Core Sampling

Materials
1 bag of dark sand
1 bag of light sand
1 bag of top soil
1 bag of small gravel
10 clear plastic straws
1 clear plastic container
water

Preparation
Fill the plastic container with several layers of the sand, gravel, and topsoil, then dampen with water.

Procedure
1. Give a straw to one of the students and have him/her push it straight down through all of the layers in the container, then place a finger tightly over the top of the straw and withdraw it from the container. Have the
students observe the layers in the core sample. Allow several students to repeat the process in different places in the container.
2. Explain to the students that core sampling is one way that geologists determine the geologic formation of rocks and sediment when exploring for oil and gas.

Rock Formation
The field of stratigraphy is the study of rock layers (or strata) to determine the type of rock formation, the age of the layers, the radioactivity of the formations and other information to determine the composition, origin and location of rock strata. Compiling information on rock formations is an important part of oil and gas exploration. Different types of rock have varying potential for holding oil or gas in a reservoir. There are three different types of rock: sedimentary, metamorphic and igneous; every rock fits into one of these three categories.

Metamorphic rock began as either sedimentary or igneous rock that was exposed to increased pressure and heat that eventually transformed it into metamorphic rock. Usually metamorphic rock is found near other types of rock. It is also usually denser than sedimentary rock since heat and pressure have removed many of the pores from it.

Igneous rock is formed from magma, or liquid rock, that exists in the earth's core. Sometimes where cracks or faults occur in the earth's crust, magma can seep up and cool, creating igneous rock. Igneous rock can also be created when magma makes its way to the earth's surface in the form of lava. Igneous rock is usually the densest of the three types.

Sedimentary rock is formed by the build- up of layers of sand and sediment over time. These layers are created as materials on the earth's surface are eroded and washed downstream. Over thousands of years, these particles are compressed to create rock. Most oil is found in sedimentary rock. Since sedimentary rock often has many pores, it is an ideal formation to contain oil.