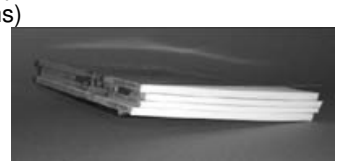
LOCALITY B: QUARRY FACE AT THE SOUTH EAST MARGIN OF THE QUARRY **20 minutes**

☛Take the group around the track to the SE corner of the quarry and take the track below the eastern face to Site B.
Stand on the track below the face, looking east and north at the quarry face. (See **Figure** 1. left)

Figure 1. The Quarry Face From Site B

Possible questions/tasks	**Possible answers (words in brackets indicate need or opportunity for further teaching)**
Q1 The rocks in this quarry face show layers. How many layers can you see here?	At least 4 layers
Q2 Describe the layering in the rocks in the quarry face.	Horizontal, varied thicknesses/some thin, some thick beds (The layers are called beds; layers are separated by bedding planes)
Q3 Which of the main groups of rocks occurs in this quarry? (Igneous, sedimentary or metamorphic).	Sedimentary
Q4 How can you tell? (Evidence - may need reminder) Was your prediction correct?	Accumulation of grains/pebbles Layered/bedded
Q5 Observe the rocks in the different beds. What differences do you see?	Weather/break up in different ways Some beds contain more pebbles Rocks show different colours Two different rock types (The two sedimentary rocks are **sandstone** and **conglomerate**)
Q6 Would these beds have been formed as horizontal beds?	Yes (roughly) **(Principle of Original Horizontality)** (The beds appear to be horizontal but they are tilted to the east by about 5 degrees. Demonstrate by holding up a tilted book and ask pupils to look at the appearance of the book from different directions) 

Q7 Now relate what we saw in the class demonstration to the rocks in the quarry face. Which beds were formed first (or laid down first) and are therefore the oldest in this quarry?	Lower beds formed first **(Principle of Superposition)**
Q8 Again relate to what we saw in the class demonstration to the layers in the quarry. How could these layers have been deposited?	Deposited by water.
Q9 Can you see any cracks across the layers?	Yes (The cracks are called **joints** or **fractures**)
Q10 Can you suggest how the fractures might have formed?	Most fractures probably formed during earth movements (**uplift**) (Take other suggestions e.g. quarry blasting)
T1 Estimate the height of the quarry here (Clue the average height of a teacher is 1.7m)	Estimated height = 3.5 to 4 metres
T2 Students asked to complete and label the field sketch	A completed worksheet is shown at the end of this document. nb. Sketch of quarry to show bed, bedding plane, joint, sandstone, conglomerate, oldest bed