G202 Lab 3 – Sedimentary Rock Video Exercise **Name_____**
(Earth Revealed: Sedimentary Rocks)

Watch the video in the lab and answer the questions below.

1. Who first explored the geology of the Grand Canyon? How did the Grand Canyon form?

2. How many years of Earth history are contained in the sedimentary rocks of the Grand Canyon?

3. What is the general goal of sedimentary geology?

4. What is sediment? How is it formed?

5. List and describe 3 examples of loose sediment at the Earth's surface.

6. How is loose sediment transformed into hard sedimentary rock?

7. True or False: sedimentary rocks most commonly occur inside the Earth, while igneous rocks are common at the Earth's surface. Explain your answer.

8. Define the term "clastic".

9. What is the smallest size of sediment particle called? What is the largest size of sediment particle called?

10. List and briefly describe 2 examples of how sediment may be transported at the Earth's surface.

11. List and describe 3 places at the Earth's where you would likely find sediment deposits. Why do you find deposits in these places?

More on Back….

12. Define the term “lithification”. What are 2 processes that result in lithification of sediment?

13. List and describe 2 environments where chemical sediments may form.

14. What is the name of a sedimentary rock that forms from the skeletons and hard parts of dead sea animals?

15. Where does coal form? What is coal composed of?

16. What is the motto for the “principle of uniformitarianism”? What is the principle of uniformity and how is it used to interpret Earth history?

End Video at Uniformitarianism.

ES202 Video Exercise – Part 2 of the Earth Revealed "Sedimentary Rocks" Video
Focus on Stratigraphy and Sedimentary Structures
(Start Video at Time Mark 10:30)

1. Describe the "principle of uniformity" or "law or uniformitarianism"? How is it applied to sedimentary rocks and interpreting Earth history?

2. True or False: Earth surface systems today have existed in the past, their processes producing sedimentary rock products.

3. Define the term "sedimentary structure"; how does this term differ from the concept of a "sedimentary rock"?

4. Define bedding? What is a bedding plane? Draw and label a sketch of several sedimentary beds to illustrate your answer.

5. True or False: A stack of sedimentary beds represent a continuous recording of geologic time and events in geologic history.

6. Describe the law of original horizontality, as applied to sedimentary beds. Draw a sketch to illustrate your answer.

7. Draw a sketch of "cross-bedding". List some example environments in which cross-bedded sand will develop.

8. True or False: The angle and direction of tilt in cross beds can give clues as to which way fluids (liquid air or water) were flowing in the geologic past?

9. Draw a sketch to support your answer in the previous question. Show cross-bedding and the direction of transport that formed the structure.

10. Define the term "ripple marks". Draw a sketch of asymmetric ripple marks, show the direction of wave motion.

11. What are mud cracks? Draw a sketch. Explain the sedimentary conditions in which mud cracks are formed.

12. From the example of the “Ridge Basin” in southern California; list the FOUR sedimentary features that are indicative of deposition in a lake basin.

13. What is a “delta”; how is it formed, and what are some of the sedimentary features that indicate such an environment of deposition.

14. Draw a sketch of a “scour-and-fill” structure. What does scour and fill indicate about ancient sedimentary environments.

15. True or False: Scour and fill structures would be highly likely in a deep lake or deep ocean environment.

16. What does the occurrence of angular and poorly sorted gravel fragments indicate about the sedimentary history along the margins of the Ridge Basin California.

17. True or False: sedimentary rocks are commonly the source of fossils fuels such as oil, natural gas, and coal?

18. True or False: sedimentary rocks are commonly used as building and construction materials.

19. True or False: I love geology.