

## ***Structural Geology***

### ***Way up***

***Way up cards***

**D**

***A4 or A5 cards with diagrams of sedimentary structures that can be used to determine younging direction are shown to the class as if the bed was in a vertical position. Students must decide whether the bed is younging to the left or right.***

***Way up photos***

***A I 2 min per photo***

***Students examine a series of photos to determine the younging direction.***

***Photos of cross bedded building stone***

***A I 3 min per photo***

***Students examine photos of building stones which show cross bedding to determine if they have been laid the right way up or up side down. (Whitby Abbey and Durham are good sources for photos).***

***Way up samples***

***A I 3 min per sample***

***Samples of ripple marks, Mudcracks, grading and cross bedding are laid out and students must determine if the samples are as they were deposited or up side down.***

***Cleavage as an indicator of overturned beds***      **D or P F 5 min**

***To show that if the cleavage has a shallower dip than the bedding and is in the same direction then the beds are overturned. Provide students with a diagram of an upright anticline and syncline with limbs dipping at 60° with vertical axial plain cleavage. Students turn the diagram slightly so that the folds are asymmetric and note the angle of dip of the bedding and cleavage where they are dipping in the same direction. Now turn the diagram further so that the folds are overturned. Now note again the angle of dip of the bedding and of the cleavage on the overturned limbs. This can also be shown using an OHP.***