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## 24 Cullercoats Bay

**Theme:** Earthquakes and folded rocks

### Location

The fault is to the south of Cullercoats Bay and its South Pier [NZ 365 710]. It's easy to reach by bus or car.

### Description

On the foreshore at Cullercoats Bay is a big geological fault; a place where rocks have been broken and dislocated by enormous forces in the Earth.

Two sections of rock that are millions of years different in age have been left lying next to each other. To the south are dark grey shales of the Carboniferous; to the north is the younger, Permian, yellow sandstone. But this break in the Earth's crust has a longer history and has probably also been a weak point for a long time.

Geologists have traced this fault and a broad line of other changes in the rocks deep in the crust using geophysics. They concluded that they are part of the "Iapetus Suture Zone": a zone of weakness caused because two ancient continents collided hereabouts when the ancient Iapetus Ocean closed about 420 million years ago.

Coal miners regularly found the fault as they extracted over 20 coal seams below southeast Northumberland. They came to recognize that it would dislocate the coal seams by around 150 vertical metres, so they named it the 90 Fathom Dyke.

You might see purple sandpipers feeding near the water's edge, and it's a good place for watching birds out to sea.

### Photographs

(Photo 24-1) Yellow Permian sandstone cliff at Cullercoats Bay.

(Photo 24-2) The 90 fathom "Dyke" (fault) at Cullercoats Bay.



(Photo 24-1) Yellow Permian sandstone cliff at Cullercoats Bay.



*(Photo 24-2) The 90 fathom "Dyke" (fault) at Cullercoats Bay.*