

Design and make a survival shelter



Famous Inventor: George W Buck

George Watson Buck designed the Viaduct bridge in Stockport in 1840. It carries the railway line over the River Mersey. The Viaduct is 33.9m high, 9.4m high and 546.2m long.



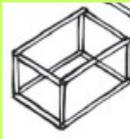
Being Safe

Stone Age to Iron Age

Remove any jewellery and tie back long hair.	Walk safely and slowly around the classroom.	Wear an apron and safety goggles when cutting wood.	Use scissors correctly. Make sure the blades are closed and facing down when moving around the room.	Use equipment carefully and safely. Report any accidents immediately.	Follow cutting instructions carefully. Measure twice and cut once.	Keep your work area clean and tidy up after yourself.
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Key Learning: Structures- Frame Structures

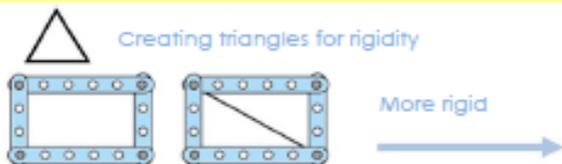
What are Frame Structures?



Frame structures are portable and hollow frames which are designed to hold forces of gravity and weight. Frame structures have joints which together with **horizontal** and **vertical** beams and columns help to **strengthen**, **stiffen** and **reinforce** frame structures. Scaffolding, bridges and houses are all frame structures.

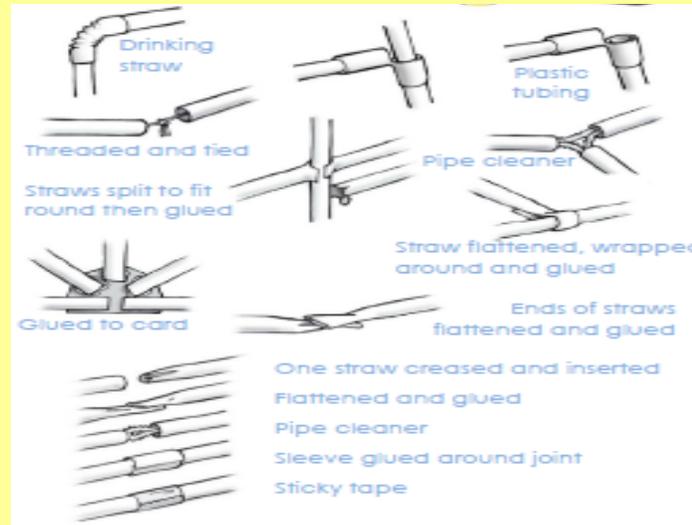
How to strengthen, stiffen and reinforce 3-D frame structures

Frame structures often require extra **reinforcement** to make sure they are **rigid** and **stable**. Triangles can be placed **diagonally** across a frame to make it more rigid, this is called **triangulation**.

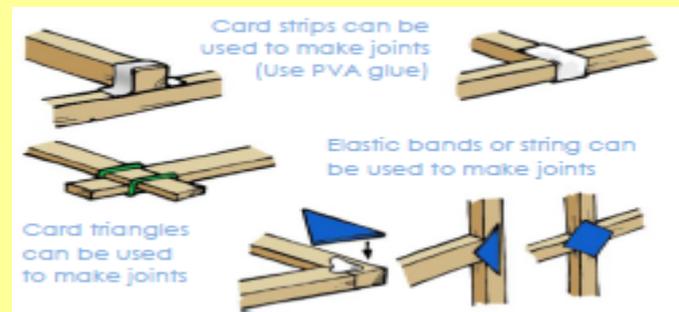


Technical Knowledge and Understanding:

Different Joining Techniques: paper straws



Joining thin sectioned pieces of wood



Key Vocabulary:

- join** To fasten together
- stiffen** To make or become stiff
- strengthen** To make something stronger
- reinforce** To add strength to something
- stability** To make solid and balanced
- triangulation** To use triangles to strengthen a structure
- temporary** Something which lasts a short time
- permanent** Something which lasts a long time

What directions can beams be positioned?
Horizontally, vertically and diagonally.

