



THE STRUCTURE OF THE EARTH

If we observe the surface of the Earth we can see that it is made of water, dirt, rocks, minerals... but under the ground???

We could take a shovel and dig...

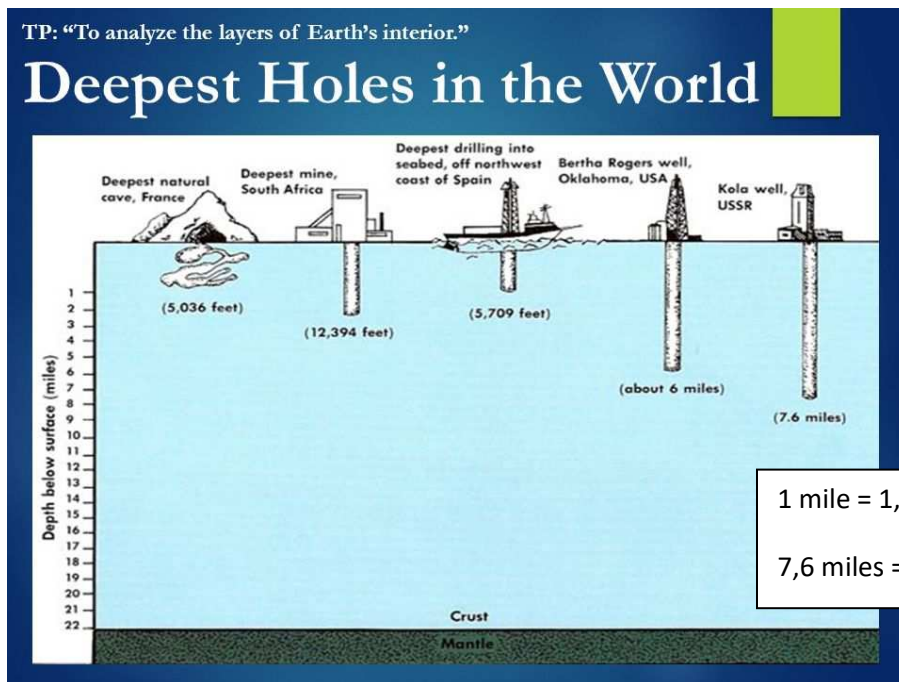
dirt, dirt, rocks... so our planet is made of dirt and rocks!

This is a question that I think has been on everyone's mind...



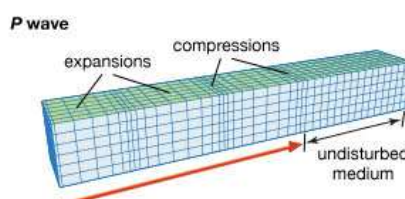
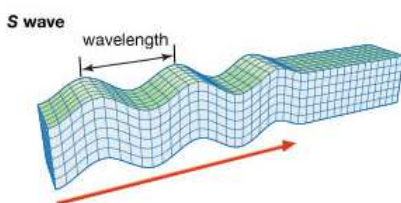
Scientists have built up an understanding of what the inside of the Earth is made of, even though we have never drilled (or been!) below the crust. The deepest drilling has

been able to achieve about 12 km depth! Scientists found that the temperature at the bottom of the hole reached 180 degrees Celsius, technically too hot to continue!

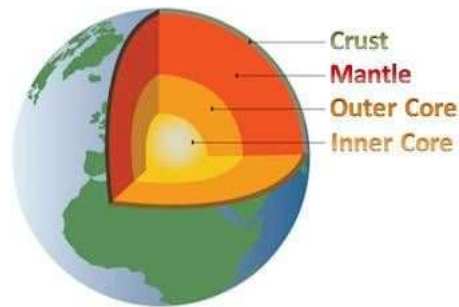
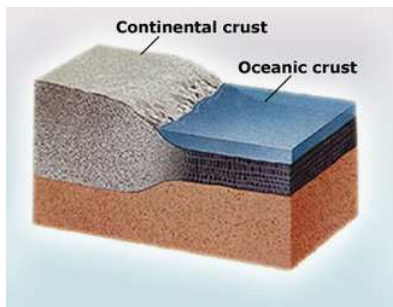


1 mile = 1,6 km
 7,6 miles = 12,2 km

The secrets buried inside our planet are revealed by recording and studying things called seismic waves. Caused by things like earthquakes or explosions, there are two types of seismic wave: a shear wave (**s-waves**), which won't travel through liquid; and a pressure wave (**p-wave**), which moves through both liquid and solids.



These waves show that the Earth is made from four layers: the **crust**, the **mantle**, the **outer core**, and the **inner core**.



The Earth's **crust** is the outer layer of the Earth and is about 5 to 70 kilometres thick depending on its location. It is the thinnest layer, only about 3-10 kilometres thick under the oceans which is called the **oceanic crust**. Under the continents it is about 40 kilometres thick, which is called the **continental crust**.

The second main layer of the Earth is called the **mantle**. The mantle of the Earth is the largest layer and is about 2900 kilometres thick. It is made up of extremely hot, dense and melted rock, and it flows like hot asphalt. The temperature at the top of the mantle is about 900° C and at the bottom it is about 3700° C. When the melted rock escapes to the Earth's surface, a volcano may erupt in that area of the Earth.



The final two layers of the Earth include the **outer core** and the **inner core**. The outer core is basically made up of melted metals, nickel and iron. Because these metals are melted, they move just like a liquid. The outer core has temperatures between 3700° C and 4300° C.

The inner core has temperatures between 4300°C and 7200°C. There is so much pressure at this layer, the metals are squeezed tightly together up to become solids.

even though = nonostante, anche se, benché
to drill = perforare, trivellare
to achieve = raggiungere, ottenere
shear waves = onde trasversali
to reach = raggiungere, arrivare
outer = esterno
thick = spesso
to flow = fluire, scorrere
to melt = fondere, sciogliere
mostly = soprattutto, principalmente, per lo più

