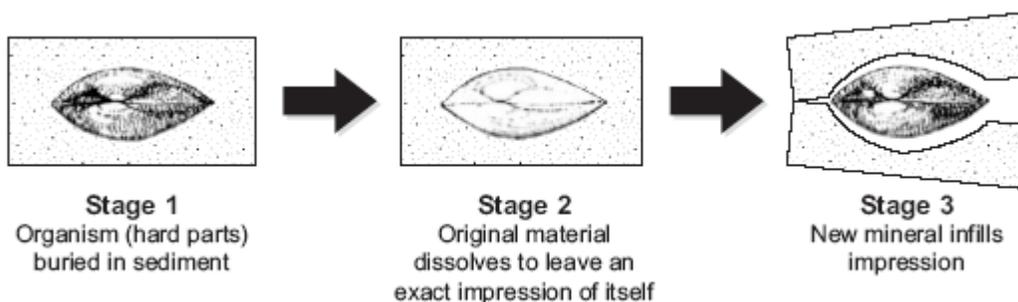


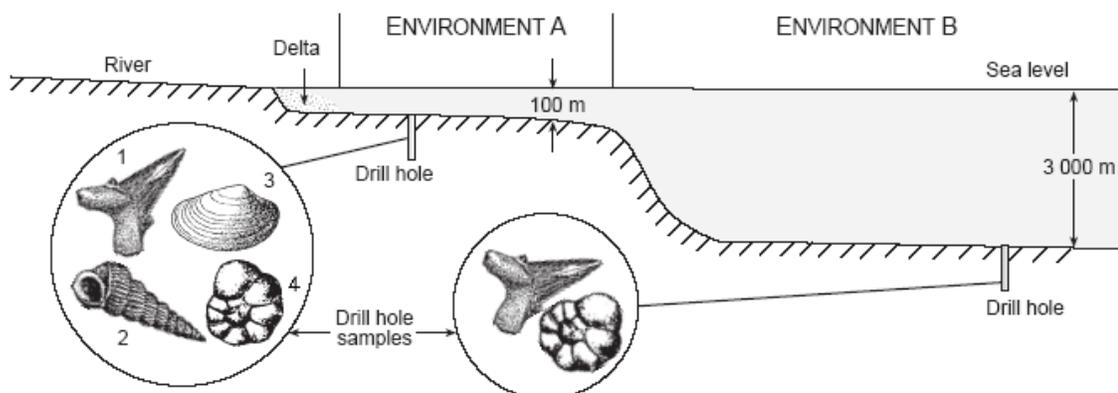
GEOLOGY 12
THE FOSSIL RECORD WORKSHEET 2

Refer to your handouts and notes to answer the following questions.

1.
 - a) Differentiate between "hard" and "soft" parts of an organism.
 - b) List some necessary conditions required for fossilization of an organism to take place.
2.
 - a) Speculate on why unaltered fossils are so rare.
 - b) List three conditions under which such fossils might be produced.
 - c) Why is it more likely that fossil remains will be recrystallized rather than remain unaltered?
3. The diagram below shows a sequence of fossil formation.



- a) At which stage has a cast of the organism been made? A mold?
 - b) What method of fossilization is shown in this sequence?
 - c) What type of organism is shown here?
4.
 - a) Petrified wood is a form of permineralization. Explain why it is so dense.
 - b) Dinosaur exhibits in museums do not display the actual fossil parts, but instead show synthetic, plastered casts of the fossilized bones of each dinosaur. Explain the difficulty (besides cost) of using the actual fossilized bones to reconstruct dinosaur skeletons for exhibit (hint: consider question 4a).
5. The diagram below shows assemblages of fossils discovered from drill holes located in two different sections of the ocean floor. The samples found in **Environment A** were along the continental shelf, while samples from **Environment B** were from the deep ocean abyssal plain.



Explain why only fossils 1 and 4 appear in both locations.

6. Examine your **Fossil Samples** chart.
 - a) Which three fossils would most likely be formed by the process of carbonization? Explain why.
 - b) Which two fossils are not associated with a marine environment? Explain how you know.
7. What makes trace fossils distinct from other types of fossils?
8. Explain how the following principles have allowed scientists to establish a theory of evolution: a) Uniformitarianism; b) Faunal Succession.
9.
 - a) Explain how mass extinctions are related to the concept of punctuated equilibrium.
 - b) Besides the Cambrian Period, name two other times from the Geologic Time Scale where massive evolutionary changes took place, and explain why.