Zion National Park

1. In class we will use the term “Grand Staircase” to describe the rocks of northern Arizona and southern Utah. Describe this sequence in general terms in the space below and describe the relative stratigraphic position of the rocks of the Grand Canyon and Zion in this Grand Staircase. Label the Grand Canyon and Zion sequences on the handout provided and include that handout in your notebook.

2. What is the oldest layer of rock exposed at Zion National Park? What age is this layer?

3. Describe how the region around Zion changed during the Triassic after the deposition of the Kaibab limestone.

4. What is distinctive about the Chinle Formation? How might you recognize it if you travel through southern Utah and northern Arizona?
5. Draw on the photo below the locations of the contacts between the formations

6. Write the name of the formation to the right and describe the types of rocks present
7. What environments are represented by the Moenavi and Kayenta Formations? What types of fossils are found in these Formations?

8. Describe the Navajo Formation. What is its age? How was it deposited?

9. Describe and illustrate how cross-bedding develops in layers such as the Navajo Formation.

10. Describe how the Zion Park area changed during the Mesozoic after the deposition of the Navajo Formation.
11. Describe the factors that have shaped Zion Canyon and the other canyons in Zion National Park.

12. The photo on the left is the Grand Canyon and the photo on the right is of Zion Canyon. Why does the Grand Canyon appear to be a series of “steps” or slopes and cliffs, while Zion is mostly cliffs with slopes at the bottom?

13. Describe and illustrate the formation of a “blind” arch.
14. Has there been volcanism in Zion NP? Is the volcanism older or younger than the erosion of the canyons? How do we know?

15. Imagine that you are responsible for producing a brochure on the geological history of Zion National Park in less than 300 words. Write your history on the back of this page or on a separate sheet and include it in your notebook.