

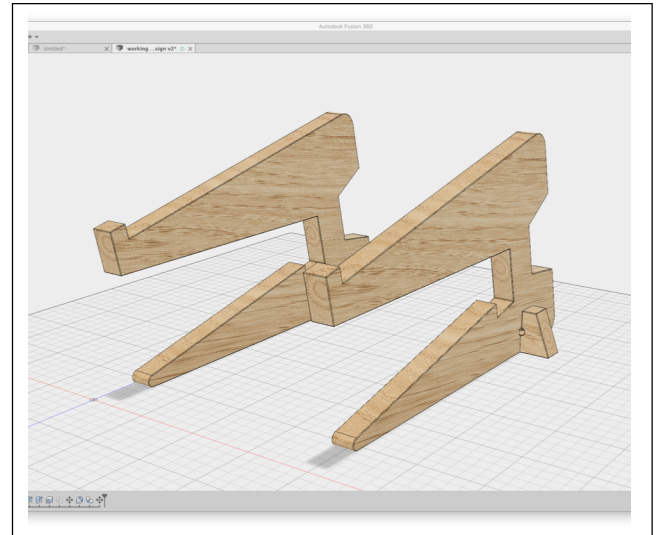


## Form Follows Fabrication: Optimizing for CAM using Fusion 360

### Intelligent arrangement of pieces for cutting saves time, material, and energy

When designing for CAM, it's important to remember that the manufacturing process should inform how you design. Are you using 3, 4, or 5 Axis milling? Why? Remember that your choice of material makes a difference too.

For example, when milling out an object roughly the size of a smartphone, 7000 series aluminium will take 10 minutes longer to cut than 6061 series. When manufacturing at scale, this difference becomes massive, increasing cost and environmental footprint per unit.



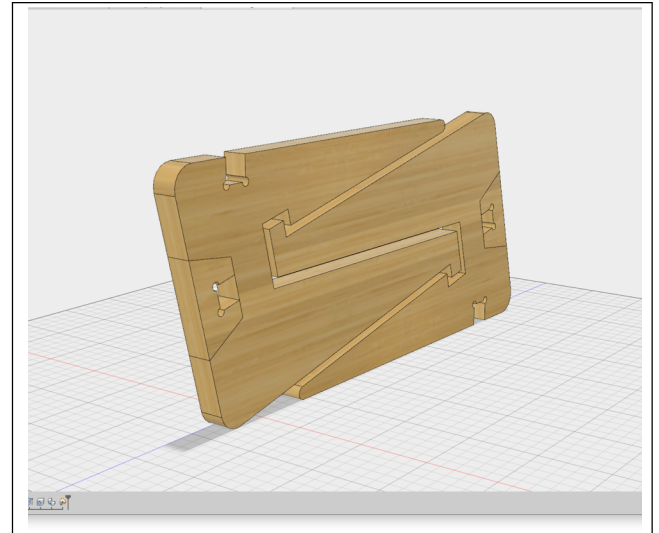
### Stacking parts for cutting

In this laptop stand example, the design has been modified to be CNC cuttable. With CNC in mind, the design has been changed to be 2 independent free-standing legs. This reduces material, increases adaptability to various laptop sizes, and the stops to prevent the laptop from slipping out are mirrored on the inside of the leg to store a keyboard against. The stabilizers can be cut from the back of the stand, further reducing material use, enabling mass production to happen faster.



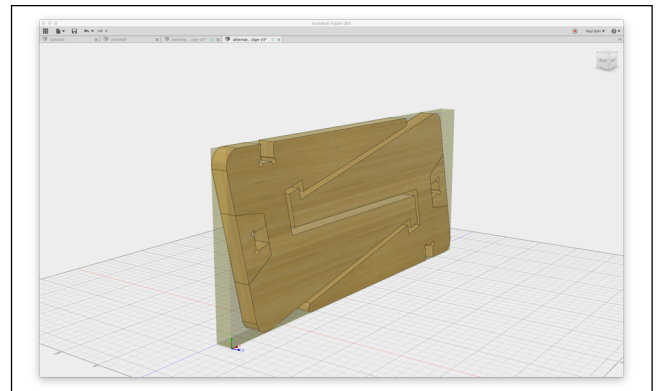
## Stacking parts for cutting

With the design complete, the parts should be stacked as best and tightly as possible for cutting



## Switch to CAM environment

2D contouring is how this will be cut. Pay attention to the order when stacking parts together



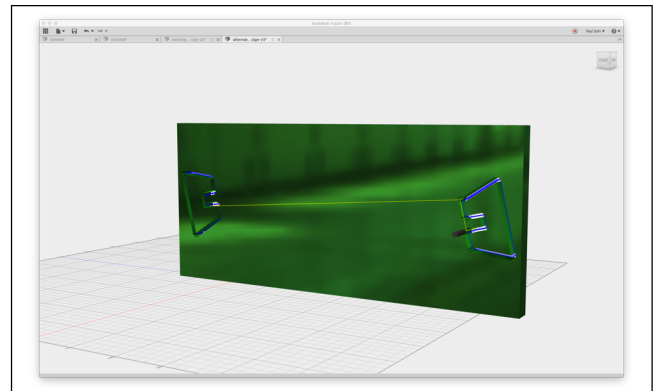


## In Stacking, think about tool diameter

When you are putting parts together, take note of your cutting diameter, if the parts are too tight you will not be able to cut them.

## Using Open and Closed Paths

The use of closed and open contours allows you to more intelligently cut paths, consider how when you are stacking parts together how you can use this for your cutting paths to better make use of raw material.





## Completed Set Up

Using this kind of smart nesting set up, it is possible to increase the number of laptop stands that can be cut from a full sheet by 60%

