

Escape the Recording Studio



Escape the Recording Studio

You are having a class visit to a record company and recording studio as part of your science topic on sound. It's really exciting and you get to meet real-life musicians, sound technicians and producers!

During a tour of the studio itself, you are amazed by the gold discs and begin to dream of a future as a music star.

You're back in the room with a bump when you hear the secure door slam. You realise that the tour has left you behind!

The secure door has a keypad on it and you must escape before the next recording session is due to start.

You don't know the ten-digit number for the keypad but you must solve the clues hidden around to piece together the code. Good luck!



Escape the Recording Studio

The Rules

- You can work in small groups.
- When you find a clue, work together to solve the puzzle.
- Write your answer down on your answer sheet.
- Once you think you have found all ten digits of the code, check these with your teacher to discover if you can unlock the door and escape the recording studio.














Escape the Recording Studio

Answers to the Clues



Escape the Recording Studio – Clue 1

Which person will hear the quietest sound?

sound source	0	1	2	3	4	5	6	7	8	9
										

Sound gets weaker as it travels. The person furthest away from the sound source will hear the quietest sound.

The ninth person will hear the quietest sound.
The **first** digit on the keypad is nine.



9

Escape the Recording Studio – Clue 2

Name these instruments. The highlighted squares will spell the digit you need.



f	l	u	t	e
---	---	---	---	---



v	i	o	l	i	n
---	---	---	---	---	---



e	l	e	c	t	r	i	c
---	---	---	---	---	---	---	---

g	u	i	t	a	r
---	---	---	---	---	---



h	a	r	p
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t	r	u	m	p	e	t
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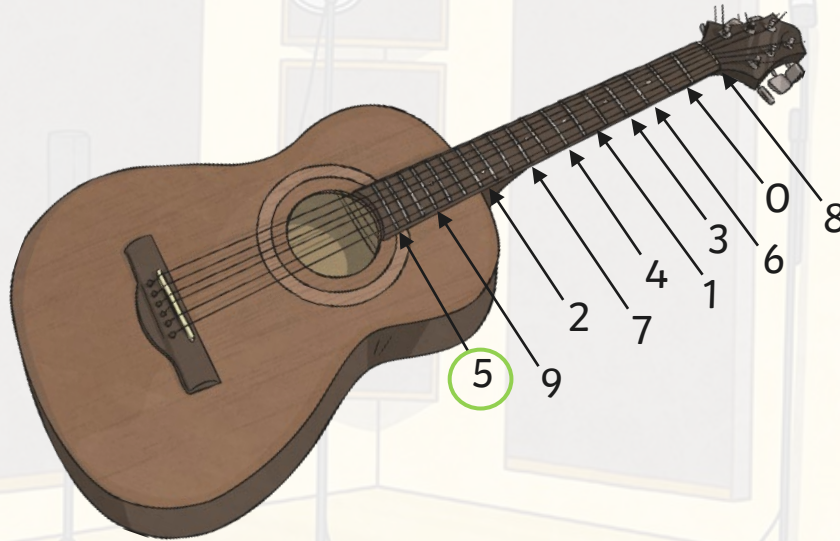
The highlighted letters spell out 'eight'. The **second** digit on the keypad is eight.



8

Escape the Recording Studio – Clue 3

Which point on the guitar string will produce the highest pitched sound?



The shorter the string, the higher the pitch of the note.

The position nearest the sound hole will produce the highest pitched note. The **third** digit on the keypad is five.



5

Escape the Recording Studio – Clue 4

Which of these are parts of the ear?

eardrum	funny bone	incisor	stirrup
inner ear	iris	anvil	bridle
pupil	lobe	ear trumpet	cochlea
hammer	nostril	outer ear	pinna

There are nine parts of the ear here.
The **fourth** digit on the keypad is nine.



9

Escape the Recording Studio – Clue 5

How many of these effects will happen as someone twangs and stretches an elastic band?

The pitch of the note gets lower as the band stretches.

The elastic band 'string' is tighter.

The volume gets louder.

The elastic band gets longer.

The volume gets quieter.

The pitch gets higher as the band stretches.

The elastic band gets slacker.

There are three effects that will happen.
The **fifth** digit on the keypad is three.



3

Escape the Recording Studio – Clue 6

Which of these statements best describes how you hear a sound?



1	Sound travels in straight lines but cannot travel through opaque objects.
2	Sound starts from the source in beams that are collected by your eyes and ears.
3	Sound is a series of vibrations that travel in waves from a source to your ears.
4	You can only hear a sound when your ear is facing the source of the sound.
5	Sound can only travel from a source to your ear through air and not through water or anything else.

Statement 3 is correct.
The **sixth** digit on the keypad is three.



3

Escape the Recording Studio – Clue 7

If you pluck a guitar string harder, what will it do to the sound?

0
change the pitch

7
stop the sound

2
nothing

1
make it quieter

4
make it more muffled

8
make it a higher pitch

6
make an echo

9
make it a lower pitch

5
make it louder

3
make it vibrate less

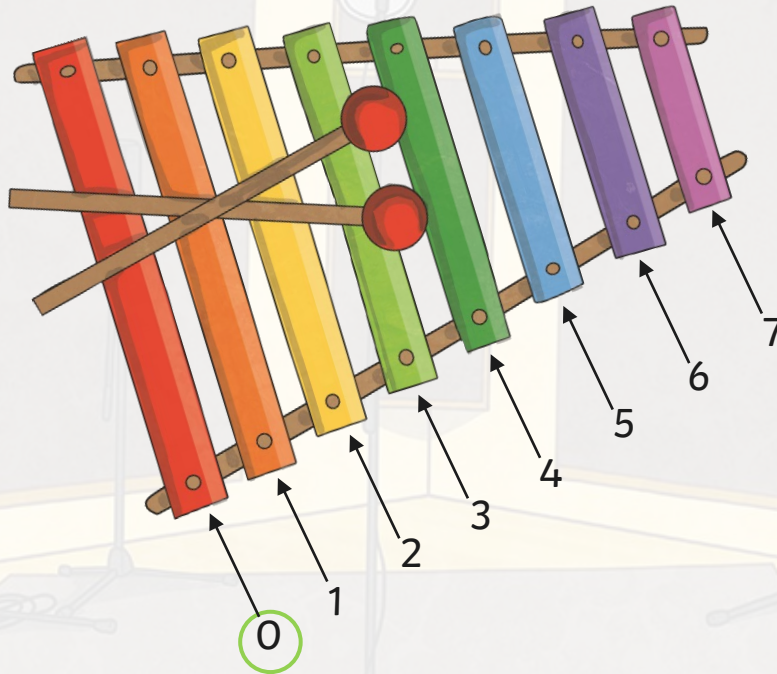
If you pluck the string harder, the sound will be louder.
The **seventh** digit on the keypad is five.



5

Escape the Recording Studio – Clue 8

Which bar on this xylophone will give the lowest pitched note?



The lowest pitched bar is the longest bar, labelled 0.
The **eighth** digit on the keypad is zero.



Escape the Recording Studio – Clue 9

Fill in the missing word in the sentence. How many letters does it have?

Sound is produced when something



There are eight letters in the word 'vibrates'.
The **ninth** digit on the keypad is eight.



8

Escape the Recording Studio – Clue 10

Which number in the table correctly describes what will happen after a gentle and hard hit of the drum?

	1 st Hit		2 nd Hit	
	Volume	Rice	Volume	Rice
0	quiet	bounces a bit	quiet	bounces a lot
1	loud	stays still	quiet	bounces a bit
2	loud	bounces a lot	loud	stays still
3	quiet	bounces a bit	loud	bounces a lot
4	quiet	bounces a lot	loud	bounces a lot
5	loud	bounces a bit	quiet	bounces a lot



Number 3 correctly describes what happens to the volume and the rice.

The **tenth** and final digit on the keypad is three.




3

Escape the Recording Studio

Now that you have solved all the clues, it is time to enter the code into the keypad and escape the recording studio!

Digit 1	Digit 2	Digit 3	Digit 4	Digit 5	Digit 6	Digit 7	Digit 8	Digit 9	Digit 10
9	8	5	9	3	3	5	0	8	3

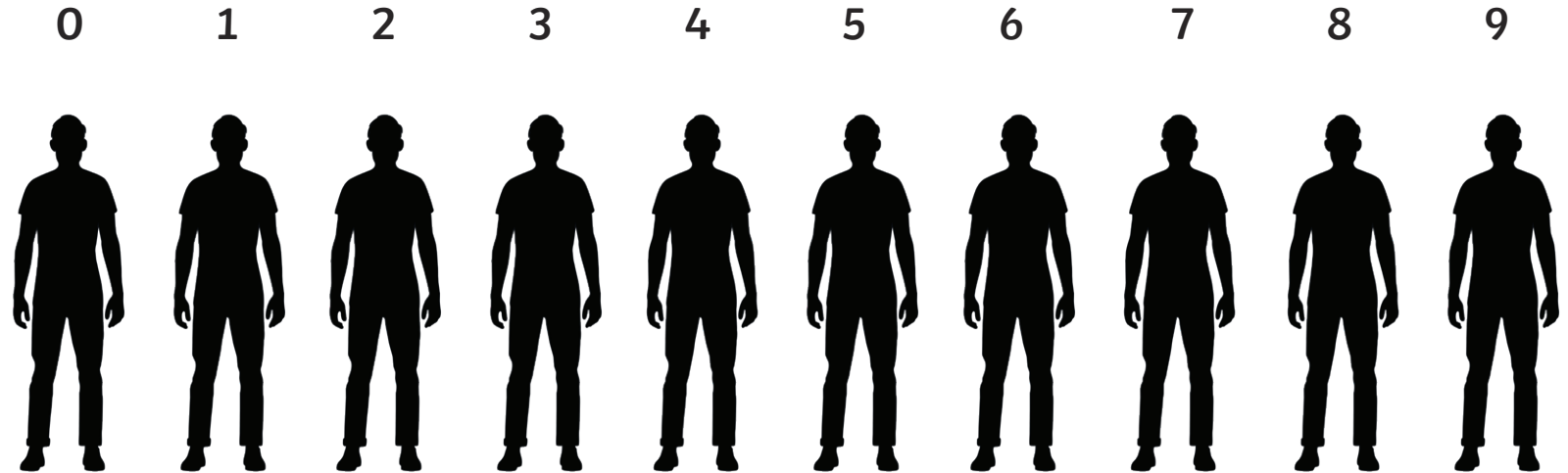




Clue for Digit 1

These people are lined up and listening to the same sound from different distances.
Which person will hear the quietest sound?

sound source



The number of the person hearing the quietest sound is the first digit on the keypad.

Clue for Digit 2

Name these musical instruments and fill in the gaps.



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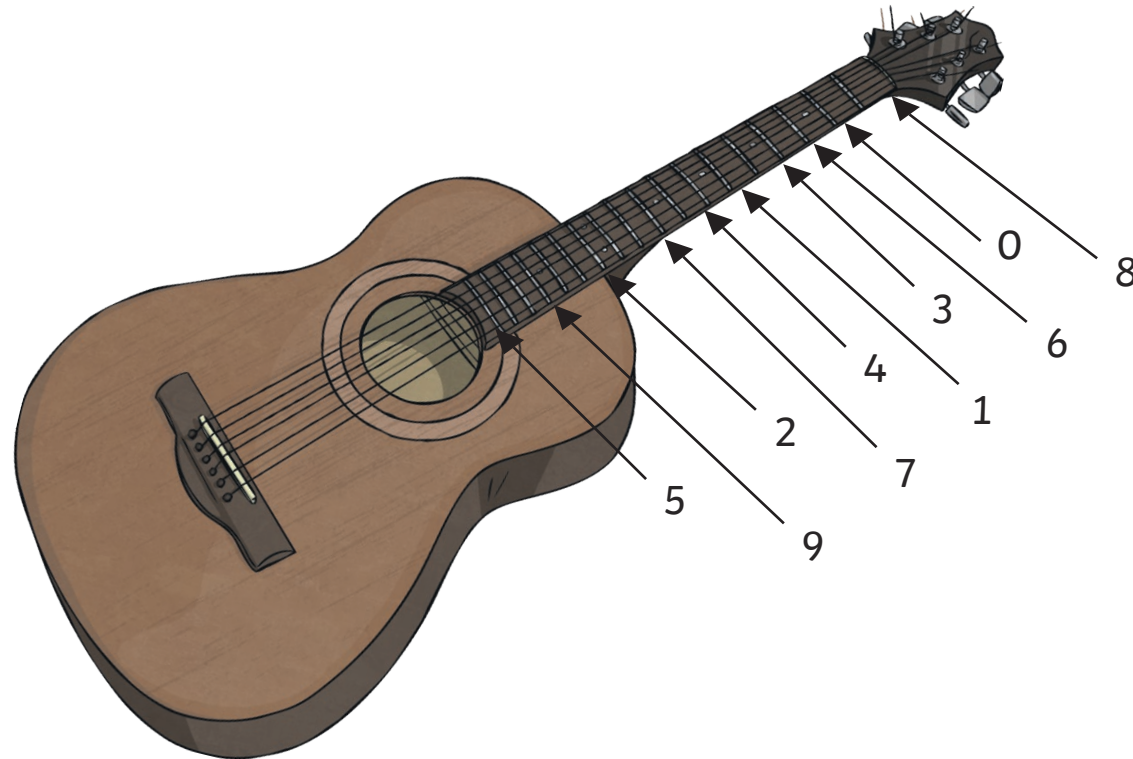


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The highlighted letters will spell the second digit on the keypad.

Clue for Digit 3

If a guitar player shortens the string by putting her finger in these different places up the neck, which place will produce the highest pitched sound?

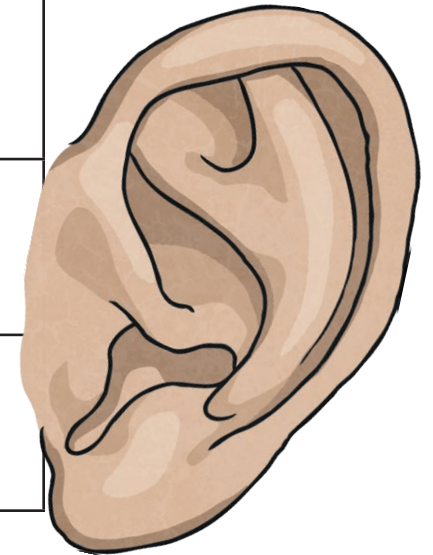


The number of the correct label is the third digit on the keypad.

Clue for Digit 4

How many of these are parts of the ear?

eardrum	funny bone	incisor	stirrup
inner ear	iris	anvil	bridle
pupil	lobe	ear trumpet	cochlea
hammer	nostril	outer ear	pinna

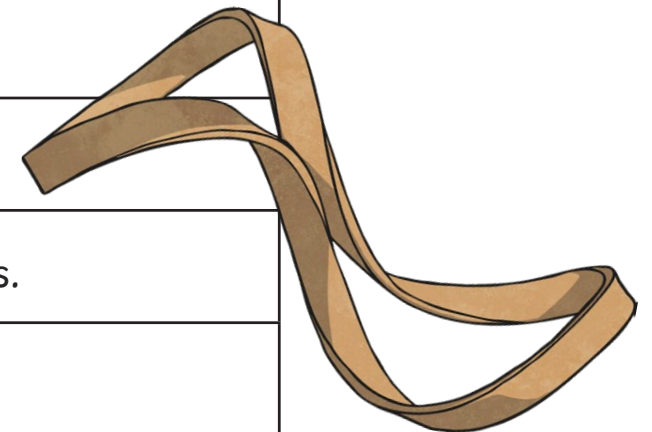


The number of ear parts will give you the fourth digit on the keypad.

Clue for Digit 5

Tim made a cardboard guitar using elastic band for the strings. As he twangs one of the elastic bands, it stretches. How many of the following effects will happen as he twangs and stretches the elastic band?

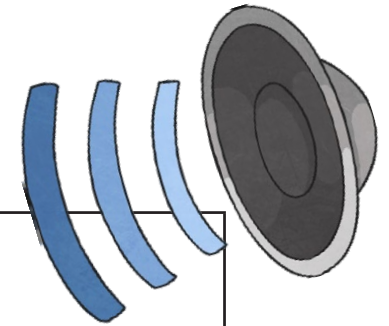
The pitch of the note gets lower as the band stretches.
The elastic band 'string' is tighter.
The volume gets louder.
The elastic band gets longer.
The volume gets quieter.
The pitch gets higher as the band stretches.
The elastic band gets slacker.



The number of effects that will happen will give you the fifth digit on the keypad.

Clue for Digit 6

Which of these statements best describes how you hear a sound?



1	Sound travels in straight lines but cannot travel through opaque objects.
2	Sound starts from the source in beams that are collected by your eyes and ears.
3	Sound is a series of vibrations that travel in waves from a source to your ears.
4	You can only hear a sound when your ear is facing the source of the sound.
5	Sound can only travel from a source to your ear through air and not through water or anything else.

The number of the correct description will give you the sixth digit on the keypad.

Clue for Digit 7

Changing the way in which you pluck a guitar string may change how it sounds.

What will happen to the sound if you pluck a guitar string harder?

0
change the pitch

7
stop the sound

2
nothing

1
make it quieter

4
make it more

8
make it a higher pitch

9
make it a lower pitch

5
make it louder

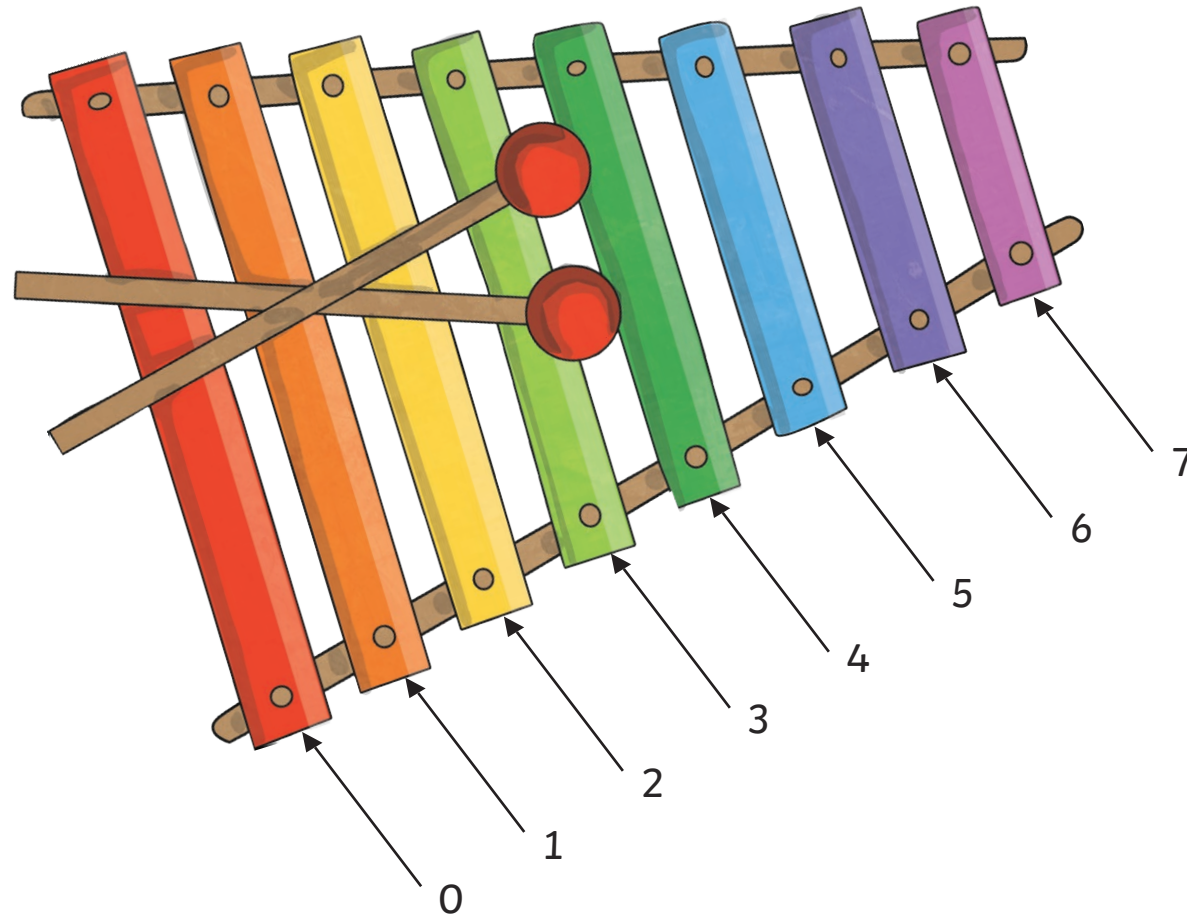
6
make an echo

3
make it vibrate

The number of the effect you choose will give you the seventh digit on the keypad.

Clue for Digit 8

Here is a xylophone. Which of the bars on the xylophone will make the lowest pitched note?



The number of lowest pitched bar will give you the eighth digit on the keypad.

Clue for Digit 9

Fill in the missing word in this sentence. How many letters does it have?

Sound is produced when something _____.



The number of letters in the word will give you the ninth digit on the keypad.

Clue for Digit 10

A percussionist is playing this drum with some grains of rice on the skin.

They hit it gently the first time and much harder the second time.

Which number in the table correctly describes what will happen after a gentle and hard hit of the drum?



	1st Hit		2nd Hit	
	Volume	Rice	Volume	Rice
0	quiet	bounces a bit	quiet	bounces a lot
1	loud	stays still	quiet	bounces a bit
2	loud	bounces a lot	loud	stays still
3	quiet	bounces a bit	loud	bounces a lot
4	quiet	bounces a lot	loud	bounces a lot
5	loud	bounces a bit	quiet	bounces a lot

The number in the table is the tenth digit on the keypad.

Escape the Recording Studio Recording Sheet

Solve the clues hidden around the room to discover the keypad passcode needed to escape the recording studio.

Write the digits on this answer sheet as you crack the clues.

1st digit 2nd digit 3rd digit 4th digit 5th digit 6th digit 7th digit 8th digit 9th digit 10th digit

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Once you have discovered the number for the keypad, check it with your teacher to see if you can escape the recording studio!

Year 4 Escape the Recording Studio

Teacher Guide

Children will love playing this escape the room game. Here are some tips on how to ensure the game goes well:

- Prior to playing the game, hide the clues (around the room, hall or even outside) so the children have to search for them. You could even couple this with an orienteering exercise or write your own treasure-trail clues.
- Divide the children into teams and give each team a recording sheet. Mixed-ability groups usually work best. However, if you have additional adults to support lower ability pupils, you may wish to put the children into ability groups.
- Show the children the first part of the PowerPoint which explains the scenario. The game works particularly well if you add a dramatic tone to this part!
- Read through the rules of the game and set the children to work. To avoid congestion, the clues can be tackled in any order, just as long as they are written in the correct box on the recording sheet.
- Once enough teams have solved the clues, gather the class back together and enter the code on the PowerPoint.