Picturing Landforms -1
Visualise and draw landforms from a verbal description

Encourage pupils to look carefully at landforms and to describe them verbally so that another person can visualise them from the description.

Seat pupils in pairs, with each person holding half of the photograph cards showing landforms, printed and cut up from those shown below. The photographs are all taken in the British Isles. Pupils should NOT show each other what cards they have in their hands.

Pupil A then examines one photograph and describes it as fully as possible to Pupil B, who listens carefully and then tries to draw it. Pupil B must listen in silence and not ask any questions. Pupil B then takes a turn with another card, with Pupil A doing the drawing, also in silence. Pupils should then compare their hand-drawn efforts with the photographs.

This first round should be tried without any guidance. Then give each participant the Prompt Card, to encourage them to be more specific in further descriptions, and ask them to work through the remaining photographs, comparing their drawings with the photographs after each round. Note that some landforms may be repeated on different photographs, and some photographs may show more than one landform.
(If drawing the landscape from a partner's verbal description proves too difficult, the listener could suggest a name for the type of landform instead. Both pupils could then draw a "field sketch" from the same photo before reverting to the game).

When all have finished, give out the descriptive cards and ask pupils to match the descriptions to the photographs which they have been using.

A

B

C

D
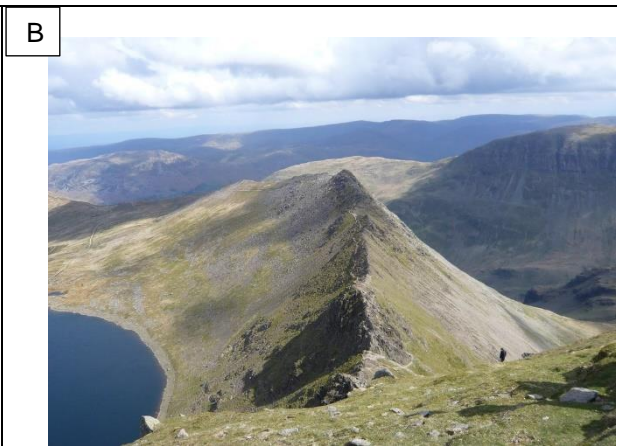
E

F

G

H

I.

J

K

L

Prompt Card
Use this card as a check list to aid your verbal description of your photograph to your partner.
Is the photo showing:
- *an upland area, a lowland area or a coastal area?*
- *mainly erosional features or depositional features?*
- *the nature of the drainage – rivers, lakes, dry valleys?*
- *any evidence of the structure of the rocks – folding, faulting, joints, igneous features?*
- *any evidence of past glaciation – deep U-shaped valleys, mounds of badly sorted debris etc?*

Descriptions of the photographs

1. **Alluvial fan**: a mass of sediment brought by streams flowing down a steep slope and deposited rapidly when a lower gradient is encountered. This often has a fan shape when seen from above, rather like the underwater equivalent – a delta.	7. **Gorge:** a very steep sided valley, produced when a river has cut down rapidly with very little widening caused by mass movement of material down the sides. Gorges are frequently formed in districts of hard limestone.
2. **Moraine:** Moraine is the badly sorted, eroded material transported and deposited by ice. This picture shows irregular "hummocky" moraine at left behind as the last ice in the valley melted.	8. **Cuesta (scarp slope and dip slope):** The feature is formed by resistant gritstone beds overlying softer siltstones, so erosion has resulted in the steep scarp slope. Earth movements titled the rocks to the right, and the gentle slope follows the dipping bedding planes.
3. **Limestone pavement:** This bare surface is formed by carbonation-solution weathering of limestone along a bedding plane. The deep furrows (grykes) and upstanding masses (clints) are formed when weathering has exploited weaknesses along joints in the limestone.	9. **Kettle Hole:** Scattered ponds such as this are common in areas of glacial deposits (i.e. till or "boulder clay"). They formed when a large mass of ice became trapped in the till and melted slowly, leaving a hollow which then filled up with rain water.
4. **Ria:** A former river valley became flooded by the sea, either when the land level dropped, or more likely, sea level rose. The level horizon suggests that the landscape consists of a dissected plateau.	10. **Col:** A col is a relatively shallow gap between hills, frequently used as routeways. When the gap is much deeper, involving less of a climb up one side and down the other, the gap is called a pass. (Sadly, the tree was felled in 2023)
5. **Sea cliffs and caves:** The strata appear to be of hard rocks such as slates, which have been tightly folded. Marine erosion has selected weakness in the rocks, with possible faulting visible in the photo above each cave. The rocks are strong enough to sustain vertical cliff faces.	11. **Blowhole:** The sea is just visible in the background. During storms, the air pressure against the cliffs increases as waves crash against them and a cave may form. Part of the cave roof may collapse along weaknesses (in this case joints or faults in the rocks) and the waves may force spray high into the air.
6. **Arête:** The central feature is the sharp ridge, known as an arête when it has been eroded on each side by valley glaciers. The right hand valley is notably U-shaped and the lake on the left is a tarn, occupying a glacially carved hollow.	12. **Fault scarp**: The cliff on the right has been eroded along the line of a major fault in the rocks, predominantly limestones. This is not immediately obvious from the photo and one would need some knowledge of the geology to be able to define the cliff as due to faulting.

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The back up

Title: Picturing landforms - 1

Subtitle: Visualise and draw landforms from a verbal description

Topic: Enhancing pupils' skills of description and interpretation using photographs of landforms

Age range of pupils: 16 years upwards

Time needed to complete activity: About 30 minutes, depending on depth of discussion

Pupil learning outcomes: Pupils can:
- examine photographs of landforms carefully and describe them intelligibly;
- listen carefully to a verbal description and interpret it in a drawing;
- enhance their observational skills as a prelude to field work.

Context: This could form a useful revision activity, once pupils have studied landforms. *Answers to the matching exercise are:*
A3, B6, C10, D1, E8, F11, G2, H12, I7, J5, K9, L4

Following up the activity:

- Ensure that pupils use the same careful description and interpretation approach to geology in the field.

Underlying principles:
- This strategy provides training in careful observation and interpretation of all relevant features.
- Being obliged to give a verbal description encourages careful observation, to ensure that clues are not missed.

Thinking skill development:
Verbal dexterity and metacognition are encouraged by the need to give intelligible verbal descriptions and to interpret from them**.** Applying the activity to the field situation is a bridging activity.

Resource list:
- Card sets of Photographs, Prompt Cards and Description Cards, cut out from those shown above.

Useful links:
See the table below for other Earthlearningidea activities in the "Picturing" series.

Source: Written by Peter Kennett of the Earthlearningidea Team.

Photos:
Photo **A** (Yorkshire Dales) and **E** (Stanage Edge, Sheffield) are by Peter Kennett.

All other photos are taken, with their reference numbers, from www.geograph.org.uk All these are marked "licensed for reuse under this Creative Commons Licence" Inserting the reference number into the website will bring up an Ordnance Survey map extract of the feature and extra information.

B. Striding Edge Helvellyn, Lake District, 3156975 © Alan O'Dowd
C. Hadrian's Wall at Sycamore Gap**,** Northumberland, 4593047, © Andrew Curtis
D. Meall Odhar, Cairngorm, Scotland, 3686052 © Richard Law
F. Poll Na Seantoine, Northern Ireland, 254756 © Bob Embleton
G. Deepdale Beck, Lake District, 3685983 © Michael Graham
H. Giggleswick, North Yorkshire, 5186830 © David Smith
I. Cheddar Gorge, Somerset, 6970598 © Mat Fascione
J. Laggantalluch Head Isle of Man, 2666631 © Douglas Wilcox
K. near Bogeney, Inverness**,** 1177843 © Dorothy Carse
L. Yealm Estuary, Devon, 3078963 © Derek Harper

Picturing………

Earthlearningidea has compiled a series of activities involving examination of photographs of geological interest and their careful verbal description to others. This table will be updated as fresh activities are added. All titles begin with: "Picturing……"

Title	Sub-title
Puzzle structures	Visualise and draw sedimentary structures from a verbal description
Trace fossils and other strange shapes	Visualise and draw trace fossils and sedimentary structures from a verbal description
Igneous rocks – 1	Visualise and draw igneous rocks from a verbal description
Igneous rocks – 2	Visualise and draw igneous rocks from a verbal description
Metamorphic rocks	Visualise and draw metamorphic rocks from a verbal description
Tectonic structures – 1 faulting	Visualise and draw fault structures from a verbal description
Tectonic structures – 2 folding	Visualise and draw fold structures from a verbal description
Minerals -1	Visualise and draw minerals from a verbal description
Minerals -2	Visualise and draw minerals from a verbal description
Fossils -1	Visualise and draw fossils from a verbal description
Fossils -2	Visualise and draw fossils from a verbal description
Landforms 1	Visualise and draw landforms from a verbal description
Landforms 2	Visualise and draw landforms from a verbal description