NPS Photo by Rick Wood

Sediments and Solution Caves: Part 2

Lesson Objective: Upon completing this activity, students will understand how the creation of solution caves in sedimentary rocks affects fossil formation. Students will also understand the process of fossil excavation and will be introduced to stratigraphic columns.

Key Concepts: sediments and sedimentary rocks; sedimentation; limestone; fossils; rock matrix, solution caves; stratigraphic column.

Duration: 1 55-minute class period

Audience: Middle school and high school students

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Sediments and Solution Caves: Part 2

Teacher Copy and Answer Key

SEDIMENTATION LAB: PART 2 – TEACHER COPY

Materials:

1. Sediments and Solution Caves: Part 2 handout for each student.
2. Excavation Directions for each group.
3. Excavation tools for each group: bamboo skewers or craft sticks; small paintbrush.
4. Newspaper to cover the tables.

SUGGESTED ANSWERS

Observation and Explanation:

1. Observe how the sediments settled in the bottle and propose an explanation based on the information above.

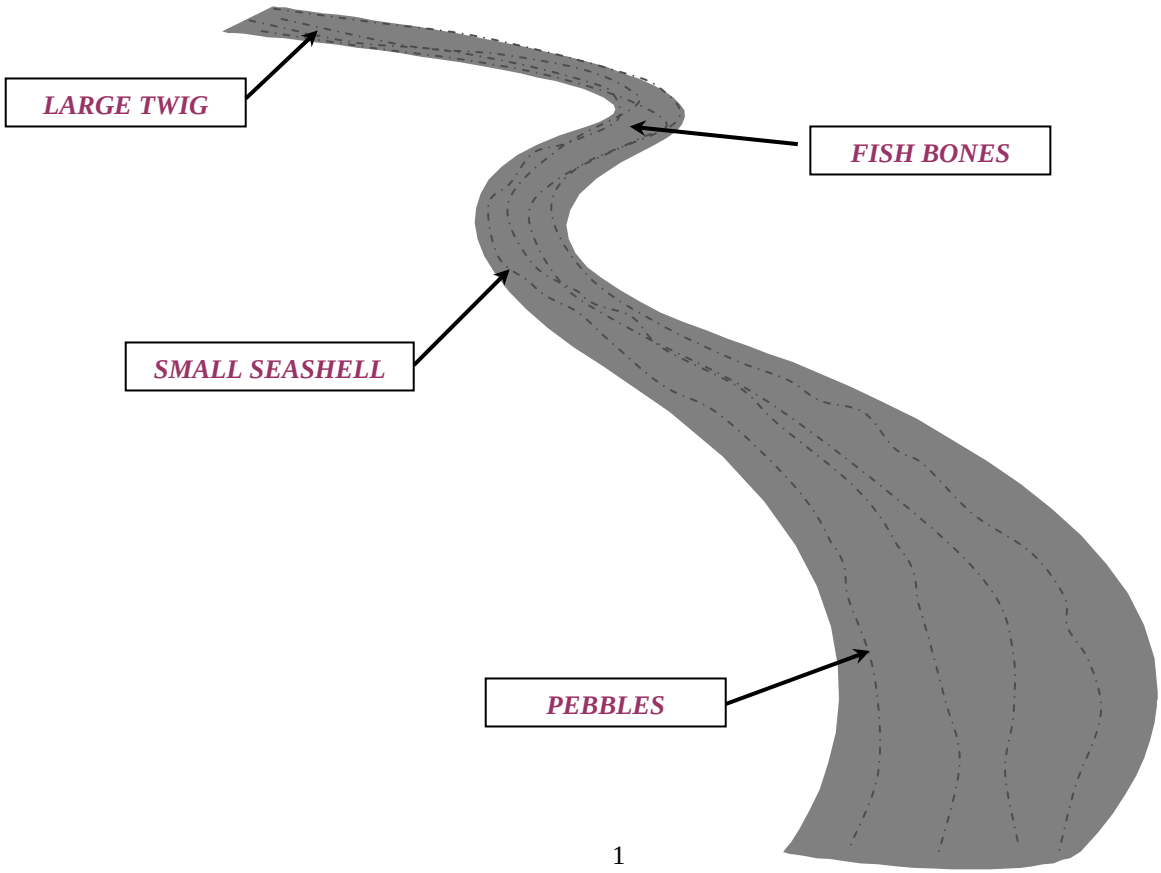
RESULTS MAY VARY, BUT IT IS IMPORTANT TO NOTE THAT HEAVY OBJECTS SETTLE OUT QUICKER THAN LIGHTER OBJECTS.

Excavation:

Data Table 1: *RESULTS MAY VARY*

Stratigraphic Columns: *RESULTS MAY VARY*

Sedimentation:



Questions:

1. What primary factor influenced your choices when labeling the sediments in the river diagram on page 3?

THE WEIGHT OF THE OBJECTS

2. What other factor(s) could have affected the order in which the sediments settled on the river bottom?

THE SHAPE, TEXTURE, AND SIZE OF THE SEDIMENTS COULD ALSO HAVE AFFECTED THE RATE AT WHICH THEY SETTLED.

3. How does the rate at which sediments settle affect the sediments found in caves?

HEAVIER OBJECTS MAY SETTLE OUT BEFORE THEY GET TO THE CAVE

4. How do the factors that affect the settling of sediments apply to the sediments in your soda bottle?

HEAVIER OBJECTS SHOULD SETTLE OUT BEFORE THE LIGHTER ONES AND THEREFORE, WOULD BE ON THE BOTTOM OF THE SODA BOTTLE