**Formation of Fossil Molds and Casts**

**Original lab by Mrs. Kaitlyn McClintock, Hanover Area School District, 2008**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 **Ammonite Mold and Cast Trilobite Mold and Cast Unknown Cast and Mold**

**Purpose**: In this lab activity, you will demonstrate how fossil molds and fossil casts are formed.

**Materials**: ½ cup of plaster of Paris per student or group, sea shell, ½ stick of modeling clay per

 student or group, empty 8 oz. cup, 1 plastic spoon, school glue, 2 rubber bands, wooden

 popsicle stick, paper or plastic plate

**Safety:** Wear goggles and gloves with plaster of Paris, or just do clay/Play Doh portion of lab. Wash hands with soap for twenty seconds at end of activity.

**Procedures: Day One…**

1. Take the piece of clay and divide it into two equal pieces. Flatten each piece like a pancake.

2. Choose a sea shell “fossil.”

3. Place the fossil between both pieces of clay and press down firmly from the top. As this is done, the

 sea shell will make deep impressions in the clay.

4. Pull the two pieces of clay apart and retrieve the sea shell.

5. Fill in the information in Part A of the Data-Analysis section of the lab.

6. Pour about half of your plaster of Paris into the empty cup. Add tap water slowly, while mixing with

 the spoon, until the mixture is the consistency of pancake batter {smooth (no lumps)

 and medium in thickness}. You may need to add more plaster of Paris to achieve a workable

 consistency. It should be able to flow into the fossil molds.

7. Pour the plaster of Paris mixture into both fossil molds that you have previously made. Fill each until

 they are level with the top of the clay. Use a popsicle stick to smooth the surface of the plaster of

 Paris.

8. Place your clay samples on the plate in a designated area and allow to dry until the next day. Make

 sure your initials are in the clay or on the plate.

 **Day Two…**

9. Retrieve your clay.

10. **Carefully** remove the hardened plaster of Paris from the clay. Cut off any jagged edges from the

 sides of both pieces.

11. Glue the two pieces together in the center; you may need to wrap a few rubber bands around them

 to hold in place to dry.

12. Examine your hardened plaster of Paris model, and fill in the information in Part B of the

 Data-Analysis section.

**Data-Analysis Section:**

**Part A**

1. After you removed the plaster of Paris sea shell from the clay, the deep impressions left

 behind in the clay are examples of fossil \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2. In the boxes below, make sketches of both of your clay samples.

 **Top half of clay Bottom half of clay**

3. Upon examination of both the top and bottom impressions in the clay, are they close to an exact

 replica of the original fossil model you pushed into the clay? \_\_\_\_\_\_\_\_\_

4. In nature, what originally happens to the real bone, tooth, or sea shell that has been buried in

 sediments? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. What happens to the sediments over time? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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6. Would all body parts fossilize? \_\_\_\_\_\_\_\_\_\_\_\_

7. Explain your answer to # 7 and give a few examples.

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**Part B**

8. The two pieces of plaster of Paris that you glued together represent what type of fossil commonly

 found in fossil beds? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. In the boxes below, make two sketches. One sketch is of the original fossil model, while the other is

 your plaster cast.

 **Fossil Model Plaster of Paris cast**

10. How closely does your plaster of Paris cast match the original fossil you used?

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11. Using the information obtained while doing this lab, explain how fossil molds and casts form in

 nature. You may also use the Internet or reference books for help with your answer.

A. Fossil molds : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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B. Fossil casts: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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