Unit: tectonic patterns and processes

Overview

Key concepts: Place, space, physical processes, human-environmental interaction.

Key Stage 2 [From NC POS]: Describe and understand key aspects of physical geography including volcanoes and earthquakes.

Programme:
Through studying individual examples, pupils learn about what happens during an earthquake and volcanic eruption and some associated landforms. They learn about the effects of these events on people. They learn simple explanations for these tectonic events through basic understanding of the structure of the Earth.

Key Stage 3 [From NC POS]: Understand, through the use of detailed place-based exemplars at a variety of scales, the key processes in physical geography relating to plate tectonics; understand how human and physical processes interact...

Programme: [from GA National Curriculum proposal]
Through studying a variety of examples, pupils develop understanding of tectonic processes and events. Studies should focus on the physical mechanisms of the events themselves, particularly the importance of different locations in relation to the earth’s structure and plate movements. It should include broader explanations, including human actions and the continued human occupation of hazardous locations. The topic teaches about human response to perceived risk, and the idea of preparedness for natural hazards.

Assessment for Key Stage 3; pupils will show evidence of:

Contextual knowledge
- The global distribution of earthquakes, volcanoes and plate boundaries
- Locational knowledge of specific hazards/events.

Understanding
- Describe the structure of the Earth and explain the movement of tectonic plates
- Explain the relationship between earthquakes, volcanic activity and processes at different types of plate boundary/situation
- Describe and explain types of volcanic activities and landforms, and earthquake events
- Describe the impact of different earthquakes and volcanic eruptions on human activities
- Explain how people can prepare for and respond to these hazards.

Procedures and skills
- Use atlas and graphic skills to locate, describe and explain tectonic distributions
- Use atlas, GIS and enquiry skills to investigate relationships between people and hazards.

---

1 References in this version are to NC England

Key concepts – may help focus planning and review: did pupils make progress in learning these ideas?

Tectonics/volcanoes/earthquakes may be taught at both key stages

NC Reference point (this one for England)

The GA’s National Curriculum proposals included a focus statement for each theme, plus >>

>> this way to express outcomes for the topic based on three domains:

KN1: geographical context; ‘core knowledge’
Kn2: conceptual content knowledge
Kn3: ‘procedural’ knowledge and applied practical skills
Theme: Tectonics

Key Questions: e.g.
- What is the structure of the Earth?
- What and where are the Earth’s tectonic plates? How and why do tectonic plates move?
- What happens at plate boundaries? What different types of plate boundaries are there?
- How are fold mountains formed, and where?

Key Stage 2
- Know that the Earth has a molten core and a crust that moves
- Understand that most earthquakes and volcanoes occur near boundaries in the crust

Pitch, for example:
I can describe the structure of the Earth
I can give some reasons why volcanoes and earthquakes happen where they do.

Key Stage 3
- Know about the earth’s structure and the division of the crust into tectonic plates
- Know the names and locations of some tectonic plates, and understand why plates move
- Know the characteristics of different types of plate boundary, and understand the processes occurring there
- Know what and where fold mountains are and understand how they are formed.

Pitch, for example:
I can describe the structure of the Earth, and explain how tectonic plates move
I can give examples of different plates and different types of plate boundary and explain the processes happening there
I can give examples of fold mountains and explain how they are formed (L5)
I can use maps to locate tectonic plates and fold mountains.

Alternative: ‘I will be able to...’

You could aggregate these from different units to form a statement of expectations for each year ‘an expert geographer in Year 7 is/will...’

Could these be useful for reporting?

Key questions help keep an enquiry focus

It may help to divide the unit into sub-themes

An alternative way to set objectives, which help fix standards and can be assessed

Attainment criteria for this theme – with a sense of level-ness re this content for Year 9. I used the LDs (old Eng+ Welsh) as a check

You can include /add a level if you want – or not?
Theme: Earthquakes and volcanoes

Key Questions: e.g.
- What happens during a volcanic eruption or earthquake?
- Where do earthquakes and volcanoes occur? Why? What causes them?
- Why aren’t volcanoes all the same? Why do different types of volcanoes occur in different locations? What sorts of eruptions happen there? What landforms do they produce? Why?
- Why aren’t earthquakes all the same? Why do some cause more damage than others?
- What is the impact of earthquakes and volcanoes on human activities? How big a hazard are they? Why do earthquakes kill far more people than volcanoes?
- How can people prepare for and respond to these hazards?

Key Stage 2
- Know that volcanoes and earthquakes are most common in particular parts of the world
- Know what happens during a volcanic eruption or earthquake and some of the landforms produced
- Understand why volcanoes and earthquakes are dangerous, and what people can do to reduce the risk.

Pitch, for example:
I can describe some features of volcanoes/earthquakes (L3)
I can describe where volcanoes/earthquakes occur and why they happen
I can describe the effects of a volcanic eruption or earthquake and what people did as a result (L4)
I can locate some volcanoes and earthquakes and using maps, globes and atlases.

Key Stage 3
- Know why earthquakes and volcanoes are located in different locations on the Earth’s crust
- Know that there are different types of earthquake/volcano, and understand reasons why
- Understand that different types of earthquake/volcano represent different types of opportunities/hazard to people; know how people can adapt and respond
- Be able to compare and explain the nature and impact of different hazards/events, linking geographical location and processes.

Pitch, for example:
I can explain where and why different types of volcano/earthquake occur
I can compare types of volcanoes/earthquakes in different locations, or volcanoes and earthquakes, and how great a hazard they are
I can explain why people live in hazardous places, and what they can do to reduce the risks (L5/6).
I can use different types of maps, globes, atlases, and GIS to locate and describe the physical, and human geography of volcanic/earthquake zones.

You can make the second theme more demanding – so progression in the unit.
Chance to include some challenging – intriguing
Year 6 objectives and pitch might be adapted for Y7? Or for differentiation in Y9
Add – modify the objectives to your course (esp the skills)
Looking for more at the end of the unit
## Alternative approach to pitch: (criteria focused on tectonics content)

<table>
<thead>
<tr>
<th>End of Y6</th>
<th>Knowledge and understanding:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitch: ex L3/4</td>
<td>Pupils can describe a simple structure of the Earth, where volcanoes/earthquakes occur and give some straightforward reasons why they happen where they do. They can describe some features of volcanoes/earthquakes, how they can change places and their effects on the lives and activities of people nearby. They can describe how people responded to one event and discuss how they might reduce the risks of living there.</td>
</tr>
</tbody>
</table>

**Enquiry and skills:** Pupils can locate some volcanoes and earthquakes and using maps, globes and atlases, and use them to show their knowledge and understanding of this theme. They present information and ideas using geographical language.

<table>
<thead>
<tr>
<th>End of Y9</th>
<th>Knowledge and understanding:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitch: ex L5/6</td>
<td>Pupils can describe the structure of the earth, and explain how tectonic plates move. They know some examples of different plates, and can describe and explain the processes happening at different types of plate boundary. They know some examples of fold mountains and can explain how they are formed. They can link the pattern of tectonic events to processes, for example different types of volcano/earthquake in different locations. They can compare types of volcanoes/earthquakes, or compare volcanoes and earthquakes, and explain how great a hazard they are. They can explain why people live in hazardous places, and what they can do to respond to these hazards (L5/6).</td>
</tr>
</tbody>
</table>

**Enquiry and skills:** Pupils can use different types of maps, globes, atlases, and GIS to locate the tectonic plates, fold mountains, volcanoes, and earthquakes studied, and to help describe the physical, and human geography of volcanic/earthquake zones. They use geographical terminology and techniques to show their understanding of this theme.

**Outcomes** (from NC-E aims): Pupils understand the processes that give rise to the world’s tectonic features and how they bring about change. They develop contextual knowledge of tectonically significant places and their defining characteristics.

---

2 Derived from last version of English NC-E aims

AESIG has investigated progression to GCSE, helping to peg the standard; also this approach has some continuity with (criterion-referenced) GCSE practice.