Development of Barrovian Metamorphic Rocks From a Shale Parent

	Sedimentary Processes	Greenschist Facies ⇨		Amphibolite Facies ⇨	Granulite Facies ⇨	Igneous Processes
Composition	Clay SiO2 Fe oxides Organic matter	Very small crystals of chlorite	Larger chlorite crystals. Fine grained quartz and feldspar	Chlorite gone. Qtz, feldspar, mica common. New Minerals include: garnet, staurolite, kyanite, andalusite, etc.	Quartz, feldspar mica dominate. Other minerals break down.	Rock melts to produce Felsic magma.
Texture	Sedimentary bedding	Slatey cleavage Fine grained foliation leading to good, flat cleavage.	Slatey cleavage Coarser grained foliation due to enlarging chlorite crystals	Schistosity Minerals completely intermixed, but with micas (biotite or muscovite) all aligned.	Mineral Banding Quartz and feldspar migrate into separate bands from micas.	Migmatite Partial (fractional) melting. Highly deformed rock with swirls of granite within banded gneiss.
Distinguishing Features	Dull sound when struck; it "thunks"	Rings like a bell. More dense than shale. More luster than shales, less than phyllite.	Has definite sheen in reflected light. Foliation begins to produce an undulating surface.	Minerals large enough to be easily identified. Index minerals important: biotite ⇨ garnet ⇨ staurolite ⇨ kyanite ⇨ sillimanite	Defining bands of light and dark colored minerals	