

Fieldtrip to the American Museum of Natural History

Name: _____

Due:

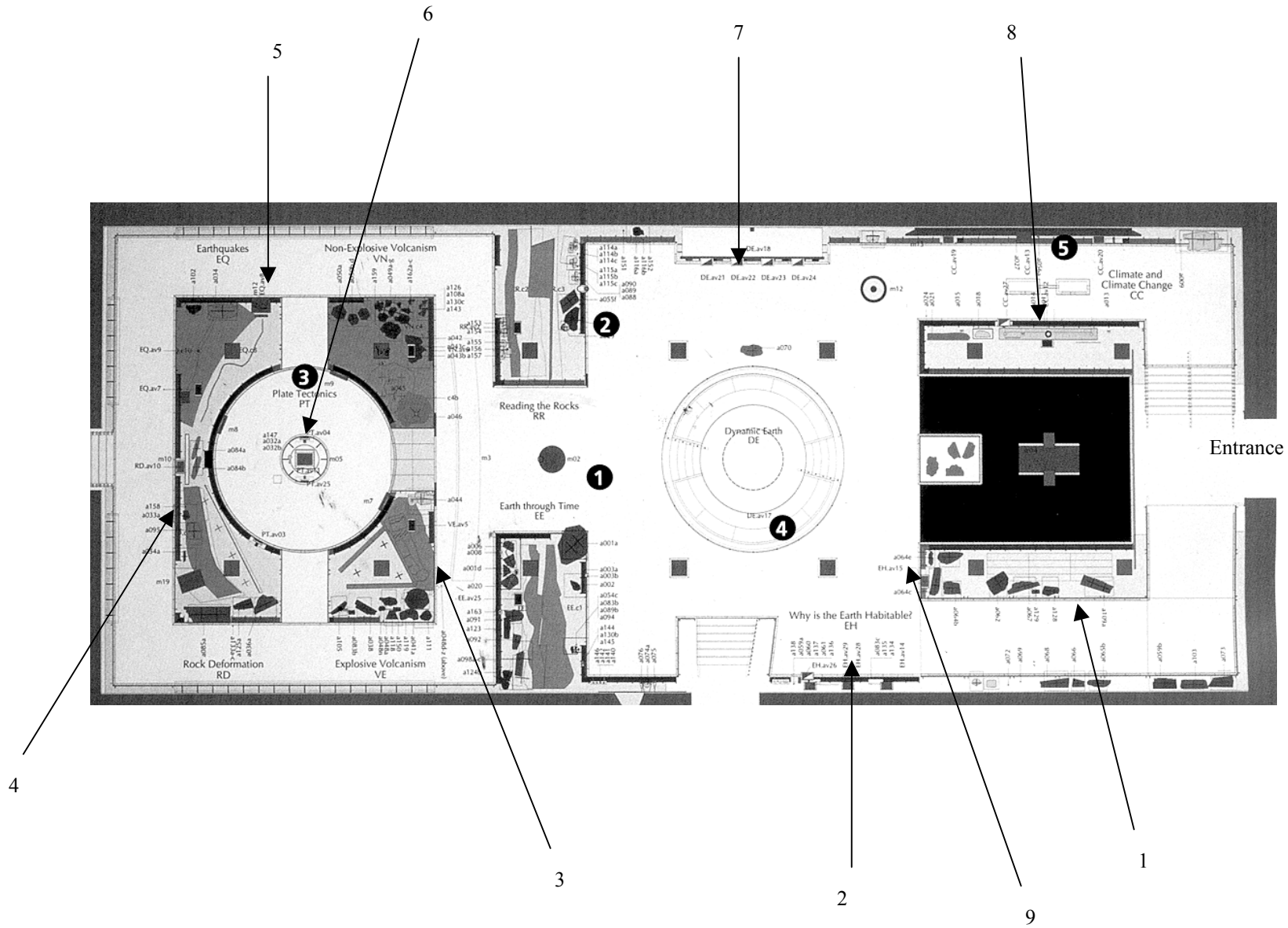
Directions to the museum, opening hours and other useful information can be found on the web at <http://www.amnh.org/welcome/>

The questions in this exercise can all be answered using the displays in the Gottesman Hall of Planet Earth. It will probably take you 3 – 4 hours to complete, so make sure you have plenty of time.

The following page is a floor plan of the Gottesman Hall of Planet Earth, indicating where you should go to answer each section of the quiz.

This exhibit at the AMNH is a wonderful resource for the Environmental Geology course. Take time to look around some of the displays not included in the exercise.

And most important – HAVE FUN ☺



1. Natural resources

Describe one of the following processes in your own words.

- Ores from hot water
- Rare minerals from pegmatite
- Ores from molten rock

Name a mineral formed in the way you described above, and make a sketch of the sample of this mineral on display.

2. Earth cycles

Watch the videos, and then describe one of the following earth cycles in your own words. You should include sketch diagrams in your description.

- The rock cycle
- The water cycle
- The carbon cycle

3. Volcanoes

What are volcanic gases composed of?

What are the consequences of a violent eruption, when these gases are injected into the stratosphere?

Why do some volcanoes explode?

4. Mountain building

Look at the sand model of mountain building and watch the video about how it was made.

Make a sketch of the model.

Compare the model with the displays about the Alps and the Himalayas.

Is this an accurate model of the processes involved?

Which factor does the model **not** represent?

5. Earthquakes

Watch the video of the Great Alaskan Earthquake.

How deep was the earthquake?

How far did the fault slip?

How long did the earthquake last?

How many people died?

What was the magnitude of the earthquake?

How do the descriptions of what happened during the earthquake relate to what you know about different types of earthquake waves?

6. Mantle convection

Watch the videos on the model of mantle convection. (Why? How? What?)

Why do scientists want to model mantle convection?

How many grid cells are in the model?

What are the important properties of each cell?

What are the differences between the isoviscous and layered viscosity models?

Which works better?

7. Interactive Earthworks station.

Describe one recent volcanic eruption from the display

Describe one recent earthquake from the display.

8. Ice cores

How is climate recorded in ice?

What is the relationship between carbon dioxide and global warming?

How are volcanic eruptions recorded in ice?

Which eruptions have been recorded in this way?

Sketch and describe the ice cores on display.

9. Groundwater modeling

Why do scientists model groundwater flow?

How do they build a groundwater flow model?

What does the model tell us?