



**ACADÉMIE
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BACCALAUREAT GENERAL ET TECHNOLOGIQUE

EPREUVE SPECIFIQUE MENTION

« SECTION EUROPEENNE OU DE LANGUE ORIENTALE »

Binôme : Anglais / SVT

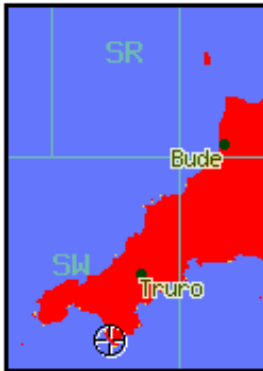
Thème 2 : A la recherche du passé géologique de notre planète Les traces du passé mouvementé de la Terre

The Lizard Complex

After presenting the document and its contents, answer the following questions:

- use your knowledge to explain what an ophiolite represents.
- present the main characteristics of such a zone.
- justify the name of Ophiolite given to the Lizard complex.

Document 1: Lizard Peninsula, Cornwall, England, Kynance Cove



Document 2: The Lizard

When the rocks of the Lizard were formed around 400 million years ago, the area was completely submerged by water. The area of what is now Cornwall was at that time a divergent plate margin and new igneous rocks were being formed as two oceanic plates moved apart at a spreading ridge*. As the plates moved apart, molten* rock rising up from the mantle filled the space created and cooled to form new oceanic floor. The minerals that form in these rocks are stable below the crust, where pressure and temperature is high and there is no water. Once formed however, these rocks come into contact with water which can cause alteration through a process called hydrothermal metamorphism. At the rocks seen at the Lizard, this alteration created the mineral serpentine which is found in the rock serpentinite. Shortly after the rocks were formed, they were subject to the compressional forces of the Variscan orogeny (around 380 million years ago). During this process, rocks formed at the oceanic ridge in the upper mantle, underneath the oceanic crust, were obducted. Normally when plates collide, the oceanic plate subducts below the continental plate because it is more dense but, in some cases, a section of the oceanic plate will be forced onto the land instead.

<https://www.geolsoc.org.uk/Policy-and-Media/Outreach/Plate-Tectonic-Stories/The-Lizard>

**ridge: arête, crête*

**molten: in a liquid state because of great heat*

Document 3: Serpentinite Boulder, Kynance Cove



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Pistes d'éléments de discussion

The Lizard now contains a suite of rocks from the upper surface consisting of sediments, below, pillow lavas, sheeted dykes and then gabbros to layered gabbro followed by ultrabasic rocks of peridotite representing the crust down to, and including, the mantle.

The term ophiolite has been used to describe sections of oceanic crust and upper mantle.

A sequence of rocks consisting of deep-sea marine sediments overlying (from top to bottom)

- pillow basalts, sheeted dikes, gabbro, dunite, and peridotite.

A piece of oceanic crust that has been uplifted onto continental crust.