The Making of the Geology Map of Scotland Display

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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.
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
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.
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