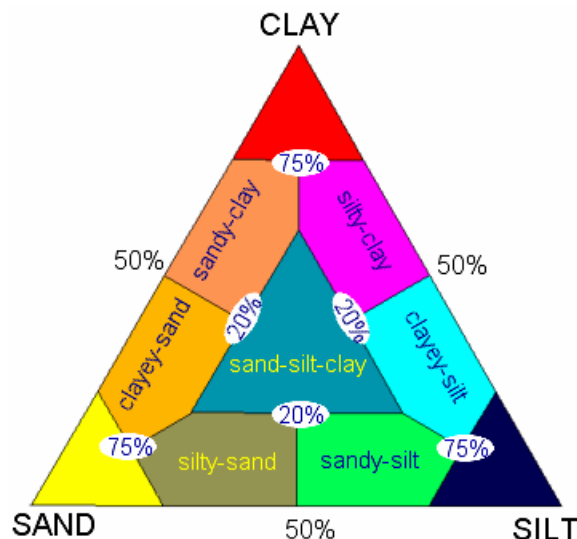


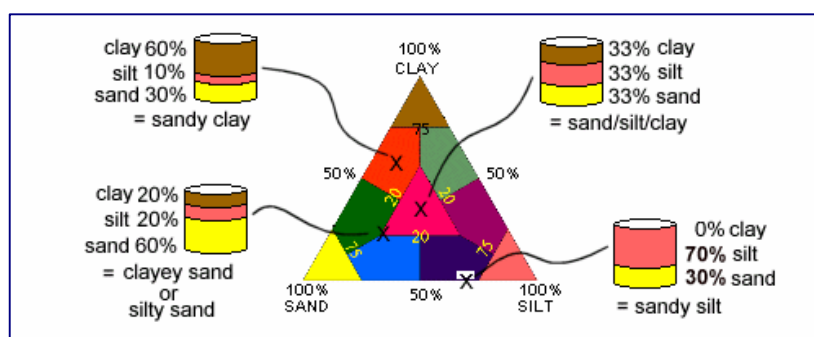
Shepard's Diagram

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Based on the proportions of sand-, silt- and clay-sized particles, the Chesapeake Bay sediments are classified according to Shepard's diagram. Shepard's diagram is an example of a ternary diagram - a device for graphing a three-component system summing to 100%. In this case, the components are the percentages of sand, silt, and clay comprising a sediment sample. Each sediment sample plots as a point within or along the sides of the diagram, depending on its specific grain size composition. A sample consisting entirely of one of the components, 100% sand for example, falls at the same-named apex. A sediment entirely lacking in one of the components falls along the side of the triangle opposite that apex. The rest fall somewhere in between.



To classify sediment samples, Shepard (1954) divided a ternary diagram into ten classes. Shepard's diagram follows the conventions of all ternary diagrams. For example, Shepard's "Clays" contain at least 75% clay-sized particles. "Silty Sands" and "Sandy Silts" contain no more than 20% clay-sized particles, and "Sand-Silt-Clays" contain at least 20% of each of the three components.

**Reference**

Shepard, F.P., 1954, Nomenclature based on sand-silt-clay ratios: *Journal of Sedimentary Petrology*, v. 24, p. 151-158.

For more information about Maryland earth science visit Maryland Geological Survey Online at <http://www.mgs.md.gov>.

For more information about Chesapeake Bay geology visit <http://www.mgs.md.gov/coastal/index.html>.