

READY, SET, spaghetti

BY HEATHER GALLAGHER

A student team known as 'The Impastas' are basking in glory after winning their university's annual Pasta Bridge competition.

RULES OF THE COMPETITION

Spaghetti may not be the first thing you think of when it comes to bridge building. But using pasta and glue to build a bridge is a fun and time-honoured experience for engineering students across the globe.

At the University of Tasmania's Australian Maritime College, the pasta bridge competition has been running since 2008.

University lecturer Dr Damon Howe says students are given 8 weeks to work on their design, test the

strength of the pasta and make a prototype. The final competition build takes place over 2 weeks.

Bridges are only allowed to be 1,100 millimetres long, 500 millimetres tall, and weigh no more than a kilogram.

"They are allowed to use any type of commercially available pasta and adhesive," says Damon. "They do their own testing to determine which is going to be the best for building their bridge."

FOR THE WIN

Impasta team member Ryan Stanaway says the team tested more than 10 different styles of pasta, including penne, spaghetti, cannoli and lasagne sheets. Rigatoni and linguini were selected as the best final materials, held together with Araldite glue.

During the prototype testing, the Impasta's bridge collapsed under a 14-kilogram weight. But during the final test, their bridge held out to a whopping 82.7 kilograms.

Ryan believes a simple design was the key to their success.

"Designing what you've been taught in class and seeing it work in a broader spectrum, it's one of the best feelings," he says.

In a challenge like this, it's important to plan well, Ryan explains.

"If your project management skills weren't perfect, you'd be freaking out on the final day waiting for your glue to dry," he says.

But that wasn't a worry for the Impastas, whose bridge was complete a day and a half before testing.

Image: Estelle Hudson



The Impastas with their winning bridge

Left to right: Oliver Holton, Thomas Weatherald and Ryan Stanaway

HOW TO BUILD A SPAGHETTI BRIDGE AT HOME

1

DESIGN SUPPORTS FOR EITHER END OF THE BRIDGE

The supports could be 2 identical cardboard boxes or containers.

2

DECIDE ON THE BRIDGE LENGTH

Starting small will give you the best results. You can build longer bridges as your technique improves.

3

DESIGN A TEMPLATE

Draw your bridge on graph paper. Then lay dry spaghetti onto the template and cut to size.

4

CHOOSE YOUR GLUE

You could try white glue or craft glue. Always follow the instructions on the packet. The Impastas recommend Araldite (with parental supervision). For Araldite, wear gloves and eye protection.



Image: CSIRO/David Shaw

5

GLUE YOUR TRUSSES

Trusses are triangle-shaped supports that attach to the road part of the bridge on either side, to provide strength. Attach the trusses to each other with glue.

Image: CSIRO/Jasmine Fellows



6

CREATE THE ROADBED

Glue several layers of spaghetti to each other to make a thick, flat roadbed.



7

ATTACH TRUSSES

Attach the trusses to either side of the roadbed and to the trusses on the other side. The finished bridge will have a roadbed on the bottom with trusses rising above on both sides, like walls and a roof.

8

TEST YOUR BRIDGE

Place your bridge on the support structure. Start by placing something super light, like a coin, on the roadbed. You can keep increasing the weight of objects until your bridge collapses in a spaghetti storm!

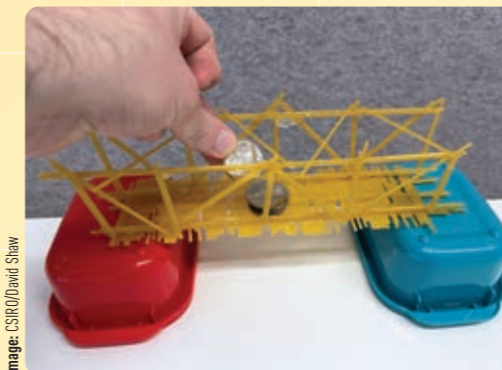


Image: CSIRO/David Shaw