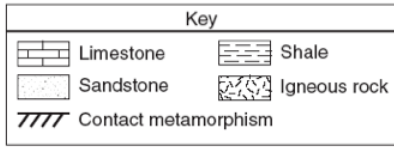
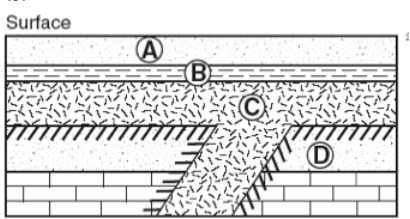


AIM: What is the geologic history of New York State?

Do Now: (1) Take out Lab #14

By the end of class, you should be able to...

- Read and interpret the geologic history table in the ESRT
- Read and interpret the bedrock geology map in the ESRT



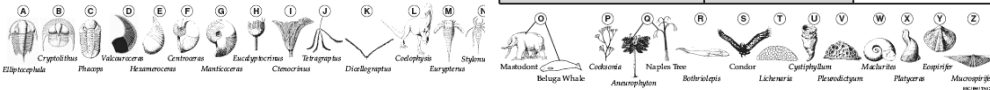
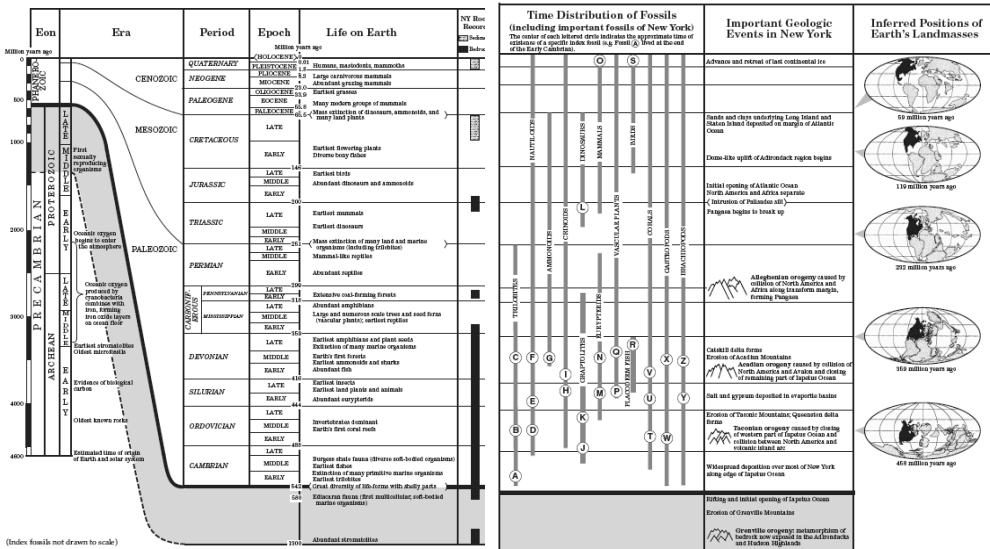
- a. Which sequence correctly shows the age of the lettered rock units from oldest to youngest?
- i. A→B→C→D
 - ii. C→D→A→B
 - iii. D→B→A→C
 - iv. D→C→B→A

b. How can we tell if a rock layer was there before or after an igneous intrusion?

c. What type of rock is layer D? _____ What type of rock could form where contact metamorphism has occurred in layer D? _____

- 1) Fossils in rock layers help to _____
 - a. Living things constantly _____
 - b. Some living things only exist or are dominant during _____
- 2) Based on fossil evidence, we have divided geologic time into divisions
 - a. From longest to shortest: _____ --> _____ --> _____ --> _____
- 3) We have gaps in our geologic time scale because of _____: _____
- 4) You can find the geologic history of New York State on pages _____ of the ESRT and a map showing the bedrock of New York State on page _____

GEOLOGIC HISTORY OF NEW YORK STATE



1) What is the latitude and longitude of Elmira, New York? (include compass direction)

2) From which geologic period does the bedrock in Elmira come?

3) What types of rock can be found in the bedrock of Elmira?

4) How many million years ago could the bedrock in Elmira have formed?

5) List the letters of all the index fossils that could possibly be found during this time period:

6) What important geologic events were happening in NY during this time period?

Try it out:

- 1) You are searching for fossils in the surface bedrock in Elmira, New York. Why are you unlikely to find dinosaur fossils at this location?

- 2) During which time was the majority of the exposed bedrock in New York State deposited?
 - a. Precambrian
 - b. Mesozoic
 - c. Cenozoic
 - d. Paleozoic

- 3) Rocks containing fossils of the earliest land plants could most likely be found in New York State bedrock near
 - a. Syracuse
 - b. Oswego
 - c. Ithaca
 - d. Old Forge

- 4) Approximately how long ago were the Taconic mountains uplifted?
 - a. 540 million years ago
 - b. 470 million years ago
 - c. 310 million years ago
 - d. 120 million years ago

- 5) What is the estimated age of Earth as a planet in millions of years?
 - a. 540
 - b. 4000
 - c. 4600
 - d. 5000

- 6) The geologic time scale has been subdivided into a number of time units largely on the basis of
 - a. Fossil evidence
 - b. Rock thickness
 - c. Rock types
 - d. Radioactive dating

7. An unconformity between two sedimentary layers is most likely produced by
 - a. the deposition of gravel followed by the deposition of sand and silt
 - b. continuous sedimentation in a deep basin over a long period of time
 - c. uplift followed by extensive erosion, submergence, and deposition
 - d. a period of extrusive volcanisms followed by another period of extrusive vulcanism

8. Explain what “the present is the key to the past means.”

9. If a rock has 25% of its original number of Carbon-14 atoms, how old could this rock be? Explain.

10. What is correlation?

11. How are index fossils different other fossils?

Summary and Reflection