**Characteristics of materials**

My project is an outdoor side table made from tanalised Pinus Radiata. I decided to use this timber because it will last longer in the weather. The tanalising is a chemical that prevents rot from growing in the wood and is made of copper sulphate, potassium dichromate and arsenic pentoxide. Tanalised Pinus Radiata is quite soft so is easy to cut but splits easily. I made sure there were no knots as these look unattractive. It is important to select wood that will be suitable for the people who are going to use the product. For this table the user wants an attractive table with no knots.

**Working with Tanalised Pinus Radiata in my project**

**Safety**

When I started I made sure I had followed the safety precautions in the workshop. I had shoes on, my shirt was tucked in and I had my safety goggles and earmuffs ready. I also had a dust mask just in case I needed it.

**Marking out**

I marked out my project parts using a steel ruler and a square. I used a gauge to mark out the parallel assembling lines where the parts joined but only where the lines were not seen as the gauge leaves a scratch in the wood. I used a marking knife to mark across the grain as I didn’t want the ends to chip when I cut them.

**Cutting**

Cutting Tanalised Pinus Radiata can be done with steel cutters and blades. I made sure the dust extractor was on for the band saw and cut to within a millimetre of the line with the band saw, then planed down to the line using a small jack plane. I wore safety goggles and set the blade guard low. When I planed the end grain I used a ‘stop’ at the far end to prevent splitting off. I kept my hands behind the blade like I do with all hand tools.

**Joining**

Because my table is outside I had to make sure that the top was weather resistant. This meant I had to use waterproof PVA glue. Waterproof PVA has chemically bonded resins that resist the way water breaks them down so perform much better in wet conditions. If I use good glues the table will be more durable and the people using the product will be satisfied.

To join the pieces on the top I decided to use a tongue and groove. Having a join right along the length of the top will make the top much stronger and weather resistant. I routed a 4mm groove in both sides using a router with a guide and used a plywood lath as the joining piece. I had to sand the edges of the lath to let it slide into the groove. I also made sure that the three ply had two of the grains ply’s going across the join for added strength.

For safety I held the router with two hands and cramped my work piece to the workbench.

**Finishing**

I sanded my table top and the sides and legs with the belt sander and a 100 grit belt first going along the grain. This makes sure I get no scratches across the grain which are hard to remove later. Using a sanding block and 150 grit sandpaper and then 240 grit sandpaper I brought the surfaces to a fine finish ready for finish coating.

I had to apply a protective finish coat to my table. After researching products I settled on an exterior polyurethane. This will make the table resistant to weathering and water. I applied the stain with a brush after reading the instructions and made sure that I put more on the end grain. This will stop water from getting into the end grain. After the first coat and 12 hours drying time, I sanded with 400 grit wet and dry sandpaper and applied another coat. After another 12 hours I sanded again with 400 grit paper and brushed on the final coat, making sure to avoid ugly runs as people don’t like a messy finish.