

Klichuan



Student Sheet



General instructions to students:

1. Note the main RISKS at the site when you arrive.
2. Respect the geological code of conduct at all times, do not disturb wildlife, close gates, do not remove rocks/fossils or sand from the site.
3. Before leaving transport, check that you have suitable clothing and footwear and the equipment to record your field observations:
 - ✓ Pencils
 - ✓ Clipboard
 - ✓ Task sheet
4. Stay close to your teacher/supervisor at all times. Hazards include uneven ground, water and slippery surfaces.
5. Try and complete your observations in as much detail as possible. Listen to the teacher as they explain what you are looking at and ask questions if you are unsure about any aspects of the site.

Tasks to be completed:

Task	Description	Completed (tick)
1	<p>The Ardnamurchan ring complex is the structure at the base of what was probably a conical volcano that existed 58.6 million years ago in the early Palaeogene. Together with centres on Mull, Rum and Skye it is one of the four great volcanoes in the West Highlands that formed during the early Palaeogene. Look to the south and you will see the Mull volcano. With reference to the Drifting Apart storyline write a short paragraph about what events took place at this time that caused these volcanoes to form.</p>	<input type="checkbox"/>
2	<p>Image 1: An aerial view of the geological map looking across the Ardnamurchan peninsula showing the rocks arranged in overlapping rings.</p>  <p>The Ardnamurchan complex is 10 km at the widest points and is mostly composed of overlapping thick circular dykes ('ring-dykes') of gabbro which define three intrusive centres (the blue and light brown rings in Image 1). The last centre to form (Centre 3) is a thick, funnel-shaped intrusion. There are also hundreds of funnel-shaped basalt 'cone-sheets' each typically less than 5 metres thick, which are inclined towards three common focus points beneath the surface. From the large cone sheet at Stop Location 1 look to the North West. Count how many cone sheets you can see along the shoreline and compare with the geological map in Image 1 to see how the structure is repeated throughout the Ardnamurchan Peninsula.</p>	<input type="checkbox"/>
3	<p>Measure the dip and the dip direction of the cone sheet at Stop Location 1 using a clinometer (you might be able to get one on your phone as part of a Compass app!). If you can't get your hands on a clinometer, you could use a protractor if you can see a level horizon (e.g. the sea)</p>	<input type="checkbox"/>
4	<p>Looking at the geological map and using your dip measurement try to draw a cross section of the volcano to imagine the structure of the cone sheets and magma chamber underground.</p>	<input type="checkbox"/>
5	<p>Walk north-west parallel to the shore and measure the thickness of each cone-sheet that you find.</p>	<input type="checkbox"/>
6	<p>Can you find any cone-sheets that cut across another cone sheet? Draw a sketch.</p>	<input type="checkbox"/>
7	 <p>Image 2: Triassic sedimentary rocks cut by cone-sheets and two narrow dykes</p> <p>West of the pier there is a large cone-sheet that cuts through bedded sedimentary rocks which are Triassic in age. The inclined character of the cone-sheet is very clear. Also visible are much steeper, thin inclined dykes (Image 2). It is possible to reach the shoreline here by crossing the fence beside the hut. Move around to identify the sedimentary rocks, cone sheets and dykes. Looking at the colours, textures and structures, write a few sentences about how you distinguish the different rock types.</p>	<input type="checkbox"/>
8	<p>Draw a diagram explaining the order that the cone sheets, dykes and sedimentary rocks formed.</p>	<input type="checkbox"/>

Name

Location

Klichoon

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Name

Location

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