

1. A sound wave is produced when an object ...

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|-----------------------|--------------------------|
| A. accelerates        | <input type="checkbox"/> |
| B. decelerates        | <input type="checkbox"/> |
| C. vibrates           | <input type="checkbox"/> |
| D. remains stationary | <input type="checkbox"/> |

2. The wavelength of a wave is measured in ...

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- |             |                          |
|-------------|--------------------------|
| A. metres   | <input type="checkbox"/> |
| B. hertz    | <input type="checkbox"/> |
| C. seconds  | <input type="checkbox"/> |
| D. decibels | <input type="checkbox"/> |

3. An echo occurs when a sound wave is ...

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|----------------|--------------------------|
| A. absorbed    | <input type="checkbox"/> |
| B. transmitted | <input type="checkbox"/> |
| C. refracted   | <input type="checkbox"/> |
| D. reflected   | <input type="checkbox"/> |

4. Another name for the unit hertz is ...

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|----------------------|--------------------------|
| A. cycles per second | <input type="checkbox"/> |
| B. seconds per cycle | <input type="checkbox"/> |
| C. metres per second | <input type="checkbox"/> |
| D. decibels          | <input type="checkbox"/> |

5. Sound travels fastest in ...

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- |                   |                          |
|-------------------|--------------------------|
| A. a vacuum       | <input type="checkbox"/> |
| B. the sea        | <input type="checkbox"/> |
| C. the atmosphere | <input type="checkbox"/> |
| D. a broom stick  | <input type="checkbox"/> |

6. Which of the following does **not** describe a sound wave?

A. transverse wave	<input type="checkbox"/>
B. longitudinal wave	<input type="checkbox"/>
C. compression wave	<input type="checkbox"/>
D. push-pull wave	<input type="checkbox"/>

7. An animal that can hear sound frequencies higher than a human child is ...

A. a human adult	<input type="checkbox"/>
B. a cod fish	<input type="checkbox"/>
C. a bat	<input type="checkbox"/>
D. an eagle	<input type="checkbox"/>

8. Hitting a drum harder makes the sound ...

A. higher	<input type="checkbox"/>
B. lower	<input type="checkbox"/>
C. louder	<input type="checkbox"/>
D. softer	<input type="checkbox"/>

9. The part of the ear that responds to sound waves like a microphone's diaphragm is the ...

A. lobe	<input type="checkbox"/>
B. eardrum	<input type="checkbox"/>
C. bones of the middle ear	<input type="checkbox"/>
D. fluid in the inner ear	<input type="checkbox"/>

10. Sounds above 20000Hz are called ...

A. ultracool	<input type="checkbox"/>
B. ultrasound	<input type="checkbox"/>
C. infra-audio	<input type="checkbox"/>
D. infrasound	<input type="checkbox"/>

## Revision questions – sound waves

1. What type of movement sets up a sound wave?
2. In what units are the following measured?  
  
(a) frequency (b) wavelength (c) loudness
3. If a tuning fork has a frequency of 250Hz, how many cycles per second does it vibrate?
4. Why does sound travel faster in a solid than in a gas or liquid?
5. Describe a longitudinal wave.
6. Describe a transverse wave.
7. What type of wave is a sound wave?
8. What happens when a sound wave hits the eardrum?
9. Who is most likely to hear a bat; an adult or a child?
10. Draw an oscilloscope trace to show a note starting low and getting higher.
11. Draw an oscilloscope trace to show a note starting soft and getting louder.
12. How can you make a drum sound louder
13. How can you make a guitar string sound higher? ( 2 methods)
14. What is meant by ultrasound?
15. Why should we not stand too close to the band at an outdoor event?

## Teaching notes and answers

There is a PowerPoint version of the multiple choice quiz which would make a useful starter or plenary activity.

The revision questions could be used in a variety of ways such as;

- A straightforward test, quiz or homework activity
- Give each student an answer or a question and get them to find their partner
- Use with one of our revision games such as 'Science Ludo' (22540) or 'Science challenge track' (22541).

## Multiple choice quiz answers

1C; 2A; 3 D; 4A; 5D; 6A; 7C; 8C; 9B; 10B

## Revision questions answers

1. A vibration
2. a) hertz b) metres c) decibels
3. 250
4. Because particles are closer together in a solid
5. This is a push-pull wave
6. This is a shake wave
7. Longitudinal
8. The eardrum vibrates
9. A child
10. Drawing showing bunching of waves increasing; wavelength decreasing
11. Drawing of wave getting taller; increasing in amplitude
12. Hit it harder
13. Tighten the string; shorten the string
14. Sound above 2000Hz; sound above human hearing
15. Damage to our hearing