Natural History Museum and Planetarium

Researching the Geologic Time Scale

Georgia College
Georgia's Public Liberal Arts University

Natural History Museum & Planetarium Researching the Geologic Time Scale

GPS

1st Grade: S1CS1
2nd Grade: S2CS1
3rd Grade: S3CS1, S3E2
4th Grade: S4CS1
5th Grade: S5CS1, S5L1
6th Grade: S6CS1, S6E5
7th Grade: S7CS1, S7L4, S7L5

Note: This activity may be difficult for younger children. For older or advanced students use animal sheets 1, 2, and/or 3. For younger students use animal sheet 4 only.

Objective: Students will connect with the exhibits in the Natural History Museum and Planetarium by learning about animals and which species lived during which geologic time period. Specimen labels include the following: common name, scientific name, location, and age (geologic period). Students or groups will be given their geologic time line handout and the animal sheets to correlate the number assigned to the animal with a particular time era, period or epoch. Students may complete a geologic time line scavenger hunt.

Pre-visit activities: Students will better understand and learn from this activity by being exposed to the following topics *before* their trip to the Natural History Museum and Planetarium.

- fossils
- geologic time scale and the different time eras, periods and/or epochs. Students should understand that geologic time includes billions and millions of years and that **MYBP** stands for "millions of years before present" and that **MYA** stands for "millions of years ago"
- become familiar with the floor map of the Natural History Museum (included) as it is arranged according to the evolution of life along the geologic time scale.

Post-visit activities: Students will more likely connect and retain information from the resources in the Natural History Museum and Planetarium by doing post-visit activities that require use of the information to complete certain tasks. These tasks may include:

- The animal sheets and posters or handouts may be returned to the students or groups with all the research they found in the museum. Students are to cut out the animals and past them onto the poster time line as a representation of the evolution of life forms throughout geologic time.
- Students (groups) can then present their research and compare and contrast their time lines.

Vocabulary:

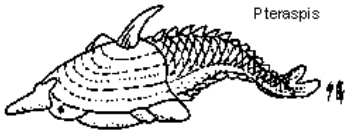
Geologic time scale: a time chart of geologic events and earth history with the oldest event and time unit at the bottom and the youngest at the top.
Paleozoic: time period of "ancient life"
Mesozoic: time period of "middle life"
Cenozoic: time period of "recent life"

GEOLOGICAL TIME SCALE

ERA	PERIOD	EPOCH	MYBP	ANIMAL LIFEFORMS PRESENT
CENOZOIC	QUARTERNARY	HOLOCENE	0.01	
		PLEISTOCENE	2	
	TERTIARY	PLIOCENE	7	
		MIOCENE	26	
		OLIGOCENE	38	
		EOCENE	54	
		PALEOCENE	65	
MESOZOIC	CRETACEOUS		136	
	JURASSIC		190	
	TRIASSIC		225	
PALEOZOIC	PERMIAN		280	
	CARBONFEROUS	PENNSYLVANIAN	310	
		MISSISSIPPIAN	345	
	DEVONIAN		410	
	SILURIAN		440	
	ORDOVICIAN		500	
	CAMBRIAN		570	
PRECAMBRIAN			1,000	
			3,400	
			4,500	

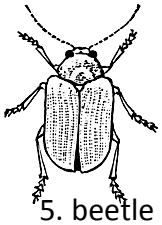
1. *Glyptodon*

2. cricket



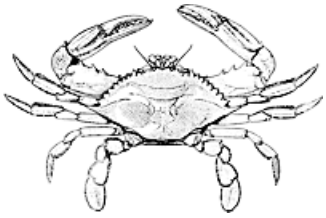
3. Agnathan

4. Salmon - Osteichthyes

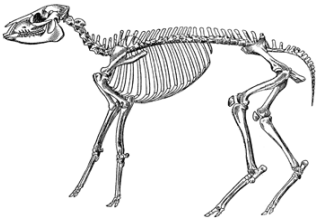


5. beetle

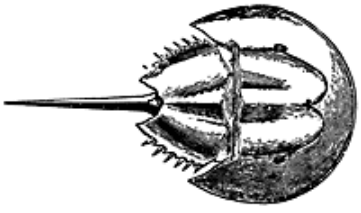
6. Trilobite



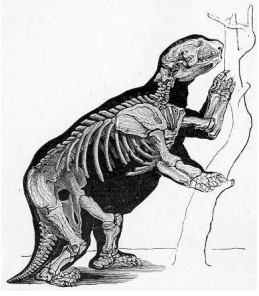
7. Crab - Crustacean



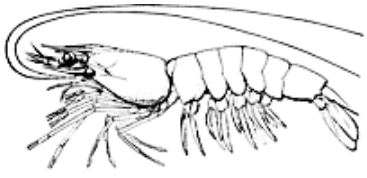
8. *Mesohippus* – Three-toed horse



9. Horseshoe Crab



10. Giant Ground Sloth



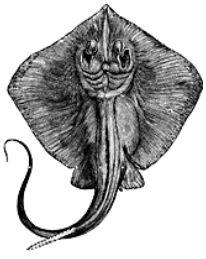
11. Shrimp - Crustacean

12. *Allosaurus*

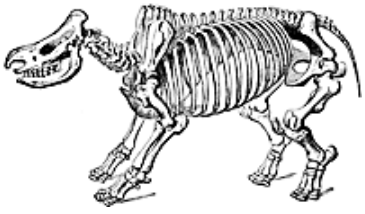
13. Brachiopod

14. Orthoceras – Cephalopod

15. Dragonfly



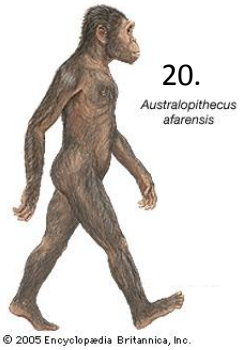
16. Stingray - Chondrichthyes

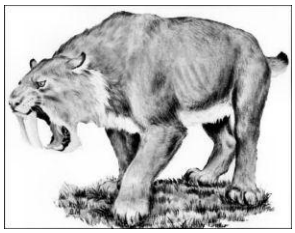


17. Ancient Rhinoceros

18. Crinoid – Echinoderm

19. Cave Bear

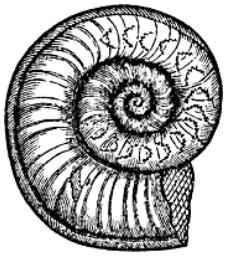




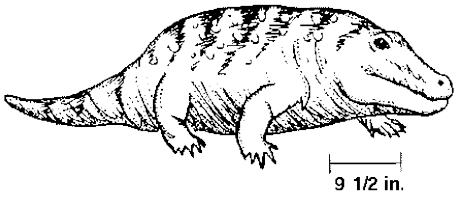
21. *Smilodon*

22. *Mammuthus*

23. *Archaeopteryx* – "first bird"

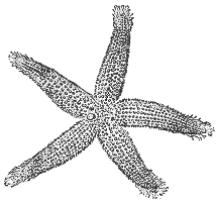


24. Amonite - Cephalopod

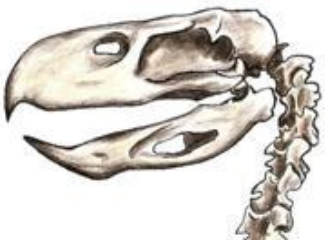


25. *Euryops* – early amphibian

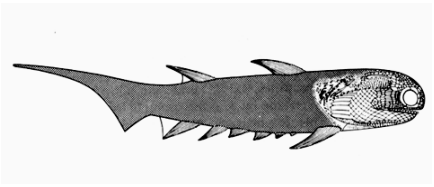
26. *Homo sapiens*



27. Starfish – Echinoderm



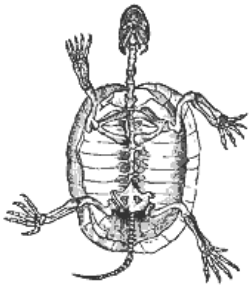
28. "Terror – bird"



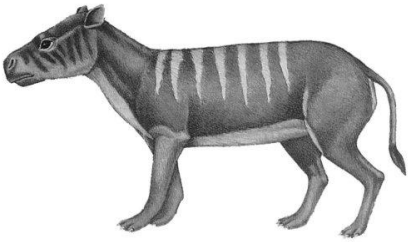
29. Acanthodian

30. Trilobite

31. Jellyfish

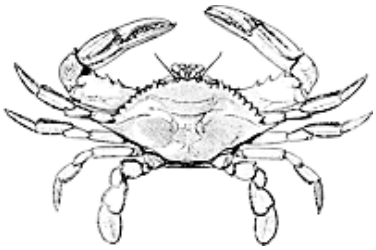


32. Turtle

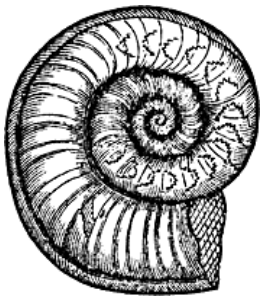


33. "Oreodont"

Crinoid – Echinoderm



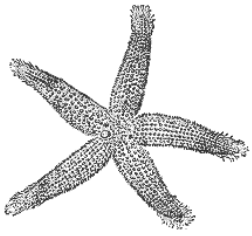
Crab - Crustacean



Amonite - Cephalopod

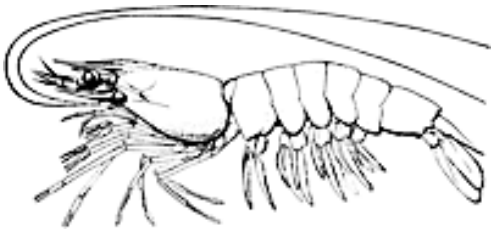
Trilobite

Orthoceras – Cephalopod



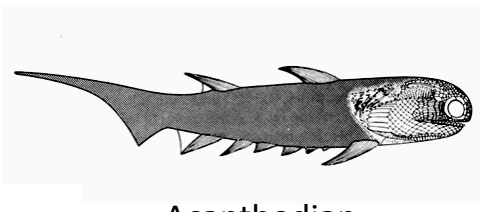
Starfish – Echinoderm

Jellyfish

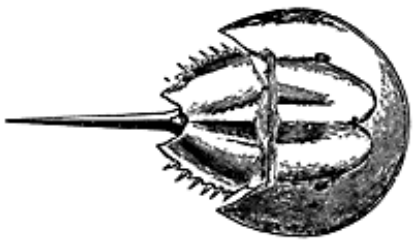


Shrimp - Crustacean

Brachiopod



Acanthodian



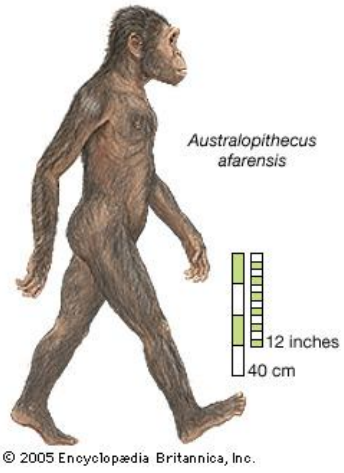
Horseshoe Crab

Dragonfly

Stingray - Chondrichthyes

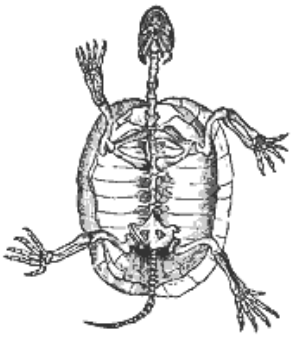
Salmon - Osteichthyes

Cave Bear

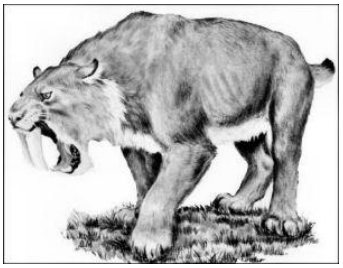


Mammuthus

Archaeopteryx – "first bird"

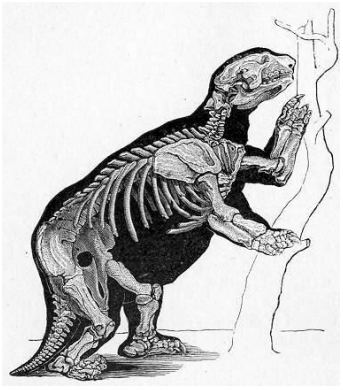


Turtle



Smilodon

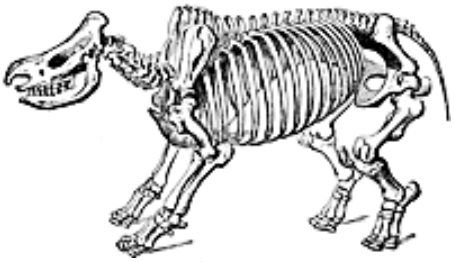
Homo sapiens



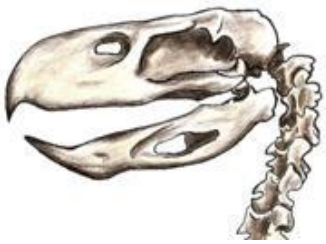
Giant Ground Sloth

Allosaurus

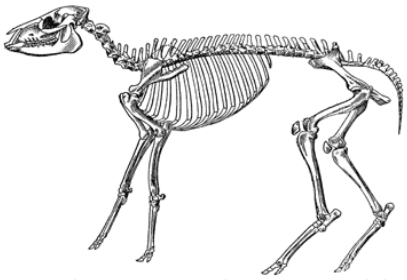
Glyptodon



Ancient Rhinoceros



"Terror – bird"

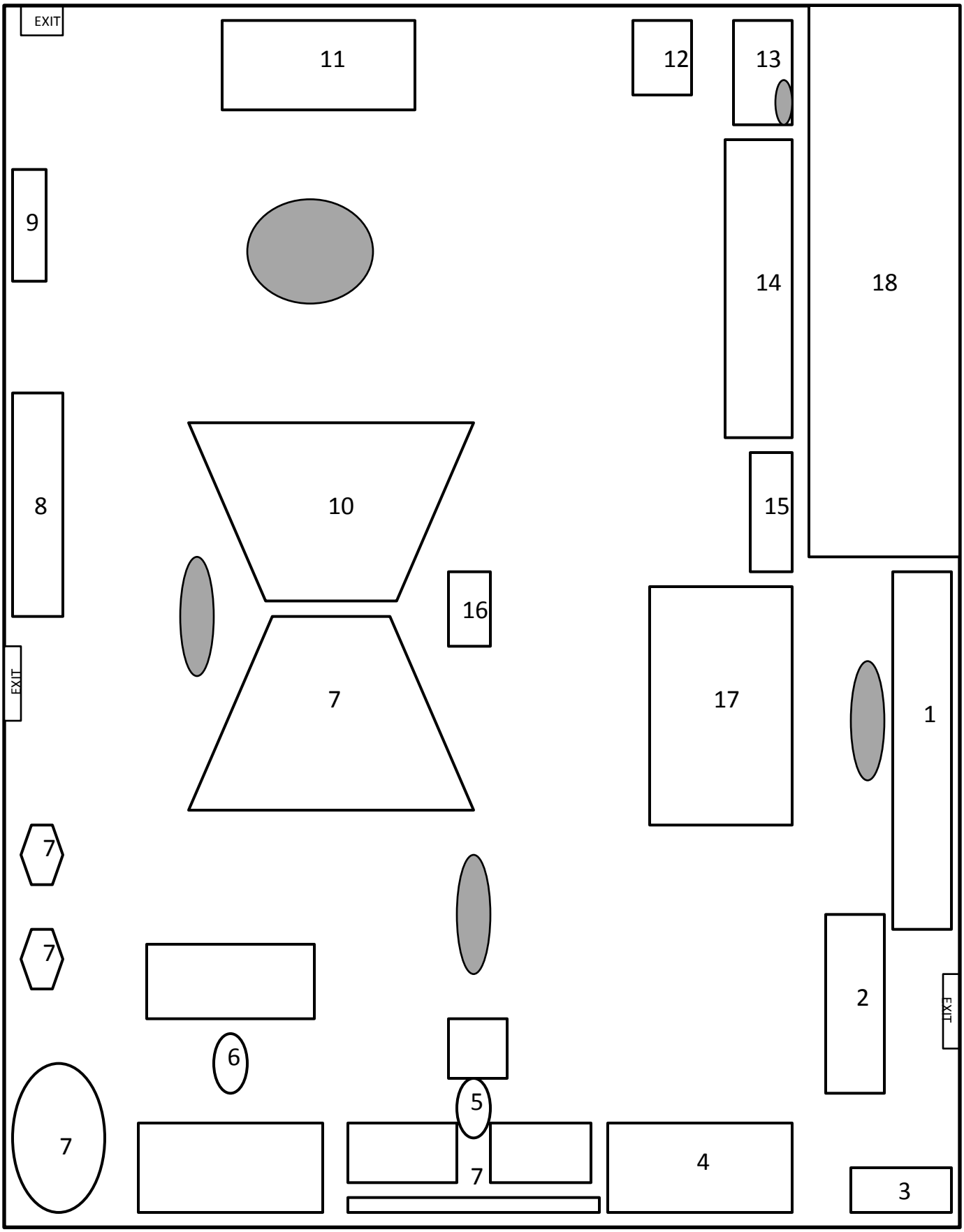


Mesohippus – Three-toed horse

Natural History Museum and Planetarium

GEORGIA COLLEGE
GEORGIA'S PUBLIC LIBERAL ARTS UNIVERSITY

Georgia College Natural History Museum and Planetarium Floor Map



Georgia College Natural History Museum and Planetarium Exhibit Guide

1. **Observation Room:** This room was originally designed as an observation laboratory where visitors could witness fossil preparation in progress. Presently, this room houses the approximately 100,000 specimens of the GCSU Entomology Collection.
2. **Future Cave Life Exhibit:** This exhibit will feature a life-like 'cave' where visitors can learn about characteristic cave formations and unique cave ecology.
3. **Future Geologic Wonders of Georgia Exhibit:** Visitors can learn about the unique geologic resources and characteristics of Georgia.
4. **The Formation of Fossils:** This exhibit features an introduction to fossils and the processes of fossilaization. Examples of each process are on display.
5. **Invertebrates:** This display offers a collection of some of the earliest and simplest life forms. Fossils on display span the ages from 543 million to 100,000 years ago.
6. **The Age of Fishes:** This exhibit includes glimpses into underwater ocean life, fish, mega sharks, and the evolution of tetrapods and amphibians.
7. **The Age of Reptiles:** Fossils and recent specimens alike are on display. Highlights of this exhibit include an Ichthyosaur, a menacing *Tyrannosaurus rex*, a Komodo Dragon, and the "missing link" fossil, *Archaeopteryx*.
8. **Fossil Plants:** The importance of studying ancient plant life is the main theme of this exhibit which includes some familiar plant specimens.
9. **The Hardie Mine Site:** Just next door to Milledgeville, this fossil- bearing site in Wilkinson County contains many marine species such as stingrays, whales, sharks, sea turtles, and sea snakes.
10. **Evolution of the Modern Mammalian Fauna:** Explore the 30 to 40 million year old grasslands of North America and the surprising mammal species that evolved on our own continent. In this exhibit visitors can learn how climate change drives biotic evolution.
11. **The Great American Biotic Interchange:** For millions of years North and South America were isolated from each other. Plate tectonic processes joined the two continents between 5 to 2 million years ago. Discover the ancient and sometimes bizarre fossils that are found in Florida.
12. **Birds:** GCSU's Natural History Collections include many groups of organisms. A portion of the ornithology collection is on display emphasizing the great diversity of bird feeding mechanisms. Visitors may also view several extinct species of birds.
13. **The Cave Bear:** A fully articulated fossil of a Cave Bear, one of the largest bear species once native to Europe and Asia, is on display.
14. **The Pleistocene of Georgia: "The Ice Age":** Giant Bison and Columbian Mammoth fossils from Brunswick, Georgia are the featured creatures of this exhibit. Climate change and the most recent North American "Ice Age" are important topics in this exhibit.
15. ***Smilodon gracilis*:** The skeleton of a saber-toothed cat that stalked the North American landscape as little as 500,000 years ago.
16. **Rodent and Rabbit Evolution:** Information from studies explain the difference between the high diversity of rodents compared to the relatively low diversity of rabbits. A collection of recent and fossil skulls are on display.
17. **The Diversity of Modern Primates and The Path to Modern Humans:** Many recent primate species are exhibited, along with information and fossil representations of the lineage of the human species including *Australopithecus*.
18. **Planetarium:** The GCSU Planetarium opened in the fall of 2008. Here visitors may view digital simulations of the sky in an immersive 20 ft diameter dome view with guides, labels, and motion. The planetarium also has the ability to display full dome show content.

Indicated on the Floor Map are several **shaded ovals.** These ovals, along with several more specimens (not indicated) located along the entry path to the Natural History Museum, represent the areas where life-like mounts of mammals can be seen. Mammals from North America and Eastern Hemisphere countries such as Africa and Asia can be observed up close.