Modelling Earth stresses with your hands
Hand modelling of compression, tension and shear in the Earth

You can use your hands to model the three different types of stress in the Earth.

**Compression** – hands pushed together: modelling the forces causing folding and reverse and thrust faulting, in crustal compression.

**Tension** – fingers hooked together and pulling apart: modelling the forces causing normal faulting and crustal extension.

**Shear** – both hands vertical, one beside the other, attempting to slide one hand to the left and the other to the right: modelling the forces causing strike-slip faulting and the transform faulting of conservative plate margins.
The back up
Title: Modelling Earth stresses with your hands.
Subtitle: Hand modelling of compression, tension and shear in the Earth.
Topic: A class activity to help pupils to visualise types of stress in the Earth through modelling with their hands.
Age range of pupils: 10 years upwards
Time needed to complete activity: 5 minutes

Pupil learning outcomes: Pupils can:
• describe the different types of stress in the Earth;
• model these with their hands.

Context:
The results of the different types of stress are seen in the deformation of a cube, shown in these diagrams.

The educational advantages of using your hands to model geoscience features and processes have been explained in the Earthlearningidea, Rock cycle at your fingertips.

Following up the activity:
Ask the pupils to think of different ways to model Earth stresses. Possibilities include using:
• foam rubber;
• stress balls;
• modelling clay;
• toffee or fudge bars.

Underlying principles:
• The three main types of stress in the Earth can be modelled with your hands.

Thinking skill development:
Modelling Earth stresses with your hands involves demonstrating a pattern which can then be bridged to real geological situations.

Resource list:
• your hands

Useful links:
See: http://earthsci.org/education/teacher/basicgeol/def orm/deform.html

Source: Devised by Chris King; photos by Peter Kennett, both of the Earthlearningidea Team.

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The Earthlearningidea hand-modelling activities

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