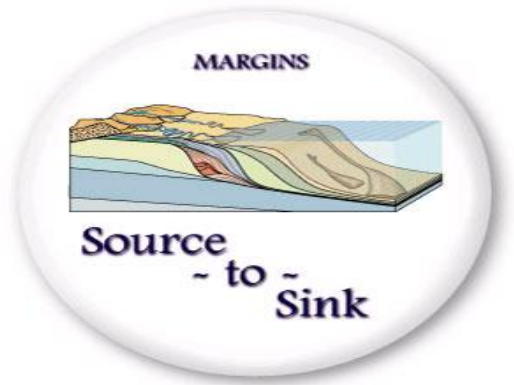


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What's the story? (Looking at Sediments)

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Background:

Continental margins comprise the continental shelf and the slope extended towards the deep ocean. These marginal areas are defined by the sediment dispersal systems that cross and shape them. Sediments are the organic materials from living organisms, such as plankton, and inorganic materials from the weathering of rock that are carried and deposited by wind and water on the sea floor. Sediment can carry anthropogenic materials. Thus, margins near large populations of people provide sediment layers containing anthropogenic materials. For example, in the United States, 80% of the population lives within 100 km (62.14 miles) of the coast and therefore, drainage basins delivering sediment carry human generated materials, such as pollutants. Sediment on the continental margins carry evidence of natural disasters, such as earthquakes, landslides, floods, and tsunamis as well as coastal erosion. By studying the layers of sediment (stratigraphic record) in the basin, scientists can begin to understand the relationship between human activity on land and the ocean where the mud settles out. One method of obtaining evidence of sea floor sediments is to extract core samples. A coring instrument is an open ended tube that penetrates the sea floor and extracts sediment.

Challenge: To develop the research plan with your scientific team and make the equipment to investigate the stratigraphic record in an imaginary sediment basin. You want to take a core of the seafloor on the continental margin in about a kilometer of water.

1. What do you want to learn about the sediment in your model? Write a question for this investigation about the sediment from this model basin.
2. What is your plan for finding answers to your question?
Action: List a step by step procedure for creating and using your coring equipment to investigate your sediment samples. (Do NOT just dump the materials out of the cup.)
3. List the materials and equipment you will use.
4. Document your observations. Draw a picture of your core sample. Describe how it worked and what you see.
5. What did you learn about the coring technique?
6. What did you learn about the importance of taking core samples?
7. Revisit your plan. What changes, if any, do you need to make for the next coring expedition? What new questions do you have?