Sedimentary Rocks Cheat Sheet

by roobear via cheatography.com/171741/cs/36066/

Classification of Sedimentary Rocks

Detrital

made of solid sedimentary fragments (eg, mudstone, siltstone, sandstone, and conglomerate/breccia)

Clastic - mainly for detrital rocks with distinct sized fragments

Chemical

made of minerals taken into a solution and reprecipitated without help from organisms (eg, evaporites like rock salt and iron formations)

Crystalline - mainly for chemical rocks with interlocking crystals

Biochemical

made of minerals of which organisms played a role in turning to sediment (eg, limestone made of calcite from coral, chert made of a planktonic micro-organism)

Bioclastic - rocks with skeletal remains

Sedimentary Rock Textures

Clastic Texture Particle Size	Sediment Name	Rock Name
Coarse (over 2mm)	Gravel (rounded particles) Gravel (angular particles)	Conglomerate Breccia
Medium (1/16 to 2mm)	Sand (or Arkose if abundant feldspar is present)	Sandstone
Fine (1/256 to 1/16 mm)	Silt	Siltstone
Very fine (<1/256 mm)	Clay	Shale/-Mudstone

Sedimentary Facies

Lateral view of sedimentary rock reflects changes in past environments.

Characteristics of each facies reflect the environment in which it formed.

Different sediments often accumulate next to one another at the same time.

The merging of many facies is usually a gradual transition.

Sedimentary Glossary

Sedimentary rock - one of the 3 rock types formed by the accumulation and cementation of inorganic or organic particles.

Sedimentary Environments

Continental - Dominated by **erosion** and **deposition** associated with streams; in frigid environments, glaciers can move large volumes and sizes of sediment; streams are a dominant factor in moving sediment; wind deposits are well sorted

Transitional (shoreline) - quiet water conditions may form ***tidal flats***; higher energy water conditions tend to form beaches, spits, bars, and barrier islands; sheltered, ***brackish water*** conditions can form lagoons; deltas are common and form when river velocity slows at river/sea interface and sediment is deposited

Marine - Divided according to depth: *shallow* ≤200m - may include land derived sediment, skeletal debris, and coral reef accumulation; *deep* >200m: tiny skeletons rain down on sea floor and strong currents may move material from ***continental shelf*** to deeper environments

Tidal flat - shallow, muddy, part of shore

Brackish water - salinized freshwater

Continental shelf - part of a continent submerged under shallow water

Sedimentary Rock Types

Biological Sediment

organic matter or **biochemically** produced materials (eg, limestone).

Chemical Sedimentary Rock

precipitates from a fluid (eg, rock salt),

Siliciclastic made off clasts (sediments or fragments) compacted and cemented together. (eg, sandstone, conglomerate); also called **detrital**

Sedimentary Structures

Strata beds - Distinct layers of sedimentary rocks; formations include multiple individual strata

Bedding planes - horizontal cracks that separate strata

Surface impressions - mud cracks or trace fossils

Graded beds - rapid deposition through water; coarse settles first and progressively shrinks in grain size upward through a bed; commonly formed by turbidity currents

Cross-bedding - Inclined layers in relation to bed formed by movement.

Ripple marks - small waves of sand formed by moving water

Current ripple marks - stream currents (asymmetric)

Oscillation ripple marks - waves (symmetric)