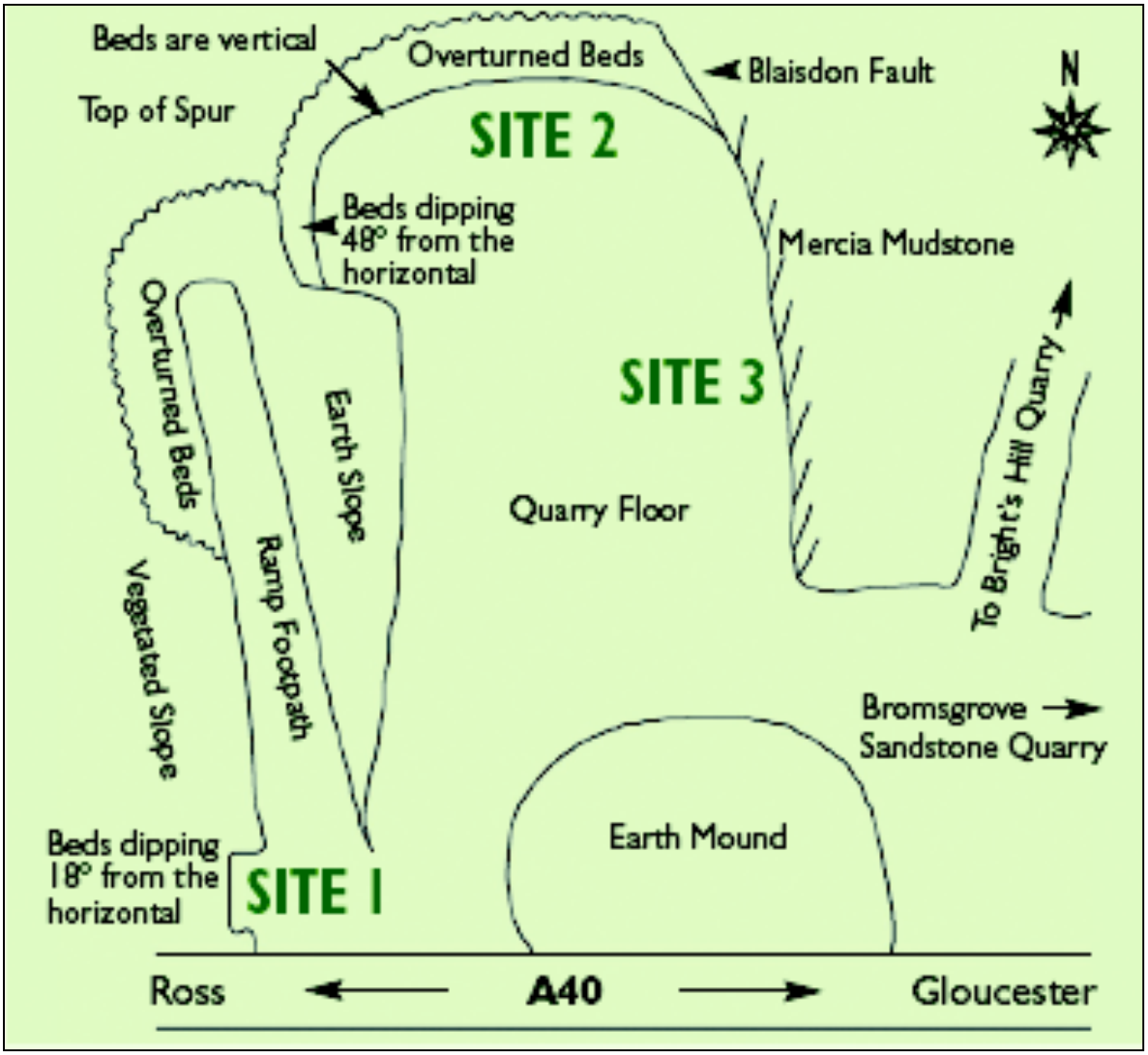
KS3 Worksheet: Teachers' Version

Map of Huntley Quarry Geological Reserve:



PUPIL NAME……

Use the following table to record your observations of the rocks you will see today in Huntley Quarry.

	At Site 2	At Site 3
Colour of rock	*Grey/green*	*Red/brown* *Patches of grey/green*
Are they bedded?	*Yes*	*No*
Horizontal or not?	*No*	
Are they jointed?	*No*	
How big are the grains? *(pupils can use grain size charts for this)*	*Fine to coarse*	*Very fine with larger fragments*
Are they hard or soft?	*Hard*	*Soft*
Do they contain fossils?	*No*	*No*
The rock name is:	*Siltstone and Sandstone*	*Mudstone*
In what environment was it probably formed?	*Partly Marine, but mainly deposited by rivers*	*In shallow water (most likely in a delta/estuary)*

Which of the two rocks is harder?
The rocks at Site 2.

Which of the two rocks would have been quarried for using as building stone and road stone?
The rocks at Site 2.
Explain your answer.
The rocks are harder and therefore more resistant to erosion. (Extension: Pupils to explain why there is a difference in hardness i.e. the rocks at Site 2 are cemented together better than those at Site 3. Rocks at Site 3 have been weathered and affected by water from a spring close by)

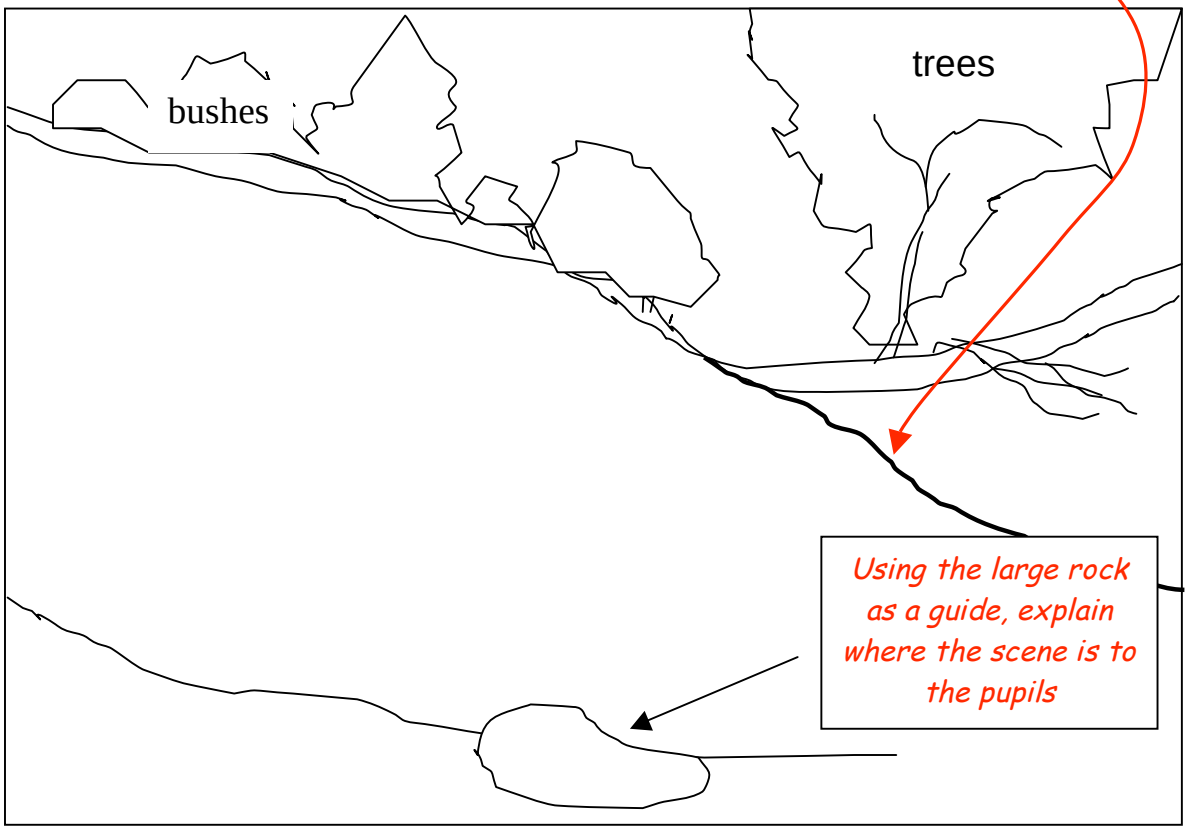
PUPIL NAME……

Sketch of Huntley Quarry at Site 2.

Complete the outline sketch of Site 2 at Huntley Quarry by drawing in the beds.
Identify and label the following on the sketch:

bedding plane **joint** **soil layer** **biological weathering by roots**

dipping beds of rock **fault** *(you will have to point this out)*



Folding:
Look at how the beds of rock are dipping (the bedding planes are not horizontal).
What do you think has happened to them?
They have been folded.

Pupils can measure the dip of the rocks, if required.

PUPIL NAME……

Faulting:

Look closely at the rocks close to the fault at Site 2. What can you see on the surface of these rocks?

Grooves/scratch marks

Make a sketch of these marks below.

These marks are called **striations**. Write the name on your sketch.

How do you think they might have they formed?

Striations are grooves that form on the surface of the rocks on either side of the fault. They are caused by the rocks rubbing against each other as they are moved. They can be used to show the direction of movement along the fault.

What is the name of the force that is acting on the surface of the rocks inside the fault?

Friction. Note: A good extension task is to ask pupils to add arrows to their sketch to show the directions of force acting on the rocks to cause a. the folding and b. the faulting.

PUPIL NAME……

Huntley Quarry Beds Rock Cycle:

Mark in the track for the rock beds at Huntley Quarry Site 2 through this rock cycle by drawing over the correct dotted arrows.