

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Class: \_\_\_\_\_

## Geologic Time Scale

### Directions:

1. Carefully review the geologic time scale in Fig. 1, as well as your ESRT.
2. Using Fig. 1 and your ESRT answer the questions below.

### Analysis:

1. Stromatolites (primitive algae) was said to exist during which Era?
2. According to the ESRT when did armored fishes inhabit the Earth?
3. According to the ESRT which type of mountain building occurred in the Devonian Period?
4. According to the ESRT which geologic time period is most completely represented within the bedrock of New York State?
5. Which geologic time period was the longest? How long?
6. According to the ESRT, near the end of which era did the dinosaurs become extinct?
7. Surface bedrock of the Allegheny Plateau is most likely to contain fossils of the earliest?
8. According to the ESRT what change occurred between the late Paleozoic and the early Mesozoic Eras?
9. There are four Orogeny events in your ESRT, what do you think Orogeny means?
10. What is the geologic age (Era/Period) of most of the surface bedrock of the Catskills?
11. According to the ESRT, what is the geologic age (Era/Period) of the salt and gypsum deposits found in NYS bedrock?
12. According to the ESRT, describe the most recent geologic event to occur in NYS?
13. According to the ESRT, which type of fossil could be found in the bedrock near Elmira, NY?
14. According to the ESRT, how many years ago did the extinction of many kinds of marine animals occur?

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15. According to the ESRT, how many years ago did the extinction of the dinosaurs occur?
16. Fossilized footprints of *Coelophysis* dinosaurs have been found in bedrock closest to which NYS location?
  - a. NYC
  - b. Old Forge
  - c. Watertown
  - d. Niagara Falls
17. According to the ESRT, during which geologic Epoch did the last glacier retreat from NYS?
18. According to the ESRT, during which geologic period did the earliest mammals appear on earth?
19. Which inference is best supported by the rock and fossil record in NYS?
  - a. Erypterids lived in shallow seas near present day Syracuse
  - b. *Coelophysis* wandered through jungles near present day Albany
  - c. The first coral reefs formed off the shoreline of present day Long Island
  - d. The condor nested on the peaks of the ancestral Adirondack Mountains during the Grenville Orogeny
20. Which NYS fossil is found in rocks of the same period of geologic history as *Manticoceras*?
  - a. *Tetragraptus*
  - b. Mastodon
  - c. *Phacops*
  - d. Condor
21. According to your ESRT, the inferred latitude of NYS 362 million years ago was closest to
  - a. where it is now
  - b. the Equator
  - c. the North Pole
  - d. 45° south
22. During which geologic time period did the earliest reptiles and great coal-forming forests exist?
  - a. Devonian
  - b. Quaternary
  - c. Mississippian
  - d. Pennsylvanian
23. List three fossils that can be found during the Devonian period?
24. During which geologic era/period did the Andes, Alps, and Himalayas form?
25. How much older are the Appalachian Mountains than the Rocky Mountains? What would you expect the Rocky Mountains to look like in approximately 155 million years?

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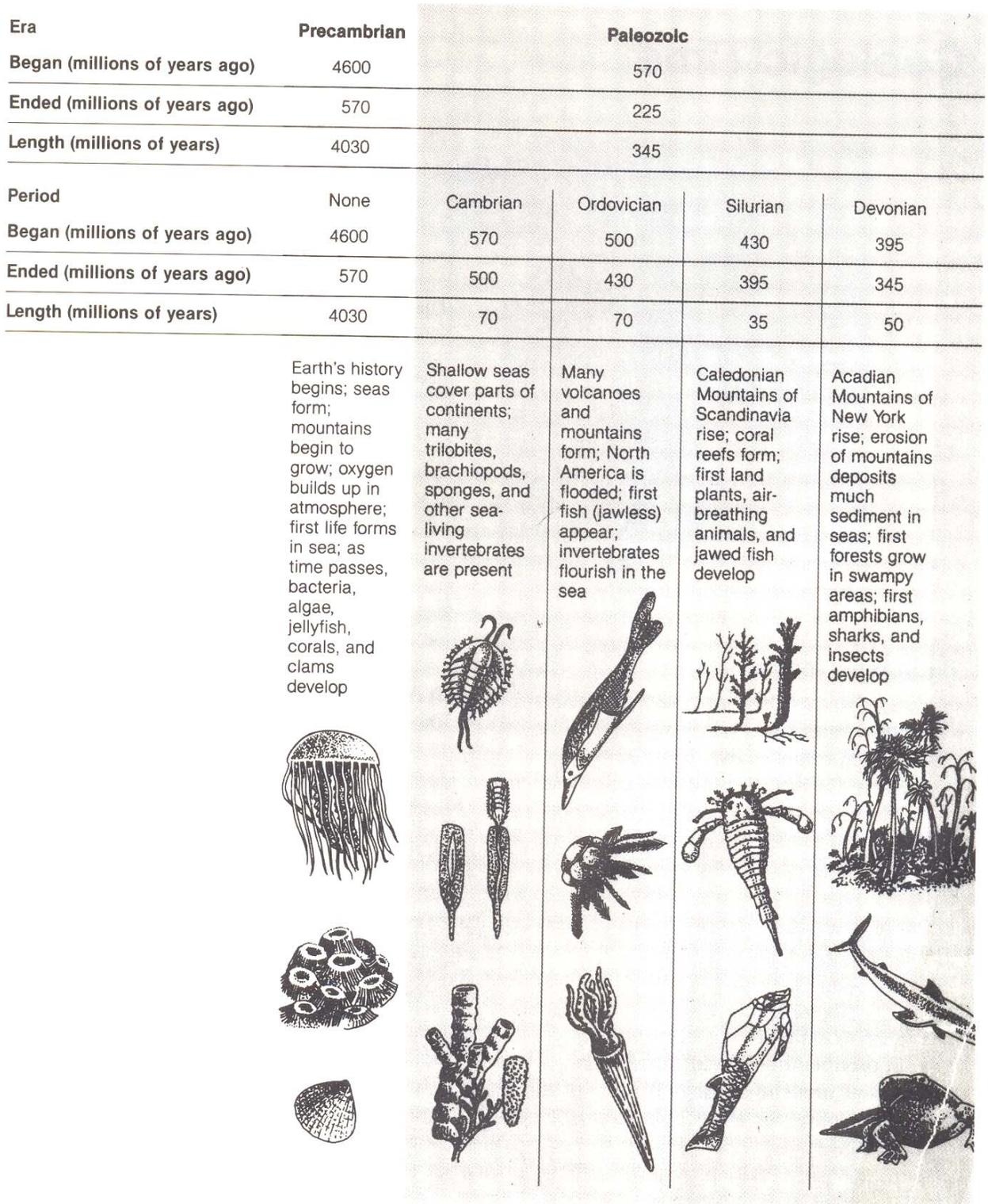
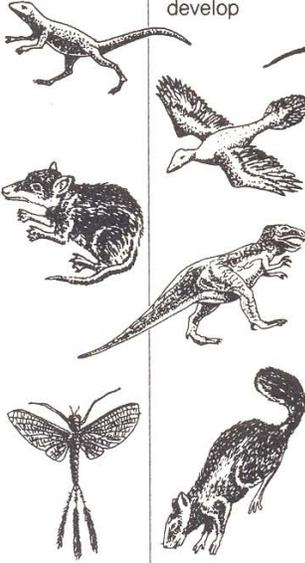
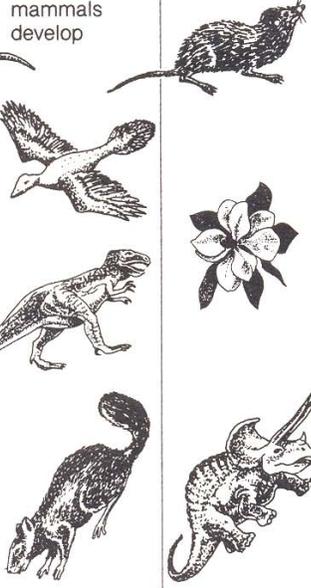


Figure 1 Geologic History of the Earth

		Mesozoic			Cenozoic	
*In North America, the Carboniferous Period is often subdivided into the		225			65	
Mississippian Period (345-310 million years ago) and the		65			The present	
Pennsylvanian Period (310-280 million years ago).		160			65	
Carboniferous *	Permian	Triassic	Jurassic	Cretaceous	Tertiary	Quaternary
345	280	225	190	136	65	1.8
280	225	190	136	65	1.8	The present
65	55	35	54	71	63.2	1.8
<p>Appalachian Mountains of North America form; ice covers large areas of the earth; swamps cover lowlands; first mosses, reptiles, and winged insects; great coal-forming forests form; seed-bearing ferns grow</p> 	<p>Ural Mountains of Russia rise; first cone-bearing plants appear; ferns, fish, amphibians, and reptiles flourish; many sea-living invertebrates, including trilobites, die out</p> 	<p>Palisades of New Jersey and Caucasus Mountains of Russia form; first dinosaurs and first mammals appear; modern corals, modern fish, and modern insect types develop</p> 	<p>The Rocky Mountains rise; volcanoes of North American West are active; first birds appear; palms and cone-bearing trees flourish; largest dinosaurs thrive; primitive mammals develop</p> 	<p>First flowering plants appear; placental mammals develop; dinosaurs die out, as do many sea-living reptiles</p> 	<p>Andes, Alps, and Himalayan Mountains rise; first horses, primates, and humanlike creatures develop; flowering plants thrive; mammals take on present-day features</p> 	<p>Ice covers large parts of North America and Europe; Great Lakes form as ice melts; first modern human beings appear; woolly mammoths die out; civilization begins</p> 