

How Dense?

Summary

Students will be given a selection of substances and asked to put them in order from least dense to most, similar to layering in Earth. They must justify their choices and be able to write the rationale down. They may make measurements using the equipment of their choice.

Main Core Tie

SEEd - Grade 7

[Strand 7.2: CHANGES TO EARTH OVER TIME Standard 7.2.4](#)

Time Frame

1 class periods of 60 minutes each

Group Size

Small Groups

Materials

Suggestions for substances:

clay

water

vegetable oil

rock

brick

metal bar

aluminum can

glass marbles or slides

ceramic tile

gravel

cotton

styrofoam

- [student worksheet](#)

Student Prior Knowledge

Students should have had experience finding the density of substances in a variety of ways.

Instructional Procedures

"Hook" the students with a demonstration of density such as a lava lamp or "dancing spaghetti" (broken spaghetti noodles in Sprite). Ask students to explain why the bubbles in the lamp move or why the spaghetti rises and falls (air bubbles attach to it, lowering the density).

Explain to students that they will be building a model of Earth and its layers with the materials you have provided. They must choose a material for each layer of Earth and justify why they placed it in that location.

Show students the materials you have provided and give them the student sheet. Students should be placed in working groups of 3-4.

Go over the introduction and allow students to work and fill in the data. Each group needs to decide on a common plan.

Have each student group present their ideas to the class.

Assessment Plan

Scoring Guide

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1. Students participate and test materials.....4
2. Students design a logical plan to test materials.....4
3. Students accurately test materials.....4
4. Students report their findings honestly and relate them to Earth.....4

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)