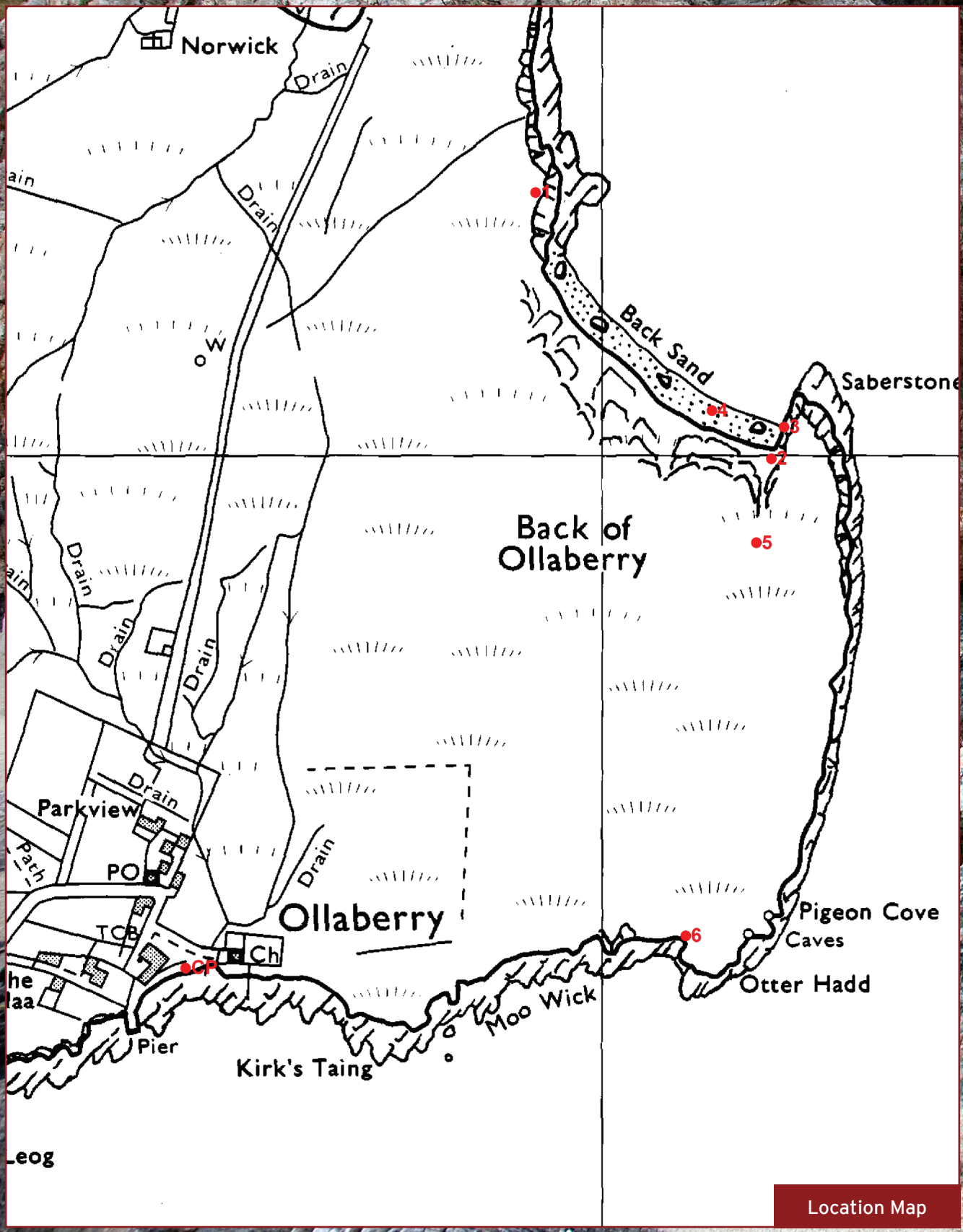
The Walls Boundary Fault



Teacher's Sheet

This extension of the Great Glen fault that cuts through the Scottish Highlands is the best 'hands-on' exposure of a shear fault to be seen in the United Kingdom.

Students will see the exposure of the Walls Boundary Fault, the northern extension of the Great Glen Fault on mainland Scotland. The fault cuts across the headland, bringing folded grey metamorphic rocks (psammite) into contact with red granite (the Graven Granite).



Location Map

Teacher's Notes

SUGGESTED STOPS	POINTS TO NOTE
Access:	The site can only be accessed on foot and parking is available at the church. Stiles and gates are located throughout the route, allowing fences/dykes to be crossed. Once at the fault exposure (approx. 0.7 km), all stops are within a short distance.
1	**Viewpoint** Grey psammite (metamorphosed impure sandstone) and semipelite (metamorphosed siltstone or muddy sandstone) in the foreground contrast with darker red granite rocks in the distance (the Devonian Graven Granite). The fault cuts across the headland. Displacement along this fault has brought the psammite into contact with the granite at this location.
2	**Fault Gully** Along some parts of the fault zone rock has been shattered. On the pathway down to the beach, there is a steep-sided gulley. This has been caused by erosion of shattered rock along the fault zone. The shattered rock is less resistant to erosion that the surrounding solid rock.
3	**The Point of Saberstone** The Point of Saberstone juts out into the waters of Yell Sound and is composed of 400 million year old Graven Granite. Graven Granite is easily identified by its dark red colour. Parts of the granite cliff are plastered with a thick layer of red fault gouge, which was a paste of finely ground rock flour that hardened and stuck to the granite during fault movements.
4	**The Bay at Back Sand** The bay at Back Sand has formed by more rapid erosion of the weaker psammite and semipelite compared with the more resistant granite of the Saberstone. The west side of the bay forms a broad zone of intense crushing and folding within the metamorphic rocks. Folding of these rocks is chaotic, varying in scale from centimetres to several metres.
5	**Fault Line** The fault line can be followed over the top of the hill as a shallow, boggy depression that cuts across the headland.
6	**Otter Hadd** At the south of the headland the fault reappears. The same two rock types can be seen on the shore, separated by the crushed rocks of the fault zone, but in this more sheltered location erosion has not been so extensive.