Fieldwork help sheet - fossils

What to record in the field

1. The general type of fossil.
2. The size of the fossil.
3. Method of preservation.
4. Description of the fossil morphology.
5. Labelled sketches of the fossil(s) observed.
7. A note about photographs taken of the fossil(s).
8. Where you found the fossils
   - were they in situ or seen in a loose block?
   - what was the type of host rock?
   - were they evenly distributed or more abundant in some places in the rock?
   - were they articulated or disarticulated?
   - do they have a particular orientation?

What do the fossils tell you?

What types of fossils can you see?	Coral Brachiopod Bivalve Gastropod Crinoid Trace fossil Belemnite Ammonite Plant	Sediment deposited in a warm, shallow, marine environment. Sediment deposited in a shallow marine environment. Sediment deposited in water. (Could be marine or freshwater) Sediment deposited in water. (Could be marine or freshwater) Sediment deposited in a (shallow) marine environment. Sediment deposited on land or in water – greatest abundance in marine environment. Sediment deposited in a marine environment Sediment deposited in a marine environment Sediment probably deposited on or near land.
Are the fossils articulated or disarticulated? 	Articulated Disarticulated	Probably preserved in their life position Not much!
Are the fossils fragmented? Complete Fragmented 	Yes	Fragmented shells indicate evidence of transport or long period of time lying on the sediment surface. (Mechanical fragmentation caused by strong current activity; shell destruction caused by biological activity - borers; predators, algae)
Are the fossils well sorted?	Yes No	Indicates sustained transport by a steady current or winnowing by waves. May indicate rapid sedimentation. May represent *in situ* life assemblage
Are the shell valves convex up? 	Yes No	Usually indicates that before burial, valves were deposited from a horizontally flowing current and flipped over; this is the most stable position. Concave up valves may indicate that the valves settled out of suspension.
Are the shell cavities partially filled with sediment?	Yes	These geopetal structures show the original horizontal at the time of deposition.  e.g. Bivalve e.g. Crinoid
Do the fossils show a preferred orientation?	Yes – in life position Yes – not in life position	Took up this position in response to light, gravity, nutrient-supplying currents. Most likely to be orientated after death by wave or current action. *(Arrow shows the current direction)*