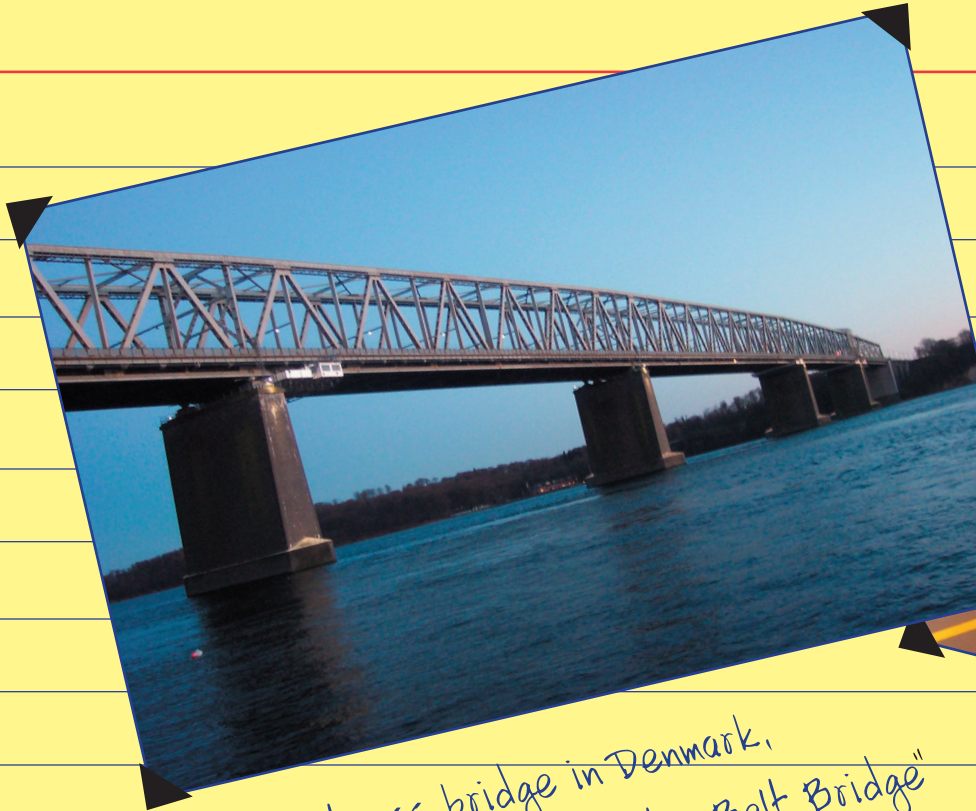
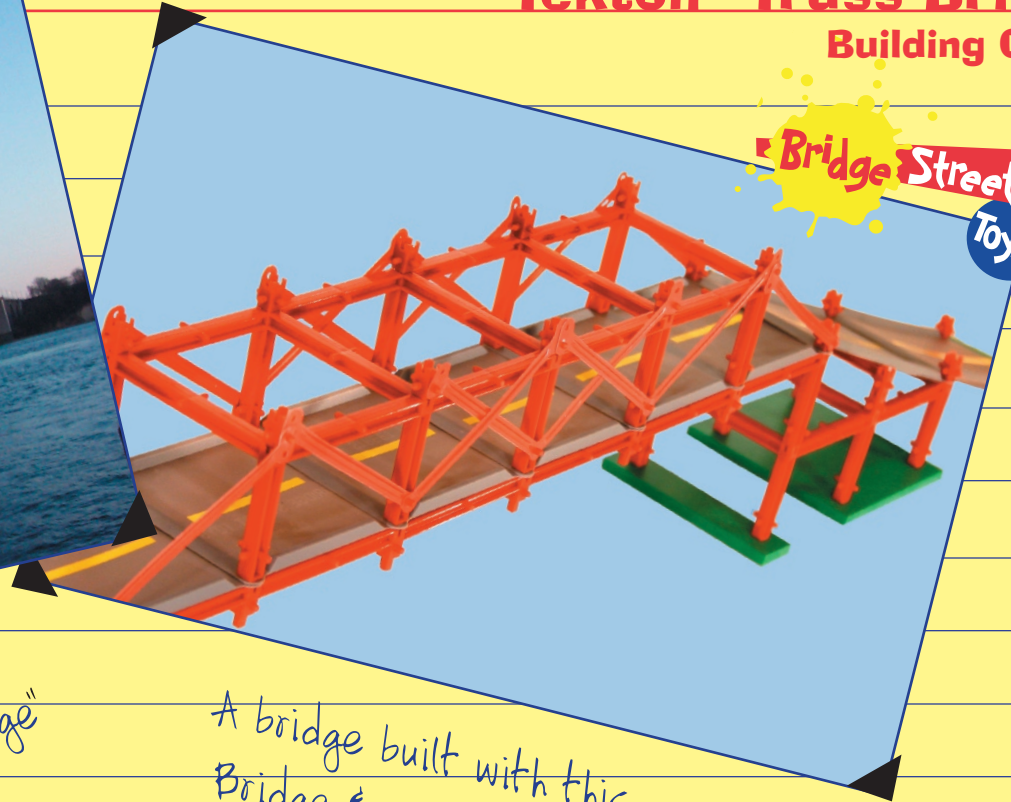


Bridge & Turnpike™ Tektōn™ Truss Bridge Building Guide



a real truss bridge in Denmark,
called "The Little Belt Bridge"



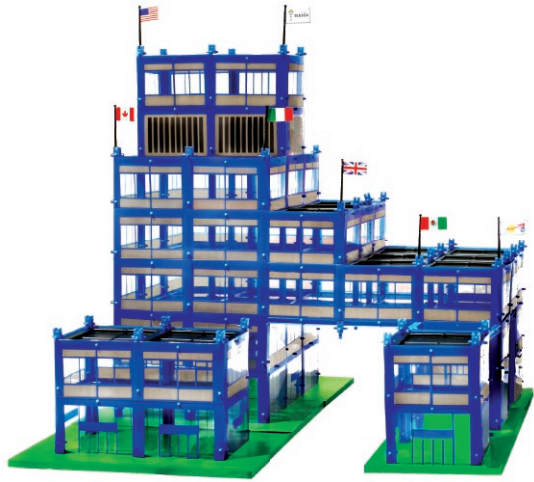
A bridge built with this
Bridge & Turnpike set

 **WARNING:**
CHOKING HAZARD - small parts
Not for children under 3 yrs.

What's inside

Curious about building?	3
Intro to Tektōn™ Truss Bridge	4
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Tekton™ Plaza Building



Tekton™ Bank

Are you curious about

How buildings are made?

How bridges work?

How chemical plants operate?

The Girder and Panel™, Bridge & Turnpike™, and Hydrodynamic™

building sets were developed to help answer these questions!

The building sets are designed to be replicas of actual buildings and bridges using a 1/87 scale (also known as HO scale).

Design...

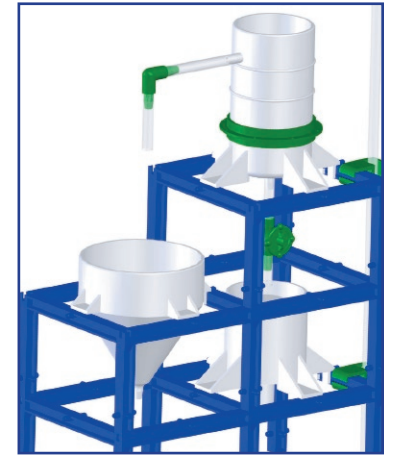
Construct...

Play!

Investigate the strongest structure for a tall building with the Girder and Panel™ set. Or the strongest design for a bridge with the Bridge and Turnpike™ set. Or have fun pumping water through tanks and changing the water flow by opening and closing valves in the piping with the Hydrodynamic™ set!

These classic sets help you understand and test the basic concepts of building strength (physics) and how water moves (fluid dynamics) in a fun, and creative way.

The parts in each of these sets are interchangeable with the other sets, and the sets can be combined to create entire cities: complete with office buildings, airports, highways, and manufacturing plants.



Hydrodynamic™ set coming soon!

Introduction to your Tektōn™ Truss Bridge Set.

About the Toy:

The Tektōn™ Truss Bridge (appropriate for ages 8 and up) allows you to design, build, and play with a scale model of a highway or railroad truss bridge. By playing with this set you will be able to discover why there is a difference in strength between a plank bridge and a truss bridge, and which is more suitable for trucks carrying heavy loads.

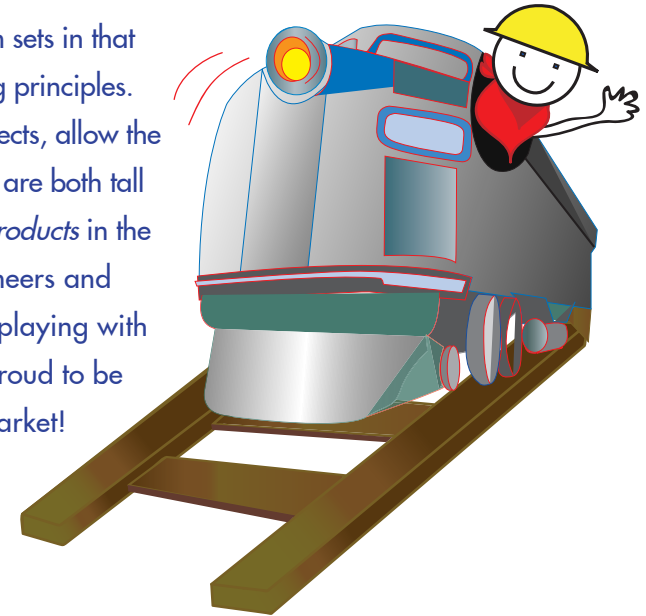
The bridge set contains plastic columns and beams which are interlocked together to create the basic frame of the bridge. Cross braces are added to make the structure stronger. Then roadways are placed on top of the bridge frame, to allow traffic to drive across it. The parts are HO scale (1/87 scale of real bridges) and can be combined with HO scale model trains, and other Girder and Panel™ building sets. Accessories include colorful signs and flags to decorate your bridges.

About Bridge Street Toys™

A privately held company, Bridge Street Toys™ is located in a suburb of Boston, Massachusetts. The company was founded by two engineers who strive to provide fun products that will inspire children to pursue careers in engineering, architecture, and technology.

About Girder & Panel™

Girder & Panel™ differs from other construction sets in that it lets children experiment with real engineering principles. The sets, which are perfect for science fair projects, allow the builder to investigate and create structures that are both tall and strong. Originally introduced by *Kenner Products* in the 1950's, there is an entire generation of engineers and architects who have many fond memories of playing with this set as children. Fifty years later, we are proud to be able to bring this inspirational toy back to market!



Included with Tektōn™ Truss Bridge



6 footings



64 beams



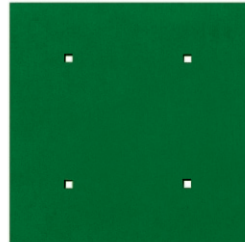
50 columns



30 braces



10 signs



2 footings



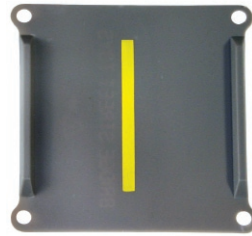
60 stubs



16 tie braces



4 flags & flag poles



6 roads (flat section)



1 road curve



4 straight road ramps



1 storage case



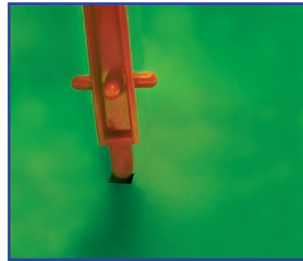
1 idea book

How The Parts Work



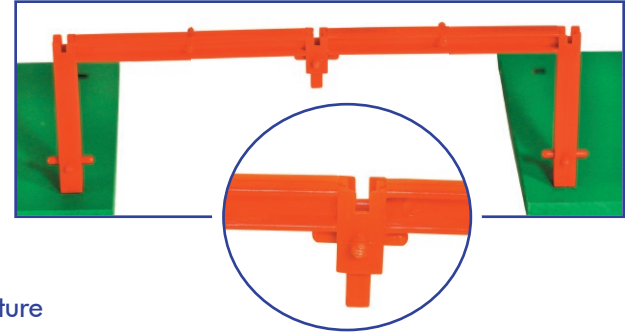
1st Start by placing the footings in the shape of your bridge.

2nd Take the columns (see page 5 if you need help figuring out what the column looks like) and place them in the square holes in the foundation pieces (footings).

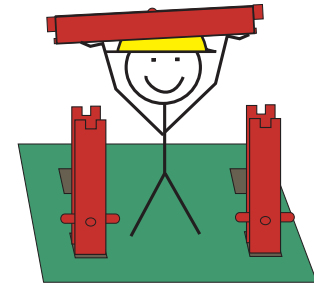
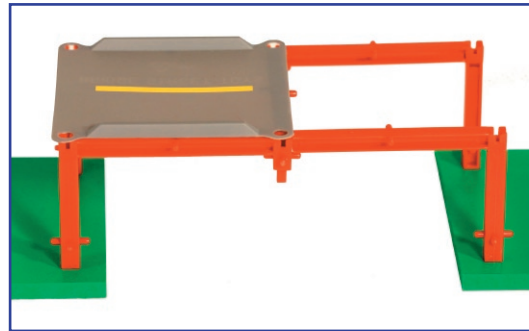


3rd Connect pairs of columns with a beam. The notch on the top of the beam slides into the top slot in the column.

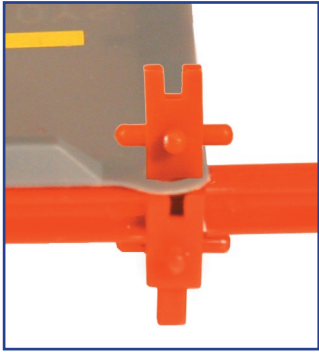
4th Place a stub between two beams, connecting them, and making an overpass for your bridge.



5th Now that the basic structure of your bridge is complete, you are ready to place the roadway pieces on top of your creation.

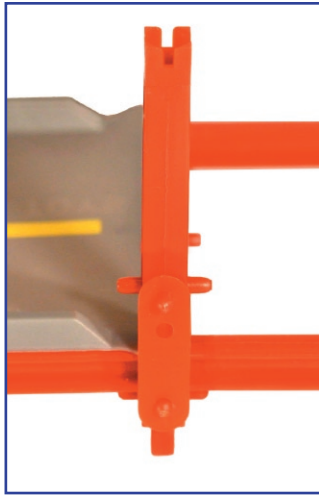


Tip: The columns may be a tight fit the first time that you put them into the footings. However, after a couple of uses, they fit perfectly and are easy to use!

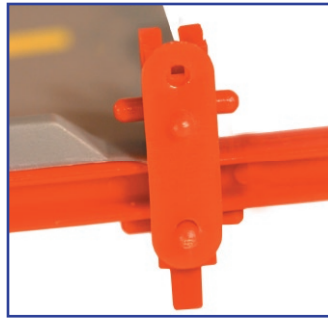


6th Once all of your road pieces are in place, secure them to the bridge structure using either a stub or a column.

7th Then make your bridge sturdy by using a tie brace (see page 5 if you're not sure what a tie brace looks like) to connect the bottom stub to the stub or column on top of it.

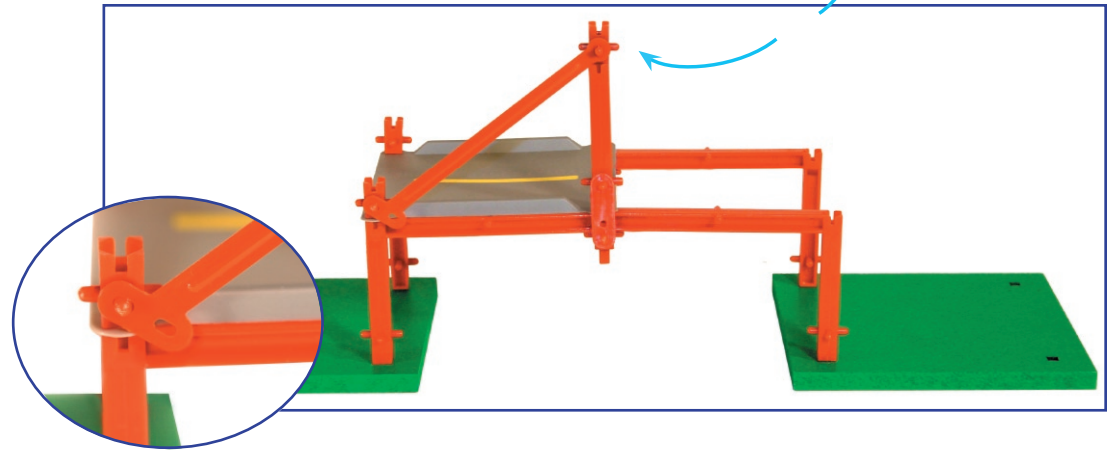


Tie brace securing two beams, a stub, and a column (that is also holding down the road piece)



Tie brace securing two beams, and two stubs (that are also holding down the road piece)

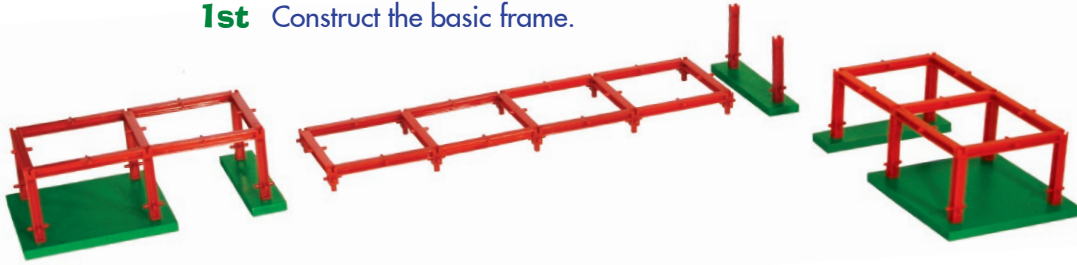
8th To make your bridge even sturdier use diagonal braces. First, add a stub to the top of the column. Then attach one end of the diagonal brace to the stub that is also holding down the road, and the other to the stub you just added on top of the column.



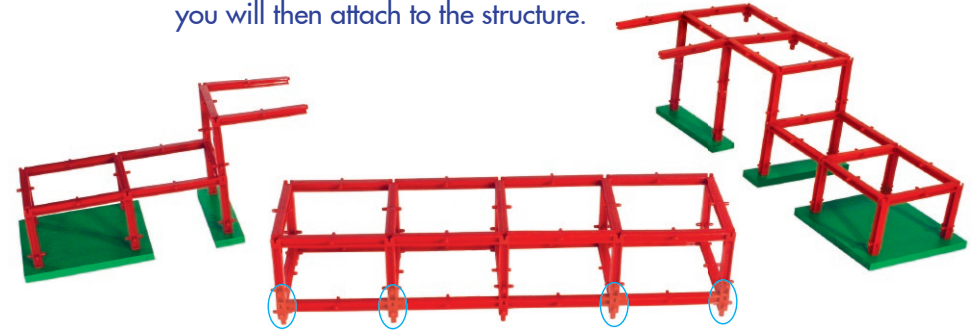
*Notice that there are two types of diagonal braces: a **left** and **right** one. The bridge looks nicer when the brace you use doesn't stick out past the top of the stub that is holding down the road, but structurally there is no difference.*

Building Instructions

1st Construct the basic frame.

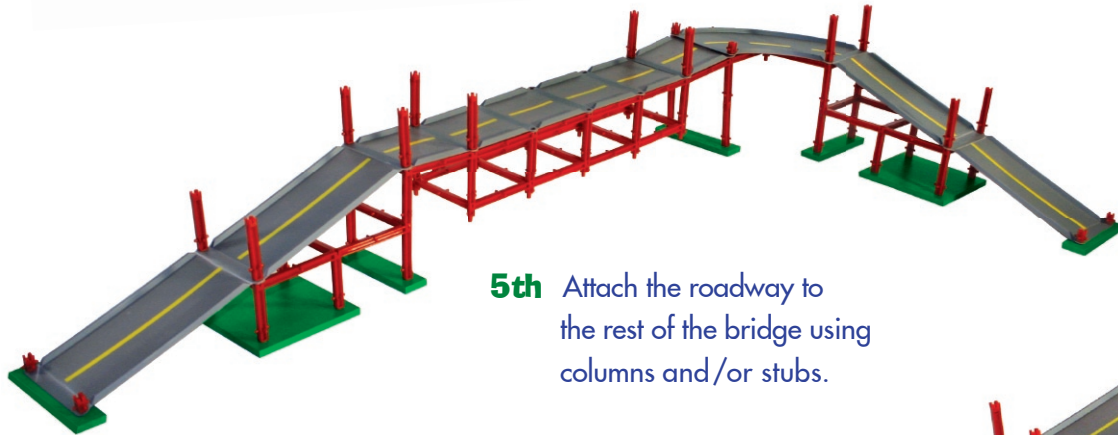


2nd Build a cantilever (overhang) that you will then attach to the structure.

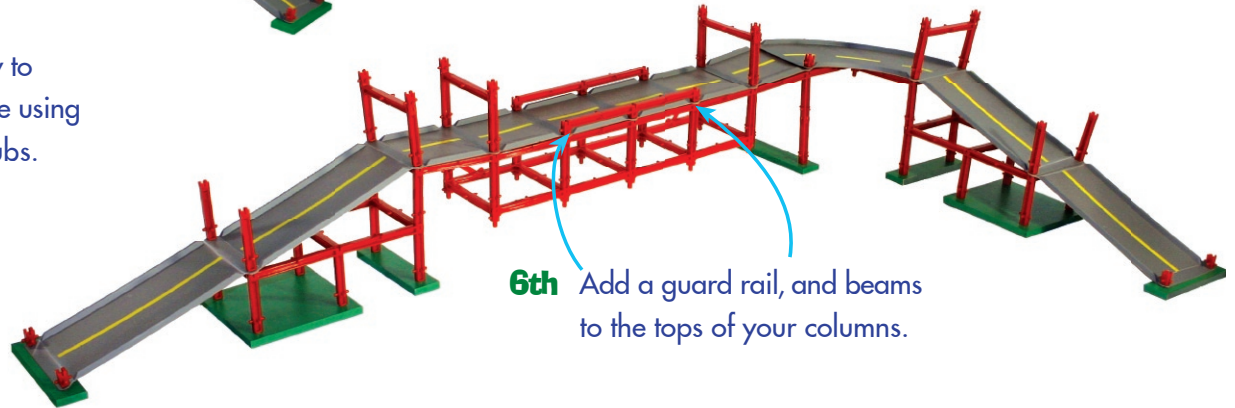


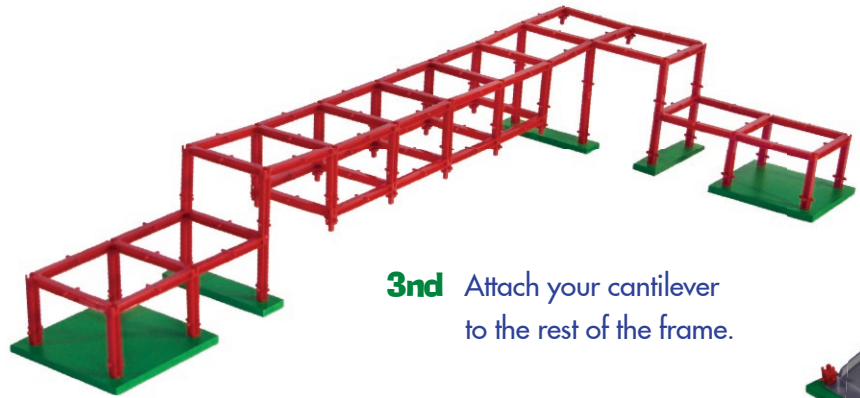
Add 8 tie braces – 4 to each side, so that the stubs don't fall off your structure. But don't attach a tie brace to the middle.

5th Attach the roadway to the rest of the bridge using columns and/or stubs.

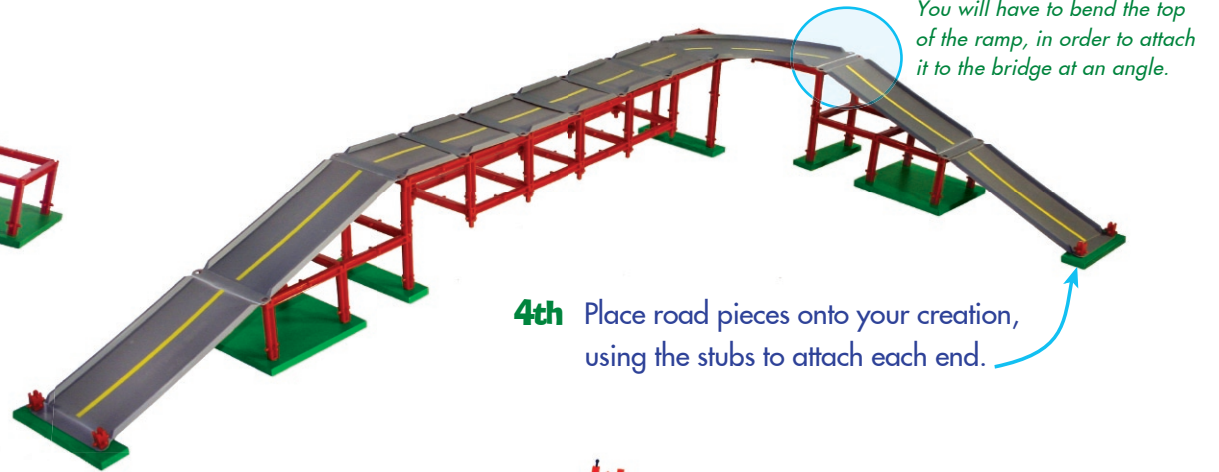


6th Add a guard rail, and beams to the tops of your columns.



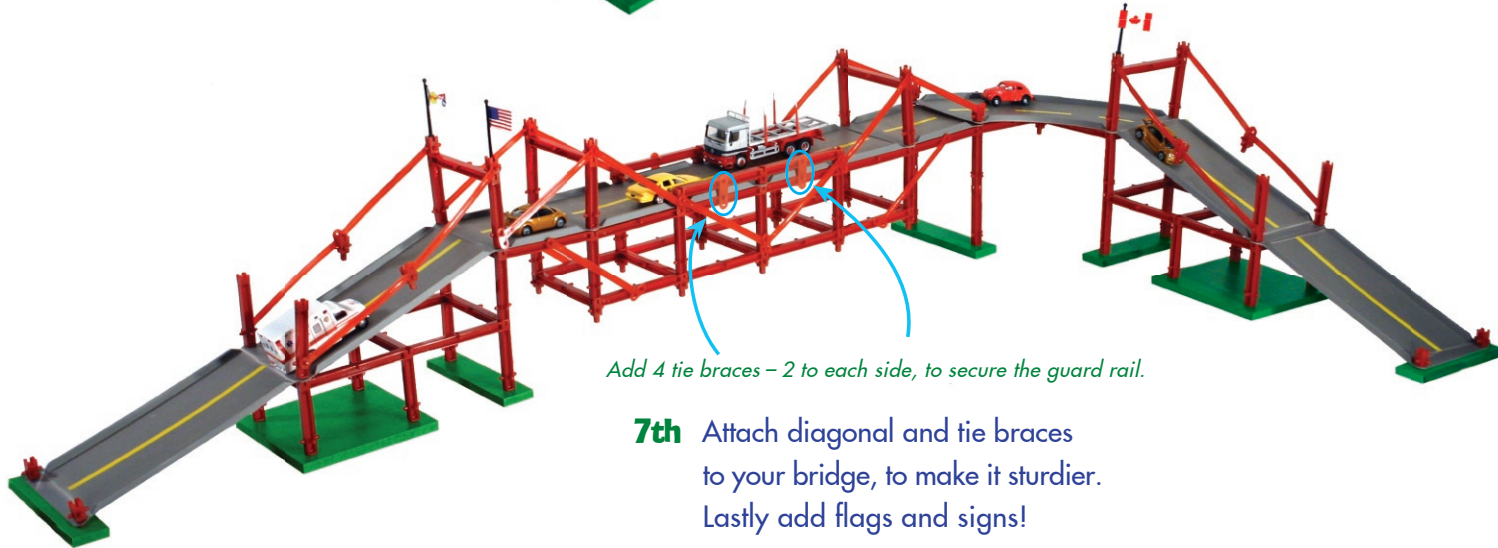


3rd Attach your cantilever to the rest of the frame.



4th Place road pieces onto your creation, using the stubs to attach each end.

You will have to bend the top of the ramp, in order to attach it to the bridge at an angle.



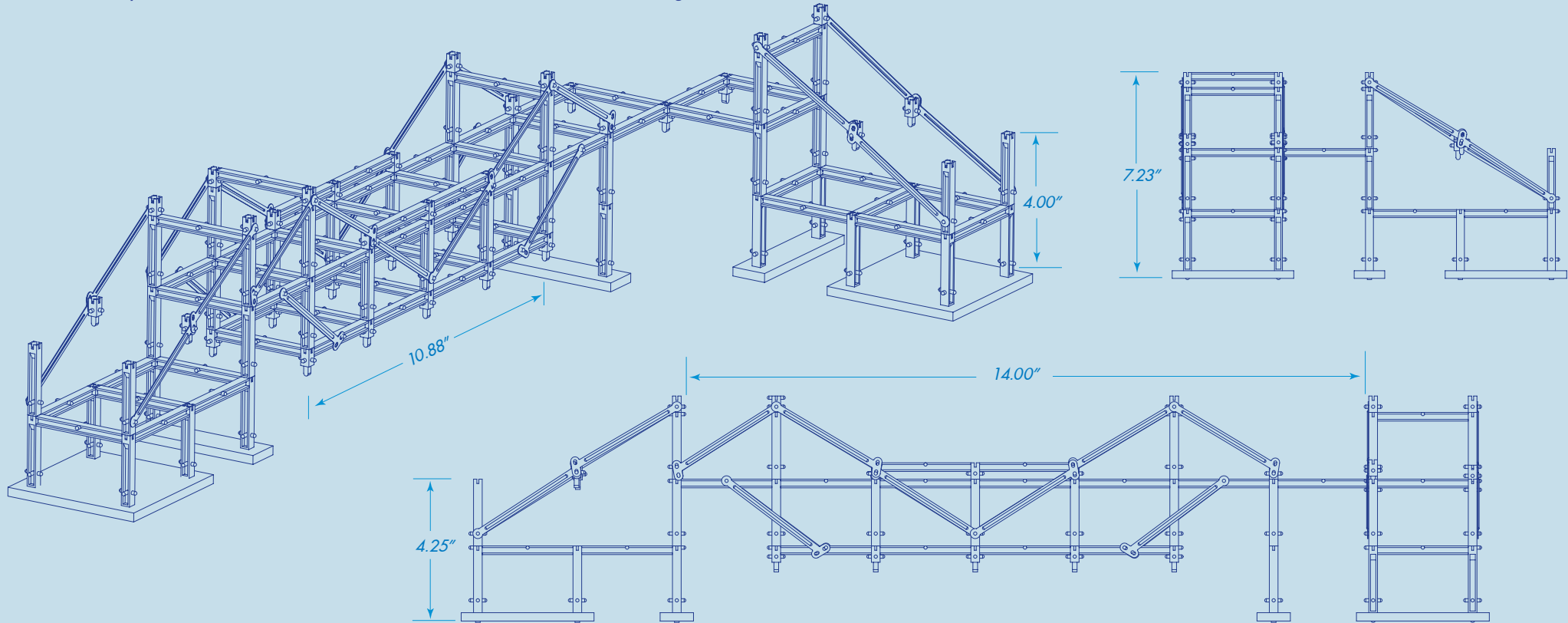
Add 4 tie braces – 2 to each side, to secure the guard rail.

7th Attach diagonal and tie braces to your bridge, to make it sturdier. Lastly add flags and signs!

CAD Drawings

"CAD" (which stands for "Computer Aided Design") is a computer program that helps real engineers make sketches of their work. The program allows you to rotate your creation, so that it can be viewed from different sides and angles.

Tekton Truss Bridge	
Scale: 1:8	Created by: BST
11/21/2005	Material: Plastic



Did you know?

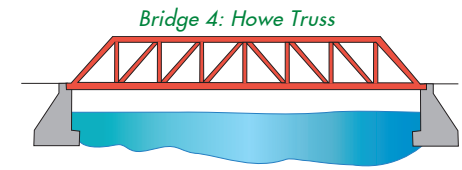
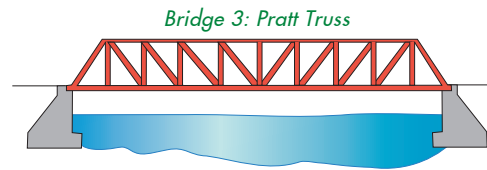
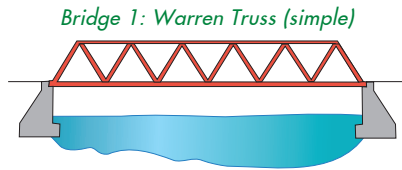
In order to be rigid, a truss bridge must be composed entirely of triangles.

A typical Truss Bridge spans anywhere from 130 ft to 1,640 ft.

Truss bridges are made of many small beams (such as the ones in your set), that together can support a large amount of weight, and span long distances.

Because the truss bridge is a simple hollow structure roadways may pass over the structure (see bridge #1), or through it (see bridge #2)!

There are primarily 3 different types of Truss Bridges: Warren Truss, Pratt Truss, and Howe Truss.



Warren Truss bridges (pictured above) are the most popular type of truss bridges because they are both simple to build, and can be quite long.

*Mameyaki Bridge:
4 span continuous truss*



The world's longest truss bridge is Pont de Quebec, in Canada. The second largest bridge is the Mameyaki Bridge, in Japan (shown on left).

Have a Problem Or a Question?

Contact Us

Please let us know if we can help you.

customerservice@BridgeStreetToys.com

1-781-237-5005

Have a Great Idea?

Do you have a great idea for a building and want to share it with other builders?

Send it to us at: funstuff@BridgeStreetToys.com

We will post pictures of creative buildings on our website's *Hall of Fame* page.

p.s. Please send your photo in "jpeg" format and include your first name and age.

Need More Parts?

No problem. We are selling spare parts! Check with your favorite local, educational toy shop, if they're not available there you can order them online through our website: <http://www.BridgeStreetToys.com>

Our Promise to You

We guarantee our products to be free of materials and manufacturing defects. Should your building set have a defect which makes the set unusable, please contact our customer service department for a replacement product.

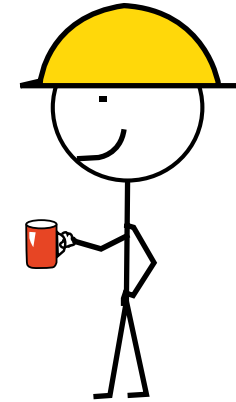
Other Products From Bridge Street Toys

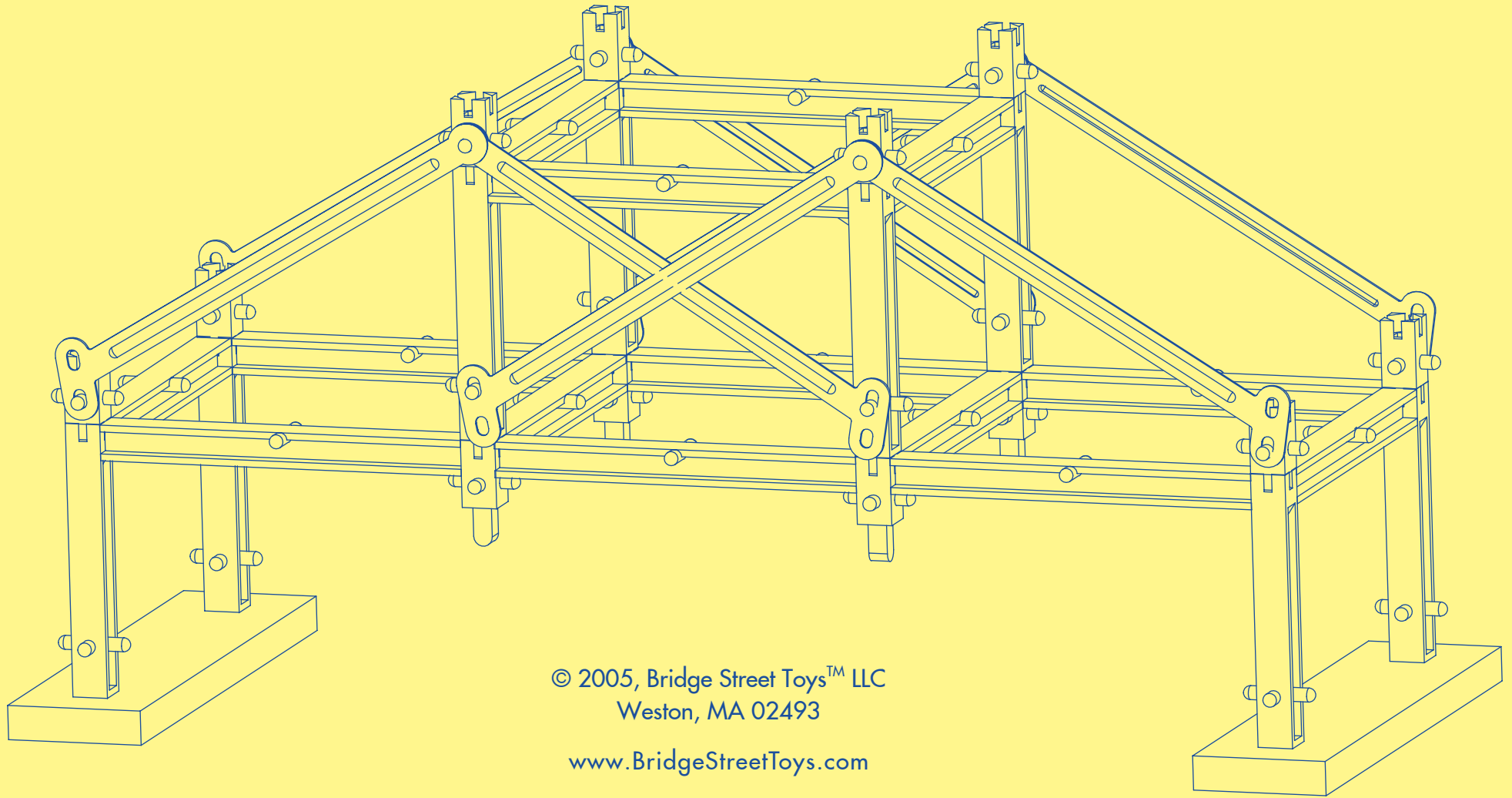
Bridge-Mania,
a Bridge &
Turnpike™
Building Set

City Buildings,
Girder & Panel™
Building Sets

A Skyscraper, a
Train Station, and
Boston Turnpike Set

Hydrodynamic™
Building Set





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