



Curriculum Units by Fellows of the National Initiative

2008 Volume IV: Bridges: The Art and Science for Creating Community Connections

Terrific Ts- Truss, Triangle, Tangram and Technology Exploring Bridge Design with the Elementary Student

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by Stephanie Johnson

What is so fascinating about the truss bridges? The truss explains the forces of bridge making to the early childhood student. What is it about bridges that make it a common structure? You can cross obstacles that would otherwise be a problem. This connection that they make from community to community provides a chance for the neighborhoods to be explored. This unit the Four Ts is a way of looking at bridges through the assistance of shapes, technology and bridge design. Histories of bridges that are located in the Pittsburgh area have been included. This unit can be adapted at every elementary level. There are several skills that are used in this unit. The literacy component includes reading and a drawing portfolio. The math has included an interactive computer software game that can be accessed through the Public Broadcasting System. The software game explores the tangram puzzle. Math also looks at the triangle in its relationship to the truss bridge. It is one of the truss major shapes. The unit has included a field trip to John Heinz History Center which has a display about bridges. This field trip will also include a visit to several bridges.

Information is given on bridge development history. This history can be used to develop a concept of time and show progress and growth of bridge design. Throughout the unit there are exciting activities that will keep the student's interest. The students will be making a basic truss bridge and discussing some of the principles of the design based on scientific facts on compression and tension. This unit can be adapted to any learning style. The adaption can be done through the countless ideas that can be developed from the information in the unit. The learning standards have been closely aligned with the activities. Any student or teacher can use this unit and learn some invaluable lessons.

(Developed for Social Studies, Math, and Writing, grade K; recommended for Social Studies, Math, and Writing, grades K-2)

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