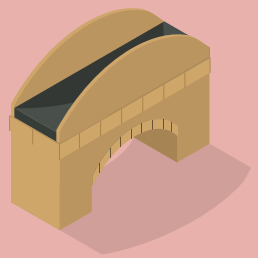
TOGO
SCIENCE

FUN FACTS

Bridges come in many different shapes. However we can classify them in three main categories, Beam, Arch and Suspension bridge.



PLAY STEAM®

WEBSITE: WWW.PLAYSTEAM.COM **EMAIL:** INFO@PLAYSTEAM.COM **ADDRESS:** SUITE 35 - 36 THE DESIGNWORKS, PARK PARADE, LONDON, NW10 4HT. MANUFACTURED BY HANGZHOU ZT MODEL COMPANY LIMITED. ADDRESS: NO 6 MINGDE RD., PUYAN, BINJIANG, HANGZHOU, CHINA.

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LEARNING BOOKLET
Bridge Architect

0-3

⚠ **WARNING:**
CHOKING HAZARD -Small parts, Not for children under 3 years.

AGES 8+

WARNING MESSAGE

GENERAL WARNING ⚠

Before you begin, please read through the instructions together with your children. Make sure you understand the safety messages. Please keep the packaging and instructions, as they contain important information.

This kit is designed for children over 8 years of age. This product contains small parts which may pose a choking hazard. It is not suitable for children under 3 years old. Please keep individual parts and the fully-assembled product away from children under 3 years of age.

Screws and other metal parts may have sharp edges. Children should have adult supervision when assembling the product.

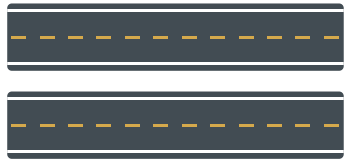
Last but not least, please clean the parts and finished product with a damp cloth. Do not use any soap or cleaning solutions.

Package Contents

- Joints

- Sticks

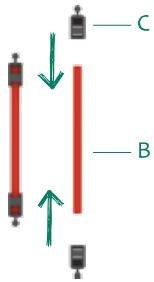
- Cars



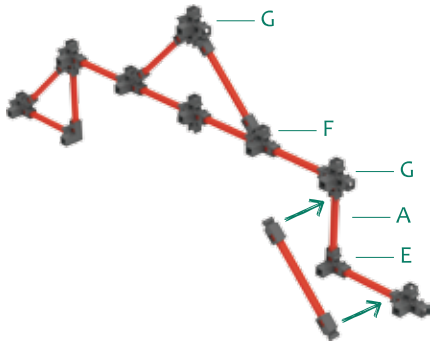
- Decks

Installation steps

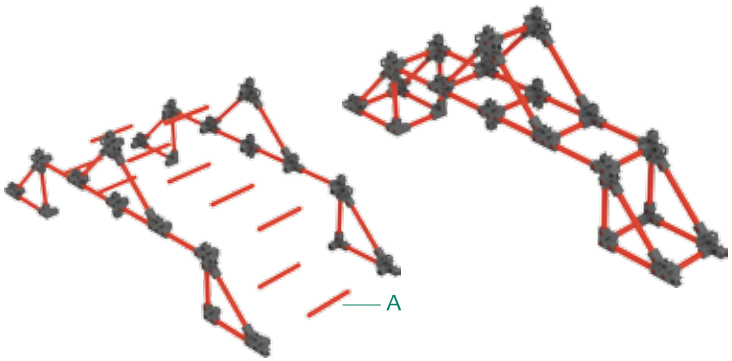
1. Prepare several simple units using sticks and joints.



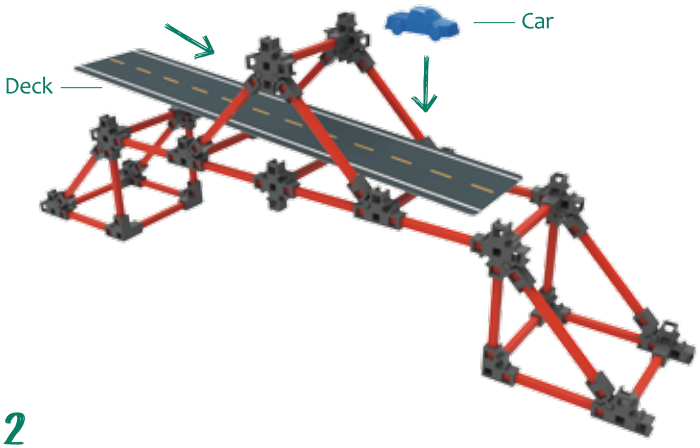
2. Use them to assemble one side of the bridge and repeat the same operation for the opposite side.



3. Assemble the two sides together to form the bridge.



4. Place the road decks and the cars on the bridge.



What does it do?

Build the bridge step by step as a real architect. You have probably noticed that most bridges, including yours, have slanted beams in the middle of the structure.

How does it work?

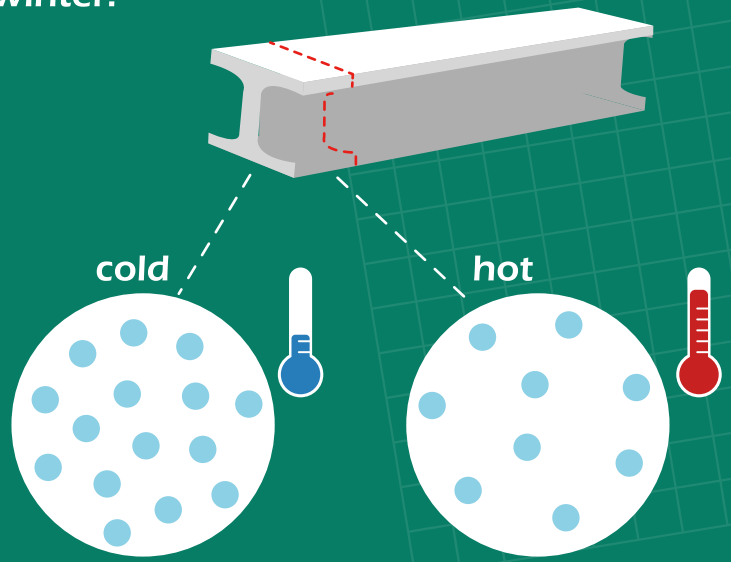
Trusses are triangle units made with straight pieces. Each truss absorbs the weight created when cars and trucks move across the bridge. Trusses are used in bridges, roofs, towers and other long structures. Try building the bridge without the triangle trusses and see the difference the strength and stability.

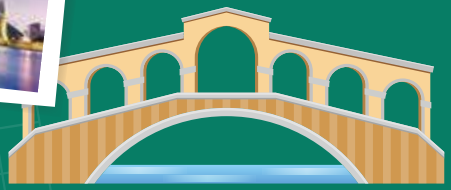
FUN FACTS

FUN FACTS 01

Have you ever heard of Thermal Expansion?

It is the tendency of solids to expand due to a rise in temperature. Most bridges are equipped with special joints because they expend during summer and shrink during winter.





FUN FACTS 02

Bridges come in many different shapes. However we can classify them in three main categories, Beam, Arch and Suspension bridge. The most famous Suspension bridge is probably the **Golden Gate Bridge** in San Francisco.

FUN FACTS 03

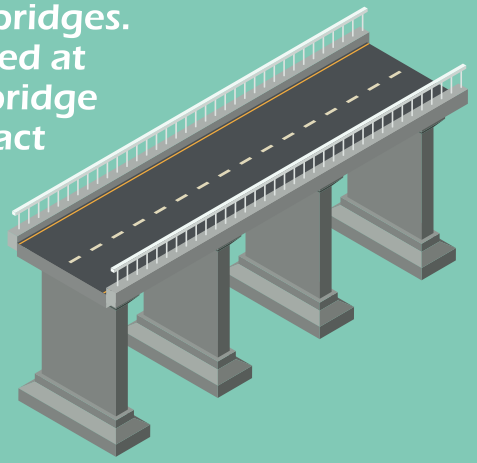
Duge Beipanjiang Bridge is a suspension bridge in China. When completed, the bridge is the highest in the world with the road deck being over 565 metres (1,850 feet) above the Beipan River.

FUN FACTS 04

The sticks and joints can be used to build other structures. Try to build a tower as high as you can. You will have to find a good compromise between building the tower strong enough and use as less sticks as possible to make the tower as high as possible. Let's see what you can do.

BEAM BRIDGE

Beam bridges are the simplest form of bridges. They are supported at each end of the bridge spans to counteract the bending at the center.

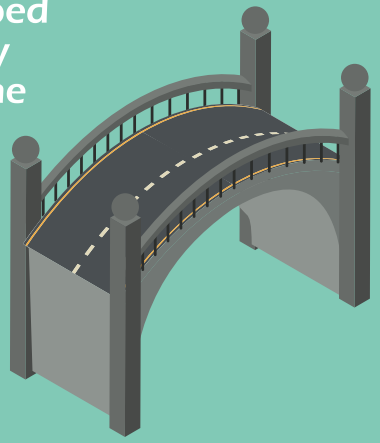


TRUSS BRIDGE

Truss bridges are kept strong by the stiffness of the structures. All the truss members work together to spread out the load.

ARCH BRIDGE

Arch bridges are shaped as a curved arch. They transfer the load to the abutments at both ends. A long bridge span may require more than one arch.



SUSPENSION BRIDGE

Suspension bridges allow for long spans. The decks which support the load are held up by cables stretched between piers.