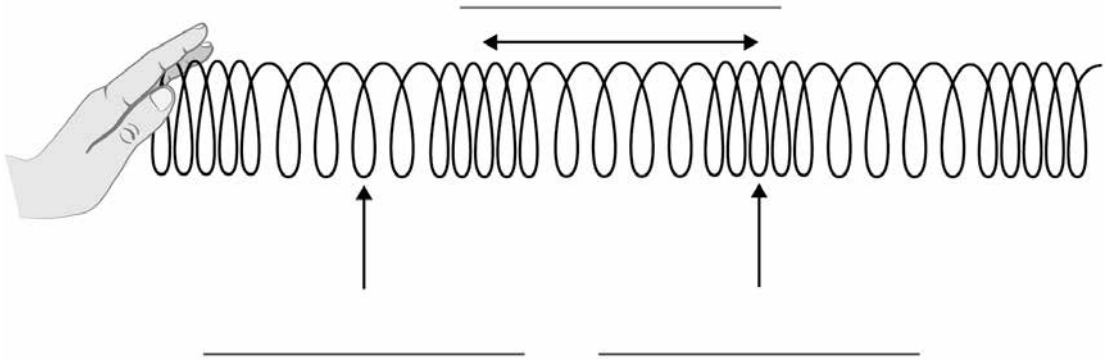
Do not write outside the box

0 2 **Figure 2** shows a slinky spring used to model a sound wave.

Figure 2



0 2 . 1 Label the arrows on **Figure 2**

Choose the answers from the box.

[3 marks]

amplitude	**compression**	**frequency**
rarefaction		**wavelength**

0 2 . 2 What type of wave is a sound wave?

[1 mark]

Tick **one** box.

electromagnetic ☐

longitudinal ☐

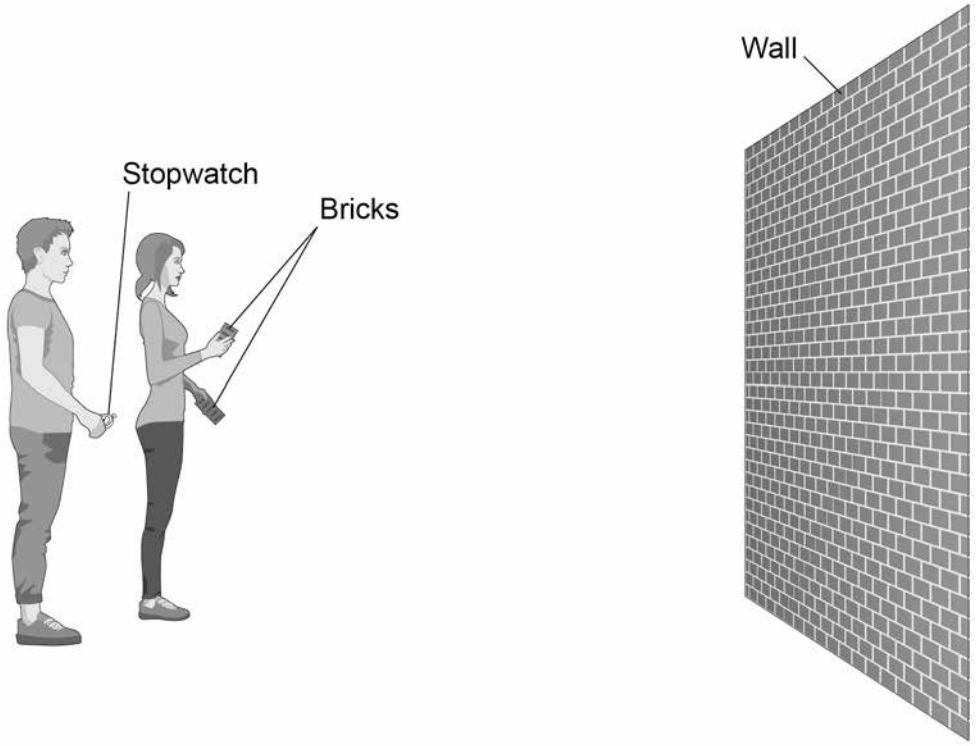
transverse ☐

Question 2 continues on the next page

Do not write outside the box

0 2 . 3 **Figure 3** shows two students measuring the speed of sound in air.

Figure 3



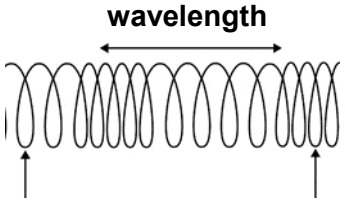
One student bangs two bricks together.

The sound wave produced is reflected from the wall and travels back to the students.

Describe how they can determine the speed of sound.

[4 marks]

8

Question	Answers	Extra information	Mark	AO / Spec. Ref.
02.1	 **rarefaction** **compression**		3	AO1 6.6.1.1
02.2	longitudinal		1	AO1 6.6.1.1

Question	Answers	Mark	AO / Spec. Ref.
02.3	**Level 2:** The method would lead to the production of a valid outcome. Key steps are identified and logically sequenced.	3–4	AO2
	Level 1: The method would not necessarily lead to a valid outcome. Some relevant steps are identified, but links are not made clear.	1–2	AO1
	No relevant content	0	
	Indicative content • measure the distance between the student with the bricks and the wall • trundle wheel or tape measure • measure the time taken from banging the bricks to the echo • double the measured distance to give the distance travelled or half the time • use: speed = $\frac{\text{distance travelled}}{\text{time}}$ • repeat timings • remove anomalies • calculate a mean		6.6.1.2
Total			**8**