



The
Impossible
Bridge

by Jane Buxton
photographs by Jamie Lean

Ready
to Read

Published 2015 by the Ministry of Education,
PO Box 1666, Wellington 6140, New Zealand.
www.education.govt.nz

First published 1998 for the Ministry of Education
by Learning Media Limited, Wellington, New Zealand.

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Series Editor: Bill Gaynor

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Publishing services: Lift Education E Tū

ISBN 978 0 478 16266 0 (print)
ISBN 978 1 77690 425 9 (online)

Replacement copies may be ordered from Ministry of Education Customer Services,
online at www.thechair.co.nz
by email: orders@thechair.minedu.govt.nz
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The Impossible Bridge

The Engineers' Report

by Jane Buxton
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Monday, 10 March: 2.17 p.m.

In maths last week, we began to build a scale model of our town.

We started by using bits and pieces we brought from home.

But we soon ran out of room, so Clementine got a strip of cardboard to make a bridge to the next table.

It looked all right, but when Emma put a car on it, the bridge bent in the middle.



Matt tried two strips of card, but the bridge still wasn't strong enough. He said that it was impossible to build a bridge out of cardboard. Emma said she would look on the Internet for some information about bridges.



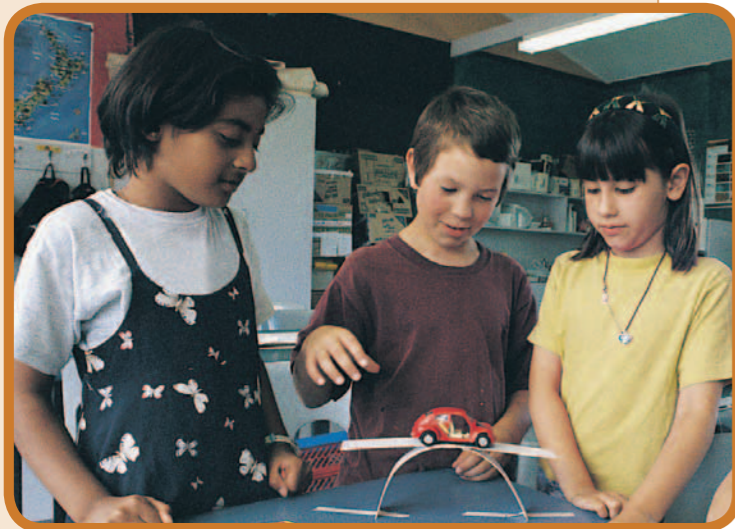
Tuesday, 11 March: 10.04 a.m.

Emma told us what she had found on the Internet.

The bridge Clementine tried to make yesterday is called a **beam** bridge.

We decided to see if an **arch** bridge would be strong enough to join the two tables.

We used the same two strips of cardboard, and it worked really well.



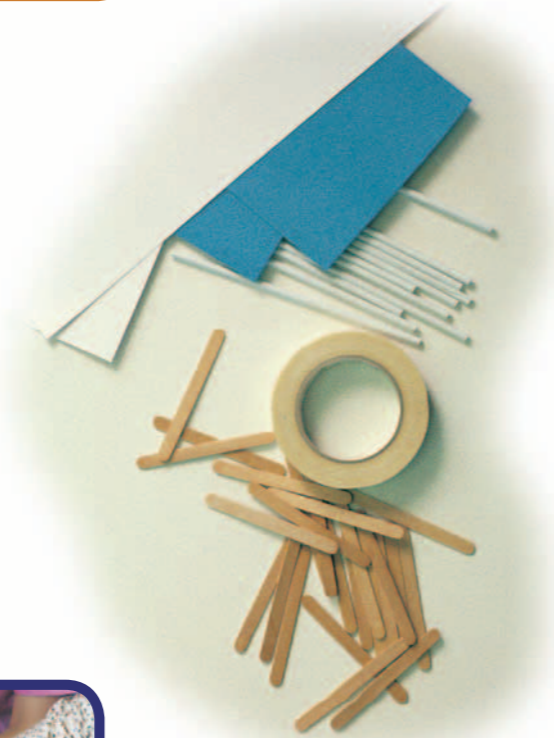


Wednesday, 12 March: 11.37 a.m.

Our teacher Mr Keith gave us some different materials to work with – some plastic drinking straws, some iceblock sticks, some sticky tape, and more cardboard.

We made arch bridges and beam bridges and tried them with different cars and trucks.

Mr Keith asked us if we would like to write an engineers' report about our work.



Engineers' Report - Wednesday, 12 March

Problem

To build a bridge strong enough to hold toy cars and trucks.

What we did

We built a beam bridge out of thin cardboard. It wasn't strong enough. We built an arch bridge out of the same cardboard, and it was strong enough.

What we found out

The arch bridge was much stronger than the beam bridge.

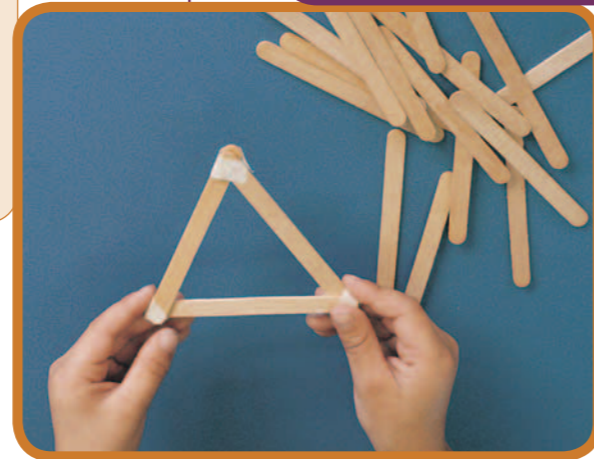


Thursday, 13 March: 10.57 a.m.

Today we decided to make a bigger bridge – from the table to the art trolley.

Clementine used the straws to make a small bridge with a triangle on each side, but it was far too short to reach across the gap. So I made some triangles out of iceblock sticks, and Emma, Luke, and Matt made triangles too.

When we joined all of our pieces together, the bridge was just the right length, and it was strong too.



Engineers' Report - Thursday, 13 March

Problem

To build bridges for our cars
to get from the table
to the art trolley.

What we did

We made bridges out of triangles.

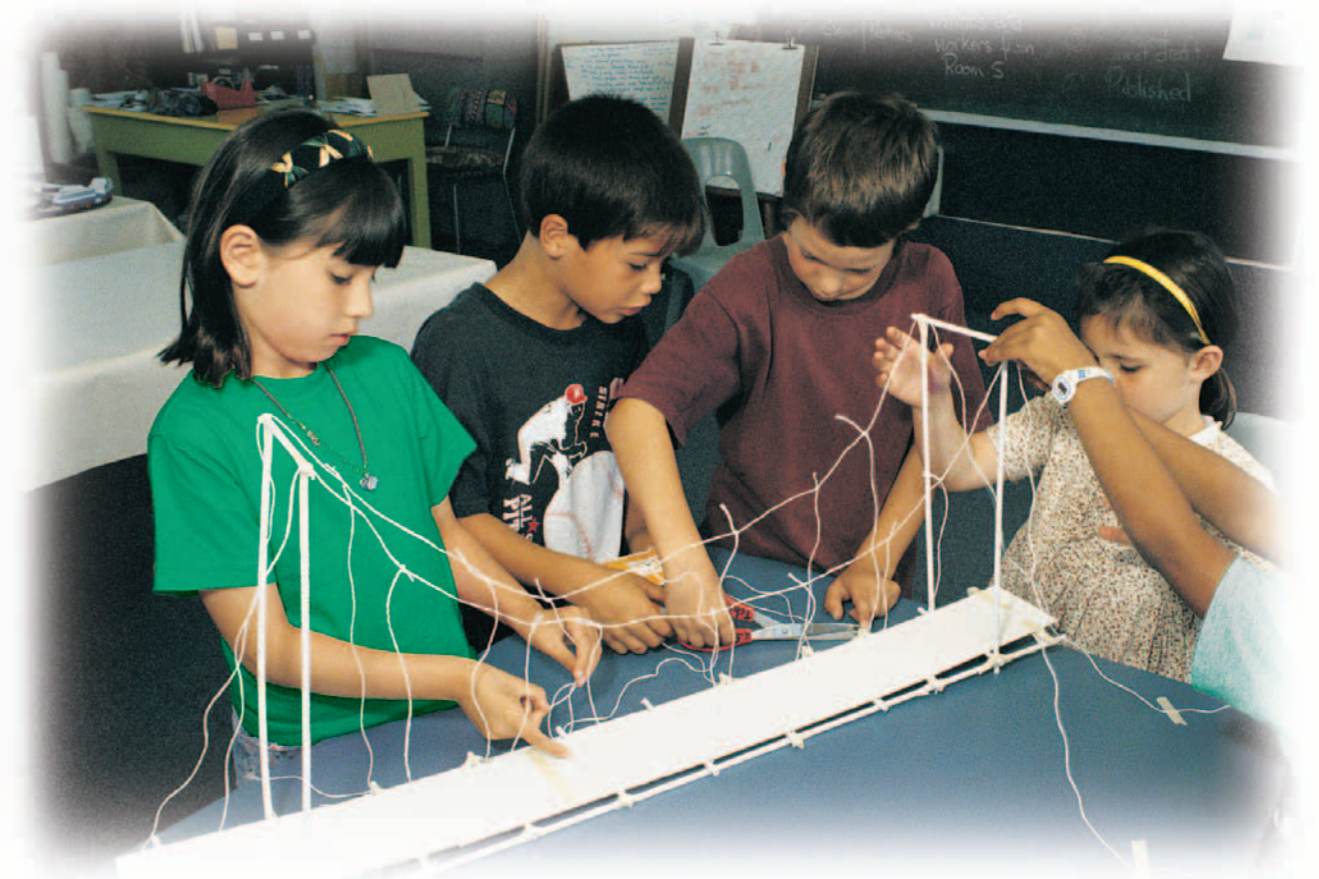
What we found out

You can make a strong bridge
using triangle shapes.
You can join triangles together
to make a "truss".
A truss can make a bridge
really strong.



Friday, 14 March: 1.57 p.m.

Today, after music,
we made a **suspension** bridge
from our table to Mr Keith's table.



The bridge took ages to make,
but it looked awesome.
This is what we said in our report.



Engineers' Report - Friday, March 14

Problem

To build a bridge long enough
to get from our table
to Mr Keith's table.

What we did

We used drinking straws,
cardboard, and string.
We used sticky tape
to fix the strings
to both tables.

What we found out

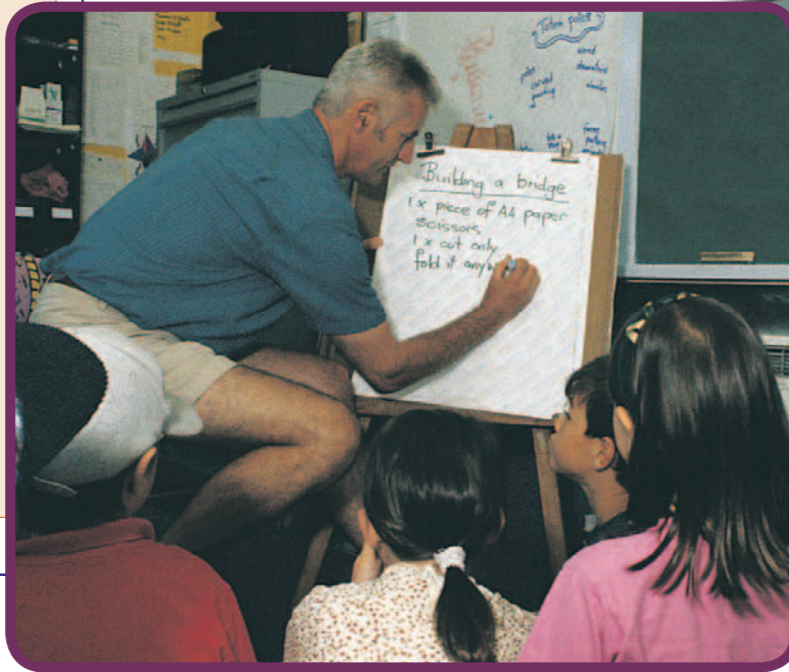
The strings hold the bridge up.
A suspension bridge is really good
for going over a long gap.



Monday, 17 March: 9.05 a.m.

Mr Keith has given us a challenge. This morning at maths, he gave us each one sheet of A4 paper to make a bridge with. We can cut or tear the paper only once, and we can't use sticky tape. It has to be strong enough to support a toy car without bending.

Clementine, Matt, and Luke say it can't be done – it's impossible. Paper just isn't strong enough. But Emma and I know some ways of folding paper to make it stronger. The others are all watching to see what we do ...



What would you do?



Engineers' Report - Monday, 17 March

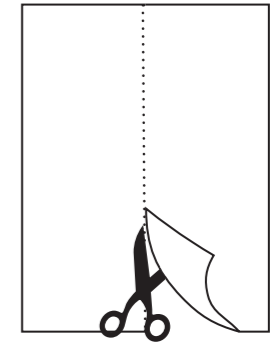
Problem

To build the impossible bridge.

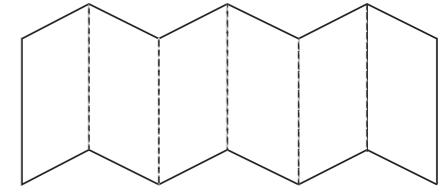
What we did ...

This is one way you can make a simple bridge with the sheet of paper.

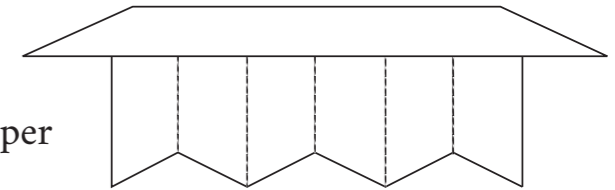
1. Cut the paper in half, lengthways.



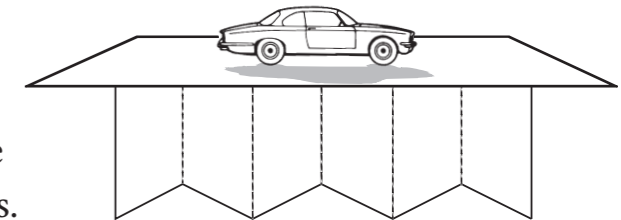
2. Fold one piece of the paper like this.

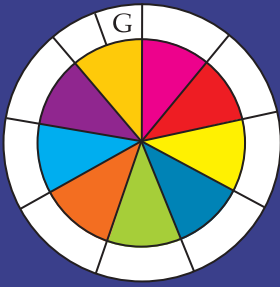


3. Lie the other piece of paper on top of the folded piece.



Put a weight on the bridge to find out how strong it is.





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ISBN 978-0-478-16266-0

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