Engineering: Bridges Workshop

A Museum of Science Traveling Program
Description

Engineering: Bridges Workshop is a 50-minute early-learner workshop that combines literature and engineering activities. It is designed to build on NGSS-based curricula.

NGSS: Next Generation Science Standards
Needs

We bring all materials and equipment, including a video projector and screen. Access to 110-volt electricity is required.
Space Requirements

The program can be set up in any room with at least 20´ by 25´ of cleared floor area. All sessions must be taught in the same room.
Goals: Story Book

The framing device of the program is a story about two friends who have an engineering problem: How to bridge a river that separates them.
Goals: Prototyping

The children are then challenged to **prototype** simple bridges over our model river using wood blocks.
Goals: Testing and Redesign

Students can **test** their bridges using models of the characters in the story and then improve their designs.
Goals: Arch Bridges

The children learn how arch bridges work and the importance of the shape of the *keystone*. 
Finale

The characters in the story eventually solve their problem with an arch bridge. The children get to build one full-size...
Finale

…and test it themselves!
Program Details

- Can only be booked for school groups during the school year.
- Only available for pre K, kindergarten, first- or second-grade students studying the program content.
Program Details

• Capacity is one class (25 students) per session.
• Up to four consecutive sessions can be taught per day.
NGSS Connections

- **PreK-PS1-2**: Investigate natural and human-made objects to describe, compare, sort and classify objects based on observable physical characteristics, uses, and whether something is manufactured or occurs in nature.
- **PreK-PS2-2**: Through experience, develop awareness of factors that influence whether things stand or fall.
- **1.K-2-ETS1-1**: Ask questions, make observations, and gather information about a situation people want to change that can be solved by developing or improving an object or tool.
- **K-2-ETS1-2**: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
- **2.K-2-ETS1-3**: Analyze data from tests of two objects designed to solve the same design problem to compare the strengths and weaknesses of how each object performs.
NGSS Scientific and Engineering Practices

- Asking questions and defining problems.
- Planning and carrying out investigations.
- Developing and using models.
- Constructing explanations and designing solutions.
- Engaging in argument from evidence.
- Obtaining, evaluating, and communicating information.
## 2019 – 2020 Prices

<table>
<thead>
<tr>
<th>Sessions per Day</th>
<th>Price</th>
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<tbody>
<tr>
<td>1 Session</td>
<td>$450</td>
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<tr>
<td>2 Sessions</td>
<td>$550</td>
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<tr>
<td>3 Sessions</td>
<td>$650</td>
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<tr>
<td>4 Sessions</td>
<td>$750</td>
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No mileage fees charged in New England in 2019-20 School Year.
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For information/reservations:
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