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## Linking Earth Science and Social Studies in the Middle and High School Curricula

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### ABSTRACT

Because of our positions as natural scientists, we often choose to explore ways of enhancing the discussion of earth science topics and skills in secondary level science courses. In the process we overlook linkages that can be built with social studies curricula that can encourage students to develop skills important in the earth sciences and an appreciation for the importance of the earth sciences in their understanding of a variety of issues. Three examples illustrate connections with state and local geography classes and with state and American history classes. These also examples illustrate how integrated curriculum concept can strengthen science education.

One of the remarkable variations in our coastal states is the climatic variation from coast to interior. This can often be related to variations in the agricultural economy. In Louisiana, students can explore the differences in temperature and rainfall around the state with data available from federal websites. These data allow students to look at climate variations over time as well as space for regions that historically produced cane, rice, and cotton, and make connections between climate and the agricultural activity in the state.

The behavior of rivers has been a central topic of earth science curricula for secondary schools since their inception. Students can be encouraged to explore the questions “Why is part of Mississippi west of the river?” Without developing sophisticated skills in reading topography, students can still study a series of historic topographic maps and determine what parts of Mississippi and how much area of the state or a river bordered county lie west of the river. This can then work into a discussion of when the boundary was fixed and how boundaries are defined. The same study can be applied to the Texas-Mexico border with a higher level discussion of treaty arrangements between the United States and Mexico.

Higher level skills using topographic maps can be developed from a study of the relationship between military strategy and topography. Battle maps exist for several Civil War sites where it is clear that topography was important in both strategy and execution. Vicksburg provides an accessible case study. Why was Vicksburg a strategic locality? Why was it a candidate for siege as a battle strategy? How were troops deployed to make use of the landscape? The answer to these questions can be found as students learn to read topographic maps and interpret patterns of contour lines.

Many of these are skills and datasets are things that we take for granted as geologists, but the secondary education system lags in building even these simple skills in students. We can encourage their development by working with students on social studies fair projects as well as science fair projects.