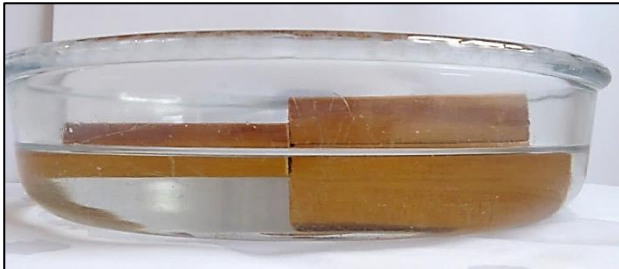


## Isostasy in the kitchen - 1 Modelling the state of “balance” of the Earth’s outer layers

You can model the balance of Earth’s outer layers, as shown in the Earthlearningidea, *Isostasy 1: modelling the state of “balance” of the Earth’s outer layers* in your kitchen, by using a bowl of water and some blocks of wood, as shown in the photograph.

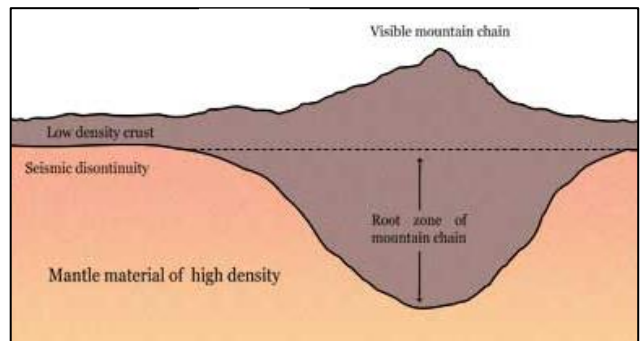


(Chris King)

The blocks we used were 8 x 4.5 cm and 1.5 cm thick. The thicker block was made by putting one thin block on top of another.

You can clearly see how the thicker block not only sinks to a lower level, but also rises to a higher level. The blocks under water look bigger due to refraction.

The same thing happens in this diagram of the Earth’s continental crust:



(from 3.bp.blogspot.com)

When the crust become thickened as a plate collision builds a mountain chain, the mountains are higher than the surrounding land but have deep roots. Where the crust is thinner, it forms lowland plains.

This illustrates the principle of isostasy. Isostasy works because mantle material flows slowly over geological time. As shown in the model, the thicker crust is ‘floating’ at a higher level but with deeper roots than thinner crust. Note that although the mantle is solid, it is capable of very slow flow over time.

**Source: Chris King of the Earthlearningidea Team**, based on

[http://earthlearningidea.com/PDF/205\\_Isostasy\\_1.pdf](http://earthlearningidea.com/PDF/205_Isostasy_1.pdf)

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