

© UKRIGS Education Project: Earth Science On-Site

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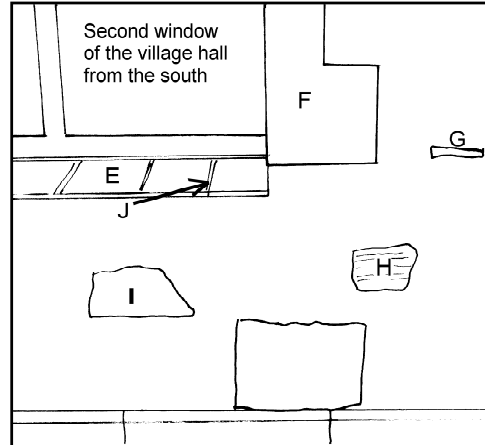
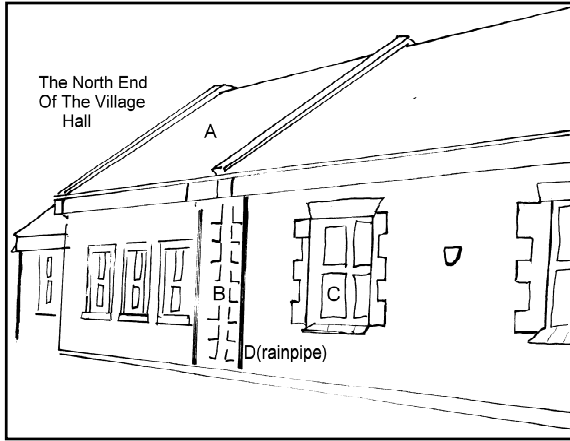
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PUPIL WORKSHEET 1

PUPIL NAME

Mungrisdale Recreation Room



Find a safe spot away from the traffic to study the material used to make the lettered features (**A** to **J**) on your part of the village recreation hall. Name each material and decide why it has been used in this way. (e.g. easy to shape, decorative, strong etc). Then fill in the table below with your answers.

	Name of material used (e.g. marble)	Important properties of that material. (e.g. strength, shape, porosity etc.)
A		
B		
C		
D		
E		
F		
G		
H		
I		
J		

What was the lime from the lime kiln behind the site of the village hall used for?

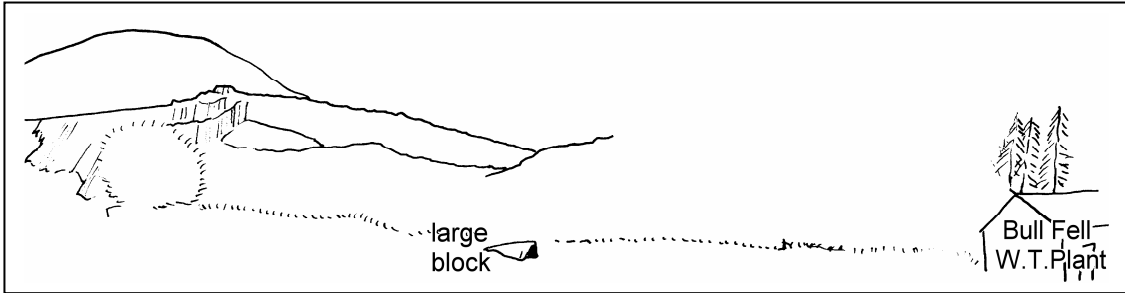
PUPIL WORKSHEET 2

PUPIL NAME

School House Quarry: On the sketch below:

- i) label the west and east ends of the sketch, then
- ii) draw in the dipping layers beyond the trees on the left.
- iii) Complete the skyline at the other end of the sketch, and then
- iv) label the following features you have observed at the quarry.

scree, marshy ground, folds, dyke, trees growing into the rock.



Fill in the table below to summarise the evidence for rock cycle events you have seen here

Rock cycle events	Evidence seen. (Circle the correct answer(s), then finish the last section in your own words).
i) Deposition:	Boulders / sand / clay was deposited.
ii) Deformation	Metamorphism / folding / tilting / dyke intrusion then occurred.
iii) Uplift, weathering and erosion.	The evidence for uplift weathering and erosion of these rocks is:

Mosedale Moss Quarry

Describe the rock at Mosedale Moss quarry:

What is the evidence for weathering of these rocks:
 Physical weathering:

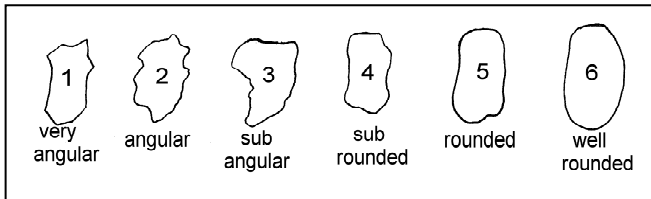
 Biological weathering:

 Chemical weathering:

PUPIL WORKSHEET 3

PUPIL NAME

Pebble Study: Stone Ends Quarry.



Roundness / Angularity scale for describing pebbles. Rounded and well rounded pebbles have been transported a lot by water. Angular ones haven't.

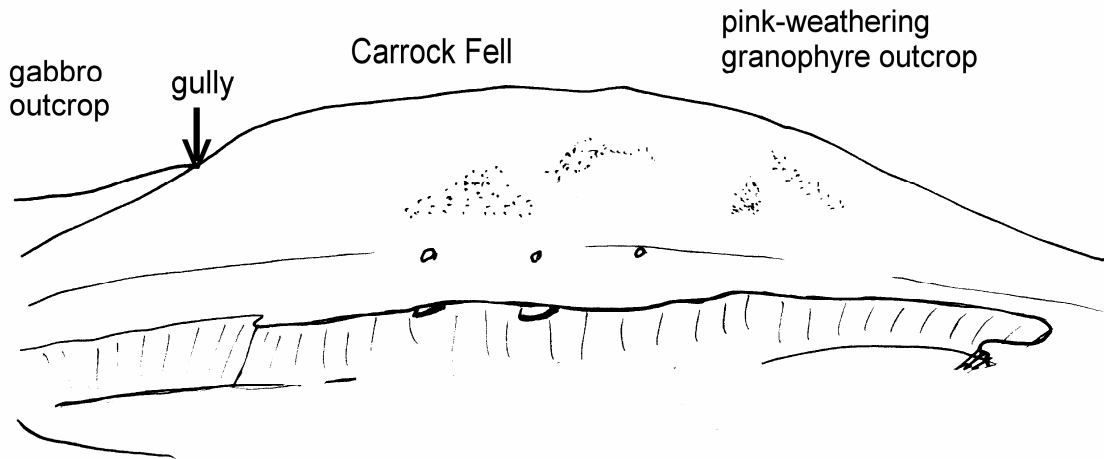
Are the fragments cemented or un-cemented together?		What rock types form the fragments? (Igneous, metamorphic or sedimentary)	
Are the pieces all the same size, or is there sand present?		Describe where the deposit is lying (e.g. Close to the valley side, on a slope, on the valley bottom, in a river bed.)	
Is the deposit bedded or un-bedded?		Explain how you think this deposit was formed? Remember to include weathering erosion and transport, followed by deposition and explain how these things happened.	
Are the fragments cemented or un-cemented together?			

Field Sketch of Stone Ends Quarry. (Stand at the end of the track to the quarry)

On the field sketch below label the following features:

- 1) Carrock Fell. the north and south ends of your sketch;
- 2) Mark on and label some of the active screes you can see on Carrock Fell;

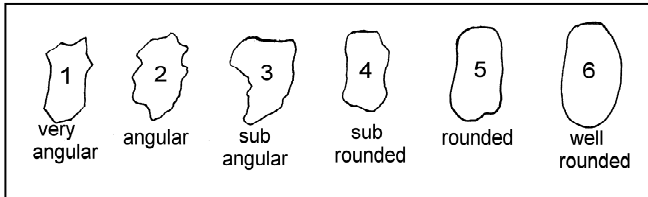
Draw in and label the face of the quarry



PUPIL WORKSHEET 4

PUPIL NAME

Pebble Study: Long Hill.



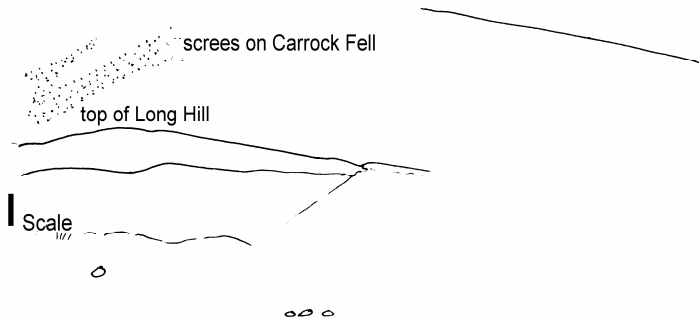
Roundness / Angularity scale for describing pebbles. Rounded and well rounded pebbles have been transported a lot by water. Angular ones haven't.

Are the fragments cemented together?		What rock types form the fragments? (Igneous, metamorphic sedimentary)	
Are the pieces all the same size, or is there sand present?		Describe where the deposit is lying (Close to the valley side, on a slope, on the valley bottom, in a river bed.)	
Is the deposit bedded or un-bedded? Are the fragments mainly rounded or angular? (Use a scale of 1 to 6)		Explain how you think this deposit was formed? Remember to include weathering erosion and transport, followed by deposition. How did these things happen?	
What length is the long axis of the largest rounded pebble you can find?	_____ mm		

Complete the right hand side of the sketch of Long Hill. Draw in any bedding and label the following features:

East and west sides of the sketch; the active quarry face; loose rounded pebbles; bedding; soil development over pebbles; old quarry face with vegetation.

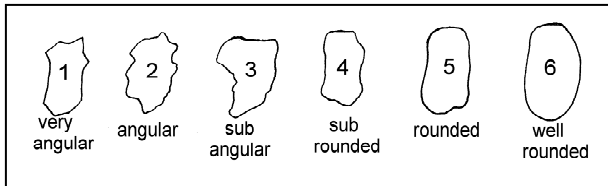
Write in the approximate scale on the scale bar in metres.



PUPIL WORKSHEET 5

PUPIL NAME

Pebble Study: Carrock Beck Ford



Roundness / Angularity scale for describing pebbles. Rounded and well rounded pebbles have been transported a lot by water. Angular ones haven't.

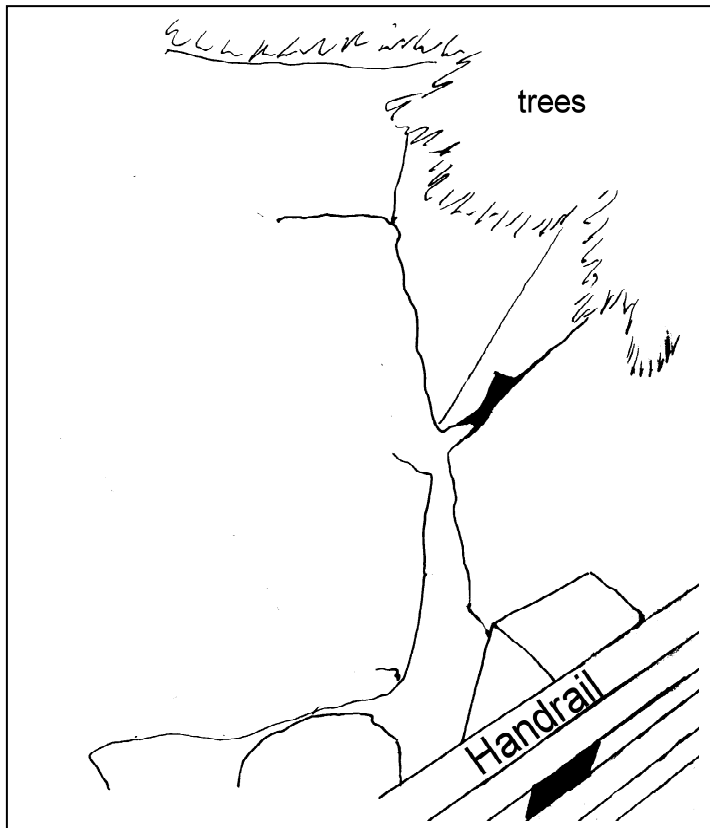
Are the fragments cemented together?		What rock types form the fragments? (Igneous, metamorphic sedimentary)	
Are the pieces all the same size, or is there sand present?		Describe where the deposit is lying. (Close to the valley side, on a slope, on the valley bottom, in a river bed.)	
Is the deposit bedded or un-bedded? Are the fragments mainly rounded or angular? (Use a scale of 1 to 6)		Explain how you think this deposit was formed? Remember to include weathering erosion and transport, followed by deposition. How did these things happen?	
What length is the long axis of the largest rounded pebble you can find?	_____ mm		

PUPIL WORKSHEET 6

PUPIL NAME

Rock Description at Howk Gorge

What is the colour of the rock?	
Is the rock bedded?	
Are the beds horizontal or not?	
Is the rock jointed?	
Is the rock made of grains or interlocking crystals?	
Is the rock porous?	
Does it contain fossils?	
Are the fossils broken (washed around)?	
Does the rock react with dilute HCl?	
The rock name is:	
In what environment was it probably formed?	



Complete the left side of the sketch of the gorge from the footbridge and label:

- an eroded joint;
- sharp bend in river, guided by joints.
- Draw in and label the fallen block and its bedding planes.

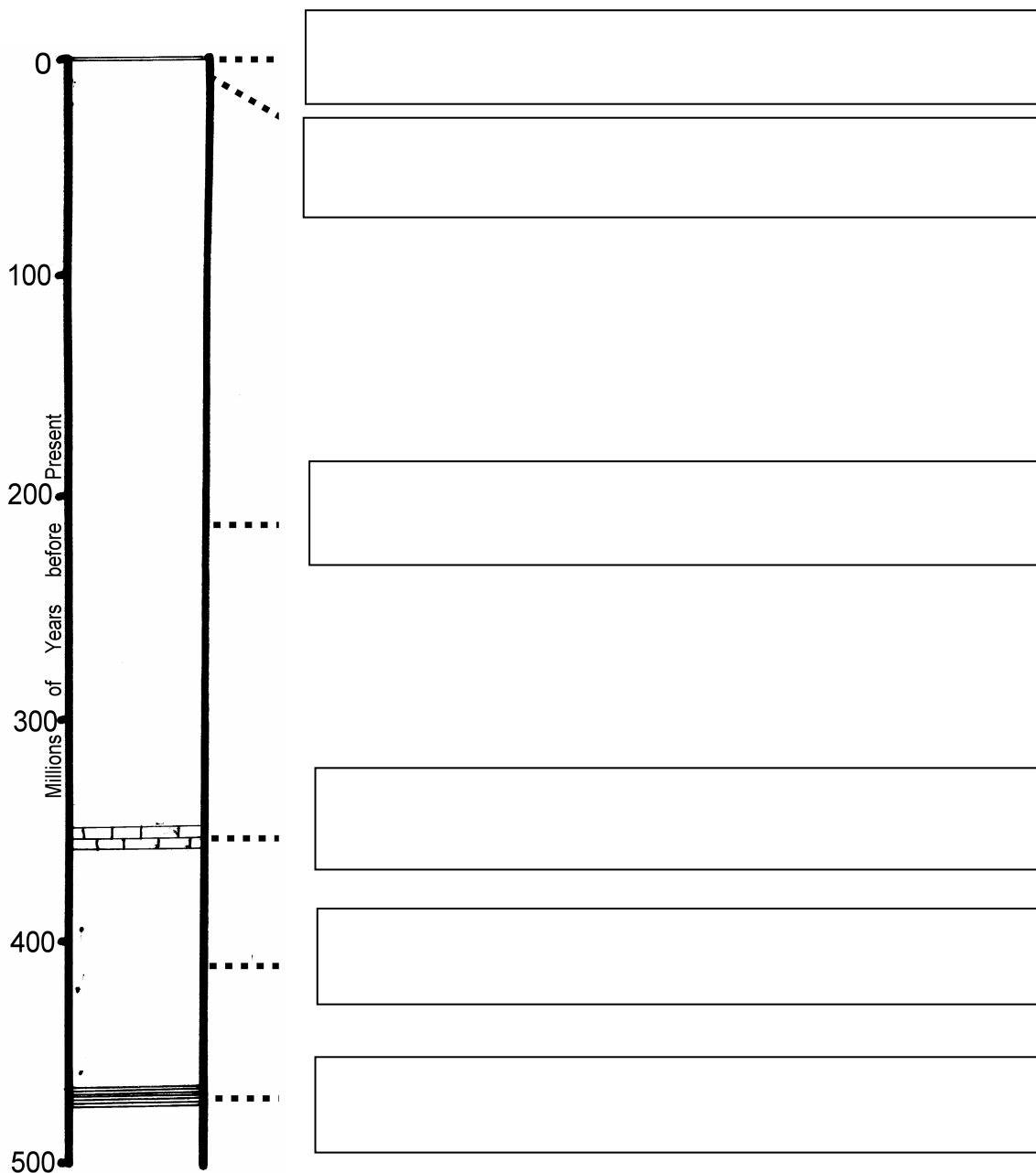
Estimate the depth and width of the gorge in metres:

Width _____

Depth _____

PUPIL WORKSHEET 7

PUPIL NAME



Write each of the sentences below in the correct box in the summary column above:

- 1) Deposition of limestone in warm shallow seas;
- 2) Deposition of mud in deeper seas;
- 3) Metamorphism of shales to slate, with dyke intrusion, uplift, tilting, weathering and erosion;
- 4) Glacial erosion and deposition of moraines and meltwater deposits;
- 5) Present day weathering and river erosion;
- 6) Uplift, weathering and erosion.

PUPIL WORKSHEET 8

PUPIL NAME

FIRST CYCLE: deposition. What can you say about the deposition of the older beds at School House Quarry? HINTS: Evidence for marine deposition; fossils, grain size etc.

FIRST CYCLE: uplift and tilting. What can you say about the changes to the beds at school House Quarry cause by plate tectonics? HINTS: folding, metamorphism, intrusions etc..

FIRST CYCLE: weathering and erosion. How long was the period of time between the deposition of the muds and the limestones?

SECOND CYCLE: deposition. What can you say about the deposition of the limestones of Howk Gorge? HINT: Fossil evidence

SECOND CYCLE: uplift and tilting. What can you say about the uplift and tilting of these limestones?

SECOND CYCLE: weathering and erosion. What can you say about more recent weathering and erosion? HINT: glaciers, rivers, soils and quarrying.