Fossilized stromatolite field investigations.

We arrived *back in time* to one of the earliest sites on our planet to document life! The bulbous mounds you are investigating are *STROMATOLITES*, not fossil cabbages. Make careful observations and measurements, and use your field notebooks to document them.

A. *Experience the field site*. Spend some time observing the fossil stromatolites. Make sure you read the descriptions from all available signage at the site *before* you begin. Be sure to record the important information from the field signs.

B. *Sketch a stromatolite*. Use your tape measure to record its dimensions, in centimeters. Carefully describe the stromatolite, including the number of layers you can detect, the average "thickness" of layers, and the shape of your specimen.

C. *Sketch another stromatolite*. Find a second, but noticeably different, example of a stromatolite. Sketch it, and also record its dimensions, in centimeters. Carefully describe this stromatolite.

D. *Location, location, location!* Are these stromatolites equally spaced, patterned, or randomly distributed? You and a partner should measure off a 3 x 3 m area. (Try to avoid other student groups if possible.) Sketch the distribution of your stromatolites, recording accurate distances between the individual specimens.

E. *Interpret your data!* Summarize your field data in a laboratory report, reproducing your sketches. Include the following information:

    1. What type of living organism produced the stromatolites? Carefully describe these organisms.

    2. Are stromatolites uniform structures (in size, as well as shape)?

3. Is stromatolite distribution regular or random?

4. What was the paleoenvironment like when these organisms were alive?

5. Hypothesize what changes the Earth experienced from the time the organisms lived (question 4) to the time you visited the site.

Lab report: Stromatolite field investigations rubric.

Student name:_____

CATEGORY	4	3	2	1
Journal	Clear, accurate notes were taken with care.	Some clear, accurate notes were taken.	Only a few notes were taken, and accuracy of notes is questionable.	Notes rare or of little use.
Drawings	Clear, accurate sketches are included and easy to understand. Drawings are labeled neatly and accurately.	Drawings are included and are labeled neatly and accurately.	Drawings are included and are labeled.	Drawings are missing OR lacking important labels.
Data	Professional-looking and accurate representation of the data in tables and/or graphs.	Accurate representation of the data in tables and/or graphs. Graphs and tables are labeled and titled.	Accurate representation of the data in written form, but no graphs or tables are presented.	Data are not shown OR are inaccurate.
Analysis	Stromatolite shapes, distribution, and paleoenviornment are accurately discussed.	Stromatolite shapes and distribution are accurately discussed; paleoenvironment is lacking in detail.	Stromatolite shapes and distribution are somewhat discussed; paleoenvironment lacking in detail.	Shapes, distribution, and paleoenvironments are not accurately discussed.
Conclusion	Plausible discussion of Earth changes from stromatolites to present day is presented.	Discussion of Earth changes from stromatolites to present day is presented.	Some discussion of Earth changes is presented, but lacking in details.	Discussion shows little effort at reconstructing Earth changes.

Score _____/20