

Create a Fossil

Name: _____

Period: _____

BACKGROUND INFORMATION

Fossils are the direct evidence of past life. They are the tools around which geologists and paleontologists reconstruct the history of the earth. They are found in sedimentary rocks. This type of rock is the result of the consolidation of sediment that has accumulated in layers. These depositional environments come from lake bottoms, river bottoms, river sandbars, beaches, and oceans. Some sediments result from weathering rocks, others originate from tissues and bones of plants and animals. It is within the depositional environment that plants and animals may become fossilized.

There are three prerequisites that must be met before organic material can be preserved: (1) Organisms must contain hard parts such as bones, teeth, cartilage, or shells. (2) The organic material must be buried quickly in an oxygen-free environment protected from scavengers. (3) Conditions after burial must be favorable as the effects of heat and pressure that produce sedimentary rock may alter the composition and appearance of a potential fossil.

There are several types of fossils.

1. **Petrification** occurs when parts of the organism are saturated with minerals. Highly porous materials such as wood and bone are often petrified.
2. **Carbonization** occurs when the weight of surrounding sediments squeezes out the water and gas and leaves a residue of carbon (imprint).
3. **Trace Fossils** – These are the most common fossils. They are impressions left in the sediment. A trace fossil is preserved when mud or dirt that was disturbed by an organism hardens and keeps its shape. There are two main kinds of trace fossils:
Mold: forms when something is pressed into soft mud and then removed by decomposition or pulled out, leaving an impression of the object.
Cast: created when a mold fills up with sediment like mud, sand or volcanic ash.

The rocks of Central New York began as sediments in a shallow tropical sea. Today, fossils of marine shell life are abundant, and the remains of bryozoans, brachiopods, trilobites, pelecypod (clams), gastropods (snails), and crinoids (sea lilies) are easily found.

A fossil that is always found in the same rock layer is called an index fossil. The New York State index fossil is *Eurypterus remipes*. By finding this fossil the paleontologist can date the rock strata to the Silurian period.

MATERIALS NEEDED

- Enough dough for each student to make a one-inch ball. Recipe for fossil dough (below).
- 4" X 4" square of wax paper for each fossil.
- Leaf, shell, or other material from which to make an imprint / fossil.
- Paint and paint brush

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PROCEDURE

1. On the wax paper, press the dough ball into a disc. The disk should be at least an 1/2 inch larger than the item you are using to make the fossil..
2. Select a piece of material (shell, bone, leaf, etc.) from which to make an imprint / fossil.
5. Press the selected material into the dough. Remove the material, leaving an imprint. Set aside to dry.
6. When dry, may be painted.

Recipes for Fossil Dough

"ROUGH LIMESTONE":

This recipe will produce a "rock" which is rough in texture. It is preferred for making fossil impressions of shells or acorns.

MIX:

2 cups flour
1 cup salt
1 tablespoon vegetable oil

1 teaspoon alum
½ - 1 cup water

DIRECTIONS:

1. Combine first four ingredients. Add a small amount of water at a time until the mixture is the consistency of bread dough. Knead until smooth.
2. Shape into balls one-inch in diameter, one for each student.
3. Store in an airtight container or plastic bag until needed. For long-term storage, keep in the refrigerator.

Yield: 25-30 one-inch balls

"SMOOTH LIMESTONE":

This recipe will produce a "rock" which is white and smooth. It is preferred for making fossil impressions of leaves.

MIX:

1 cup cornstarch
2 cups baking soda (1 lb. Box)

1-¼ cups cold water

DIRECTIONS:

1. Stir all ingredients in a saucepan over medium heat for about 4 minutes until the mixture thickens to moist mashed potato consistency. Remove from the heat, turn out onto a plate and cover with a damp cloth until cool. Knead as you would dough.
2. Shape into balls, one for each student.
3. Store in the refrigerator in an airtight container or plastic bag until needed.

Yield: 25-30 one-inch balls