

The Sound of Rooms

A LANGUAGE GAME

You know that every room *looks* different.
If you see tiles, you know you're in a bathroom.
And if you see pillows and cushions, that's the bedroom.

Have you ever paid attention to the *sound* of rooms?
Do you think you can recognise a room just by listening to it?



This language game will help you find out how you can use just your *ears* to recognise what *room* you're in.

Do you want to know more before you start playing the games? Go straight to The Science on the next page!

THE GAMES

The games go from low-tech to high-tech. The high-tech games may be more suitable for older children.

Contrasting rooms like a bedroom (under the covers, least echoey), bathroom (most echoey) and hallway (probably in-between) will work best.

1. WHICH ROOM ARE YOU IN?

2-4 players; in person

1. One person is blindfolded and led (carefully!) into a room.
2. Say with a big voice: "Guess what room we're in!"
3. The blindfolded person guesses based on the sound.



2. PREDICT THE SOUND OF ROOMS

2-4 players; in person

Go through the rooms in your home, answering the following questions:

1. Can you predict what each room will sound like?
2. If you speak, can you hear whether a room has lots of hard surfaces, in cushiony, or something in between?
3. Can you find the spot in each room where your voice sounds most echoey? And where in the room does your (big!) voice sound least echoey?

3. CALLING ROOMS ON THE PHONE

2 players; on the phone/online

1. Call a friend/family member on the phone/turn off the video.
2. Go into different rooms, and say with a big voice: "Guess what room I'm in".
3. The other person has to guess!



THE SCIENCE

How can rooms all sound so different?

Your voice starts as a vibration in your throat (which you can feel as you're talking!). Your voice then travels through the air as sound waves. A bit like ocean waves in water, but sound waves are invisible.

Have you ever seen ocean waves crash onto the cliffs? Sound waves also hit whatever is in front of them. And when they do, they sometimes bounce back. When we talk in a room, some of the sound waves bounce back from the walls, the ceiling, the floor, and the furniture. Those returning sound waves are the sound of the room.

But not all surfaces bounce back sound in the same way. Just like knocking on surfaces is different! Try knocking on tiles: you can do that quickly because your knuckles bounce back from the tiles (and it may hurt a bit!). Now try knocking on a pillow: that is difficult, because the pillow doesn't bounce anything back. Tiles and other hard surfaces bounce back your knuckles, but also lots of sound waves. Pillows and other soft surfaces bounce back very few sound waves.

CAN YOU SHARE THE FUN?

The Child Language Lab would love to hear or see examples of your family playing one of these games. Can you record it and share on the Child Language Lab Facebook page:

www.facebook.com/CLLMQ

You can see examples of Child Language Lab members having a go at these games on Facebook too!

MEET THE TEAM!

This worksheet was developed by [Titia Benders](#), one of the Child Language Lab's Deputy Directors. The science was double-checked by [Kiri Mealings](#), researcher at the National Acoustic Laboratories. Kiri wrote a PhD thesis in the Child Language Lab about [the sound of open-plan classrooms, and the difficulties children have hearing there](#). Leanne Trinh, a third-year student in the [Bachelor of Speech, Hearing and Language Sciences](#) who is completing an internship in the lab, chose the pictures and fixed the layout. They hope you enjoy the result!

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MACQUARIE
University



The Child Language Lab studies the process of child language acquisition. Our goal is to understand the nature of language development in children in order to inform theories of language acquisition and more targeted language therapies, providing an evidence base for health and education policy.

POPULATIONS: *Our research group studies language development in infants, monolingual and bilingual children, children with hearing loss and children with language delay.*

TOPICS: *We focus primarily on issues at the phonetics/phonology/morphology interface, including the acquisition of grammatical morphology and language processing more generally.*

METHODS: *We do our research with specifically designed tasks to gather behavioural and neurological evidence of children's developing language abilities in both comprehension and production. Our methods include: behavioural speech perception and production tasks, eye-tracking, EEG/MEG (KIT-Macquarie Brain Research (MEG) Laboratory), various standardised tests of language, working memory, cognition and executive function*

MAIN RESEARCH AREAS:

- **Hearing loss:** *What are the challenges faced by children with hearing loss when it comes to language, communication and listening effort?*
- **Bilingualism:** *How do bilingual or second language learners acquire language? What are their unique strengths and challenges in language processing?*
- **Production/speech planning:** *What are the factors that determine how children produce sounds, words, morphemes, prosody and sentences, and how does this change over time?*
- **Perception/comprehension/processing:** *When are children able to recognize sounds, words and morphemes, and predict what's coming next in the sentence?*

FIND OUT MORE:

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