

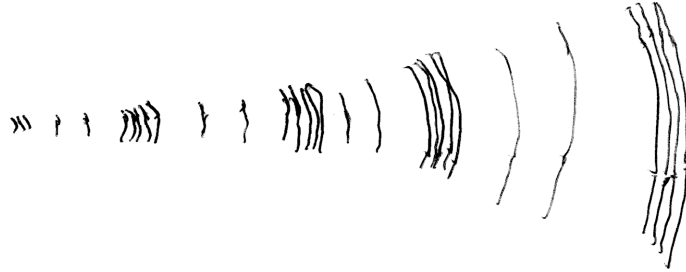
# S and P waves

**S**-waves (**S**urface waves or **S**haking waves) only travel along the **S**urface or outer crust.

Shaking movements are perpendicular (transverse) to the direction of travel.



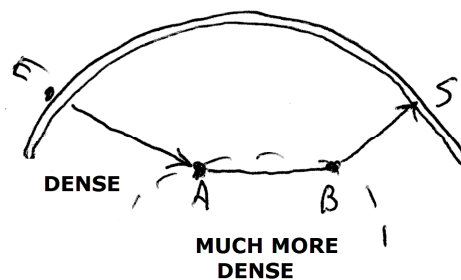
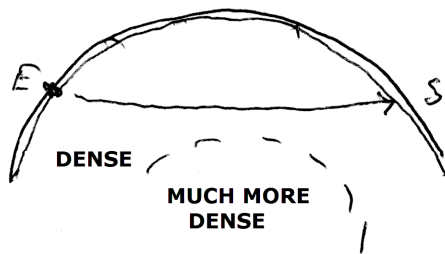
**P**-waves are **P**ressure waves (like sound waves), with molecules moving further apart and compressed closer together. The regions of compression and increased spacing move in the same direction as the direction of travel of the waves.



P-waves can go very deep, and their travel speed is a bit faster in denser rock.

This means that the P-waves are bent (refracted) as they pass from one region into a region of higher density.

P waves that travel great distances go right through the deep layers of the Earth.



This illustration shows the path of P-waves at great depth. Between points A and B, the waves travel faster, so they are bent (refracted) at points A and B.

Nearly everything that we know about the interior structure deep inside the Earth has been deduced (inferred) from calculations based on the rate of travel of P-waves across differing distances (and thus differing depths).