

ENGINEERING
CHALLENGE

03

SPAGHETTI BRIDGES



THE
JAMES
DYSON
FOUNDATION

SPAGHETTI BRIDGES

ENGINEERING CHALLENGE 03

Designed by Kristian,
Design engineer at Dyson

The brief

Construct a free standing bridge out of spaghetti, strong enough to support a 1/2lb bag of sugar.

The method

Think about bracing strands together for strength. Some shapes are better at absorbing loads – triangles are particularly strong. Rubber bands make for good junctions.

Top tip

Be patient. Through trial and error, you'll become proficient at working with spaghetti.

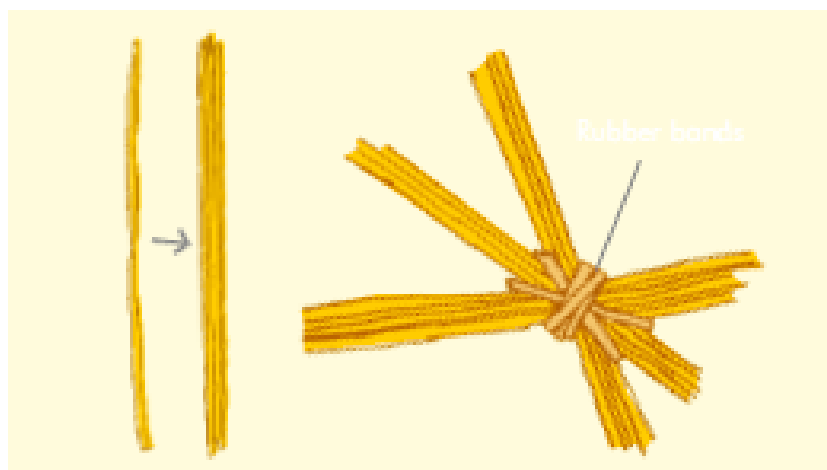
Materials

Spaghetti

Small rubber bands
or bag ties

Tope

1/2lb bag of sugar



How does it work?

Bridges manage two important forces: compression and tension – pushing and pulling. Too much of either and they buckle or snap.

Design icons

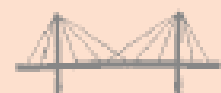
Why not take inspiration from these iconic bridge designs?



Beam bridge



Truss bridge



Cable stayed bridge



Arch bridge



Suspension bridge



Cantilever bridge