My project is a cabinet with one drawer and a door and is made from untreated pine. I decided on untreated pine because it is quite safe to use and also because it is easy to work with. It does not have any chemicals added to it which means it is non-toxic when you touch it or cut it. The real name for this wood is Pinus Radiata. It has a low density which means it is soft and also that the grain is not squeezed up tight. Grain is what we call the fibres in the wood and they affect how we work with it. Pinus Radiata is also porous which means it will soak up liquids easily.

**Working with Pinus Radiata in my project**

**Safety**

Before I started my work I made sure I had followed the safety precautions in the workshop. I had covered shoes on in case I drop a sharp tool, my shirt was tucked in to avoid getting caught in rotating machinery, and I had my safety goggles and earmuffs ready. The workshop is noisy and we can slowly damage our hearing by not wearing muffs even though we can’t tell it is happening. It is important in the workshop to take responsibility for our own safety as this is what is expected when we go and work later on.

**Marking out**

I used a pencil and a steel ruler with millimetres to mark out the sides, the shelves and the rails of my cabinet. I used a square to make sure the 90 degree angles were accurate. For the cuts that were going across the grain I made another line with a marking out knife. Because Pinus Radiata has a loose grain it sometimes chips when you cut across the grain. By using the knife it gives the grain a line to chip on and leaves a tidier edge. When I marked out the hinges for the door I used a butt gauge which also has a sharp edge that leaves a shallow cut in the wood. Because Pinus Radiata is soft the butt gauge cuts a line deep enough to fit the end of a chisel when you chisel out the hinge.

**Cutting**

Cutting Pinus Radiata is quite easy using normal steel blades because it is soft. I used the band saw to cut along and across the grain and then I used a hand plane to trim down to my line. I made sure that I had safety goggles on in case a chip came flying off the wood and hit my face, and that the band saw blade guard was set down close to the wood. Doing this means there is less blade showing that could accidently cut your hands. It also means that the blade bends less when you are cutting. I made sure I never put my hands in front of the blade as many accidents on the band saw are people pushing their hands into the blade. I also made sure the dust extractor gate was open for the band saw. By sucking away the dust there is less moving around the workshop. When I was planing across the grain I put a piece of wood on the far end to stop the plane from splitting the last grain from the wood. Whenever I use hand tools I keep my hands behind the blade to avoid cutting my hands. If your hands are behind the blade you can’t accidently push the blade or cutter onto yourself.

**Joining**

I had to make the wood wider for the top, sides and shelves of my cabinet so I used the biscuit jointer and number 20 biscuits. Wood is stronger along the grain as it has tensile strength, so biscuits have the grain going diagonally across them to get the most strength across a join. I set the biscuit jointer to the middle of the 20mm Pinus Radiata and set the depth stop to allow extra space for excess glue to go. I evenly spaced using a ruler and then cut the grooves for the number 20 biscuits making sure I had both hands on the jointer; this way if the machine kicks back my hands are safely on the machine. I also used an F cramp to hold the wood still. This is necessary to avoid the wood moving and creating a situation for an accident to happen. I got all the sash cramps ready before I started gluing and laid all of the pieces on the cramps. I applied PVA glue to one edge and to all of the biscuit grooves and then tightened the sash cramps up. I protected the edge from the cramp with a block of wood on each one. To stop the pieces from bowing upwards I laid another sash cramp across the top and tightened it.

**Finishing**

I found Pinus Radiata to be easy to sand but because it was so soft the rough 100 grit sand paper left deep cuts. I had to sand these out with a finer grit of 150 and then remove those scratches with 240 grit wet and dry. I was careful not to sand across the grain. The hardest part was sanding the end grain of the Pinus Radiata. When I had planed the end grain the plane had ripped out some of the wood so there were rough holes all along. I used a sanding block to make sure I was sanding flat. I
made sure to do the sanding near the dust extractor as any dust is not good for our lungs. I also avoided using compressed air to blow the dust around as this is unacceptable in industry. The Pinus Radiata is very loose grained and this makes it absorbent. To make sure my finishing coats of polyurethane got into the wood I thinned down the first coat with about one part of mineral turpentine to 10 parts of polyurethane. I brushed the first coat on and put it on quite thickly then cleaned up my brush with turpentine. The next day I sanded the surfaces with 400 grit wet and dry sandpaper to remove the roughness and brushed on another coat with out any thinning. I did the same again a day later but was careful on the last coat to wipe the brush very gently along the grain to lay off the polyurethane and try not to show any brush marks. I also made sure that there were no runs or puddles of polyurethane that would spoil the look of the surface. I did this with careful brushing.