

Plate-riding

Role-play plate-surfing to ask: 'How is the plate you live on moving now?'

Stand on the floor facing in the direction the plate that you live on is moving (you might have to find out this direction beforehand, using the plate map below and a magnetic compass).

Pretend you are balancing on a surfboard. Ask the students:

- "What am I doing?" *Plate-riding or plate-surfing.*
- "How fast am I going?" *As fast as our fingernails grow, several centimetres per year.*
- "In which direction am I travelling?" *Towards the direction in which the plate is moving.*
- "What is happening behind me?" *New plate material is being formed, probably at an oceanic ridge.*
- "What is happening in front of me?" *You are probably heading towards a subduction zone, with its earthquakes, volcanoes and mountains.*
- "How can I tell I'm moving?" *This is shown by evidence from: GPS measurements over several years; magnetic ocean floor stripes; the age of ocean floor sediments; and the lines of volcanoes produced at volcanic 'hot spots' like Hawaii.*



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The back up

Title: Plate-riding

Subtitle: Role-play plate-surfing to ask: 'How is the plate you live on moving now?'

Topic: Helping students relate to the movement of the plate that they live on

Age range of pupils: 11 – 99 years

Time needed to complete activity: 5 mins

Pupil learning outcomes: Pupils can:

- explain how the plate they live on is moving, considering the direction, speed and plate activity behind and ahead.

Context:

This is a useful revision activity, to review student understanding of plate tectonic concepts and remind them that it is not an abstract concept, but is happening today, if slowly.

Some of the answers for Europe are:

- "In which direction am I travelling?" *Towards the East.*
- "What is happening behind me?" *New plate material is being formed, as in Iceland and all along the North Atlantic oceanic ridge.*
- "What is happening in front of me?" *I'm heading towards the Japanese subduction zone.*

Following up the activity:

Consider how the answers might differ for people riding on different plates.

Underlying principles:

- The principles of plate tectonic movement.

Thinking skill development:

Applying a role-playing plate-surfing image to the reality of plate movement is a bridging activity.

Resource list:

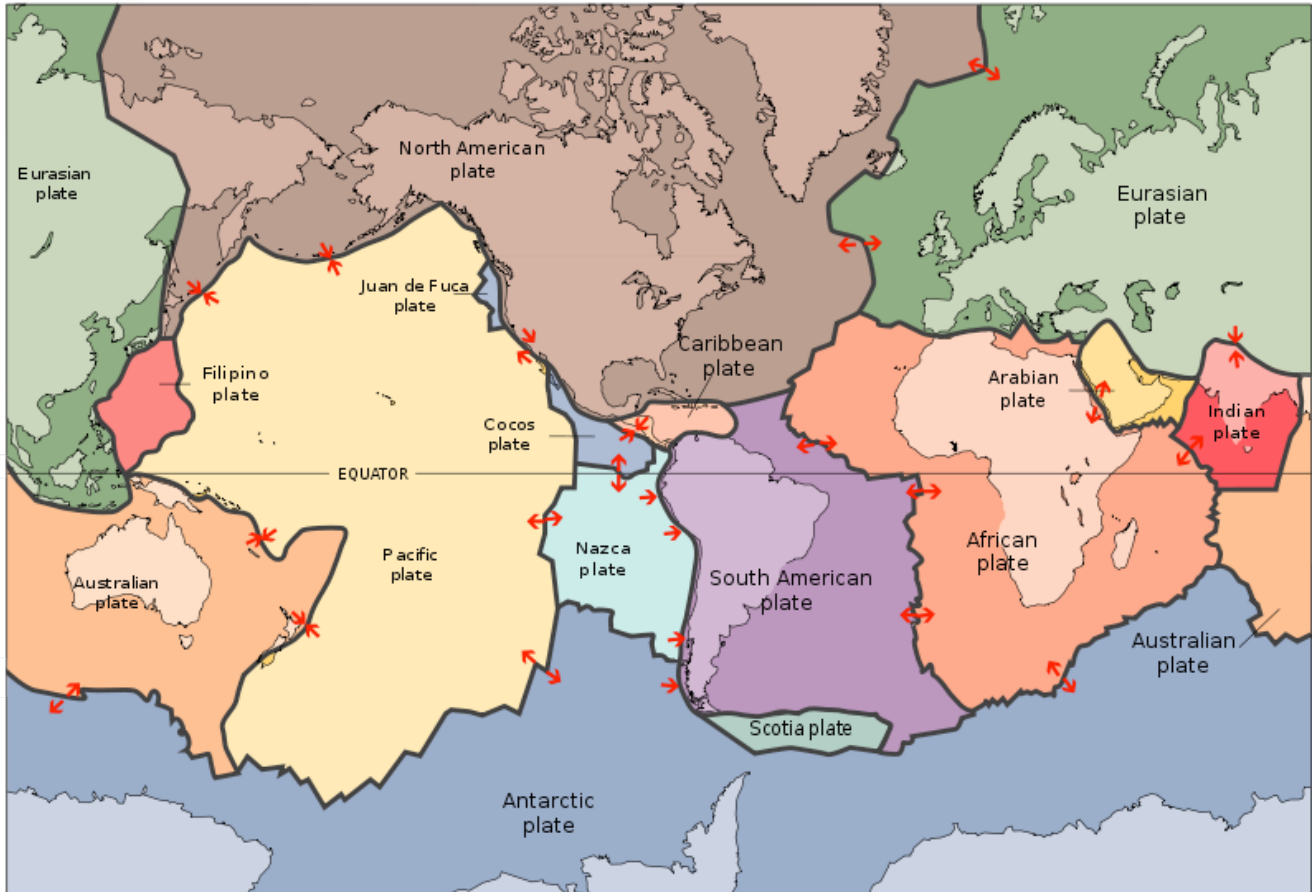
- None needed, apart from a vivid imagination and floor-balancing ability.

Useful links:

The US Geological Survey has published a useful downloadable book about the plate tectonics on its website, called 'This dynamic Earth: the story of plate tectonics' available at:
<http://pubs.usgs.gov/gip/dynamic/dynamic.html>

Source:

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Movement directions
of the major plates.

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