

# Sedimentary Rocks (p. 1 of 2)

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**Coquina** is composed almost entirely of transported, abraded and sorted shell fragments that are cemented together (often lightly) into a coherent rock.



**Limestone** can be chemically precipitated in marine setting, but most originated as the grains of calcium carbonate ( $\text{CaCO}_3$ ) skeletal material that accumulated as broken grains, were buried and recrystallized into the mineral calcite. Often fossils remain recognizable and such rock is termed **fossiferous limestone**.



Hard, resistant, except to acid rain

**Chalk** is extremely fine grained, soft carbonate rock formed from accumulation of tiny calcite plates (coccoliths) from marine algae species, usually in deep water where clastic sediment does not reach



Chalk cliffs of Dover, England south coast

# Clastic Sedimentary Rocks (p. 2 of 2)

Clastic sedimentary rocks are formed from the erosion of other rocks, the transport of erosional products (cobbles, sand grains, clay, etc.) , their deposition in air or water, and their burial and lithification into rocks. Fossils and fossil fragments can be transported with the “clasts” or, as in the case of mud/clay, fossils can settle into the sediment and become buried with it.

**Mudstones** and **shales** are made of silt- and clay-sized particles that are too small to see. The only difference between mudstone and shale is that mudstones break into blocky pieces whereas shales break into thin chips with roughly parallel tops and bottoms (i.e. shales are fissile). Both are made of ancient mud.

Therefore fossils in shale are often along the bedding planes where the chips break apart.

**Siltstones** are clastic sedimentary consist of grains that are visible but still very small.

**Sandstones** consist of grains that are on the order a 1-2 mm in size.

As grain size increases, the level of energy in the depositional environment increases and the capacity for fossil preservation decreases.



## SEDIMENT COMES IN ALL SIZES

256 mm and up	BOULDERS	GRAVEL
64-256 mm	COBBLES	
2-64 mm	PEBBLES	
0.0625-2 mm	SAND	
0.002-0.0625 mm	SILT	
0.002 mm and smaller	CLAY	

Color is not really diagnostic. Grain size is the key.