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## 15 Carrock Fell

**Theme:** Volcanoes and molten rock

### Location

15 Carrock Fell "gabbro". There is parking at Apronful of Stones immediately east of the Fell. It's a short, but strenuous, hike to the top [NY 342 336].

### Description

Right on the north-eastern edge of the Lake District is a fell whose profile is recognisable from miles away. It's special geologically too.

Carrock Fell is made up of a lot of different rocks and one of them, gabbro, is rare in Cumbria, in Britain and on the surface of the Earth. Most igneous rocks (rocks that were once molten magma) that form the Earth's continental crust contain lots of silica making them relatively light in weight and in colour. But gabbro has lots of iron and magnesium and is darker and heavier. Gabbro and its volcanic equivalent, basalt, are common in the oceanic part of the Earth's crust. They are also present where continents break apart and have origins in the Earth's deeper layers. At Carrock Fell and in the more famous Black Cuillins in Skye, gabbro began as molten rock, several kilometres beneath the Earth's surface. Around 460 million years ago it was injected (intruded) as a series of layers into older volcanic rocks. Directly to the north of the gabbro and cutting through it are younger silica-rich rocks: microgranites, which are lighter in colour. Both these sets of rocks were later broken up by stresses in the Earth. That fragmentation and their complicated chemistry, has made their story difficult to unravel and is why, for a long-time, the area was simply referred to as the Carrock Fell complex. It continues to fascinate geologists today.

Carrock Fell has other stories to tell. In Grainsgill, in the valley below, are the remains of one of only two tungsten mines in Britain, a legacy of the special chemistry of these rocks and the adjacent Skiddaw granite. On the top of the Fell is a rampart of stones, an Iron Age hill fort; it has a wonderful view but it must have been a cold stronghold.

### Photographs

(Photo 15-1) 15 Carrock Fell viewed from the southeast.

(Photo 15-2) 15 Carrock Fell.



*(Photo 15-1) Carrock Fell viewed from the southeast.*



*(Photo 15-2) Carrock Fell.*