

GCSE Physics B (Twenty First Century Science)
J259/03 Depth in physics (Higher Tier)

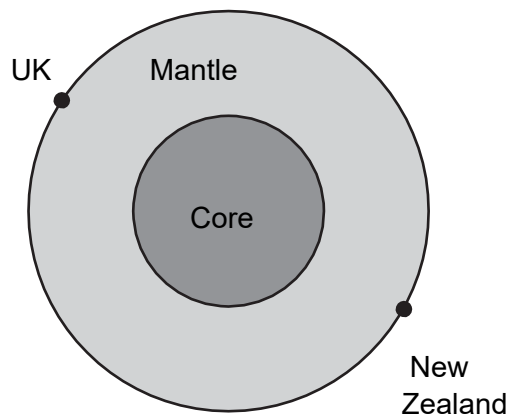
Question Set 36

- 1 Sundip is a scientist in the UK, and studies the waves produced by Earthquakes to understand more about the inside of the Earth.

The table shows some properties of the two main types of wave produced by earthquakes.

Name of wave	Type of wave	Travels through solids	Travels through liquids
P-wave	Longitudinal	Yes	Yes
S-wave	Transverse	Yes	No

- (a) Compare the vibration of particles in P-waves and S-waves. [2]
- (b) There is an earthquake in New Zealand, almost on the opposite side of the Earth to the UK.



Sundip studies waves produced by this earthquake.



Sundip

The first waves to arrive in the UK travelled through the core of the Earth. All of these were P-waves. There were no S-waves.

This is evidence that part of the Earth's core is liquid.

- (i) Explain why Sundip is correct.

Use the information in the table to support your answer.

- (ii) Sundip detected some S-waves in the UK later, but these did **not** travel through the centre of the Earth. [2]

Suggest how these S-waves reached Sundip's detector in the UK.

You may draw a diagram to support your answer. [2]

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