



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
2001 Volume V: Bridges: Human links and innovations

Introduction

As complex artifacts of society and structure, bridges rise over obstacles and generate human paths to link communities and enhance communication. While focusing on bridges, the seminar offered opportunities for discussing the multiplicity of relationships between their rationale for design, engineering and construction. Communities have given birth to bridges throughout history. The process continues to expand the role of the bridge in developing the infrastructure of landscapes throughout the world. This seminar included a field trip to bridge sites along with a project to design and construct a model bridge. Both experiences enlarged the participants' insights for understanding the impact of design and construction processes. The daily human dependence on bridges is often unnoticed by common users; however, significant bridges mold many lives as the awesome technology blends purpose, directness and beauty.

The creation of a bridge, from inception to utilization, involves a drama of human decision making which impacts the landscape and community, and reshapes their growth and being for decades thereafter. The design becomes symbolic of the bridge's success or failure whether in matters of function or material durability. The reality of community satisfaction unfolds with the daily experiences unfolded during and post construction.

One teacher examined the history of significant New York bridges and their impact on the American Industrial Revolution. Two curriculum units are focused on influences of how bridges shape and serve the adjacent communities. Each of these units concentrate on bridges located near the New Haven schools where their students reside. Although significantly different in specific content, the other curriculum units present some technical aspects of bridges as they focus on simple principles of engineering processes, basic mathematics, applicable mechanics of basic physics, and pure geometries all of which exist in the making and construction of bridges. The majority of curriculum units include hands-on projects which are created to capture the student's interest in designing and making models appropriate for their study. Through the subject of bridges, teachers have sought ways to involve young people in learning very useful principles that impact everyday patterns of each person's life. The discoveries and inspirations students may encounter could be beacons for greater aspirations of learning.

Behind every bridge, recognized as successful, historians find records of significant effort, dedication and commitment of those persons responsible for the creation and construction of it. Together with the people making primary decisions, the design and construction teams are dedicated to the public's benefits, the site and environment, the material and methods of construction, and local resources. A bridge changes the landscape forever and its creation must be designed with a future vision. The curriculum units created for this volume recognize the importance of the talents and interests of individual students as they learn about

principles of life through a focus on bridges.

Martin D. Gehner

<https://teachersinstitute.yale.edu>

©2019 by the Yale-New Haven Teachers Institute, Yale University

For terms of use visit <https://teachersinstitute.yale.edu/terms>