Interactive: The Earth’s Interior

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Please use [this interactive model](https://ees.as.uky.edu/sites/default/files/elearning/module06swf.swf) of the Earth’s interior to develop thorough, detailed responses for the following prompts.

The earth is made of concentric layers of rock with a core of iron-rich metal. How do we know this? To begin to answer this question, watch how waves created by an earthquake spread out as they travel through the Earth.

1) Move to the second page of the interactive (Seismic Waves) and click the “Earthquake” tab. The waves that are created during this earthquake are called “seismic waves”.

2) Move ahead to the next page, P Waves and S Waves. Click on the “P Wave” tab and watch what happens:

What direction does the blue “Compression” arrow move when you press the button?

What direction do the round spheres move in as the wave passes by?

3) Click on the “S Wave” tab and watch what happens:

What direction does the red “Shear” arrow move when you press the button?

What direction do the round spheres move in as the wave passes by?

4) Seismic Waves: Watch [this computer animation](http://ds.iris.edu/seismon/swaves/) of seismic waves traveling through the Earth.

Which type of wave, P or S, travels the fastest?

What happens to the line of P waves as the waves reach the outer core?

What happens to the speed of the P waves as they move through the outer core?

What happens to the line of P waves as the waves reach the inner core?

What happens to the speed of the P waves as they move through the inner core?

What happens to the S waves when they reach the outer core?

Do S waves travel straight through all the way to the exact opposite place on the Earth from where the earthquake occurred?

What does the “p” in P wave stand for? What does the “s” in S wave stand for?

Do P waves and S waves differ from each other in terms of the types of materials that they can move through? Be specific in your response.

Based on your answer to the previous question, how might geoscientists be able to determine which parts of the Earth’s interior are solid, and which are liquid?