

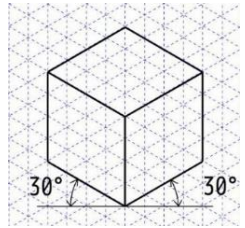


Knowledge Organiser: Year 7 Timbers: 'Money Box'

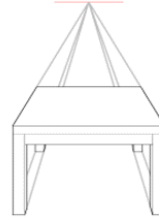
Technical drawings are essential for communicating ideas in industry and for the three dimensional visualisation of a product or concept.

design brief	an outline of a task set by a client
specification	a list of criteria a finished product will meet

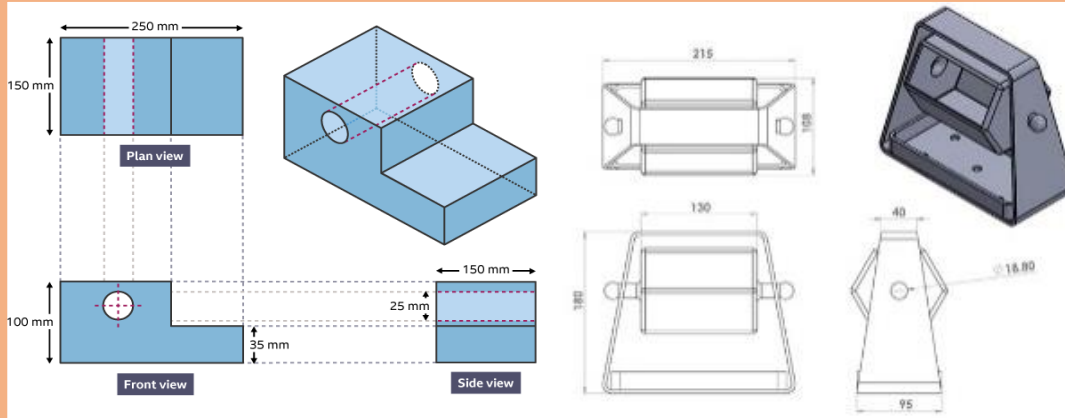
An **isometric drawing** is a three dimensional representation of an object or design on a two dimensional surface. It shows the top, front and side of an item.



One point perspective drawing shows how things appear to get smaller as they get further away, converging towards a single 'vanishing point' on the horizon line.



Rendering is used to add effects of colour, tone and texture to a technical drawing



Orthographic drawings are used to show an object from every angle to help manufacturers plan production. They show a plan, front and end or side view.

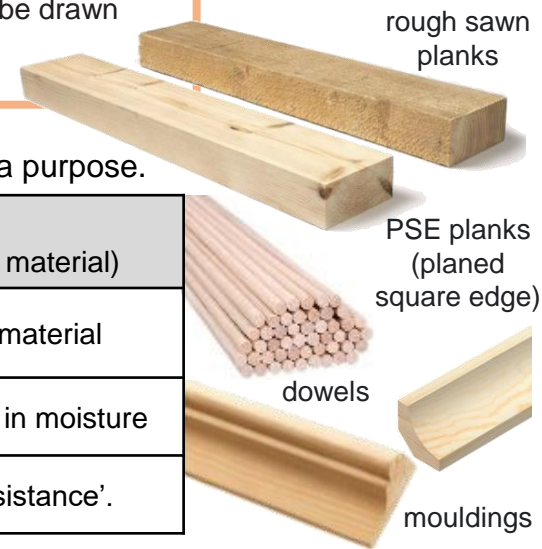
These drawings are to scale and must show dimensions. The advantage of this type of technical drawing is that it allows complex shapes to be drawn simply in 2D.

The **measurements** shown on technical drawings are always in **millimetres (mm)**

Timbers can be bought in different shapes (known as **stock forms**) and sizes...

Material properties are the **working and physical characteristics** that make a material suitable for a purpose.

working properties (how a material reacts to a type of applied force)		physical properties (a measurable characteristic of a material)	
strength	the ability to withstand a force or load that is applied (such as tension, compression, torsion and bending)	density	the mass of a material
hardness	the ability to resist wear or being scratched	absorbency	the ability to draw in moisture
toughness	the ability not to break when force is suddenly applied. This can also be called 'impact resistance'.		



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Hardwoods come from **deciduous** trees. Deciduous trees have **broad leaves** and **lose their leaves** in winter. They **grow slowly**.

Hard Dogs Leave Bad Bite Marks On Arms

	working properties	physical properties	uses
oak	<ul style="list-style-type: none"> very strong hard tough durable 	<ul style="list-style-type: none"> open grained light brown 	<ul style="list-style-type: none"> high quality furniture indoor flooring
mahogany	<ul style="list-style-type: none"> fairly strong durable 	<ul style="list-style-type: none"> reddish brown 	high quality furniture
ash	<ul style="list-style-type: none"> tough – absorbs shock well flexible 	<ul style="list-style-type: none"> open-grained light creamy brown 	<ul style="list-style-type: none"> tool handles sports equipment ladders
balsa	<ul style="list-style-type: none"> very soft 	<ul style="list-style-type: none"> off-white to tan low density 	modelling
beech	<ul style="list-style-type: none"> hard 	<ul style="list-style-type: none"> pinkish-brown 	<ul style="list-style-type: none"> chairs toys



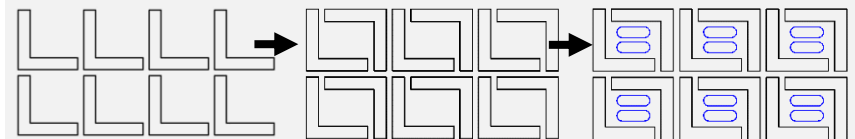
Softwoods come from **coniferous** trees. Coniferous trees have **needles** and are **evergreen**. They **grow quickly**.
Soft Cats Eat Pork, Lamb and Sausages

	working properties	physical properties	uses
pine	<ul style="list-style-type: none"> quite strong 	<ul style="list-style-type: none"> yellow with brown streaks 	<ul style="list-style-type: none"> cheap furniture construction work joinery
larch	<ul style="list-style-type: none"> hard tough durable 	<ul style="list-style-type: none"> yellow to reddish brown resistant to rot 	<ul style="list-style-type: none"> decking building cladding boats and yachts
spruce	<ul style="list-style-type: none"> strong hard not very durable 	<ul style="list-style-type: none"> good strength to weight ratio 	<ul style="list-style-type: none"> crates ship masts aircraft frames



Manufactured boards are man made using **veneers** or **scrap wood** and **glue** compressed together.

In manufacturing industry, **nesting** refers to the process of laying out cutting patterns to minimize the **wastage** of raw materials.



Tools

