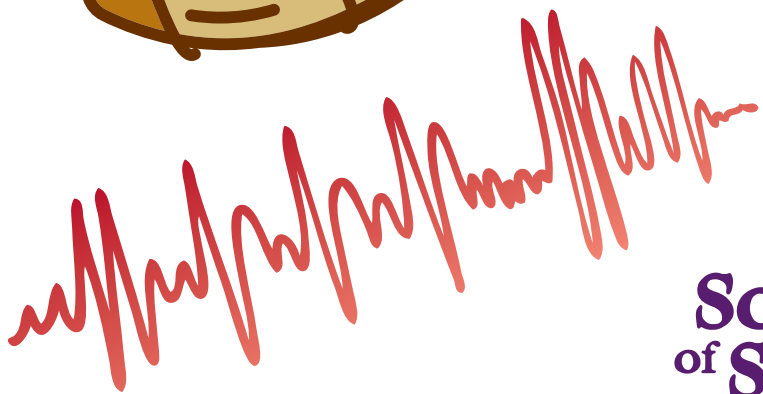
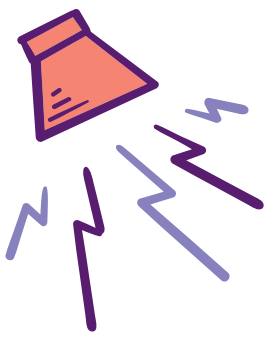
HELLO



POW!



BOOM!



PSST!

Sounds of Scotland



Sticker set



I've lost my bagpipes... can you help?



Solution on inside back cover

#LearningWithHES

