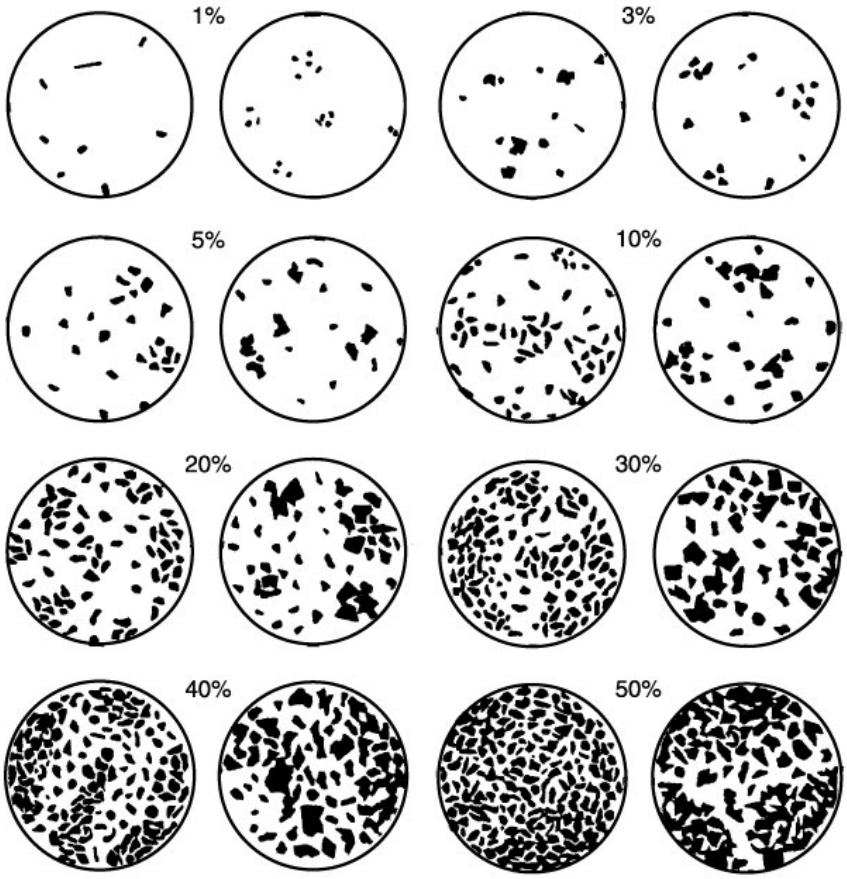
GEOS 315 Sedimentology/Stratigraphy
Fall 2011

Lab 4
Siliciclastic Rocks

THE STEPS – CLASSIFICATION

1. **What is the Grain Size – Gravel, sand, or Mud – use the appropriate chart?**
2. **What is the composition – What are the percentages of Quartz, Felsdspar, and Lithics (see chart for visual estimation)?**
3. **What is the texture – rounding, sorting, etc.?**
4. **What is the color?**
5. **Are there any important clasts (i.e. fossils) or structures?**
6. **What is the name of the Rock?**



Number	Color and texture	Components	Name	Environment/ Maturity	sketch

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Percentage clay-size constituents			0–32	33–65	66–100
Field adjective			Gritty	Loamy	Fat or slick
Nonindurated	Beds	Greater than 10 mm	Bedded silt	Bedded mud	Bedded claymud
	Laminae	Less than 10 mm	Laminated silt	Laminated mud	Laminated claymud
Indurated	Beds	Greater than 10 mm	Bedded siltstone	Mudstone	Claystone
	Laminae	Less than 10 mm	Laminated siltstone	Mudshale	Clayshale
Metamorphosed		Degree of metamorphism: Low → High	Quartz argillite	Argillite	
			Quartz slate	Slate	
			Phyllite and/or mica schist		

SOURCE: Potter et al., 1980.

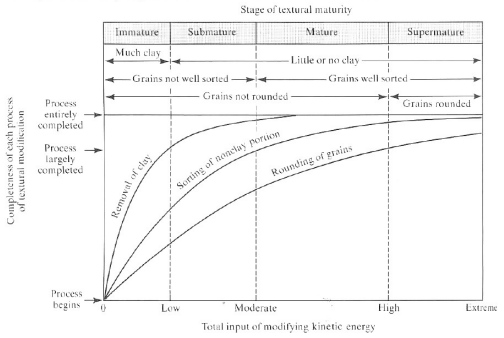


Figure 13–29
Textural maturity of sands as a function of the input of kinetic energy. [From R. L. Folk, 1951, *Jour. Sed. Petrology, 21*, Fig. 1.]

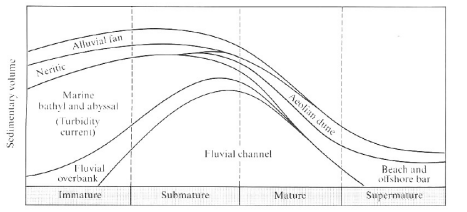
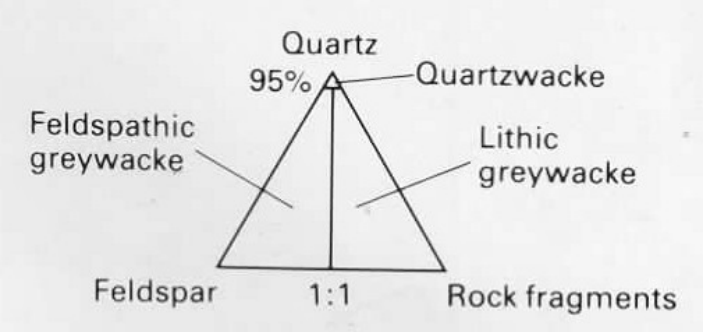
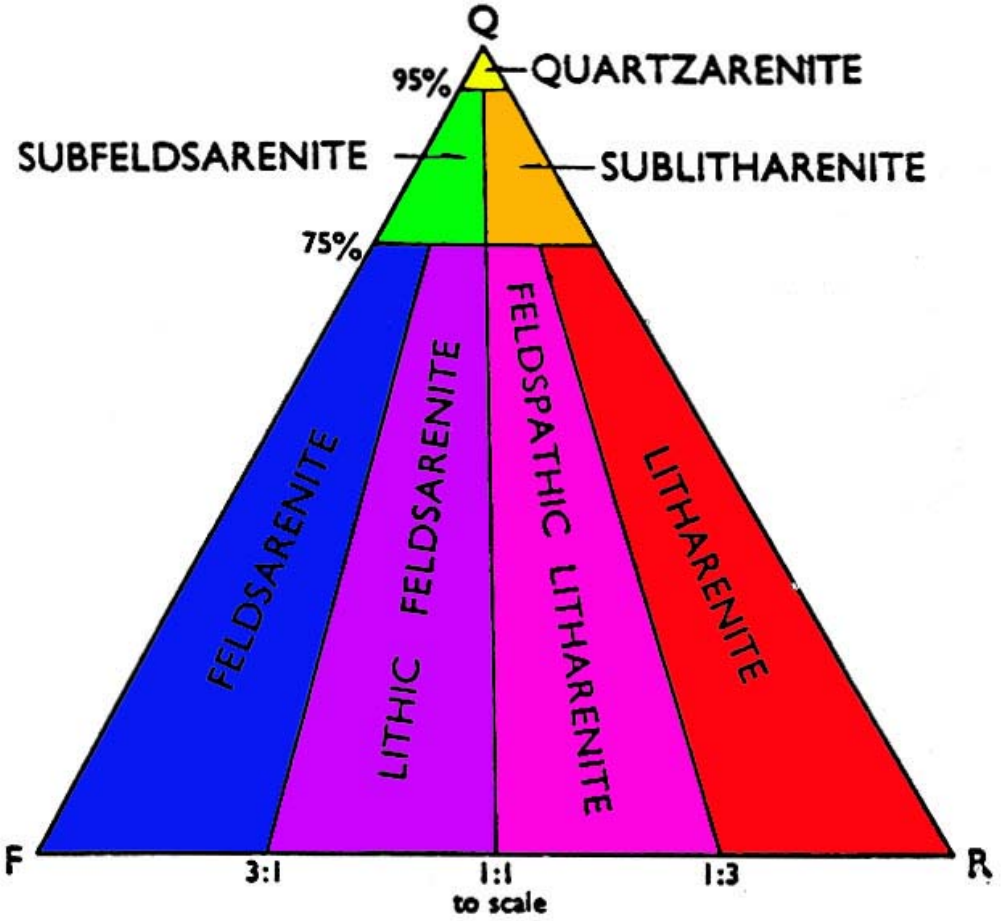


Figure 13–30
Relationship among sedimentary volumes, environments of deposition, and textural maturity. The diagram is qualitative; adequate numerical data do not exist.





Q = monocrystalline and polycrystalline quartz (excluding chert)
F = monocrystalline feldspar
R = rock fragments (igneous, metamorphic, and sedimentary, including chert.)

Primary arenite triangle.