Brunel University London

Bridge building: welding with chocolate

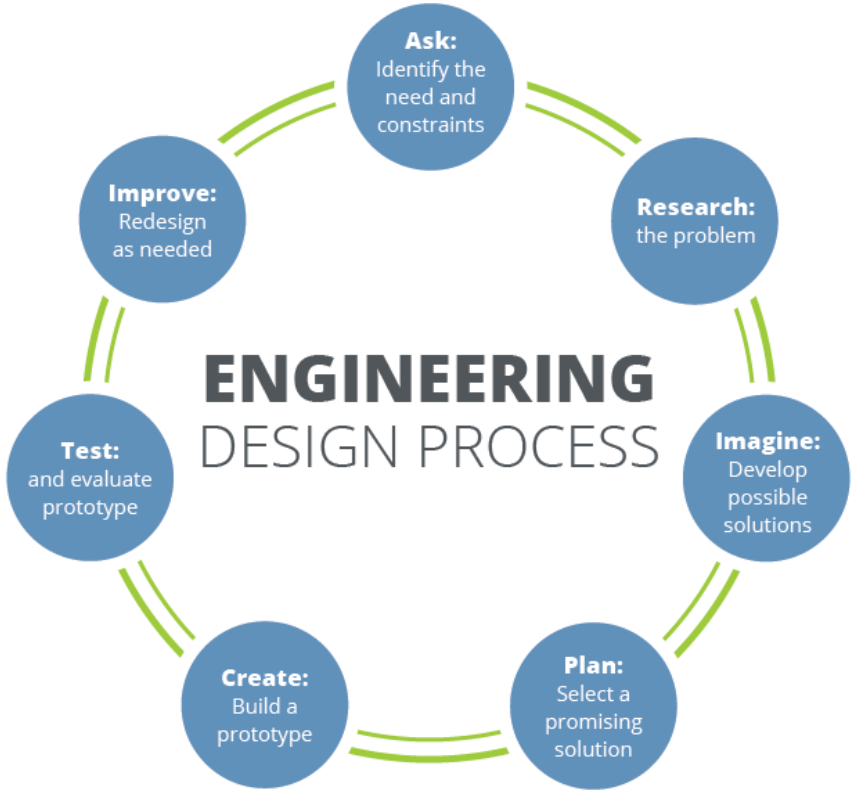
in association with The Welding Institute

Discover Brunel

We can all be engineers and inventors

Aims of this workshop:

- Familiarise ourselves with bridges
- Fabrication techniques for metals
- Engineering job role



What is welding with chocolate?

Putting pieces of chocolate together to make a structure

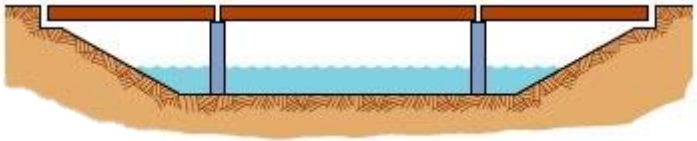
What are bridges?

A structure built to span a valley, road, seas, rivers or other physical obstacles, that allow people or vehicles to cross from one side to the other.

- What would our lives be like if bridges didn't exist?

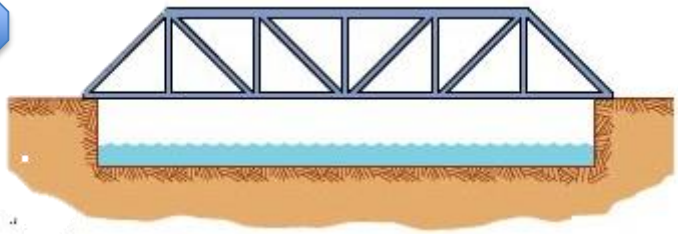
Types of bridges

A



Beam Bridge

B



Truss Bridge

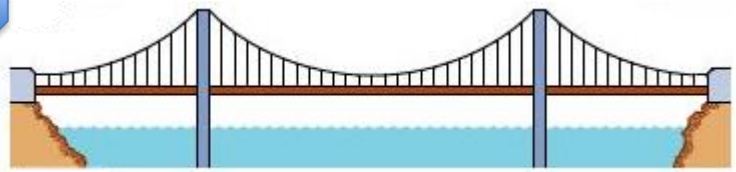
C

Cantilever Bridge

D

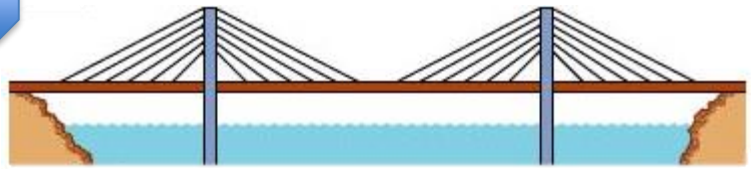
Arch Bridge

E



Suspension Bridge

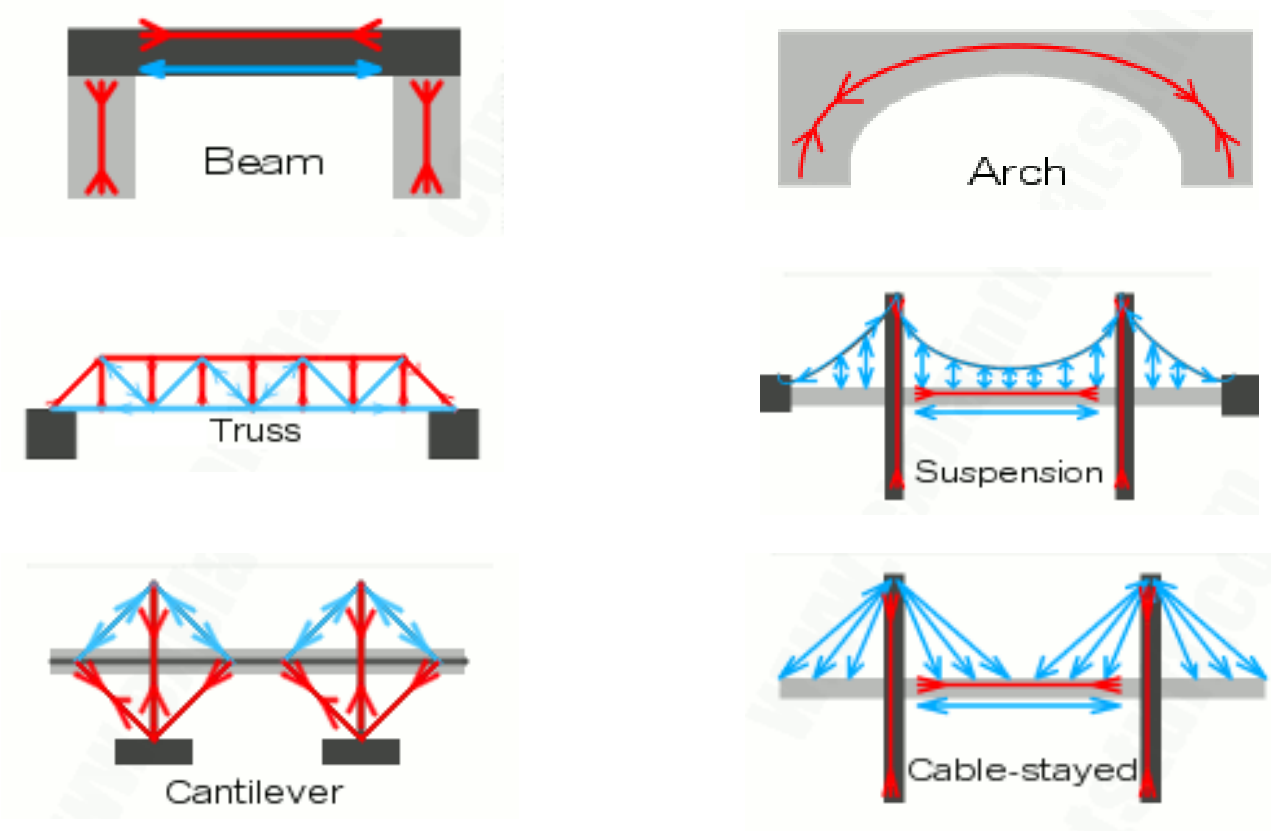
F



Cable-Stay Bridge

Tension or Compression

(Pushing) *(Pulling)*



Clifton Suspension Bridge

- Designed by our university namesake Isambard Kingdom Brunel
- Although built for pedestrian and horse drawn traffic, the bridge was so ingeniously constructed that it is now capable of carrying millions cars a year!

The Bristol bridge spans 214 metres between its two 26 metre high towers and stands 76 metres above the high water mark in the Avon river gorge

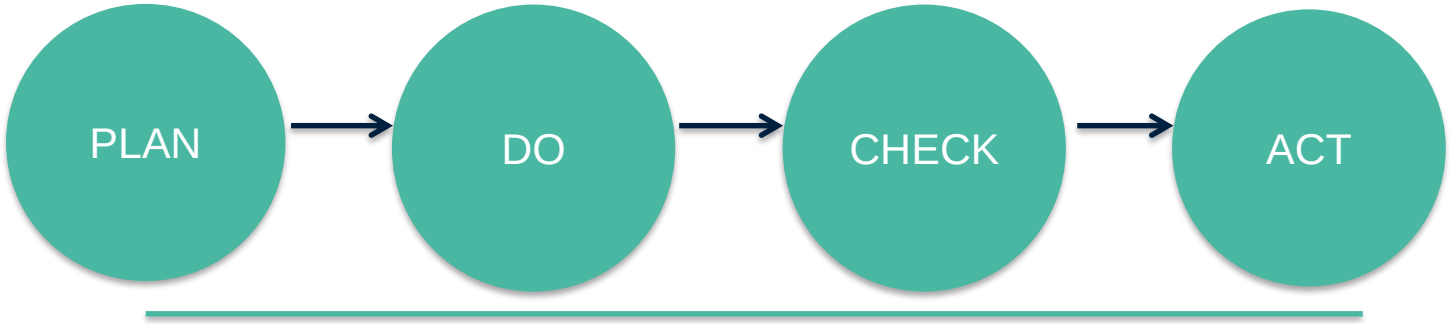
Today's task

Design and build a strong bridge…out of chocolate

Download here:
https://theweldinginstitute.wildapricot.org/careers-and-education/educational-outreach/welding-with-chocolate

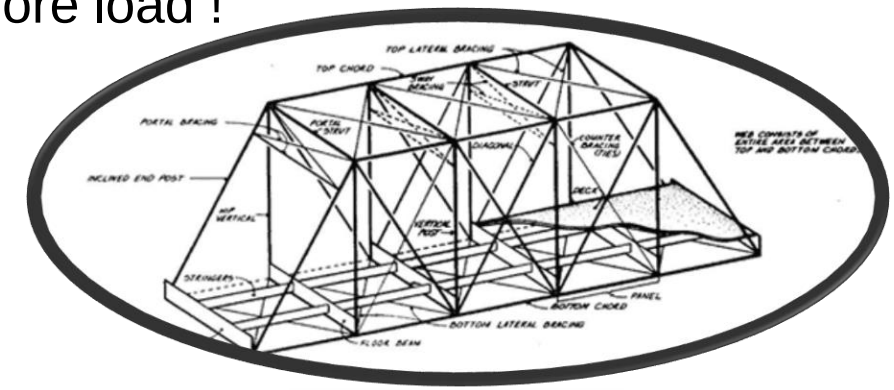
What have we learned about engineering principles?

In terms of a project…



In terms of a bridge construction…

- Truss bridges usually withstand more load !



Brunel University London

Well done!

Now find out more about becoming a Civil Engineer like Isambard Kingdom Brunel