

Glacial Striations

Time: 5-10 minutes

Materials: blocks of ice with gravel frozen in / card painted black (or similar material with a scratchable surface) / images of glacial striations in rocks

Preparation: freeze ice in blocks with gravel in bottom, paint card

Summary: Show a process by which glaciers erode, illustrate how glacial striations are formed and demonstrate how they indicate ice-flow direction.

Instructions: (*for a large class, this can be carried out in groups*)

1. Stick the card/scratchable material to the table (or hold in place)
2. Mark the compass direction N E S W around the edges of the card
3. Examine the ice and discuss how the gravel represents pieces of rock that have been frozen in to a glacier
4. Gravel side down, drag the block of ice over the surface from N to S
5. Examine the scratches left on the surface (could measure using compass)

Concepts/explanations:

Dragging the blocks of ice over the surface creates a series of parallel scratches which indicate the direction in which the block was moved (note that the scratches indicate the block was moved N-S rather than E-W but further information would be needed to tell whether it started N and moved to S or vice versa).

The same mechanism creates large scratches/groves in the bedrock in glacial areas and these *striations* (refer to images) can be identified and measured in the field using a compass. This erosion process is known as *abrasion* – material carried in the glacier acts like sandpaper and scratches away areas of the bedrock.