Isostatic Lesson Plan

By

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Grade Level: 9-14
Key Ideas

- Introduction to isostatic leveling, global topography/bathymetry and coastlines
- Reinforcement of density and buoyancy concepts
- Exploration and application of concepts
Cognitive Objectives

- Hands on exploration with density and buoyancy
- Working in groups and having discussions
- Application of concepts for modeling exercise

Affective Objectives

- Working in groups with partners
- Solidify ideas and concepts
- Develop confidence in self ability to analyze, discuss and application of ideas
Explore globes and maps of terrestrial and oceanic topography/bathymetry

Discuss observations and general trends between the two types of surfaces

Exploration with online isostasy program

http://discoverourearth.org/student/isostasy.html
Turn findings into concepts through class discussion

Discuss reasons then, for the large difference between oceanic and terrestrial plate locations. i.e. relative depth

Have students create their own topography profile on a piece of paper

Allow the students to create a 3-d version using the next experimental
Create-a-topography
Assessment

Pat on the back if the developed topography resembles the proposed topography

Questions on a later test that deal with application of the concepts

Follow up

Over night or weekend have students consider what would happen to the land as a glacier melts off

Next class, discussion and introduction to eustatic leveling

Connection to next lesson plan

Next lesson will involve eustatic leveling and combining concepts while applying them to real world situations
The Learning Cycle

- **Exploration phase**
  Students interact with materials and each other

- **Concept-application phase**
  Students apply information to a new situation

- **Evaluation and discussion**

- **Concept-introduction phase**
  Development of concepts and terminology
References

www.globalchange.umich.edu

http://discoverourearth.org/student/isostasy.html