What are bridges for?
Bridges are built to carry some sort of load over an obstacle.

The load might be people or cars or trains.

The obstacle might be a river or road.

This is Tower Bridge in London, it carries a road over the River Thames.

(This bridge has a special opening section to allow tall ships to pass under.)
There are lots of different types of bridges...
Girder Bridge

This Girder Bridge carries a railway across a river
Concrete Bridge

Made by pouring liquid concrete into a moulded shape. There are steel bars inside the concrete for extra strength.
Arch Bridge

Made from blocks of stone, the rounded arch shape make it very strong. Not so good for very long bridges.
The Forth Railway Bridge

Made from steel tubes. It was built super-strong after the disaster of the Tay Bridge which blew down in a storm.
Suspension Bridge

Suspension bridges are very good at crossing wide gaps and using very few materials.
The Clifton Suspension Bridge

This is a much older suspension bridge, in Bristol. Again, a long and strong bridge is made with few materials.
What is this bridge made from?!

It looks as though it is made from Lego, but it is really made from concrete beams.
Your challenge today is to build a bridge.

The bridge will span a gap between two tables. You are going to work in teams and each team will have two tables with a gap between them. The gap will be 60 cm.

It is a competition to see which team can make the strongest bridge.
What are your bridges to be made from?

You will be provided with:
Some string, a roll of sticky tape and 10 drinking straws.

What will the bridge carry?
As much as possible!
The load will be hung from the middle of the bridge.
The bridge which carries the heaviest load before it collapses or “fails” will be the winning bridge.
The Rules of the Competition

1. The tables will all be set 60 cm apart

2. The bridge is built to span the gap

3. No part of the bridge can be below the level of the table-tops.

4. The load is hung from the middle of the bridge
   IE the mid-point between the tables

5. The load will be placed in a bag which is hooked onto the
   bridge. weights will be added until the bridge fails.

6. IMPORTANT The bridge has failed when any part of the
   bridge dips below the level of the table-tops.

7. There can be no supports built up from the ground!

   Enjoy building your bridges....
Do not show the following page until after the competition
Here are some pictures of winning bridges at schools in the Isle of Man. One of them carried a load of over 5 kg before it failed. Maybe one of your bridges has beaten it?!
This bridge was so strong that it carried a bag full of books and sticky tape. Then more books had to be balanced on top. It failed at over 5 kg load.

Maybe one of your bridges has beaten it?!
PRIZES

If one of your bridges carried a load of more than 5 kg, please write to Chris Vine for a prize of some books !...
Real bridges sometimes collapse

This YouTube clip shows a real life bridge which collapsed spectacularly in America.

Nobody was hurt, so enjoy!!...

https://petersrailway.com/schools/tacoma-narrows-bridge-collapse/