


Postcard



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Overview Students were tasked with becoming engineers and had to use the engineering design process to research, design, build, and test a bridge design. Students worked in teams and had to go through several rounds of critique, revision, and presentations prior to building and testing their bridges. Students used what they learned during their research about the Brooklyn Bridge, Tacoma Bridge Tragedy, and the Golden Gate Bridge to help them make decisions. In addition to designing the bridge, students had to manage a budget and materials.

Driving Questions

- How can you build a bridge that spans 30 cm and supports at least 15 lbs with a limited budget?
- Would you cross that bridge?

Teacher Reflection If I were to complete this project again, I would build in extra time to revise the blueprints with examples of high quality, real world work. Although students provided feedback and revised I would have liked them to see high quality work that would have inspired them to elevate their blueprint designs.

PBL Unpacked

As identified using "Unpack My PBL" within www.pblounge.org

WANTS	NEEDS
<p>Public Project</p> <ul style="list-style-type: none"> <i>Interacting:</i> Exhibit/Contest <i>Producing:</i> Model or Prototype <i>Revising/Iterating:</i> Revise a Product or Service <p>Media Produced</p> <ul style="list-style-type: none"> <i>Computer-Assisted Drawings:</i> Blueprints <i>Tactile:</i> Modeling Materials <i>Technical Writing:</i> Budget, Cost Analysis or ROI <i>Physical Drawings & Fine Arts:</i> Product Drawing or Sketch <p>Real World Exploration</p> <ul style="list-style-type: none"> <i>Humans in the World:</i> Inventions <p>Authentic Industries & People</p> <ul style="list-style-type: none"> <i>Career & Technical:</i> STEM Research & Applications 	<p>Questions & Themes</p> <ul style="list-style-type: none"> <i>Challenging Problem:</i> Build a Better World <p>Project Parameters</p> <ul style="list-style-type: none"> <i>Project Timeframe:</i> 3-4 Weeks <i># of Project Members:</i> Small Group <i>Grade Level:</i> Middle School <i>Authentic Connections:</i> Industry Representatives <p>Success Skills</p> <ul style="list-style-type: none"> <i>Creativity:</i> Brainstorm Change Design/Create Improve/Refine <i>Communication:</i> Business Presentation <i>Collaboration:</i> Maximize Strengths of Team Members Work Fluidly to Meet Deadlines <i>Critical Thinking:</i> Manage People or Deadlines Innovate Assemble Parts of a Whole <i>Instilled Citizenship Values:</i> Personal Responsibility <p>Areas of Knowledge & Understanding</p> <ul style="list-style-type: none"> <i>Engineering:</i> Civil Engineering

For additional resources provided with this PBL, follow links beneath the **Building Bridges** thumbnail on the [Isle of Wight County Schools](http://www.pblounge.org) page within www.pblounge.org.



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