

# Are textbooks making Isostasy unnecessarily hard for students to get to grips with?

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In an analysis of introductory geosciences textbooks, we have found that isostasy is introduced almost identically to its original 1855 presentation (Airy, 1855). This presentation neglects the importance of lithospheric flexure and introductions therefore do not reflect the modern understanding of the Earth's behaviour (Watts, 2001). We find that the presentation of the underlying physics of buoyancy is often unclear, and that the analogies used are usually poorly explained in the textbooks. Interviews with students indicate a tendency to focus on the surface features of analogical presentations, rather than the structural relations that reflect causal processes. They easily identify some of the limitations of the analogies, but without explanation struggle to integrate this into their understanding of the Earth's tectonic behaviour. Drawing on the idea of Image Schemata from Embodied Cognition (Johnson, 1987), we consider some everyday experiences that may be relevant to support students when developing a conceptualisation of isostasy and lithospheric flexure.

## References

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