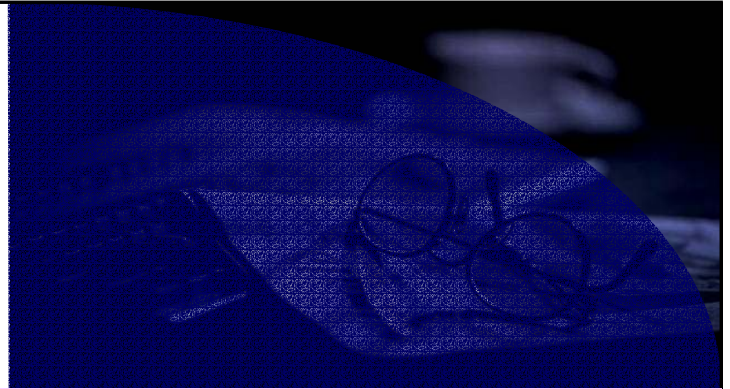


assessment for learning
year 8



Science Interactive LTD. PO BOX 50764 LONDON NW6 9AT

web: www.science-interactive.co.uk

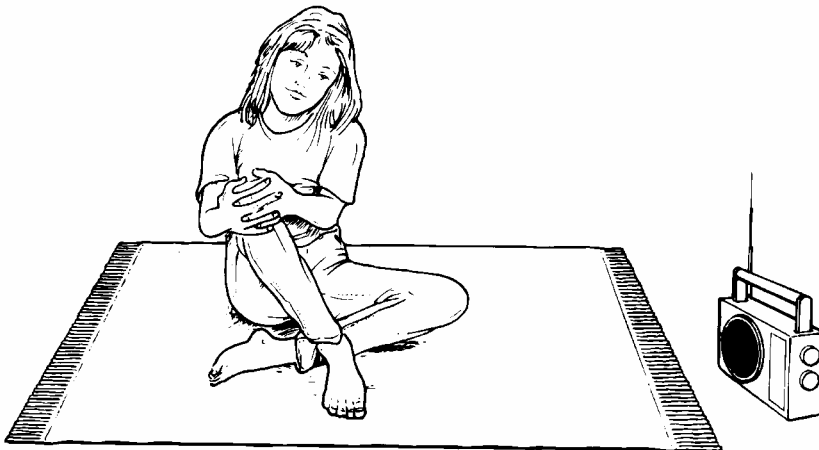
8L Sound and hearing

Assessment for learning...year 8 (level 3-6)

Answer all questions:

Total marks	19
Time allowed	25 mins.

Question 1:



- (a) Claire is sitting in her bedroom listening to music. The sound she hears is produced by the loudspeaker in her radio.

(i) What is the loudspeaker doing to produce the sound?

Tick the correct box.

- blowing
- filtering
- spinning
- vibrating

1 mark

(ii) How does the sound get from the radio to Claire?

.....
.....

1 mark

(iii) What part of Claire's ear detects the sound?

.....

1 mark

(b) Lorna is in the school hall. The fire alarm rings and Lorna walks away from it.

(i) When Lorna is further away, how loud does the alarm sound to her?

Tick the correct box.

- It sounds louder than before.
- It sounds quieter than before.
- It sounds the same as before.

1 mark

(ii) When Lorna is further away, how does the pitch of the alarm sound to her?

Tick the correct box.

It has a higher pitch than before.

It has a lower pitch than before.

It has the same pitch as before.

1 mark

Maximum 5 marks

Question 2:

The table shows the speed at which sound travels through different materials.

material	physical state of the material	speed of sound in m/s
granite	solid	5400
nitrogen	gas	354
oil	liquid	1460
oxygen	gas	332
steel	solid	5980
water	liquid	1510

(a) Does sound travel fastest through solids or liquids or gases?

.....

1 mark

(b) Sound travels through air. Air is mostly nitrogen and oxygen.

Use the information in the table to suggest the speed of sound in a mixture of nitrogen and oxygen.

The speed of sound in this mixture is about m/s

1 mark

(c) Tom and Zoe make a string telephone.
They use two empty tin cans joined by a piece of string.



Tom and Zoe are 5 m apart.
Tom talks quietly into one tin can, and Zoe holds the other tin can to her ear.
If they keep the string tight, the sound of Tom's voice travels along the string.

(i) How does the sound travel along the string to Zoe?

.....
.....

1 mark

(ii) How does the tin can at Zoe's end make a sound?

.....
.....

1 mark

Maximum 4 marks

Question 3:

A rocket was fired above a seaside town to call out the lifeboat crew.
The rocket exploded, giving out light and sound at the same time.

(a) Lisa was outside the town. She saw the flash of the rocket exploding
and heard the bang.

(i) Which sentence is true?

Tick the correct box.

She heard the bang first.

She saw the flash first.

She heard the bang and saw the flash at the same time.

1 mark

(ii) Give the reason for your answer.

.....
.....

1 mark

(b) Some people were nearer to the rocket than Lisa. How did the sound seem to them?

Tick the correct box.

It was quieter.

It was louder.

It was higher pitched.

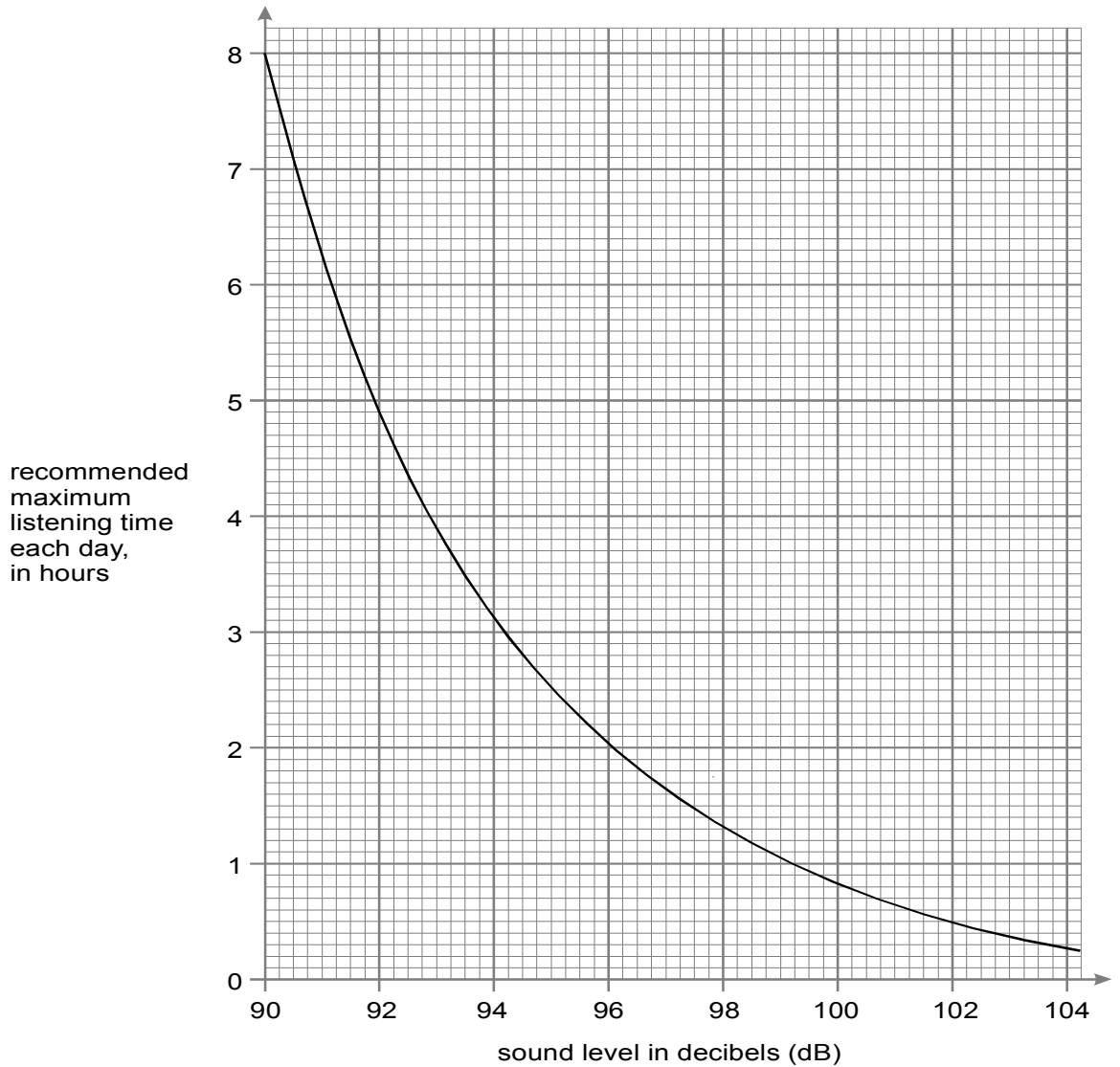
It was lower pitched.

1 mark

Maximum 3 marks

Question 4:

Sound levels are measured in decibels (dB). The graph shows the recommended maximum times people should listen to sounds of different levels. At longer times there could be serious damage to hearing.



(a) What is the maximum time each day for listening to a personal stereo at 96 dB?

..... hours

1 mark

(b) In what way could a sound of more than 120 dB damage the ear?

.....

1 mark

(c) (i) Sally works for five hours in a nightclub. What should the maximum sound level be in the nightclub so that her hearing is **not** damaged?
Use the graph to find your answer.

..... dB

1 mark

(ii) How can ear plugs protect Sally's ears?

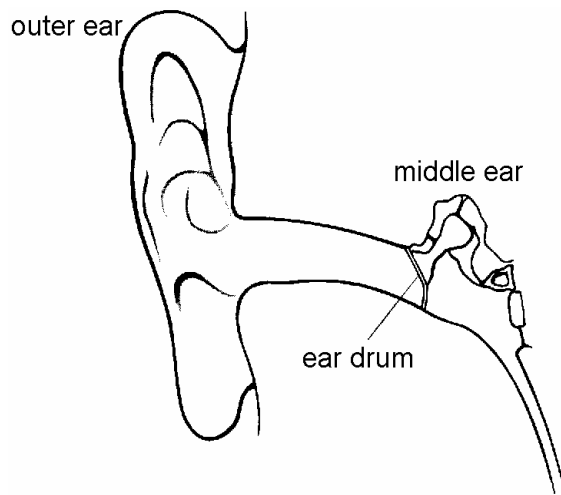
.....
.....

1 mark

Maximum 4 marks

Question 5:

The diagram shows part of an ear.



Sound waves enter the ear and make the ear drum vibrate.

(a) The pitch of the sound is increased. What difference will this make to the way the ear drum vibrates?

.....
.....

1 mark

(b) The sound is made louder. What difference will this make to the way the ear drum vibrates?

.....
.....

1 mark

(c) Explain how a person's ear can be damaged by loud sounds.

.....

.....

1 mark

Maximum 3 marks