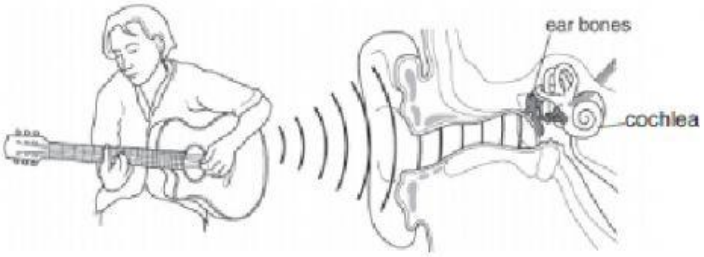
1 The diagram below shows someone playing a guitar and shows part of an ear. The eardrum vibrates when sound waves reach it.



(a) Give the function of:

(i) the ear bones _____

(ii) the cochlea _____

(b) What happens to the eardrum if the sound reaching the ear gets louder? Tick **one** box.

☐ **A** the eardrum vibrates faster

☐ **B** the eardrum vibrates slower

☐ **C** the eardrum vibrates further

☐ **D** the eardrum vibrates less

(c) What happens to the eardrum if the pitch of the sound gets higher? Tick **one** box.

☐ **A** the eardrum vibrates faster

☐ **B** the eardrum vibrates slower

☐ **C** the eardrum vibrates further

☐ **D** the eardrum vibrates less

LIVEWORKSHEETS

The sentences describe some ways in which humans and animals make use of sounds. Join up the boxes to make sentences.

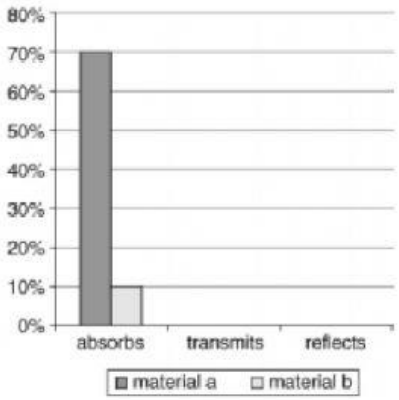
Humans and animals use sound	or absorb sound.
Sound waves can be transmitted	to relieve pain.
Some materials reflect	through materials.
Energy transferred by sound waves	using echolocation.
Physiotherapists use energy transmitted by sound waves	an echo.
Reflected sound is called	for communication.
Bats and dolphins find prey	to find the depth of the sea.
Sonar uses ultrasound	can be used to clean delicate objects.

LIVEWORKSHEETS

The table shows how much sound different materials absorb, transmit and reflect.

	Material A	Material B
absorbs	70%	10%
transmits	10%	20%
reflects	20%	70%

1 Complete the bar chart by drawing in the bars for transmitting and reflecting.



2 Draw lines to match up the words to their meanings:

absorbs	a sound that has reflected from something
transmits	takes sound energy in and does not let it out again
reflects	lets energy pass through it
echo	when waves bounce off something

3 Which material would be best to use for soundproofing a room? _____

Explain your answer. _____

4 Complete the sentences to explain which material would be the easiest for bats to detect.

Bats use _____ to find their prey and avoid flying into things.

Material _____ would be the easiest to detect because _____

5 Name *one* other animal that uses echoes to find prey. _____

6 The drawing shows people using bat detectors.

a Why do humans need to use special equipment to listen to bats?

_____

_____

b Why do bats and some other animals use echolocation to find prey?

_____

_____

LIVEWORKSHEETS