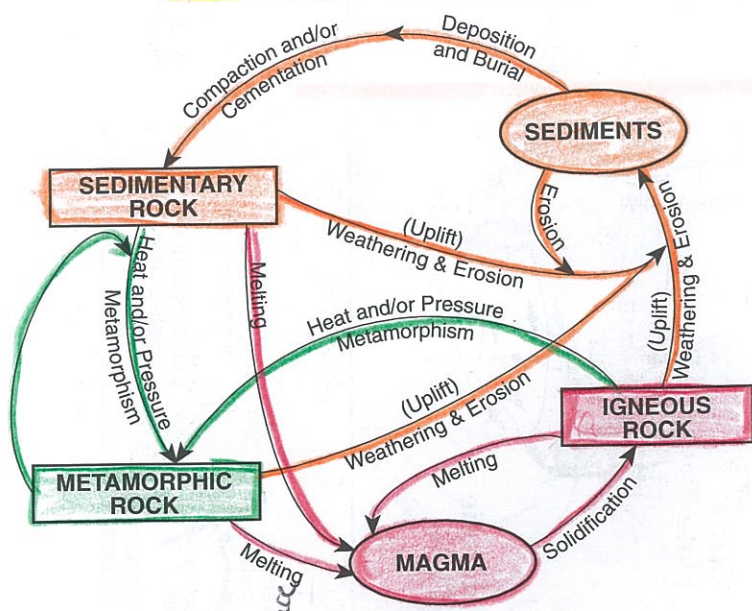
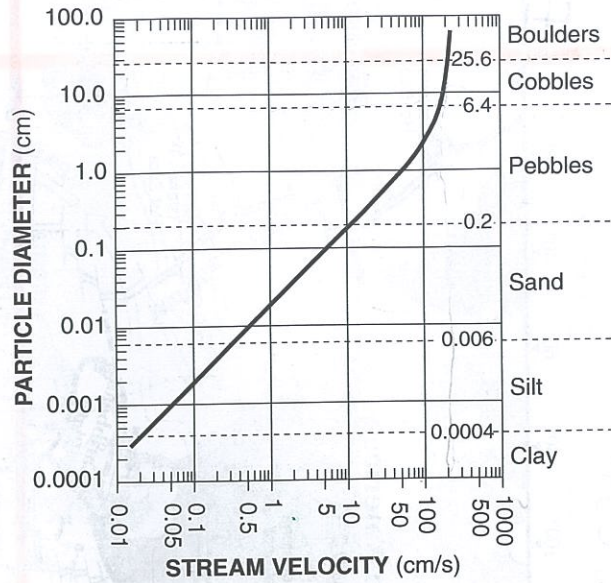


Rocks classified by HOW THEY FORM
Rock Cycle in Earth's Crust



Relationship of Transported Particle Size to Water Velocity

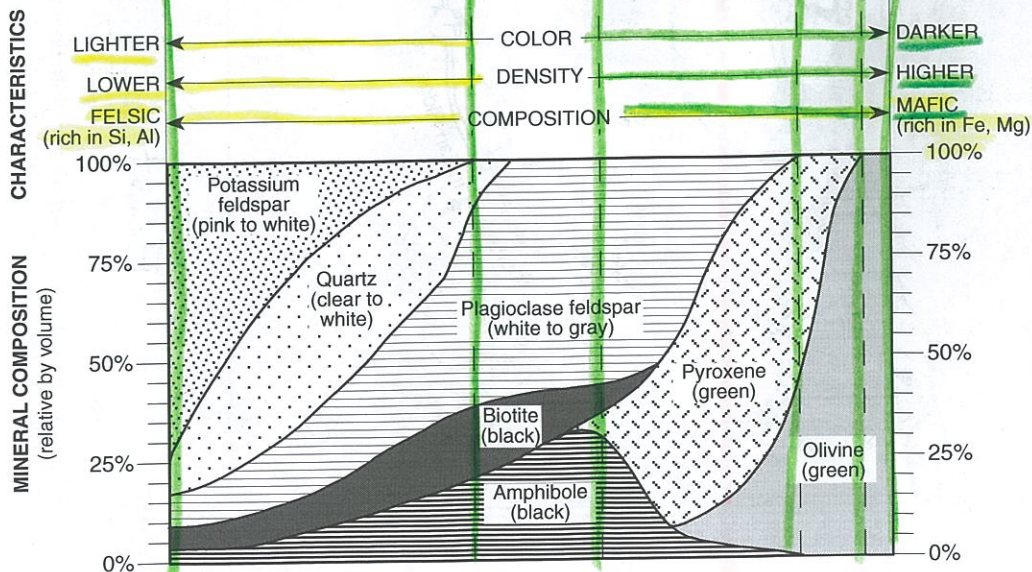


This generalized graph shows the water velocity needed to maintain, but not start, movement. Variations occur due to differences in particle density and shape.

Scheme for Igneous Rock Identification

ENVIRONMENT OF FORMATION	CRYSTAL SIZE		TEXTURE	
	Obsidian (usually appears black)	Basaltic glass	non-crystalline	Glassy
EXTRUSIVE (Volcanic)	Pumice	Scoria	less than 1 mm	Small Fine
	Vesicular rhyolite	Vesicular andesite		
INTRUSIVE (Plutonic)	Rhyolite	Andesite	1 mm to 10 mm	Coarse
	Basalt	Diabase		
	Granite	Diorite	10 mm or larger	Very coarse Large
	Pegmatite	Gabbro		
		Peridotite	Dunite	

Take a short time to cool = Fine or NO crystals
↑
Take a long time to cool = Large (coarse) crystals



Melting + Solidification

Scheme for Sedimentary Rock Identification

INORGANIC LAND-DERIVED SEDIMENTARY ROCKS					
TEXTURE	GRAIN SIZE	COMPOSITION	COMMENTS	ROCK NAME	MAP SYMBOL
Clastic (fragmental) Pieces cemented together	Pebbles, cobbles, and/or boulders embedded in sand, silt, and/or clay	Mostly quartz, feldspar, and clay minerals; may contain fragments of other rocks and minerals	Rounded fragments	Conglomerate	[Symbol]
			Angular fragments	Breccia	[Symbol]
	Sand (0.006 to 0.2 cm)		Fine to coarse	Sandstone	[Symbol]
	Silt (0.0004 to 0.006 cm)		Very fine grain	Siltstone	[Symbol]
	Clay (less than 0.0004 cm)	Compact; may split easily	Shale	[Symbol]	
CHEMICALLY AND/OR ORGANICALLY FORMED SEDIMENTARY ROCKS					
TEXTURE	GRAIN SIZE	COMPOSITION	COMMENTS	ROCK NAME	MAP SYMBOL
Crystalline	Fine to coarse crystals	Halite	Crystals from chemical precipitates and evaporites	Rock salt	[Symbol]
		Gypsum		Rock gypsum	[Symbol]
		Dolomite		Dolostone	[Symbol]
Crystalline or bioclastic	Microscopic to very coarse	Calcite	Precipitates of biologic origin or cemented shell fragments	Limestone	[Symbol]
Bioclastic		Carbon	Compacted plant remains	Bituminous coal	[Symbol]

Compaction + cementation

Scheme for Metamorphic Rock Identification

TEXTURE	GRAIN SIZE	COMPOSITION	TYPE OF METAMORPHISM	COMMENTS	ROCK NAME	MAP SYMBOL
FOLIATED MINERAL ALIGNMENT	Fine	MICA QUARTZ FELDSPAR AMPHIBOLE GARNET PYROXENE	Regional (Heat and pressure increases)	Low-grade metamorphism of shale	Slate	[Symbol]
	Fine to medium			Foliation surfaces shiny from microscopic mica crystals	Phyllite	[Symbol]
	Medium to coarse			Platy mica crystals visible from metamorphism of clay or feldspars	Schist	[Symbol]
NONFOLIATED	Fine	Carbon	Regional	Metamorphism of bituminous coal	Anthracite coal	[Symbol]
	Fine	Various minerals	Contact (heat)	Various rocks changed by heat from nearby magma/lava	Hornfels	[Symbol]
	Fine to coarse	Quartz	Regional or contact	Metamorphism of quartz sandstone	Quartzite	[Symbol]
		Calcite and/or dolomite		Metamorphism of limestone or dolostone	Marble	[Symbol]
	Coarse	Various minerals		Pebbles may be distorted or stretched	Metaconglomerate	[Symbol]

Heat + Pressure