



Complex Structures

A frame structure is like a skeleton. It provides support and shape. Frame structures can be as simple as a garden fence or something much more complex, such as a skyscraper.



Many frame structures provide a framework for an outer covering. Chicken wire can be tacked to the frame to ensure whatever is inside can't escape.

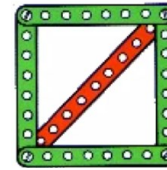


Key Vocabulary

structural members	the different parts, which are joined together to make a frame's structure
column	a vertical structural members
beam	a horizontal member used to support a floor or roof
load	the amount of weight a structure needs to carry

Triangulation

The triangle is a strong shape and is used to support structures. If you put a member diagonally across a square, you create two triangles and a much stronger shape



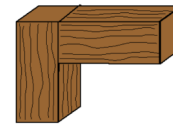
Trusses

A truss is a frame structure made with triangles. Each triangle has **beams** that are connected and joined at the corners. The beams work together and spread the **load** evenly across the whole structure, supporting the load and staying rigid and strong.

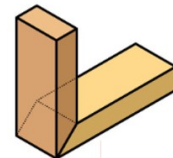


Joining Techniques

A **butt joint** is a way to join two pieces of wood. To create a butt joint, simply place the end of one piece of wood against another piece of wood.

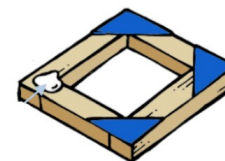


A **mitre join** is another way to join two pieces of wood together using an angular cut on both pieces.



Usually wood glue is then used to permanently join the pieces together.

Cardboard triangles can also be used to reinforce the join where the **members** meet.



How to Use a Saw Safely

Place the wood on the bench hook and push it up against the back rest. Make sure the cutting mark, drawn in pencil, is lined up with the edge of the bench hook.



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



Line the blade of the saw up with the marked cut line. Firstly, to start your cut, make a few saw cuts by pulling the saw backwards. Then continue with a controlled forward and backwards motion with the saw.



To ensure an accurate cut, keep the junior hacksaw straight and keep sawing until the cut is complete.