

Developing a design for a chair frame structure

Learning Objective

To develop students' iterative designing and problem solving capability by:

- designing a chair frame structure within the stated constraints
- choosing appropriate sizes for the various parts of the frame structure and the seat
- choosing appropriate joining methods for the various parts of the frame structure.

Design Brief

Design a wooden chair frame structure.

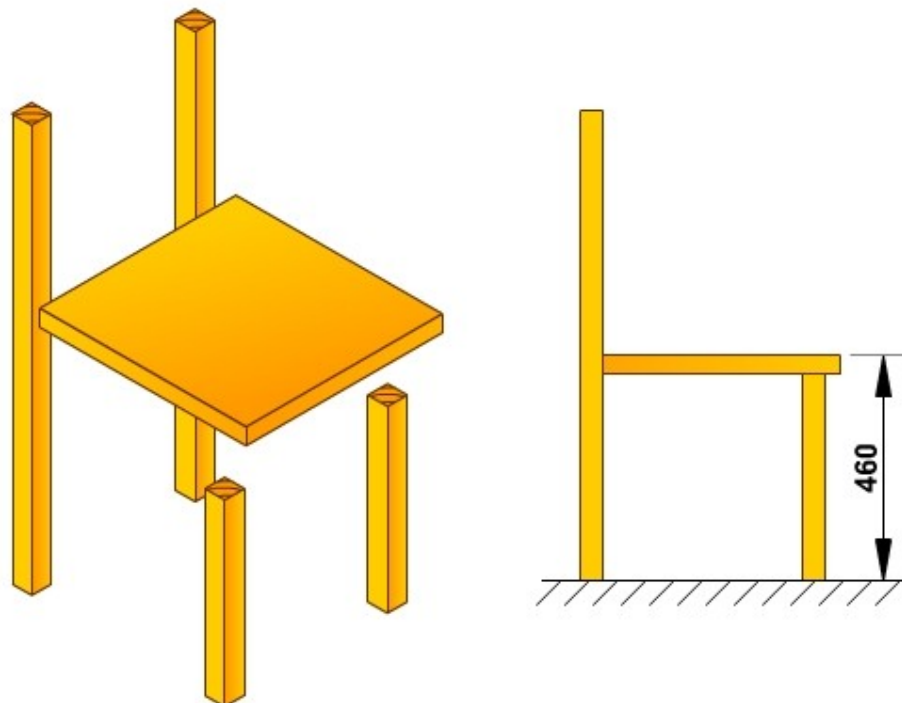
Specification

- The top of the seat must be 460mm above the floor.
- The chair structure must be a rigid frame structure made from wood.
- The chair frame structure must have four legs, a seat and a back rest.
- The chair seat must be fixed to the chair structure.
- The finished design must be safe to use.

You will start with a hazy idea for a chair frame structure and develop the idea into a clear and detailed design.



Designing a chair frame structure



What you must do

- Explain why four chair legs fixed to a chair seat without any other support will form a very weak structure.
- Devise a frame structure that will support the chair seat. Use notes and sketches to illustrate your ideas.
- Develop the design and use notes and sketches to show:
 - how the various parts of the frame structure will be fixed together
 - the joining methods that should be used to fix the various parts of the frame structure, stating the reasons for your choice
 - the sizes of the chair legs and any rails that may be used in your design
 - how the chair seat will be fixed to the chair frame structure
 - the shape of the chair seat
 - how the back rest will be fixed to the chair frame structure
 - the shape of the back rest.
- Prepare a pictorial view of your design, either isometric or 2 point perspective drawing.
- Prepare a dimensioned orthographic drawing of your design.