**Lesson Plan Summary for ‘River Sediment Fluxes to the Ocean’**

**1 Summary**

Students consider sediment transport processes in a river basin by using empirical equations in a spreadsheet. By comparing the results from controlling groups, they learn about the importance of different variables. A series of questions guides students to further understand the processes. This assignment generally takes 1.5 hours for students to complete.

**2 Learning Goals**

*Topical Goals*

Understanding the factors that control suspended sediment flux to a river mouth.

Find out the main factors that control bedload at the river mouth.

Learn about the influence of dam construction on sediment flux through calculations of trapping efficiency.

*Quantitative Skills Goals*

Use spreadsheet to make simple calculations, and to explore the relationship between 2 variables by plot analysis. Develop a sense of how changes in controlling parameters affect predictions. Learn about the conversion of units

**3 Context to use**

This activity works when assigned as a problem set and is set up to be completed individually. It can serve as a simple approach to explore numerical modeling for students in hydrology, geography, environmental sciences or geology majors.

This activity could be assigned after students have developed a basic understanding of sediment transport in a river basin. The simplified equations for the most important process in the model are shown for students to know more quantitatively the process, and the practice of relationship between different factors is given as a means for assessing their role on this process.

**4 Teaching Notes and Tips**

The CSDMS Educational Repository features a downloadable lecture on Sediment Supply that you may find useful:<http://csdms.colorado.edu/wiki/SurfaceDynamics_Modeling_CMT>

**5 Assessment**

Grading involves checking for mathematically correct answers and reasonable verbal explanations. In evaluating the reflection questions, we place greater emphasis on demonstration of a reasonable thought process than on arrival at the correct answer.