

Design Technology (Y3) – Building Bridges Structures

Prior Knowledge

- Materials can be joined together in different ways. For example, you could use glue, tape, staples, screws or paper fasteners. Some of these are stronger than others (Y1, Summer Term)
- A strong base is needed in order for a structure to support itself (Y1, Summer Term)

Key Knowledge

- Frame structures are like the skeleton of a building. They are made up of lots of connected parts to create a strong, sturdy shape. These parts hold up the structure and have joints which are formed according to the design requirements.
- A wider base can make a structure stronger.
- Reinforced shapes are stronger as they can't be pushed over.

Equipment



Hacksaw

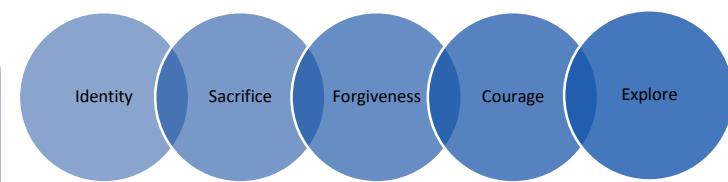


Dowel



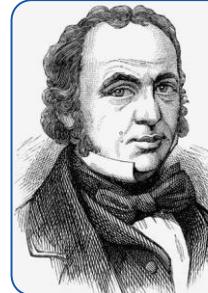
Bench Hook

How can I strengthen the structure of my bridge?



Key Vocabulary

frame	a rigid structure used to support building work.
joints	a connection where two pieces of wood meet.
reinforce	to make a structure stronger by adding another element to it.
bench hook	a tool used when working with wood to help hold objects still when they are being cut. it prevents slipping.



Isambard Kingdom Brunel

Isambard Kingdom Brunel was a Victorian engineer who designed some of the most famous bridges, tunnels, railways and boats in the world.

Health and Safety

Walk slowly and carefully around the classroom.

If you are left-handed, the cutting mark should be lined up against the left edge of the bench hook.

If you are right-handed, the cutting mark should be lined up against the right edge of the bench hook.

To hold, place your thumb on the wood and push down/forward, grip your fingers over and around the back rest of the bench hook.

Pick the hacksaw up by using the handle. Be careful to not touch the blade and keep the saw pointing down.

Use a controlled forwards and backwards motion to cut.