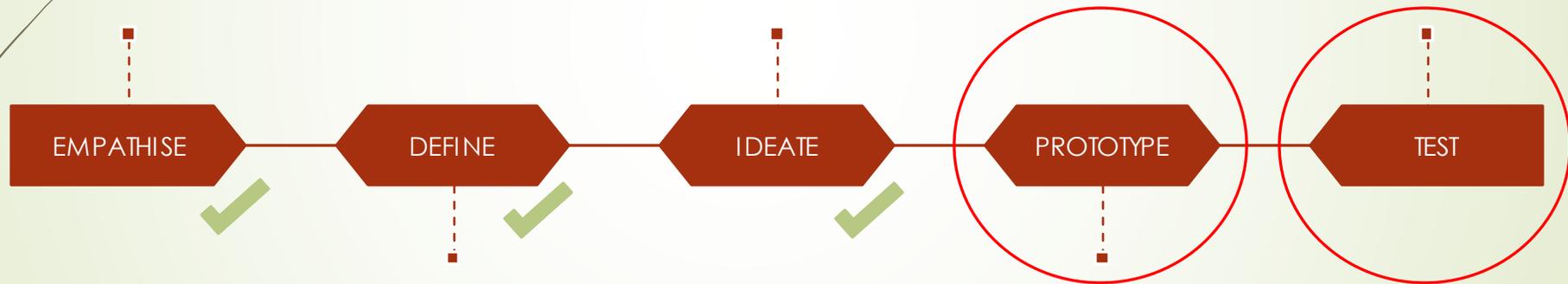


2023 Design Technology- Side Table

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PLANNING THE DESIGN PROCESS



MODEL
PHOTOS



MODEL
PHOTOS



MODEL SIDE TABLE PROCESS



THESE LEG PIECES WERE CUT DOWN BY 5CM FROM 50CM TO 45CM. THIS IS DUE TO THE ORIGINAL LEG PIECES BEING TOO HIGH AND BEING DISPROPORTIONATE TO THE SIDETABLETOP.



TESTING THE STRUCTURE OF THE SIDE TABLE



A CIRCLE PIECE OF WOOD IS GLUED TO THE SIDE TABLETOP TO CONNECT THE SIDE TABLETOP TO THE CIRCLE WITH THE HOLE.



CIRCLE PIECE OF WOOD GLUED TO THE SIDE TABLETOP

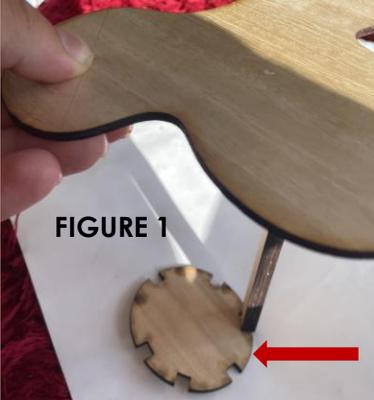


FIGURE 1

TESTING THE SIDE TABLE'S BASE, THE MEASUREMENTS OF THE SIDE TABLE WERE INACCURATE. HOWEVER, THIS GAVE ME THE IDEA I HAD TO MAKE THE BASE BIGGER, SO THE LEGS COULD GO ON A SLIGHT ANGLE.



I GLUED A PIECE UNDER THE BASE TO TEST IF I SHOULD MAKE THE MODEL LIKE THIS OR AS IN FIGURE 1. I CONCLUDED THAT FIGURE 1 WAS THE BETTER DESIGN DUE TO IT BEING MUCH EASIER TO FIT THE LEGS IN AND FOR THEM TO STAY IN THE HOLE. WHEREAS IN THIS DESIGN, IT WAS MUCH MORE DIFFICULT FOR THE LEGS TO STAY UP WITHOUT SUPPORT.



DRAW TESTING- JOINERY



FRONT VIEW



BIRDS EYE VIEW

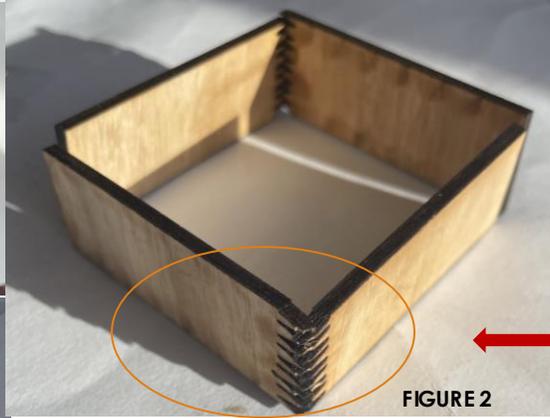


FIGURE 2

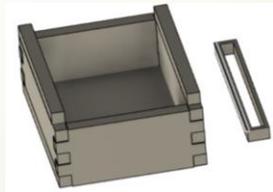
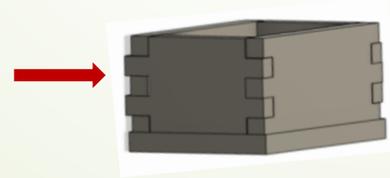
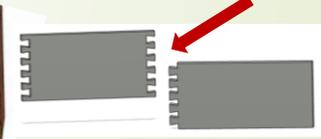
THIS JOINERY, THE FINGER JOINT, DOES NOT MAKE THE WOOD TOUCH EACH OTHER; THERE IS A SMALL GAP. THIS IS DEMONSTRATED IN **FIGURE 2**. THIS IS BECAUSE I HAVE PROGRAMMED THE SPIKES TOO SMALL, MEANING FOR FUTURE REFERENCE, I NEED TO MAKE THE GAP BETWEEN THE SPIKES BIGGER. THIS JOINERY IS STRONG AND HOLDS THE PIECES OF WOOD TOGETHER AND CREATES THE SHAPE OF THE DRAW. THIS COULD, HOWEVER, BE PROBLEMATIC ON THE AESTHETIC SIDE AND AS A SAFETY CONCERN. SHARP EDGES ARE STICKING OUT FROM THE FINGER JOINT, WHICH IS UNSAFE FOR CHILDREN.

ALTHOUGH A DOVETAIL JOINT IS THE STANDARD JOINT FOR DRAWS, I HAVE CHOSEN TO USE A BOX JOINT FOR THE PURPOSE OF THE TASK AND THE TIME CONSTRAINT. THIS IS BECAUSE I FOUND IT DIFFICULT TO CREATE A SUCCESSFUL DOVETAIL JOINT WITH ALL THE PIECES LINING UP TOGETHER PROPERLY. THUS, A BOX JOINT WAS USED.

EVOLUTION OF DRAW:



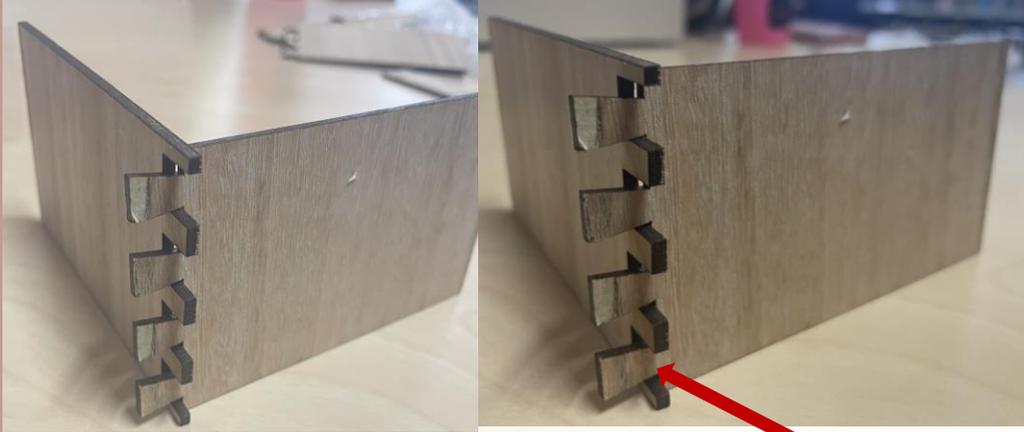
DRAW WITH CURVE



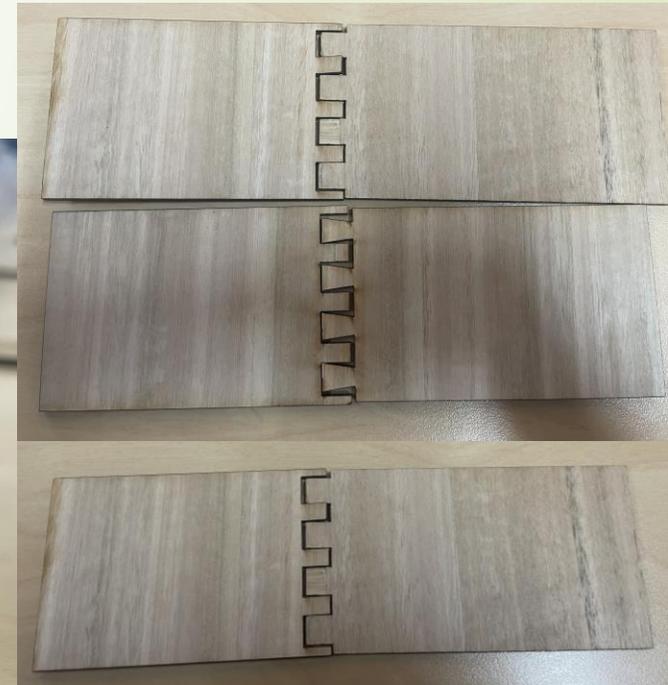
SLIDING MECHANISM PART

THIS IS THE FINAL DRAW DESIGN WHICH WAS CHOSEN DUE TO BEING THE MOST SIMPLISTIC DESIGN. THE MECHANISM OF THE DRAW IS BASED ON A SLIDING DRAW. THE BLOCK CIRCLED IN RED WILL BE GLUED TO THE DRAW, WHICH IS HOW THE DRAW WILL BE ABLE TO ATTACH TO THE SLIDING PART. THE SLIDING PART IS SHOWN ABOVE IN THE IMAGES

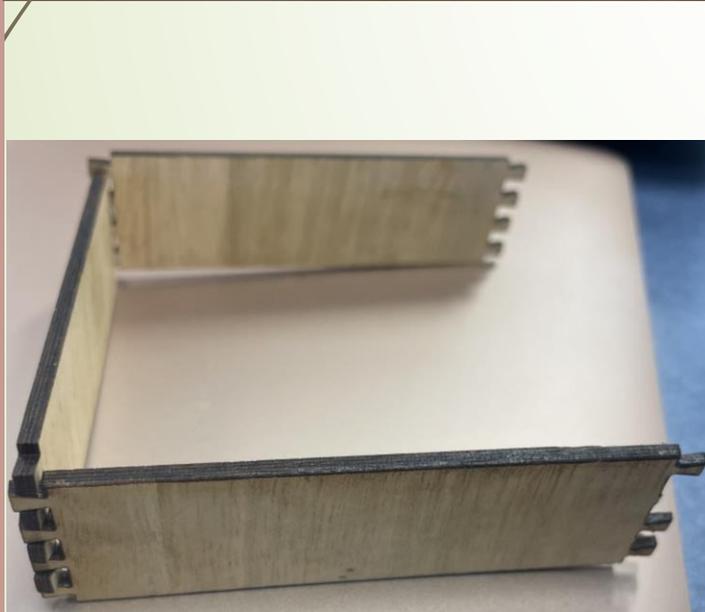
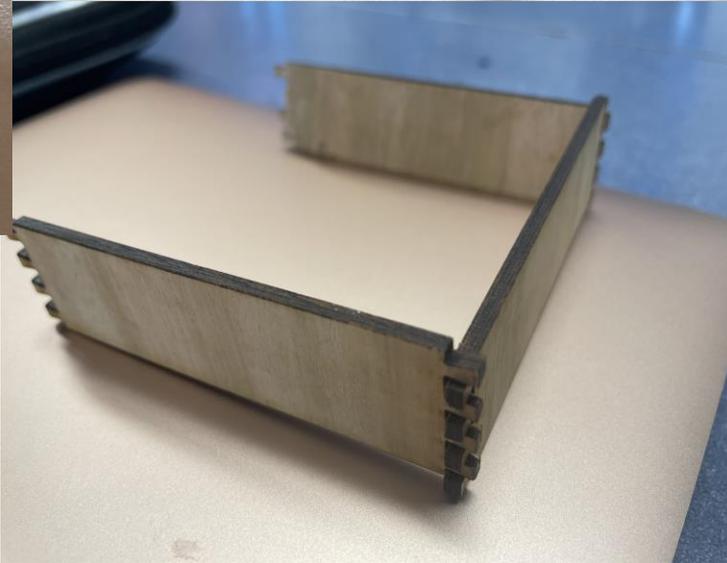
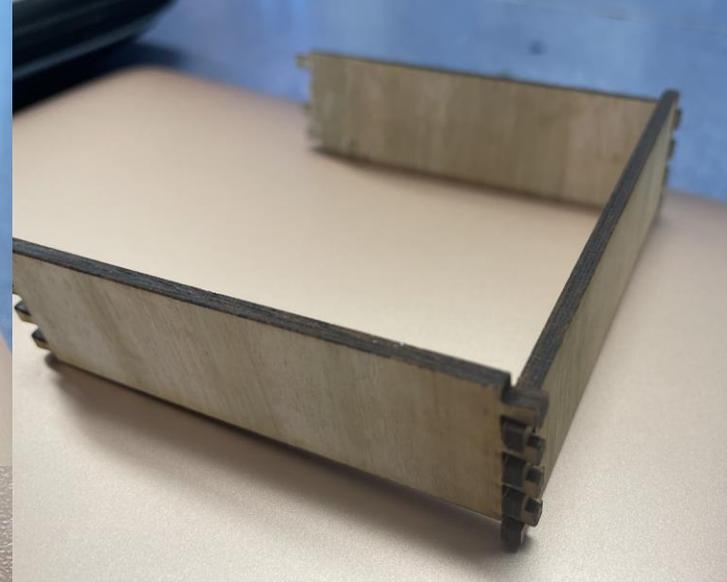
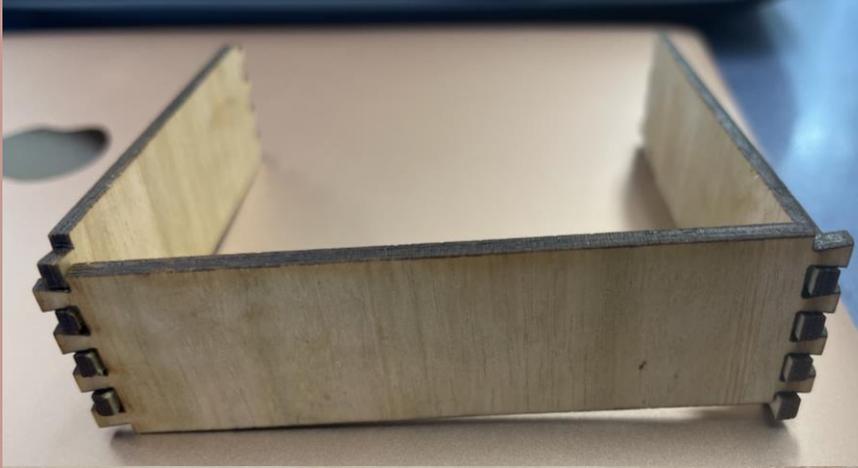
DOWEL JOINT TESTING



I ATTEMPTED TO USE THE DOVETAIL JOINT ON A LARGER SCALE. HOWEVER, DUE TO THE DOVETAIL JOINT BEING TOO BIG, IT DID NOT ACCURATELY FIT THE SOCKET FOR THE DOVETAIL JOINT.

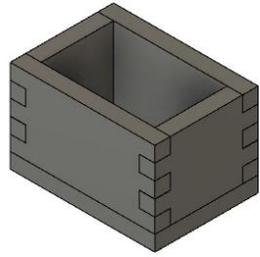


DOWEL JOINT TESTING



I DID NOT CREATE THE DOWEL JOINT PROPERLY, AS SHOWN IN THE IMAGE BELOW. THERE IS AN EXTRA DOWEL ON ONE OF THE SIDES. THUS, FOR FUTURE DIRECTION, I NEED TO ENSURE THAT ON ONE OF THE SIDES, THERE ARE ONLY 3 DOWEL JOINTS TO CONNECT TO THE OTHER SIDE, WHICH WOULD HAVE 4.

**BOX JOINT
TESTING &
ANIMATION**

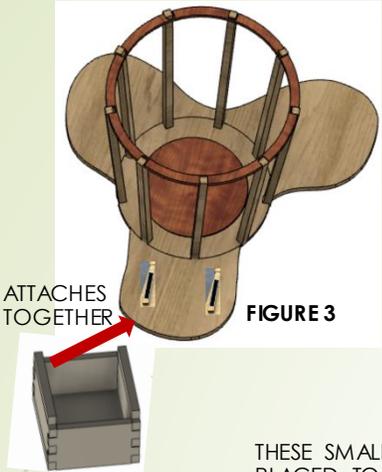


VIDEO

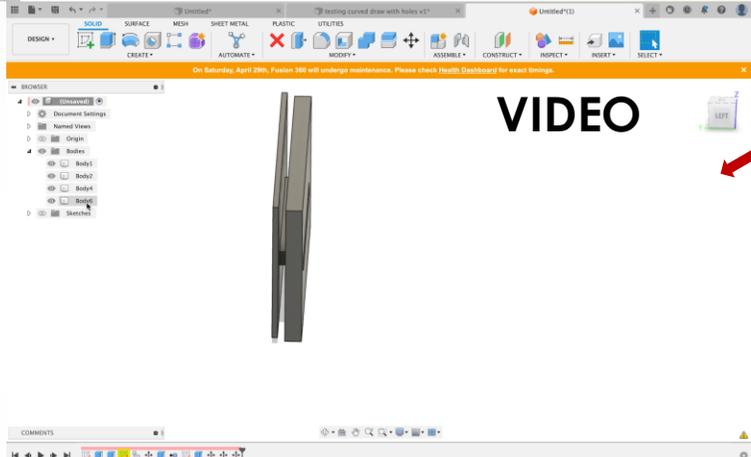
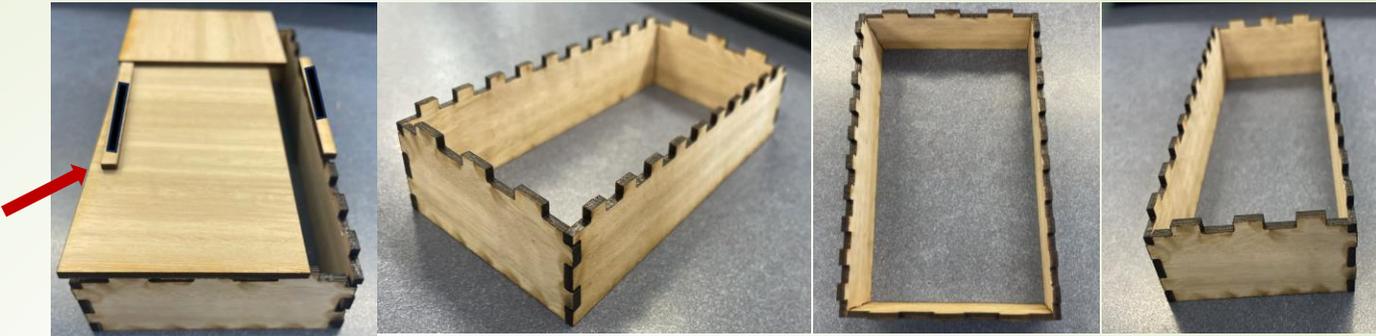


VIDEO

BOX JOINT PROTOTYPING DRAW

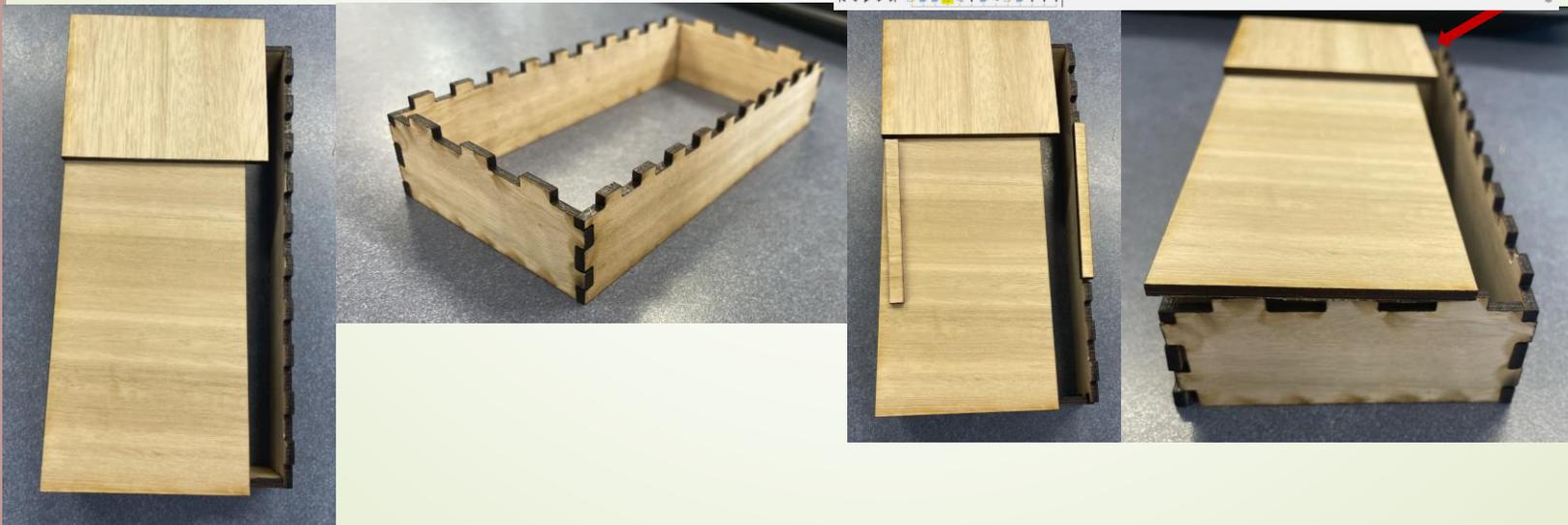


THESE SMALLER RECTANGULAR WOOD PIECES WERE PLACED TO DEMONSTRATE THE DRAW MECHANISM. THESE WOOD PIECES WOULD HAVE A GAP (DEMONSTRATED IN THE BLACK RECTANGLES), SO THE DRAW CAN SLIDE. THE WOOD PIECES WOULD EITHER BE GLUED OR SCREWED ON THE BOTTOM OF THE SIDE TABLETOP. THIS IS DEMONSTRATED IN FIGURE 3. **AS A SIDE NOTE, THIS MECHANISM WAS ADAPTED FOR THE FINAL DESIGN TO BE MORE SIMPLISTIC.**

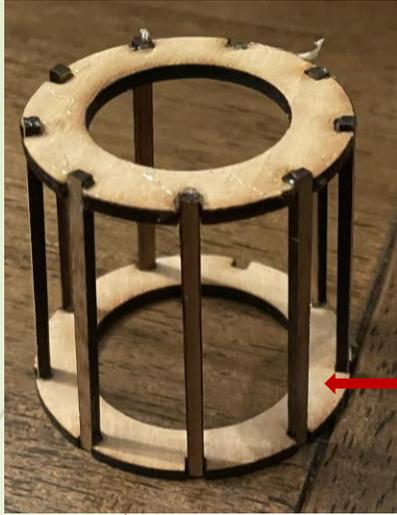


TESTING THE SAME MECHANISM, HOWEVER, ON THE SIDE TO MAKE IT EASIER FOR DEMONSTRATION PURPOSES.

THESE WOOD PIECES WERE USED TO VISUALISE THE DRAW TO THE SIDE TABLETOP. THE PIECES OF WOOD REPRESENTED THE SIDE TABLETOP, WHERE THE DRAW WOULD SIT UNDER. THIS IS DEMONSTRATED IN FIGURE 4.



SLIGHT ANGLE TESTING



THE LEG PIECES OF WOOD WERE GLUED TOGETHER DUE TO THE LEG PIECES BEING TOO SMALL FOR THE HOLE. THIS HAPPENED DUE TO THE LASER CUTTER NOT CUTTING THE WOOD OUT FULLY ON THE FIRST GO. SO, WHEN THE LASER CUTTER CUT THE LEG PIECES OUT AGAIN, IT MADE THE WIDTH SMALLER. NEXT TIME I NEED TO MAKE SURE THAT THE LEG PIECES ARE MEASURED TO TAKE INTO CONSIDERATION OF THE LASER CUTTER CUTTING TWICE.



I IMPLEMENTED THE SUGGESTIONS FROM MY LAST DESIGN OF THE LEG PIECES BEING TOO SMALL FOR THE HOLE. THIS TIME I ENSURED THAT THE LEG PIECES WERE BIGGER IN THE WIDTH TO ALLOW FOR THE LASER CUTTER TO CUT TWICE.

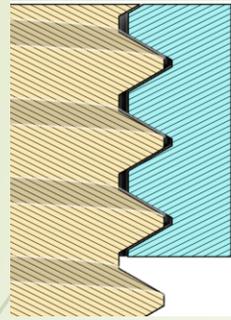
FUSION 360 PROTOTYPING



WATER BOTTLE USED FOR DEMONSTRATION PURPOSES.



SCREW PROTOTYPING



THE GAPS IN THE SCREWS WERE TESTED. IN THE FIRST SCREW, A GAP OF 0.1MM WAS APPLIED.

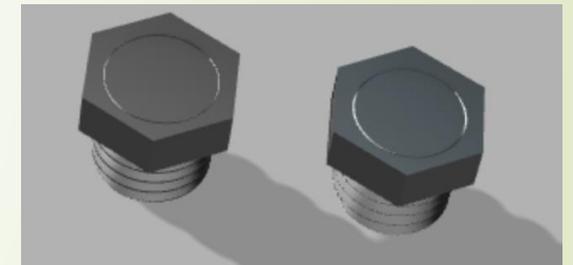


THE SECOND SCREW GAP OF 0.5MM. THE GAP WAS MADE BIGGER TO ENSURE THE THREADS AROUND THE SCREW WERE OF AN ADEQUATE SIZE GAP TO BE ABLE TO SCREW IN THE WOOD.

THESE GAPS WERE TESTED ON SCREW 2; HOWEVER, THIS METHOD WAS TRANSFERRED INTO SCREW 1 TO HAVE A BIGGER SIZE GAP.



SCREW 2



TO NOTE: I DID NOT END UP 3D PRINTING THE SCREWS, AS THERE ENDED UP NO NEED FOR THEM.

VIDEO



DEMONSTRATION OF SIDE TABLE DRAW