

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

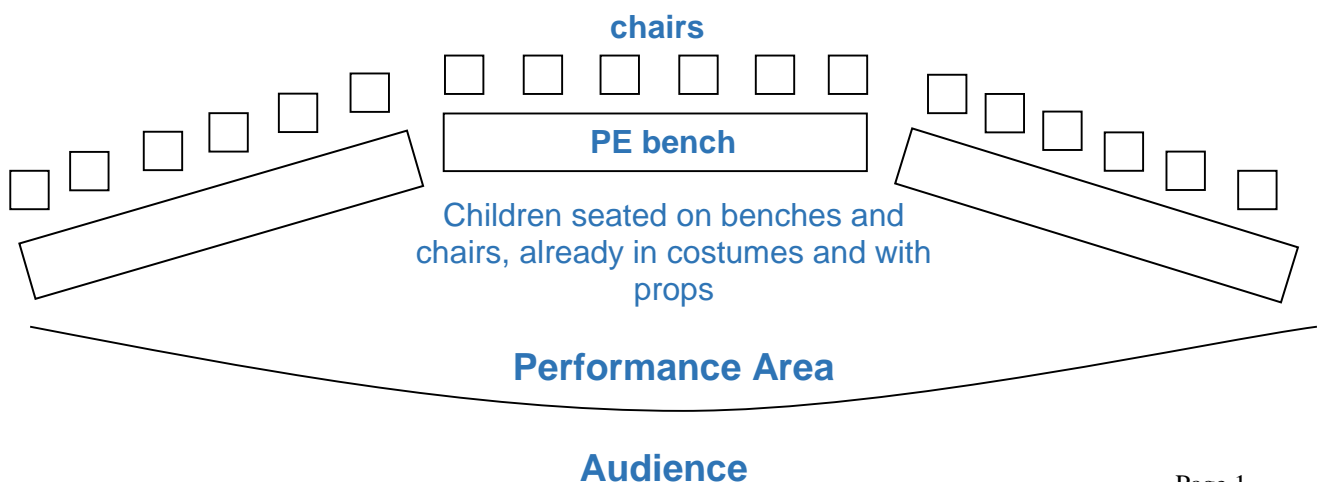
Props/costumes to make or collect

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!

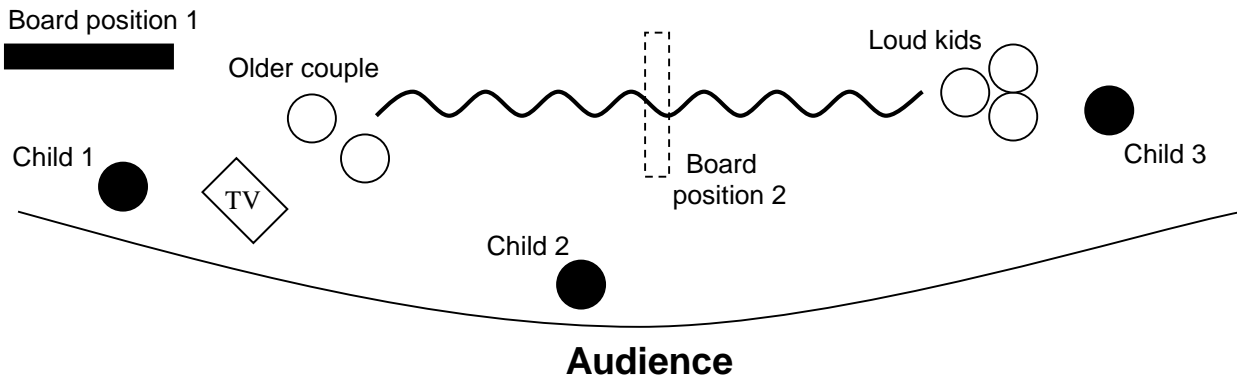
Child 1 Tut! *(shouting)* GOOD MORNING EVERYONE AND WELCOME TO OUR ASSEMBLY! IS THAT BETTER?

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.)

.....end of script sample.....