



Rock type:	Igneous Rock
Formation Environment:	Underground deep under a continental volcano
Description:	100% visible, large, interlocking crystals -- Quartz, K-Feldspar, Muscovite, Biotite (light colored and low density)
Name:	Granite
Source of picture	K. Wiese



Rock type:	Igneous Rock
Formation Environment:	Underground deep under an oceanic volcano
Description:	100% visible crystals -- large, interlocking -- Plagioclase Feldspar, Pyroxene (dark colored and high density)
Name:	Gabbro
Source of picture	K. Wiese



Rock type:	Igneous Rock
Formation Environment:	Surface eruption of an oceanic volcano
Description:	Most crystals too small to see -- Dark colored and high density
Name:	Basalt
Source of picture	K. Wiese



Rock type:	Metamorphic Rock
Formation Environment:	Hydrothermal metamorphism of mantle rock under a seafloor spreading center
Description:	Mottled green color -- Smooth, slick sides - - Looks like squished watermelon seeds --
Name:	Serpentinite
Source of picture	K. Wiese



Rock type:	Minerals in chemically precipitated sedimentary rock
Formation Environment:	Shallow super-salty ponds in hot dry regions where evaporation rates are high
Description:	Transparent to translucent – soft enough to scratch with a fingernail.
Name:	Gypsum (Calcium Sulfate) -- Evaporite
Source of picture	K. Wiese



Rock type:	Minerals in chemically precipitated sedimentary rock
Formation Environment:	Shallow super-salty ponds in hot dry regions where evaporation rates are high
Description:	Clear cubes, tastes salty.
Name:	Halite (Sodium Chloride) – Evaporite
Source of picture	K. Wiese



Rock type:	Chemically precipitated sedimentary rock
Formation Environment:	Shallow super-salty ponds in hot dry regions where evaporation rates are high
Description:	Interlocking and layered crystals of calcite (precipitated from water) – 100% CaCO <sub>3</sub> composition (reacts with acid)
Name:	Evaporite
Source of picture	K. Wiese



Rock type:	Chemically precipitated sedimentary rock
Formation Environment:	Shallow super-salty ponds in hot dry regions where evaporation rates are high
Description:	Interlocking and layered crystals of calcite (precipitated from water) – 100% CaCO <sub>3</sub> composition (reacts with acid)
Name:	Evaporite
Source of picture	K. Wiese



Rock type:	Chemically precipitated sedimentary rock
Formation Environment:	Deep ocean floor under areas of upwelling (surface waters cool and nutrient rich), where silica shells from dead diatoms and/or radiolarian collect.
Description:	Chemical (Smooth and glassy) -- 100% SiO <sub>2</sub> composition (doesn't react with acid)
Name:	Chert
Source of picture	K. Wiese



Rock type:	Chemically precipitated sedimentary rock
Formation Environment:	Deep ocean floor under areas of upwelling (surface waters cool and nutrient rich), where silica shells from dead diatoms and/or radiolarian collect.
Description:	Chemical (Smooth and glassy) -- 100% SiO <sub>2</sub> composition (doesn't react with acid)
Name:	Chert
Source of picture	K. Wiese



Rock type:	Chemically precipitated sedimentary rock
Formation Environment:	Ocean floor shallower than 3500 m under areas of high biological activity where calcareous shells from dead forams and/or coccolithophores collect.
Description:	Chemical (Smooth and glassy) -- 100% CaCO <sub>3</sub> composition (reacts with acid)
Name:	Limestone
Source of picture	K. Wiese



Rock type:	Clastic sedimentary rock (rock fragments)
Formation Environment:	Ocean floor shallower under areas of low biological activity and/or high river input where clay particles collect.
Description:	Clastic Clay Minerals (from land) -- Mud-sized -- Gets sticky when wet (no reaction to acid)
Name:	Kaolinite (type of mudstone)
Source of picture	K. Wiese



Rock type:	Clastic sedimentary rock (shells)
Formation Environment:	Ocean floor shallower than 3500 m under areas of high biological activity where calcareous shells from dead forams and/or coccolithophores collect.
Description:	Clastic Shells -- 100% CaCO <sub>3</sub> composition (white -- reacts with acid) -- Mud-sized shells – loosely consolidated
Name:	Chalk
Source of picture	K. Wiese



Rock type:	Clastic sedimentary rock (shells)
Formation Environment:	Deep ocean floor under areas of upwelling (surface waters cool and nutrient rich), where silica shells from dead diatoms and/or radiolarian collect.
Description:	Clastic mud-sized shells -- 100% SiO <sub>2</sub> composition (white – doesn't react with acid) – loosely consolidated
Name:	Diatomite
Source of picture	K. Wiese



Rock type:	Clastic sedimentary rock (shells)
Formation Environment:	Shallow coral reef area – warm tropical waters.
Description:	Clastic gravel-sized shells -- 100% CaCO <sub>3</sub> composition (reacts with acid) – loosely consolidated
Name:	Coquina
Source of picture	K. Wiese



Rock type:	Clastic sedimentary rock (rock fragments)
Formation Environment:	Deep ocean floor or outer continental shelf or near-shore stillwater lagoon
Description:	Mud-sized rock and mineral fragments -- NOT white -- NOT white -- doesn't break in layers
Name:	Mudstone
Source of picture	K. Wiese



Rock type:	Clastic sedimentary rock (rock fragments)
Formation Environment:	Deep ocean floor or outer continental shelf or near-shore stillwater lagoon
Description:	Mud-sized rock and mineral fragments -- NOT white -- NOT white -- doesn't break in layers
Name:	Mudstone
Source of picture	K. Wiese



Rock type:	Clastic sedimentary rock (rock fragments)
Formation Environment:	Deep ocean floor or outer continental shelf or near-shore stillwater lagoon
Description:	Mud-sized rock and mineral fragments -- NOT white -- breaks in layers
Name:	Shale
Source of picture	K. Wiese



Rock type:	Clastic sedimentary rock (rock fragments)
Formation Environment:	Inner continental shelf, beach, or submarine canyon – could be shore sand dunes
Description:	Sand-sized rock and mineral fragments -- Grains are mostly quartz
Name:	Quartz Sandstone
Source of picture	K. Wiese



Rock type:	Clastic sedimentary rock (rock fragments)
Formation Environment:	Inner continental shelf, beach, or submarine canyon – could be shore sand dunes
Description:	Sand-sized rock and mineral fragments -- Grains are mostly rock fragments
Name:	Graywacke sandstone
Source of picture	K. Wiese



Rock type:	Clastic sedimentary rock (rock fragments)
Formation Environment:	Base of rock avalanche, rock fall, or landslide. Or along fault zone. Area where rocks shatter and there's no water to smooth the rough edges.
Description:	Gravel-, sand-, and mud-sized rock and mineral fragments – angular grains -- grains are a mixture of rock fragments and minerals
Name:	Breccia
Source of picture	K. Wiese



Rock type:	Clastic sedimentary rock (rock fragments)
Formation Environment:	Rocky headland with high wave action (to round the gravels) or base of cliff along river.
Description:	Gravel-, sand-, and mud-sized rock and mineral fragments – rounded grains -- grains are a mixture of rock fragments and minerals
Name:	Conglomerate
Source of picture	K. Wiese



Rock type:	Cosmogenous sediment
Formation Environment:	Material that has entered Earth's atmosphere, molten, and solidified while moving through the air (hence the streamlined shape). Originally part of Earth's crust -- ejected during an asteroid collision.
Description:	Glassy luster, rounded smooth black tear-dropped shape with pits (holes, cavities) on the outer surface.
Name:	Tektites
Source of picture	K. Wiese



Rock type:	Chemically precipitated sedimentary rock
Formation Environment:	Deep ocean floor where seawater is supersaturated with Mn
Description:	Black, rough spheres made of concentric spheres around central shape –
Name:	Manganese (Mn) Nodules
Source of picture	K. Wiese