Bridges Around the World

CONNECTING PEOPLE, PLACES, AND IDEAS
Bridge Engineering Security Team
Bridge Engineering Security Team
Dear Friends,

We need your help. There are many disasters around the world in which important bridges are lost. People in these places need to build new bridges, and we want to give them models. Please help us design bridges for these future disasters.

Use the materials in this package to learn about beam bridges, one of the three basic bridge designs. We want to be able to give beam bridge designs to communities that need them. Take notes in your Bridge Engineering Security Team Notebook.

Thank you for your help and welcome to our team!

The Bridge Engineering Security Team

BEST
A Beam Bridge
Where is China?
Luoyang Bridge
Quanzhou, China

Built in 1053
Luoyang Bridge = Beam Bridge
Where is New Orleans, Louisiana in the United States?

Pontchartrain Causeway Bridge
Old or new?
Stone or wood or concrete?
For cars or for walking?

Luoyang Bridge

Pontchartrain Bridge

log bridge
Beam Bridges
Dear Friends,

Now you have learned about _______________ bridges, one of the most important kinds of bridges. The basic parts were the _______________ and the _______________. You can use this information to help us design bridges for future _______________, when they strike.

Now for your next mission!

Use the materials in this package to learn about arch bridges, another one of the three basic bridge designs. We want to be able to give arch bridge designs to communities that need them.

________________ for your help.

Bridge Engineering Security Team

BEST
Where is France?
Avignon, France

Pont du Gard

Pont du Gard
An Arch Bridge: Pont du Gard

LOAD

FORCE FROM ABUTMENTS

SHEAR FORCE

COMPRESSION

KEYSTONE

FORCE FROM ABUTMENTS

SHEAR FORCE
What is different between these bridges?
Where is Franklin, Tennessee in the United States?
Old or new?
Stone or concrete?
Two Arch Bridges to Compare
Natchez Trace Parkway Bridge

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COMPRESSION

KEYSTONE

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SHEAR FORCE

SHEAR FORCE
London Bridge is Falling Down
Where is London?
London Bridge 1831
London Bridge Is Falling Down...
London Bridge 1971: Arizona
London Bridge Today: Lake Havasu

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What kind of bridges do you see?
Bridge Engineering Security Team
Dear Friends,

Now you have learned about beam and arch bridges, the first two of the three most important kinds of bridges. The information in this package will help you to design bridges for future disasters, but there is one more kind of bridge you will need to learn.

Use the materials in this package to learn about suspension bridges, the last of our three basic bridge designs. We want to be able to give suspension bridge designs to communities that need them.

Thank you again for your help. We are really looking forward to the designs you will make for us.

Bridge Engineering Security Team
Where is Japan? Where have we been?
Where is Kobe?

The Akashi Kaikyo Bridge
Suspension Bridge

CABLE

HANGER

ROAD

PIER

DOWEL

BRIDGES AROUND THE WORLD - A STEM MODULE FOR WORLD LANGUAGES
Suspension Bridges
Golden Gate Bridge
Where is San Francisco, California?
# Suspension Bridges

<table>
<thead>
<tr>
<th>Golden Gate Bridge (1937)</th>
<th>Akashi Kaikyo (1998)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,737 m (8,981 ft) long</td>
<td>3,911 m (12,831 ft) long</td>
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![Golden Gate Bridge](image1.jpg)

![Akashi Kaikyo Bridge](image2.jpg)
Brooklyn Bridge (1883)

1,055 m (3,460 ft) long
Suspension Bridges

- **Brooklyn Bridge**: 3,460 ft. (1883)
- **Golden Gate Bridge**: 8,981 ft. (1937)
- **Akashi Kaikyo Bridge**: 12,828 ft. (1998)
Beam, Arch or Suspension?
What do you see?

The Tower Bridge
Bridge Engineering Security Team
Dear Friends,

This is our last letter to you. You have now learned about the three basic kinds of bridges: beam, arch, and suspension. In your package are the tools you will use to design bridges for future disasters. Today we are showing you one more bridge that is a kind of a puzzle. When you solve the puzzle about this bridge, you will be official members of the CTSF and will be ready to design your own bridge.

The materials in this package will help you with your bridge design. We want to be able to give your bridge designs to communities around the world that will need them when disaster strikes.

Thank you again for your help. We are really looking forward to the designs that you will make for us. We hope you enjoy your work.

Bridge Engineering Security Team
Where is Stevensville, Maryland?
Chesapeake Bay Bridge