

## Practical Rotation

### Knowledge Organizer - Year 9 DT

#### Materials Used:

**Pine:** a natural softwood from the evergreen Scots Pine tree

**MDF:** An engineered board, manufactured in sheets from wood dust & glue

**Acrylic:** A thermoplastic material; comes in many colours & easily cut or melted.

**HIPs:** High Impact Polystyrene – another thermoplastic, used with a mirrored finish on this project.

#### Tools Needed for this Project:

Try Square, marking gauge, steel ruler

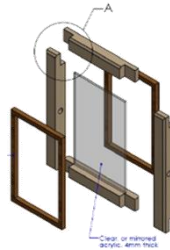
Tenon Saw, mallet, chisels (6mm & up), smoothing plane, pillar drill, belt sander.

#### Key Vocab: "Sub-Assembly":

We know an assembly is a number of parts put together.

A sub-assembly is when we assemble a collection of parts which are then used together as part of a larger assembly.

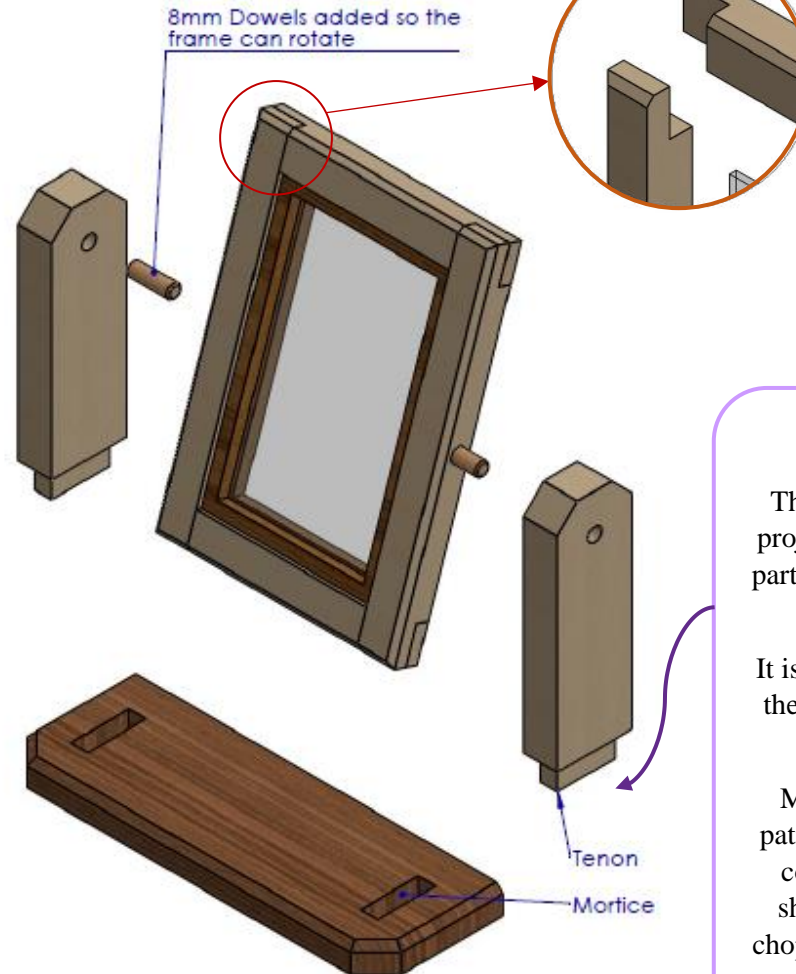
In this project, we can make a sub-assembly of the picture frame before assembling it with its stand.



**Dowels:** These are small wooden pegs, used in the dowel joint, a quick & strong joint, easily made with just a drill. Used on this project for the pivot point.

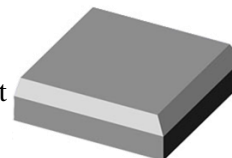


#### The Picture Frame Project:



#### Key Vocab: "Chamfer":

A chamfer is a small bevel put on the edge of a project part – it removes the sharpness of the edge & adds decoration.



#### The Corner Halving Joint:

This is a really useful wood joint for connecting the corners of frames.

It is often called a lap joint because the 2 parts lap over one another.

By cutting this joint we can increase the area for glue to hold the parts together.

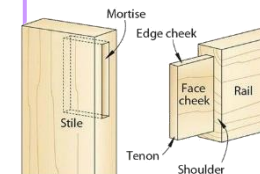
After marking, we need to rip cut down from the end of the workpiece, and cross cut away our waste material at the shoulder. The joint can then be tidied up & made more accurate by paring away any spare waste with a chisel.

#### The Mortice & Tenon Joint:

This is a great joint for when we need on part of a project to join to & extend from the face of another part, like where the arms to hold the frame join onto the base of our project.

It is made up of a rectangular tongue (the tenon) on the end of one piece which slots into a rectangular hole (the mortice) on the other piece.

Making this joint accurately takes skill & some patience; sawing the tenon is similar to making the corner halving joint above, but we must cut the shoulder on each side. To make the mortice, we chop out our waste material using a mallet & chisel, digging in from both faces.



To get a good fit, the tenon & mortice must be the exact same size & the shoulder must be level all the way around to sit well on the face of the base.