

Whole Class Assembly/Presentation

Topic

Sound

For class size

20 to 40. In classes with fewer children some will need to take more than one of the smaller speaking parts.

Summary

The assembly begins with a look at the problems of sharing a house with loud children! This is followed by a short presentation/demonstration on how sound is made at a source and travels via vibrations to the ear. We consider the concepts of blocking sound, and of echoes. Using tuned and non-tuned instruments the class then demonstrates the principles behind how sound can be altered in terms of pitch and volume (loudness). A short comedy/drama based on the ancient tale King Midas and the Ass's Ears highlights the fact that not everyone has the same opinion on what is a pleasant sound and what is not! An optional prayer and then a song, 'Sound Is All Around', close the assembly.

Duration

20 – 25 minutes

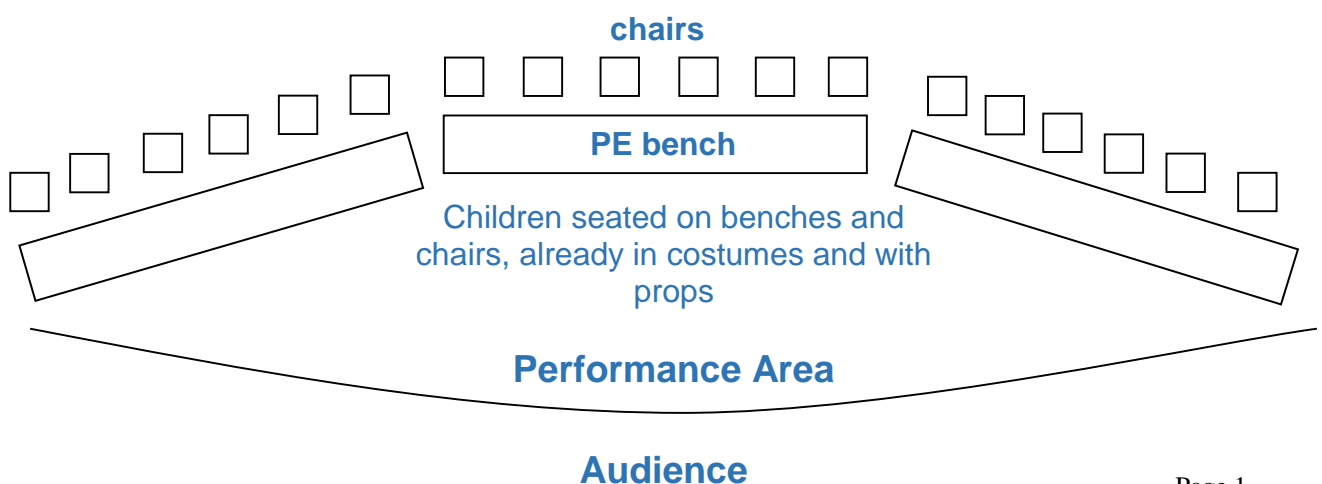
Props/costumes to make or collect

For the first section you will need a ghetto blaster/portable CD player, a card cut-out of a crotchet or quaver, a card cut-out the word BANG! and a display board. A shawl and a flat cap can be worn by the 'older' couple to show their seniority! For the instrument demonstration you will need a snare drum and stick, a wood block and beater, a triangle and beater, a cymbal and stick, a recorder, a trumpet/brass instrument or a flute, and a stringed instrument like a guitar or violin. The ancient tale characters could wear bed sheet togas, or white t-shirts (belted at the waist) and shorts. The king and queen will need a crown, and the king also a pair of ass's ears on a headband, and a cap big enough to cover them. Make a small harp out of card and string for Apollo's lyre. Pan will need a flute or recorder. Every other child will need a strip of green paper or card representing river reeds.

Music required

A piece of loud, heavy rock music, and short sections of flute music and harp or classical guitar music.

Seating



(3 children stand in the centre facing the audience.)

Child 1 *(whispering)* Good morning everyone, and welcome to our assembly.

All SPEAK UP!

Child 1 *(slightly louder)* Good morning everyone, and welcome to our assembly.

All LOUDER!

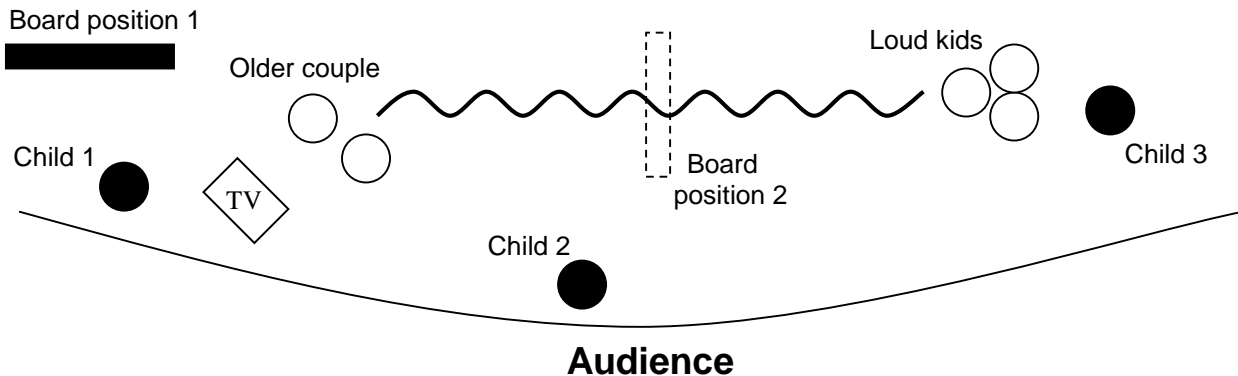
Child 1 Tut! *(shouting)* GOOD MORNING EVERYONE AND WELCOME TO OUR ASSEMBLY! IS THAT BETTER?

All Yes, that's fine!

Child 2 We all had a little trouble hearing *(child 1's name)* at first, but had absolutely no problem at the end. We're going to explain why! So, yes, welcome to our assembly where we will transport you into the fascinating world of sound.

Child 3 To start with let's look at a situation that the old folks in the room will be familiar with.

(An older couple, she wearing a shawl and he a flat cap, sit on two chairs in front of a television, in the positions shown. Children 1, 2 and 3 move to the positions shown. The 'loud' kids will enter as shown carrying a ghetto blaster. A display board is kept side stage (position 1) to be brought into position 2 when indicated in the script. The wavy line will be explained shortly.)



Old man Ah, this is nice dear. The kids are out, so it's just you, me and Emmerdale.

Old woman Mmm. Isn't lovely to have a bit of piece and quiet for once.

(The loud kids enter and hold up the ghetto blaster. We hear loud rock music and they start head-banging. The old couple jump and look shocked.)

Old man What on earth!

Old woman Oh! Goodness me!

Both TURN THAT OFF!

(The music stops and the action freezes.)

Child 1 As you can see, the couple's evening is being ruined by sound. In this case the sound is loud music, made with loud rhythms, loud instruments and loud voices. It's certainly not Cliff Richard!

Child 2 Let's look at how and why this is such a problem for the old folks, in a 'living diagram of sound'!

*(At this point a line of children – about 12 – position themselves between the loud kids and the old couple, along the wavy line. The first child stands, the second kneels, the third stands, the fourth kneels etc etc so the line is made up of alternately standing and kneeling children. The child nearest to the loud kids holds the crotchet/quaver cut-out. Remember, the display board should be in position 1, **not** position 2 yet.)*

Child 3 First we need a source of sound. A source of sound is where a sound is made – in this case the ghetto blaster. The speakers vibrate as they produce the sound, and these vibrations are the key to that sound being heard.

(The child with the cut-out, who is standing, holds it against the speakers of the ghetto-blaster and starts vibrating/shaking.)

Child 2 The vibrations from the speakers vibrate the tiny air molecules around them.....

(The cut-out is handed down to the second child who is kneeling, and s/he starts vibrating.)

.....and these molecules vibrate the molecules next to them. It's a bit like passing the vibrations along a conveyor belt.

(The cut-out is handed up to the third child who is standing, and s/he starts vibrating. It is then handed down to the fourth who is kneeling, then to the fifth who is standing etc etc, so it moves along the line in a wave pattern, up-down-up-down-up-down. As each child receives the cut-out s/he vibrates.)

Child 1 The vibrations are passed along in a wave pattern, like this. We call it a sound wave. Eventually, if someone is close enough the vibrations will reach their ears.

(The cut-out reaches the old couple.)

And this is where the problems start. The vibrations continue into the air in the ear and vibrate a tiny bone called the hammer. This then vibrates the ear drum which sends a message to the brain.

Child 2 The brain recognises the vibrations as a sound which we react to in a certain way based on our experiences. In this case the old couple hear the rock music, their brains tell them it means louts behaving badly and they react by shouting.....

Both ~ TURN THAT OFF!

Child 3 Like adults should do, let's see what happens if they compromise and politely **ask** the kids to turn the music down, instead of off.

Old man Excuse me, but would you be so kind as to turn your music down.

Loud kids Of course. No problem.

(Child 1 returns the cut-out to the beginning. This time the vibrations are not so large and the cut-out is passed slowly, and stops half way along the line.)

Child 1 The sound wave is now weaker because the vibrations are not so strong. It therefore runs out of steam before it reaches the old couple's ears, and they can enjoy Emmerdale in peace.

(Children 1, 2 and 3 sit down and are replaced by 4, 5 and 6.)

Child 4 Another way of preventing sound from reaching someone's ears is by blocking it. It is difficult, though not impossible, for vibrations made in the air to travel through a solid object like a wall. So a bit of DIY might be a solution for our old couple.

(The couple move the board into position 2, with the vibrating children split into two groups either side. They sit down and the cut-out is returned to the beginning.)

Child 5 So again the sound is made at the source.....

(The loud kids head-bang and the cut-out is passed along in large vibrations.)

.....and is carried by vibrating air molecules as a sound wave. It travels easily until it reaches the blockage. Unless the vibrations are huge they will not vibrate the wall, so the sound will stop there.

(The vibrations stop and the cut-out remains at the board.)

Child 6 But if the sound is really loud and the vibrations strong, they will vibrate the wall. The wall will vibrate the air on its other side and the sound will reach the ears.

(The cut-out is passed to the other side of the wall and is carried to the old couple.)

Both NOT AGAIN!

(The crotchet cut-out is removed, the loud kids and old couple exit and children 4, 5 and 6 stand together in child 3's position with the BANG! cut-out. The vibrating children on the old couple's side of the screen also sit down.)

Child 4 Now here's something strange. Listen carefully to this. Everyone has to be quiet so shhhh..... BANG!

(If you are not in a large hall that will provide an audible echo when a child sharply and loudly shouts BANG! then have a hidden child repeat the shout – it won't really fool anyone but it will illustrate the point we are about to make.)

Did you hear that? Listen again..... BANG!

Child 5 You should have heard the BANG! again, very quickly after the first time it was shouted. That is called an echo. It is best demonstrated in a large space where you can stand quite far away from a large object like a wall or mountainside. The echo is just like a reflection of sound, and this is how it is caused.

Child 6 When a loud, short sound is made, like this....BANG!.....the vibrations travel as normal. We hear the sound as soon as it is made, because we made it.

(The BANG! cut-out is passed along the vibrating children until it gets to the board.)

If the vibrations reach a blockage that has a hard, flat surface they will bounce back, just like a rubber ball, and travel back to the source of sound that made them... ie me! And I hear it again.

(The cut-out comes back along the line, and when it reaches child 6 a hidden voice shouts BANG!)

Child 4 So that is how sound is created and how it travels – it's all about vibrations.

(Everyone vibrates back to their seats. The board is put back to position 1. Children 7 – 15 step forward, with musical instruments listed earlier.)

Child 7 Our world is filled with lots of sounds, which make it an interesting place to live. Music, for example, is enjoyed by everybody in one form or another, and there is a lot of science behind making music. Rhythm is vital to music. Rhythm is the beat and pace of music and is played on percussion instruments. Here are three examples of percussion instruments. Although we can't play a tune on them we can create textures by hitting them in different ways

Child 8 I can hit this triangle hard or softly to create louder and quieter sounds, like this. By holding the string I get a long sustained sound when I hit it, like this. But if I hold the metal of the triangle I can deaden the sound when I hit it, like this.

Child 9 It's the same with this wood block. Hard or soft beats create louder and quieter sounds, like this. By hitting it in different places we get different textures, like this.

Child 10 And in the same way you can get lots of different sounds from this cymbal, but in my opinion there's only one way to hit it...(BIG CRASH!)

- Child 7** However, with these next instruments their sounds can be changed in other ways. As well as blowing or plucking them hard and softly for louder and quieter sounds, we can also make higher and lower notes. We call this changing the pitch.
- Child 11** On a flute (*or trumpet/brass instrument*) we press these valves. These control the amount of air vibrating in the flute. The less air that vibrates, the higher the pitch of the note is. Like this (*playing the note*). The more air that vibrates, the lower the pitch of the note is. Like this (*playing the note*).
- Child 12** On a recorder we cover these holes to control the amount of air vibrating inside it. Again, the less air that vibrates, the higher the pitch of the note is. Like this. The more air that vibrates, the lower the pitch of the note is. Like this.
- Child 13** With this snare drum we can press on the skin to change the pitch. The harder I press the tighter the skin, and the higher pitch the note is. Like this. If I loosen the skin gradually, by reducing the pressure on the skin, the pitch gets lower. Like this.
- Child 14** It's the same with this guitar/violin. If I tighten the strings using these pegs the pitch of the note gets higher, like this. And when I loosen the string the pitch gets lower, like this.
- Child 15** Also with stringed instruments if you shorten the part of the string that is played the pitch gets higher. Like this (*running finger up the fret-board/neck and plucking*). If you lengthen the part of the string that is played the pitch gets lower. Like this (*running finger down the fret-board/neck and plucking*).
- Child 7** And when notes of different pitch are played in turn to a rhythm we get.....music!

(All instruments are played together creating an awful din! Children at the back cover their ears and shout 'STOP'. Everyone then sits down and 5 narrators for the final story stand to one side of the performance area.)

- Narrator 1** I'm sure you've all heard of King Midas. He is famous for turning everything he touched into gold. However, there is another tale told about him, which shows us that having a good ear for sound isn't always a benefit.

(Midas and his queen enter and sit on thrones centre stage.)

- Narrator 2** Having been cured of his craving for gold, King Midas and his queen lived a happy and contented life. However, the atmosphere between the two musical gods, Apollo and Pan, had become a little tense.

(Apollo enters carrying his lyre, followed by Pan carrying his flute. They stand to the other side.)

Pan I'd give that lyre of yours the boot!
It's not a patch on my cool flute.

(A short burst of flute music is played from a CD.)

Apollo Ha! When you blow you really suck!
Whilst I with skill do strum and pluck.

(A short burst of harp or guitar music is played from a CD.)

Narrator 3 They argued constantly about who was the finest musician, until they decided the only way to settle things was to ask someone impartial to judge their playing. They came before King Midas and each performed for him – first Pan.....*(A short burst of flute music is played from a CD)* and then Apollo....*(A short burst of harp or guitar music is played from a CD)*.

Midas Wow! You two guys really rock!
Hmmm. Allow me to take stock.
Apollo, yes, I must admit
Your heavy riffs are such a hit.
But Pan, your tooting has impressed,
So I declare it's you who's best!

Apollo You must be joking, foolish man.
I play with far more flare than Pan!
Your taste has really gone to pot,
And your hearing's obviously shot!
To remedy this it shall come to pass
You'll grow the ears of a hairy ass!

(We hear a magical 'PING' from the triangle and Midas replaces his crown with a pair of ass's ears. Apollo and Pan exit.)

Narrator 4 Midas was horrified. How could he rule his kingdom with a pair of donkey's ears where his crown should be?

Midas Oh no! I'll be a laughing stock
With these things sitting on my block!
This asinine transformation
Could really damage my reputation.

Queen Fear not my love, I've a solution
For your prickly protrusion.
This cap will keep them in their place.
(aside) Shame it doesn't cover his face!

(She places a baggy cap over the ears.)

Narrator 5 So time went by and nobody was any wiser as to the king's situation.
People put Midas's cap down to nothing more than a fashion mistake.
But all the time his hair was growing.....

Queen Now, come on dear, time for a trim.
No-one wants a hippy king!
This barber's promised not to chat
About what's underneath your hat.

(A barber enters, bows to Midas, then removes his cap to reveal the ears.)

Barber Hey! Check out this real weird style!
That look's been 'out' for quite a while.
The donkey thing is so passé.
You're right to hide it well away.

Midas On pain of death you must not tell
This secret I keep hidden well.
For if you do, Barber, beware,
I'll chop off more than your hair!

Narrator 1 And so for years nothing was said about the ass's ears underneath the king's cap. The barber found it easy at first not to spill the beans, but after his latest visit he was about fit to burst. He had to tell someone!

(The barber furtively moves to one side.)

Barber I'm sorry, I can't take this pressure.
I need to gossip – well, I am a hairdresser!
But if I blab then I'm a goner.
I mustn't tell, but I really wanna.

(Everyone sitting at the back holds up their paper reeds.)

Narrator 2 So the barber ran to a lake side, and dug a small hole by the reeds. He knelt and lowered his head into the hole and whispered.

Barber This secret I have known for years,
King Midas has ass's ears!

Narrator 3 The barber was relieved that he'd got things off his chest, and also happy that he hadn't told the king's secret to another living soul. Or so he thought!

Narrator 4 For little did he know that the reeds by the lake heard him speak the truth about Midas, and together they repeated the words he had whispered into the hole.

All *(whispering)* King Midas has ass's ears! King Midas has ass's ears!
King Midas has ass's ears! King Midas has ass's ears!

Narrator 5 Horrified, the barber fled and was never heard of again. In the days that followed King Midas couldn't be sure, but he often thought he heard his courtiers sniggering behind his back – well, only those courtiers who had spent time strolling by the lake side!

Narrator 1 Even today, should you walk near reeds when there is a breeze, stop and listen. They still repeat the secret the barber told so many years ago....

All *(whispering)* King Midas has ass's ears! King Midas has ass's ears!
King Midas has ass's ears! King Midas has ass's ears!

(Everyone but Narrator 2 goes back to their seat.)

Narrator 2 Let us pray.

Dear God, thank you for filling the air with so many wonderful sounds,
and for giving us the chance to hear them. Help us to listen out for the
voices of those in need, and to sooth them with words of kindness.
Amen

Song – Sound Is All Around

The End

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