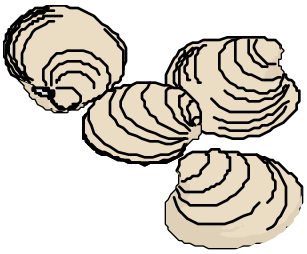
WHAT IS LIMESTONE?



Objective:
Students will investigate how limestone forms.

Materials:
- Several seashells (some whole, some broken, some crushed)
- Piece of limestone with an imbedded brachiopod fossil

Procedure:
1. Ask students, "What is limestone?" What type of rock is limestone? Review the three different rock types. (Igneous, metamorphic, and sedimentary.) How are sedimentary rocks formed? (Deposited in a body of water.)
2. Ask the students if they have ever collected seashells on a beach. Where do the shells come from? (Animals in the water.) What are these shells made of? (Calcium carbonate.) Discuss the seas that once covered many parts of the United States. Shelled animals also lived in these ancient seas. Show the students several examples of shells and pass them around.
3. Have the students ever found broken seashells? What might cause them to break? Discuss the force of waves in the ocean. Show the students several examples of broken shells. Some are crushed into a fine powder. What will happen to the shells or shell pieces over time? Where will they go? (They settle to the ocean floor.)
4. Over a long period of time (thousands or millions of years) the shells and shell pieces at the bottom of the ocean will pile up into thick layers. Some of these layers can be thousands of feet thick.
5. How would it feel to be a shell at the bottom of the pile? How heavy would the shells above you be? Discuss football players and how the person on the bottom of a pile-up feels. Have the students create a human pyramid and have the people at the bottom discuss what it felt like. How pressure from the weight of the shells causes the shells to cement together over time. The resulting rock is limestone, composed of calcium carbonate.
6. Show the students the piece of limestone. What do they see imbedded in the rock? Brachiopod fossils are found in limestone wherever the shells were not completely broken.
7. What might cause an ocean to recede? Discuss freezing, (and water being contained in glaciers) changes in topography, (such as uplift), filling with sediments and evaporation. What will be left behind when the ocean dries up or moves? A bed of limestone.