

GEOGRAPHY · CHAPTER 3

Interior of the Earth

A 1-page guide for parents · 90-second read.

EXPECTED MARKS**7 marks****TIME TO MASTER****6-8 hrs****HELPLINE****70330 05444****WHAT THIS CHAPTER IS, IN PLAIN ENGLISH**

This chapter answers a fascinating question: how do we know what the earth is made of deep inside, when no one has ever drilled even one-thousandth of the way to the centre? Your child learns that scientists use clues — some direct (samples from mines, the deepest borehole at Kola in Russia which reached only about 12 km, and material thrown up by volcanoes) and most of them indirect, above all the EARTHQUAKE WAVES that pass right through the planet. Different waves behave differently — 'P-waves' go through everything, but 'S-waves' refuse to pass through liquid — and from this scientists worked out that the earth has a crust, a mostly-solid mantle, a LIQUID outer core and a SOLID inner core. The chapter also covers earthquakes (where they start) and volcanoes. It is worth about 5-7 marks and is one of the more interesting chapters of the year.

5 QUESTIONS TO ASK YOUR CHILD

- How do we know about the deep interior if no one has drilled there — what is the main clue?
- What is the difference between a P-wave and an S-wave?
- How do we know the outer core is liquid? (Hint: which wave disappears?)
- What is the difference between the FOCUS and the EPICENTRE of an earthquake?
- Name the layers of the earth from outside to inside and say which is liquid.

WEAK-SPOT INDICATORS

- Thinks scientists have actually drilled to the core.
- Says S-waves are faster than P-waves, or that S-waves can pass through liquid.
- Confuses the focus (inside the earth) with the epicentre (on the surface).
- Says the whole core, or the whole mantle, is liquid molten rock.

WHEN TO WORRY — AND WHAT TO DO

The hardest part is the reasoning chain — 'S-waves stop, therefore the outer core is liquid'. A child can memorise the layers yet still fail a 5-mark question because they cannot EXPLAIN how the shadow zones prove the structure. If your child can name the layers but cannot explain how we know the outer core is liquid, they will lose the long-answer marks. The fix is drawing the shadow-zone diagram and writing the explanation by hand a few times.

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