

BECOMING A GEODETECTIVE – SOLVING EARTH’S MYSTERIES

OBJECTIVES

- To use trace fossils to determine if sediment surfaces have been reworked.
- To learn some conditions that might help explain the lack of trace fossils within a stratum (rock layers).
- To learn what is meant by facies change, a time-rock unit, and reworking of sediment.

CLASS DISCUSSION

- A **facies change** represents a lateral or vertical variation in the lithologic (rock features) or paleontological (fossil) characteristics of contemporaneous sedimentary deposits (deposits that occurred during the same period of time) caused by, or reflects, a change in the sedimentary environment.
- A **time-rock unit** is a subdivision of rocks considered solely as the record of a specific interval of geologic time.
- Discuss **reworking**. Reworked means sediment, fossil, rock fragment, or other geologic material has been removed or displaced by natural agents (wind, water, etc.) from its place of origin and incorporated in recognizable form in a younger succession of strata.

CLUES

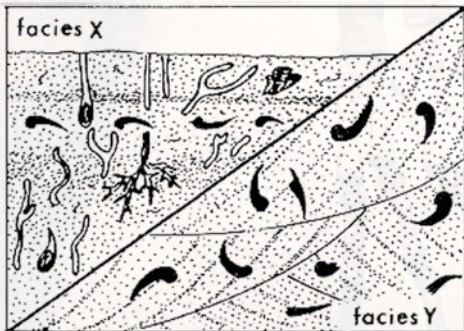
- We represent examples of trace fossils preserved in the rock record reflecting changes in the depositional (sedimentary) environment.

QUESTIONS

Using the illustration shown, answer the following questions.

1. A. What biological evidence suggests the sediment of Facies X does *not* represent a reworked sediment? _____

B. What evidence suggests the sediment of Facies Y *does* represent a reworked sediment? _____



C. Suggest some conditions other than the reworking of sediments that might account for the lack of trace fossils within a stratum.

Trace fossil patterns resulting from facies changes within a succession of rocks deposited in a specified interval of geologic time (after Brice & Levin, 1981).

Answer these questions by visiting: <https://nie.newsok.com/educators/curriculum/oklahoma-rocks-fossils-come-alive/> and be entered into a drawing to win a \$250.00 VISA Gift Card.

ALL ENTRIES ARE DUE BY DECEMBER 28, 2016. Also, if you win, your teacher will win a \$500.00 VISA Gift Card. The drawing will be held on December 28, 2016.