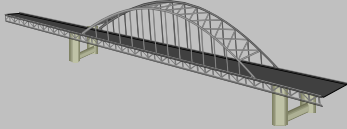


Building Bridges

Instruction in an Interdisciplinary Unit



Dave Janosz

Considerations



- Curriculum Standards
- Student Learning Styles
- Instructional Methods
- Assessment Techniques

Curriculum Standards

Standards for Technological Literacy (ITEA, 2000)

Standard 3

Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.

Standard 9

Students will develop an understanding of engineering design.

Standard 11

Students will develop the abilities to apply the design process.

Standard 20

Students will develop an understanding of and be able to select and use construction technologies.

Student Learning Styles



- Gardner's Multiple Intelligences
- How People Learn: Brain, Mind, Experience, and School
- Bloom's Taxonomy

Instructional Methods



- Short Lectures
- Presentations
- Video
- Demonstrations
- Short Activities
- Design Activity

Assessment Techniques



- Teacher Observation
- Design Portfolio
- Worksheets
- Tests and Quizzes

Bridge Classifications Presentation



Students will be able to:

- Identify several types of bridges
- Compare different materials used in bridge construction.

West Point Bridge Designer



Students will be able to:

- Analyze tension and compression forces on structural members.
- Design/Redesign for efficiency.

Short Lectures



Students will be able to:

- Differentiate between tension and compression forces.
- Describe structural loads as live, dead, static, and dynamic.

Short Lectures



Students will be able to:

- Compare and contrast structural forms.
- Compare and contrast structural materials.

Bridge Design and Construction Activity



Students will be able to:

- Apply the design process.
- Apply learned concepts of loads and forces.

Testing & Analysis Worksheets



Students will be able to:

- Analyze the strengths and weaknesses of their design.
- Describe methods of construction employed.
- Sketch objects.
