

## **GE-102 Historical Geology**

### ***Required Field Trip to the American Museum of Natural History***

Your name: Print \_\_\_\_\_ and Sign \_\_\_\_\_

Date:

Go to the American Museum of Natural History, on Central Park West. A, C, E, trains come in to the same platform at 42<sup>nd</sup> street or Penn Station so be careful to take only the uptown C local to 81st Street. Get off there and from the subway level go down stairs to enter the lower level (LL) of the Museum.

"Pay what you want but you must pay something." Regular suggested admission is around \$8, but what you pay is up to you and what you can afford. **Clip your Museum entrance-receipt to these pages.** This is not so we can check how much you paid, but just to check that you did indeed go.

**TIME REQUIRED:** You should expect to spend about two hours at the museum. Travel time is in addition of course.

#### EVENT 1

Obtain a floor plan of the museum when you enter.

Walk towards the rear of the entry hall and take the stairs to the left. and at top bear left to enter the Hall of Biodiversity.

Inside the Hall, find the entrance to the Rain Forest and complete the "Rain Forest Treasure Hunt" (page 5)

Would you like to live in this forest or would you clear it away if you had to live there?

Continue on though the Hall of Biodiversity and turn right through the Hall of North American Forests. As you walk through the Hall of New York State Environment notice on your right the sawn through log of a giant sequoia. Explain how the dates shown on it were determined.

## EVENT 2

As you leave the Hall of North American Forests find the elevator to your left and take it up to Fourth Floor

Turn left to enter the Wallach Orientation Center

Watch the 12-minute movie narrated by Meryl Streep about vertebrate evolution and pay attention to the concept of branching points in evolution.

Comment on the experience:

Leave and walk straight ahead into the Milstein Hall of Advanced Mammals.

On the wall to the right on entering are images from Dordogne, France.

1) Most of the animals are in profile. Describe and name the animal that is depicted in head-on view.

2) Are the humans drawn realistic or fanciful?

3) Could the animals be fanciful in the same way and so not be a historical record of reality?

4) Give two hypotheses as to the cause of Ice age Extinctions (see TV monitor)

4a)

4b)

Extinct megafauna.

Give the genus and species name of an extinct

giant bull: \_\_\_\_\_

giant bison: \_\_\_\_\_

Feel the elephant, mammoth, and mastodon molar teeth and describe their similarities and differences.

Look at the exhibits of the three proboscidiens on display at his place in the Hall and decide before you look at the identification given if you can see from the teeth which are mammoth and which are mastodon.

List their genus and species names:

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Name an early relative of elephants (fossils found in Texas) that lived 10 million years ago.

(On left wall)

What is the advanced feature that all proboscidiens, sirians, and extinct desmostylians have?

What is the name of the group?

What specialization did extinct *Platybelodon* have?

Explain how the fossil assemblage found at Agate Springs National Monument, Nebraska, could have formed?

TAKE A COFFEE BREAK

### EVENT 3

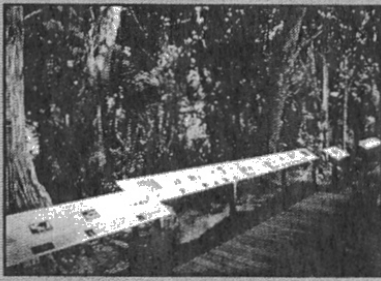
Go to Floor 1 and enter the Rose Center for Earth and Space and (to the left of the entrance to the Gottesman Hall of Planet Earth) you will see a curved ramp going up left. The notice at the bottom of the ramp says EXIT ONLY.

Enter fearlessly and start your walk back through time going up the ramp.

You will see markers for the following:

- 1) From 0 billion years ago (0 Ga), the first cave paintings date back to \_\_\_\_\_ years ago and this distance of time is represented by the width of a single \_\_\_\_\_
- 2) First appearance of Hominid family is \_\_\_\_\_ million years ago (Ma)
- 3) Age of dinosaurs ended \_\_\_\_\_ Ma,
- 4) Age of dinosaurs began \_\_\_\_\_ Ma
- 5) Cartwheel galaxy event was \_\_\_\_\_ Ma
- 6) We see is now as it was \_\_\_\_\_ Ma
- 7) Cambrian explosion of life \_\_\_\_\_ Ma
- 8) Multicellular life forms \_\_\_\_\_ Ga
- 9) Oxygen atmosphere develops \_\_\_\_\_ Ga
- 10) Oxygen buildup in oceans \_\_\_\_\_ Ga
- 11) Microscopic life forms \_\_\_\_\_ Ga
- 12) Oldest terrestrial rocks \_\_\_\_\_ Ga. What is its "locality and type of rock" name \_\_\_\_\_ ?
- 13) Solar system forms \_\_\_\_\_ Ga. In what galaxy? \_\_\_\_\_
- 14) Each foot along the path represented \_\_\_\_\_ Ma
- 15) Our galaxy includes about how many globular clusters? \_\_\_\_\_
- 16) ESSAY: In the known universe was there time or place for humans to have come to be before we actually did?

Walk back down the ramp and if you have the energy take the up-escalator to the Second floor and queue to enter the exhibit called the "Big Bang." It's free (not the same as the sky show which costs extra). You'll hear Maya Angelou narrate a short Big Bang story. Then exit and enter the spiral Cosmic Pathway, which takes you through 13 billion years after the Big Bang, again!!!



## RAIN FOREST TREASURE HUNT

Find this other forest inside the Hall of Biodiversity. This one is a rain forest, the Dzanga-Sangha Rain Forest in the Central African Republic. When scientists study a rain forest they divide it into three different levels, like the stories in a building: the forest floor, the understory, and the canopy.

Can you find the animals and plants that live in different parts of the rain forest? Make an observation about each. (Hint about things to observe: What does it eat? Where does it live? Who is it with?)

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### THE CANOPY (sit back on the benches and look up high in the treetops)



African Pied Hornbill



Moustached Monkeys



Elegant Galago

MY OBSERVATION

### THE UNDERSTORY (look straight in front of the railing)



Rhinoceros Beetle



Emperor Moth



Tree Pangolin

MY OBSERVATION

### THE FOREST FLOOR (look down on the floor of the diorama)



Dung Beetle



Blue Duiker



Seedlings

MY OBSERVATION