

STUDENT: **What types of waves do seismologists use to image the interior of the Earth?**

TEACHER: ⇨ seismic waves

STUDENT: **In the layered model of the Earth, the outermost layer is what?**

TEACHER: ⇨ crust

STUDENT: **In the layered model of the Earth, the mantle has two layers below it. What are they?**

TEACHER: ⇨ the outer core and inner core

STUDENT: **In the layered model of the Earth there are seismic discontinuities in which layer?**

TEACHER: ⇨ the mantle

STUDENT: **Recently a more detailed model of the Earth was developed. Seismologists were able to create this using images of what from the interior of the Earth?**

TEACHER: ⇨ wave speeds

STUDENT: **What do seismologists use to map the Earth's crust?**

TEACHER: ⇨ CANNOTANSWER

STUDENT: **What was not able to see through the dense solid core of the Earth?**

TEACHER: ⇨ CANNOTANSWER

STUDENT: **By how many kilometers are shear waves separated when measuring the crust?**

TEACHER: ⇨ CANNOTANSWER

Section:Geology3

Context: Seismologists can use the arrival times of seismic waves in reverse to image the interior of the Earth. Early advances in this field showed the existence of a liquid outer core (where shear waves were not able to propagate) and a dense solid inner core. These advances led to the development of a layered model of the Earth, with a crust and lithosphere on top, the mantle below (separated within itself by seismic discontinuities at 410 and 660 kilometers), and the outer core and inner core below that. More recently, seismologists have been able to create detailed images of wave speeds inside the earth in the same way a doctor images a body in a CT scan. These images have led to a much more detailed view of the interior of the Earth, and have replaced the simplified layered model with a much more dynamic model. CANNOTANSWER

STUDENT: **What have CT scans lead to for doctors and their patients?**

TEACHER: ↪ CANNOTANSWER

STUDENT: **In the layered Earth model, what is the inner core separated by?**

TEACHER: ↪ CANNOTANSWER

STUDENT: **What is the outer core called?**

TEACHER: ↪ CANNOTANSWER

STUDENT: **What is the size of the mantle?**

TEACHER: ↪ CANNOTANSWER

STUDENT: **How quickly to wave speeds inside the earth move?**

TEACHER: ↪ CANNOTANSWER