<table>
<thead>
<tr>
<th><strong>Revise assumed knowledge:</strong></th>
<th><strong>Check</strong></th>
<th><strong>Date</strong></th>
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<tbody>
<tr>
<td><strong>SC4-12ES</strong> describes the dynamic nature of models, theories and laws in developing scientific understanding of the Earth and solar system</td>
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<tr>
<td><strong>SC4-13ES</strong> explains how advances in scientific understanding of processes that occur within and on the Earth, influence the choices people make about resource use and management</td>
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**ES2 The theory of plate tectonics explains global patterns of geological activity and continental movement. (ACSSU180)**

| **5ES2a.** outline how the theory of plate tectonics changed ideas about the structure of the Earth and continental movement over geological time | | |
| **5ES2b.** relate movements of the Earth’s plates to mantle convection currents and gravitational forces | | |

**Literacy activity (ESL focus): Define and describe.**
- inner core, outer core, mantle, crust, continental plate, plate tectonics, Continental drift, tectonic plates, density, convection currents, sea floor spreading, Pangea, mid-ocean ridges, earthquake, epicentre, volcano, magma, lava

Describe the theory of plate tectonics

Give two pieces of evidence for the theory of plate tectonics

Identify the major tectonic plates

Activity 5.1.1 Where in the world are tectonic plates? (group task)

**Explain the idea of Pangaea and how the continents have reached their current positions**

Activity 5.1.2 Reconstructing Pangaea

**Literacy activity (ESL focus): Define and describe.**
- continental drift, gravity, convection

Illustrate with a diagram that continental movement could be driven by convection currents within the Earth

Define gravity and convection

**first-hand investigation(s):** To investigate how a supercontinent may have broken up into smaller pieces Page 186

**Earthquakes and volcanoes** Pages 189-190

Explain when earthquakes occur
Explain the formation of volcanoes at plate boundaries and at hot spots.

**5ES2c.** Outline how the theory of plate tectonics explains earthquakes, volcanic activity and formation of new landforms.

**Literacy activity (ESL focus): Define and describe.**
Transform boundary, fault, strike-slip, shallow focus earthquakes, converging boundaries, subduction, ocean trench, tsunamis, diverging boundaries, rift valley.

**Explain the difference between transform, convergent and divergent boundaries.**

**Link what can happen along a transform boundary to at least one event in history.**

**Define a transform boundary as a fault line where tectonic plates can slide past each other and identify some examples.**

**Converging boundaries**
Describe the three possibilities or collisions of plates along converging boundaries and the different geological features and natural events that can occur there.

**Activity 5.2.1 Chocolate plates Pg 195**

**Teacher demonstration:** Activity 5.2.2 Volcanic bubbles pg 196

**First hand Investigation pg 197**

**Student design task:** Measuring the density of rocks

**Earthquakes and Tsunamis**

**Volcanoes causing tsunamis**

**Diverging boundaries**
Describe diverging boundaries and how they produce rift valleys on land which eventually widen to produce new seas.

**Activity 5.2.3 Modelling sea-floor spreading Page 193**

**Literacy activity: COSMOS.**
The ocean network by Peter Calamai: Issue 39 pg47 OR students research another related article. Students then write a series of questions that MUST include 5 multiple choice, 2 identify, 2 describe, 1 explain and either 1 assess or evaluate question.

**5ES2d.** Describe how some technological developments have increased scientific understanding of global patterns in geological activity, including in the Asia-Pacific region.

**Predict one possible outcome for the Earth’s continents if they continue to drift.**

**A future Earth**
Discuss what the Earth may look like if continental drift continues into the future.

**Activity 5.3.1 Geology in the headlines**
Identify at least two devices a geologist might use in their work and explain what each measures

Literacy builder: Plate tectonics may grind to a halt, then start again

<table>
<thead>
<tr>
<th>Geographical technology</th>
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<tr>
<td>Describe magnetometers, seismometers, and seismic surveys and their use by geologists.</td>
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5ESadd4 discuss technological developments that have extended the ability of scientists to collect information about, and monitor events in, the natural world

Discuss technological developments that have extended the ability of scientists to collect information about, and monitor events in, the natural world
- Seismographs
- Satellite tracking
- Early warning and detection systems

5ESadd5 research evidence relating global warming to changes in weather patterns, including El Niño and La Niña

Research task(s)
research evidence relating global warming to changes in weather patterns, including El Niño and La Niña

TOPIC TEST