

© UKRIGS Education Project: Earth Science On-Site

Funded by Defra's Aggregates Levy Sustainability Fund, administered by English Nature.

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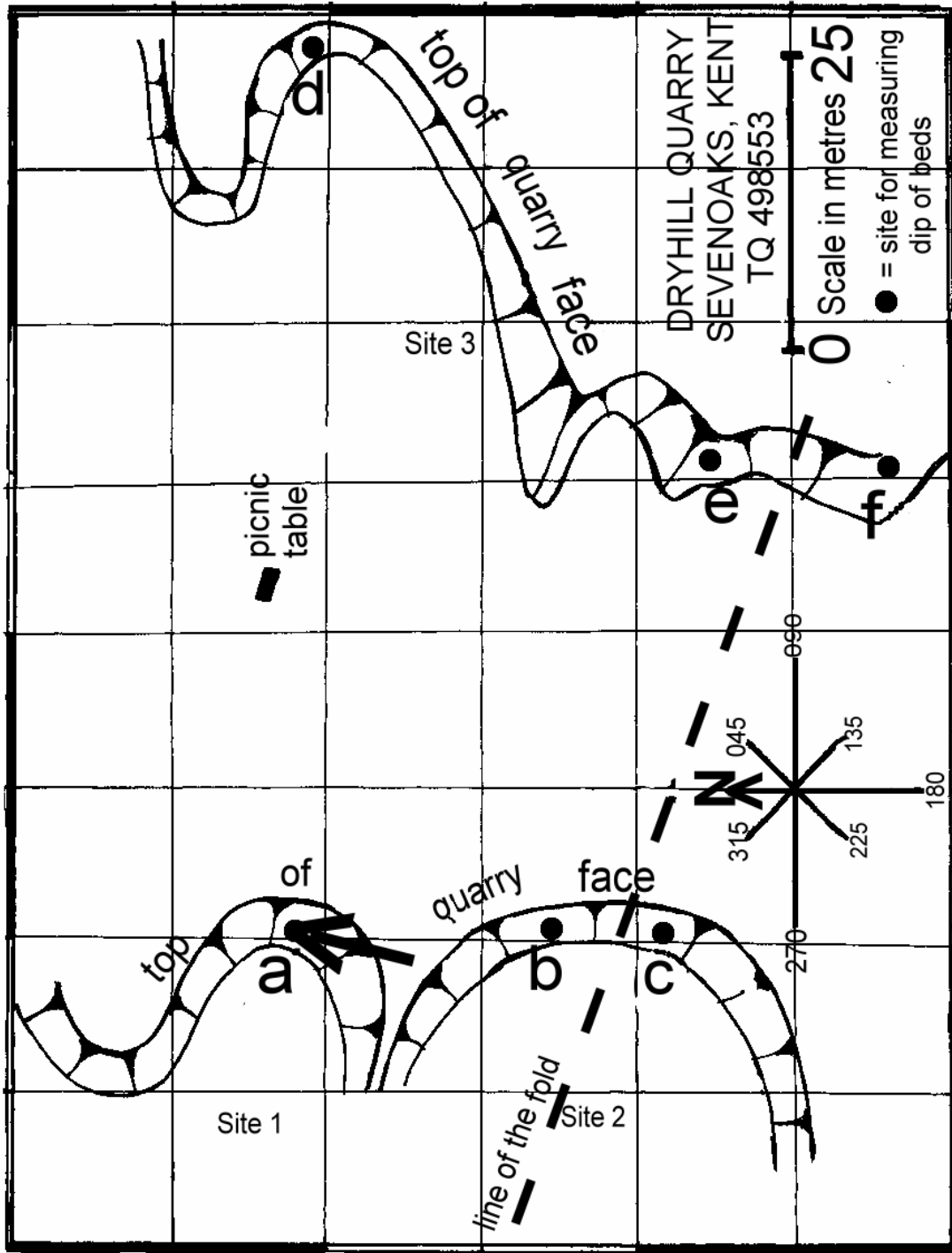
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Contact: info@ukrigs.org.uk

PUPIL WORKSHEET 1

Pupil Name:

Use the map below to draw on your measurements of dips, and the lines (axes) of any folds you find. (One fold axis and the dip at point "a" have already been done)

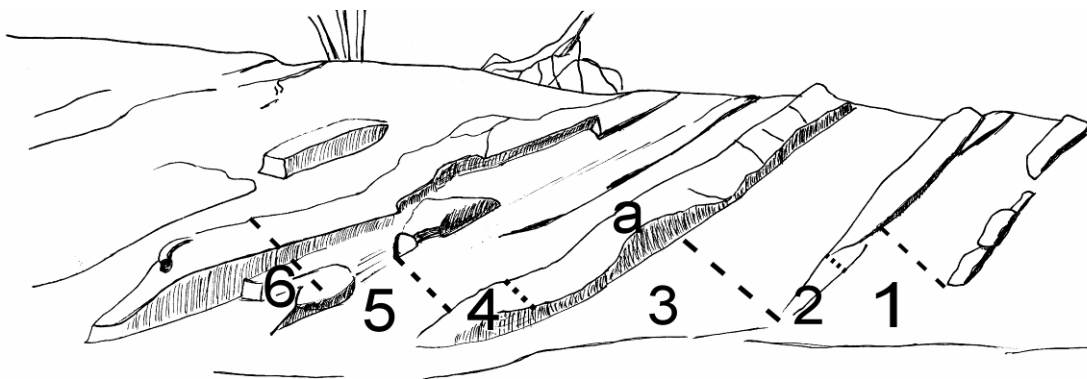


PUPIL WORKSHEET 2 (Site 1)

Pupil Name:

Collecting Evidence From Rocks: Record your observations and measurements from these rocks in the table below.

Use the dotted lines on the sketch below to guide you when measuring thickness at **right angles** to the bedding planes.



Bed	Thickness (cm)	Rock type	Other observations (e.g. colour, grain size, "fizz" with HCl, bedding planes, joints, fossils, more easily weathered, more resistant, etc)
Youngest 6			
5			
4			
3			
2			
1 Oldest			

Summarise below the things you can now say about these beds. (e.g. Deposited in lake, river, sea, or on land. Currents stronger or weaker. Amount of tilting, etc)

PUPIL WORKSHEET 2 (cont)

Pupil Name:

Predicting the Folds: These beds have been tilted by Earth forces so they now dip at _____ degrees in the direction of _____. This means that any anticline will be found to the _____ and any syncline will be found to the _____.

Label your field sketch at point "a" to show the direction of dip. (Notice, the dip arrow has already been drawn on the map, worksheet 1.)

Evidence For Weathering: Record your observations in the table below

Chemical	Biological	Physical

Why is this quarry here?:

What was there in this quarry that was worth all the hard digging?

What do you think this material was used for? _____

What Volume Was Removed? Can you estimate the height, width and depth of this small part of the quarry and multiply them to get the volume of rock that has been removed?

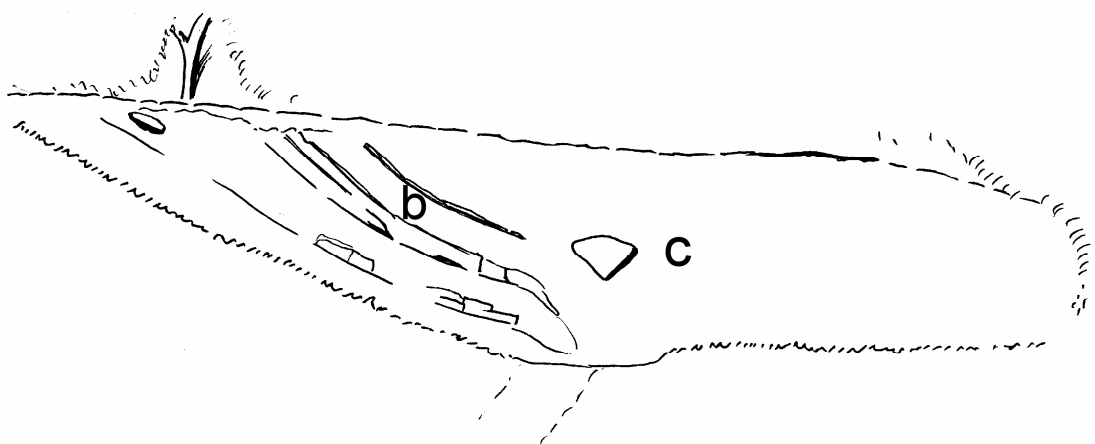
Hint: There is a scale on the map, and your teacher is about 1.8M tall. (Show your working below)

PUPIL WORKSHEET 3. (Site 2)

Pupil Name:

Field Sketch: Draw in the missing bedding planes on the outline sketch below. Then add the following labels:

Youngest bed, oldest bed, syncline, erosion of beds, soil formation, line of the fold axis.



Measure the dips at points "b" and "c" and draw the arrows to show these dips **on the map**, worksheet 1. Notice point "a" on the map has been done already.

Predicting where the fold goes:

These folds run forwards and backwards through the rocks. On the map the line (axis) of this fold has already been drawn.

Where do you think the line of the anticline runs? Use a ruler to draw the line (axis) of the anticline on the map.

Hunting the Anticline:

Now try to find it at site 3, and see how close you were.

Measure the dip of the rocks at point "d", and draw it as an arrow on the map on worksheet 1.

Walk around the exposure and explain why no syncline to the north (left) of site 3, can be seen.

PUPIL WORKSHEET 4 (Site 4)

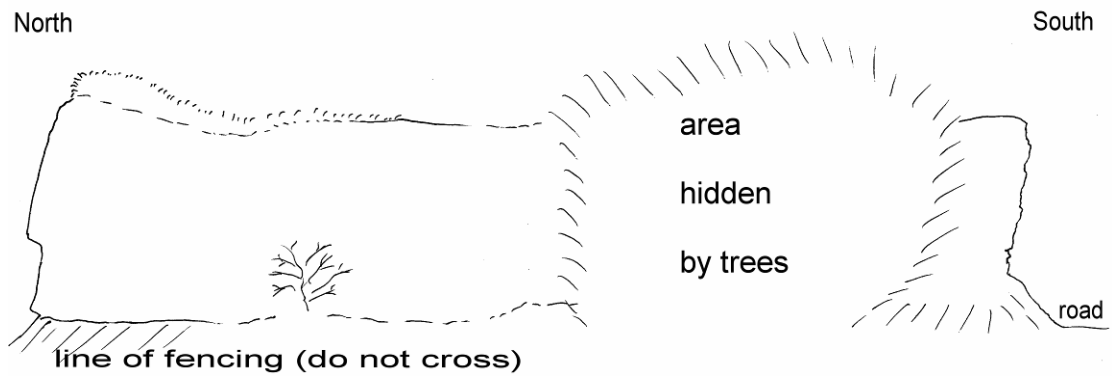
Pupil Name:

Investigating Site 4

Here you need to use your skills to investigate the rock face, where some of the evidence is hidden. (It is usual in Earth Science not to be able to see all of the evidence that you need).

Here are the problems. Part of the rock face is hidden by the vegetation and slipped soil weathered from the face, and you cannot cross the fence. You must observe carefully and see if you can work out if there is a fold, and what kind of a fold it is?

There is no need to climb on the exposure, but you will need to walk around the base of it, outside of the fence. Label the sketch below to show the evidence you discover in your investigations.



Write down any evidence you can find for a fold at Site 4 and label it on the sketch.

What kind of a fold do you think might be here? _____