

The Making of the Geology Map of Scotland Display

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SPPC
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National Museums of Scotland

The objectives

- The *Geology Map of Scotland Project* was launched in summer 2000.
- It's purpose was to help teachers promote and teach earth science in schools at the 5-14 age group of the National Curriculum.
- NMS geology section was hopeful that many schools would be interested in the project as one of the main objectives was to have rocks supplied to construct a 4x2.5 metre geological map display.

Schools and rangers contributing

- In total:
 - Resource packs sent out
 - ~ 120 schools
 - ~ 2800 pupils
 - Fieldwork contribution
 - ~ 60 schools
 - ~ 70 rangers

Resource Packs

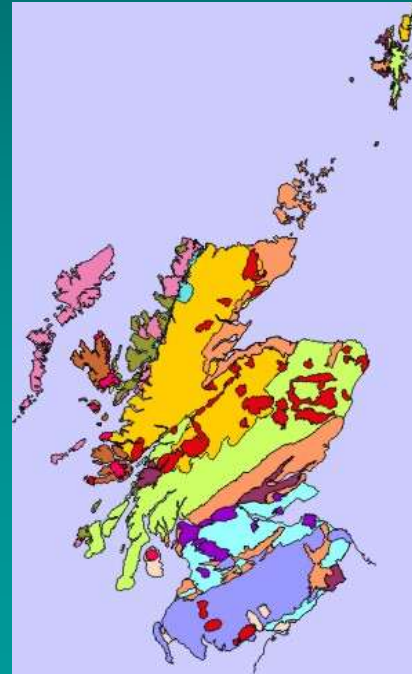
- Background information
- Step-by-step lesson plans
- Full colour graphics
- Activities (with answers/ expected outcomes)
- 9 rocks, 2 minerals and 3 fossils
- 250g alum powder (for growing crystals)

Resource pack folder and rock examples sent to teachers and countryside rangers



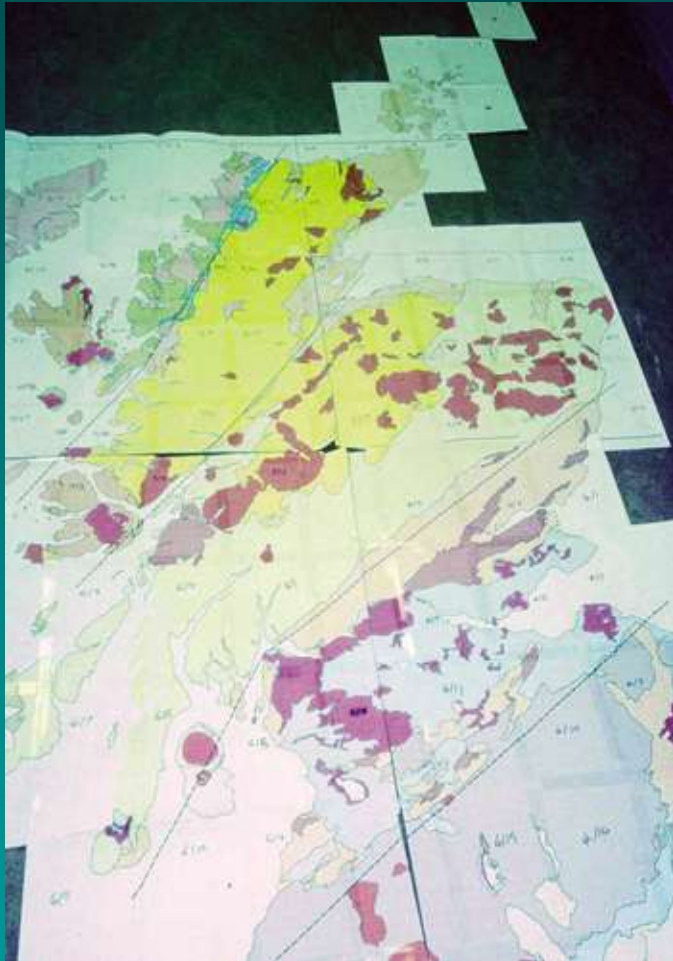
The geology of Scotland

- Scotland is made from many types of rock, ranging in age from around 3000 million years old to around 50 million years old. These rocks formed when Scotland saw large changes in its climate, global position and topography.



Simplified
geological
layout of
Scotland

Geological Layout



Full size floor layout for 4x2.5m display

Cutting the rocks



Geological template printed on clear film



Reversed geological template



Rocks fixed on template

Filling gaps with Paraloid mixture



Removing film template



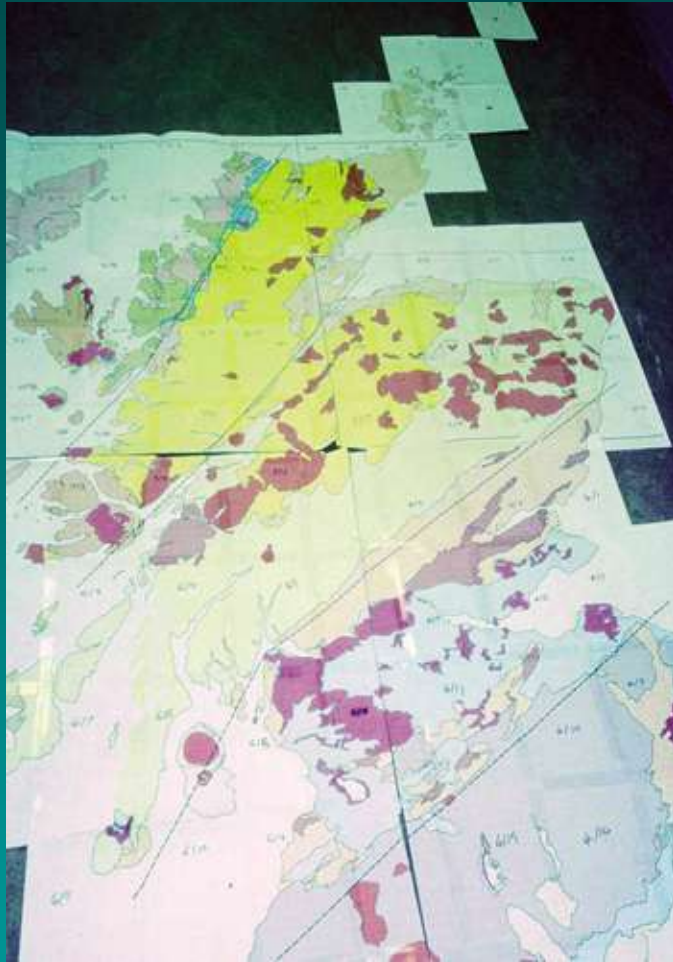
Scraping rock surface



Smoothing edges using Dremel Multitool



Completed rock section



South-east Scotland



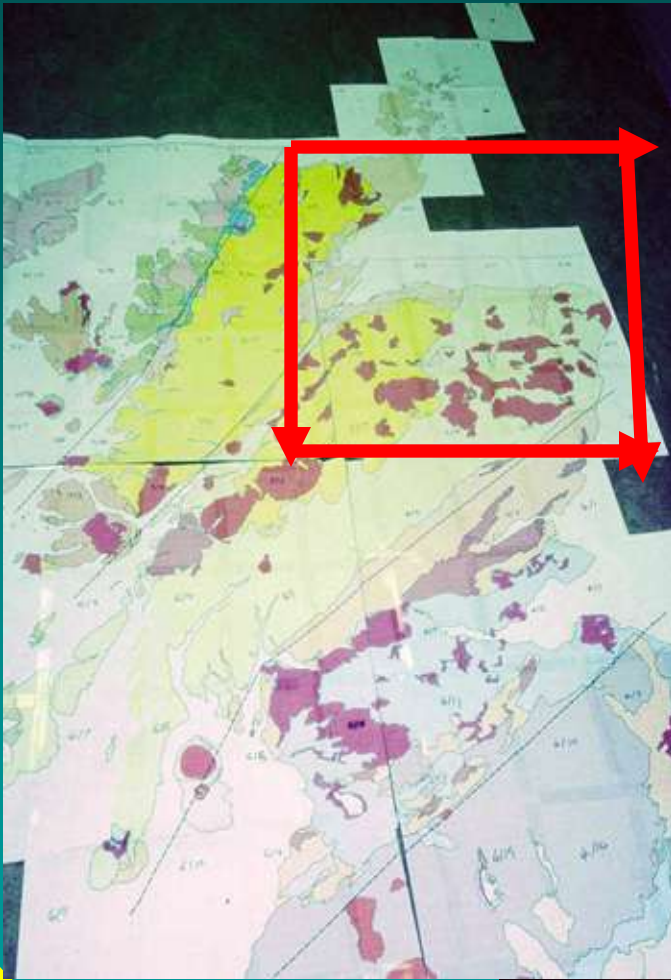
Fibreglass and Paraloid B72



Coating one of the six trays with Silastic 3481



North-East Scotland (face downward in wooden tray)



Spreading Jesmonite AC400



Reinforcing with fibreglass



Trimming edges with diamond cutting disk



Packing and polishing



Fitting polished rock section



Painting "sea" areas



The Geology Map of Scotland Display



Weight of each section:
Average 60-70Kg
Number of rock pieces used:
approx. 2500

Materials used

- Acetone
- Glass beads
- Jesmonite AC100 and Jesmonite AC400. A Casting and laminating water-based acrylic compound with low toxicity
- Jesmonite retarder
- Paint ('1829 Precious Metals' range, Antique bronze)
- Paraloid B72 adhesive (consolidant 30% in acetone)
- Pigments
- Plastazote
- Quadaxial matting and chopped glass strands
- Rocks from the Scottish countryside
- Sand
- Silastic 3481

Important facts

- Jesmonite AC400 water-based acrylic compound was chosen to represent the large 'sea' areas in the map. Jesmonite is user friendly and does not generate heat and gases as solvent-based resins would.
- The rock cutting saws were cleaned regularly to protect the diamond blades.
- Care was taken in identifying and numbering rock samples.
- Large quantities of powder pigment added to the Jesmonite did not mix evenly throughout.
- One of the sections warped slightly during production. The sun shining directly through glass onto the section could be responsible for that effect.



Island of Arran

**Museum of Scotland,
Edinburgh**



We will like to acknowledge the support of the Friends of the National Museums of Scotland.