

The Education Program at the New Jersey Sea Grant Consortium

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EXPLORING BEACH SAND

Beaches are composed of materials deposited by waves. The composition and appearance of sand on different beaches depends on many things including geologic factors as well as natural and human forces.

If you were to look at sand from beaches worldwide, you would observe many differences, including color, texture and composition. For instance, if you traveled to Bermuda you would find the sand pink in color. The sand on some of the beaches on the Hawaiian Islands is black. If you found yourself walking the beaches in the Bahamas you would notice that the sand there is white.

Why do you think sand comes in so many different colors?

Sand is made of rocks, minerals, and shells that have been worn down into loose gritty particles through the process of erosion. The major minerals found in the sand on Sandy Hook beaches are:

1. Quartz Silicon Dioxide. Glass-like. Is clear to white when pure, but is often colored.
2. Feldspar Any one of a group of moderately hard, light colored minerals found in igneous rocks. Principally aluminosilicates of potassium, sodium and calcium.
3. Magnetite An oxide of iron appearing in sand as dark specks; its presence can be verified through the use of a magnet because of the mineral's iron content.

The sand along the New Jersey shore comes from the mountains of the northeastern states. Rock is broken into pieces by the actions of water and wind and carried by rivers and streams to the ocean to create sand deposits. These sand deposits are then carried up and down the coast by the longshore current to form the beaches that you see.

Compare and contrast four different sand samples.



The New Jersey Sea Grant Consortium (NJS GC) is an affiliation of colleges, universities and other groups dedicated to advancing knowledge and stewardship of New Jersey's marine and coastal environment. NJS GC meets its mission through its innovative research, education and outreach programs. For more information about NJS GC, visit njseagrants.org.