



3D Design and 3D Printing – Session C

TechResort Innovators Sessions #2107C

Skills involved:	3D Design using Microsoft 3D Builder	✓
	Using a 3D Printer	✓
	Creativity and Imagination!	✓
Suitable for ages:	10+	

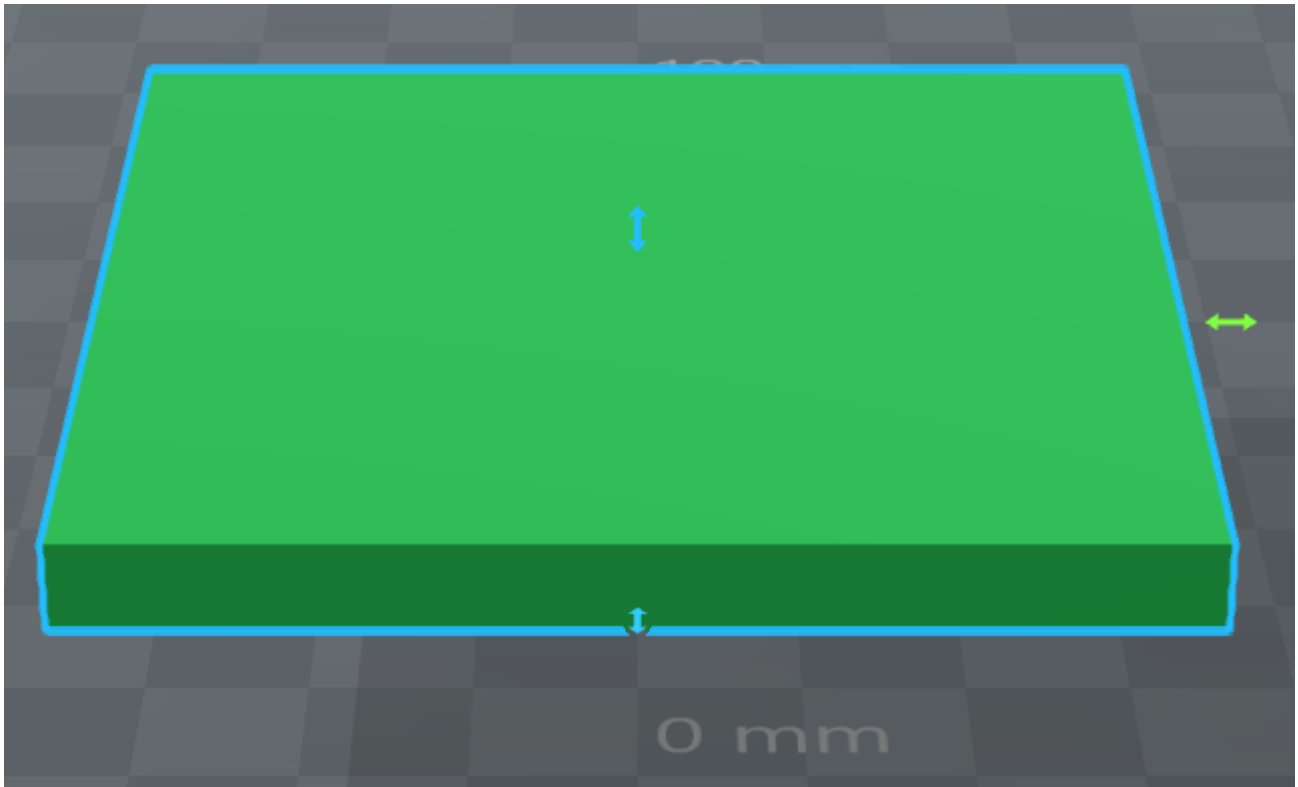
In these sessions we're going to investigate 3D printing. In order to make the most of 3D printing we'd like to be able to design the objects we make ourselves: this is much more useful and rewarding than just downloading stuff off of the internet.

In the first session you made a name badge which we printed. You're now going to use all those skills you learned to make a much more complicated object – a small ball maze.

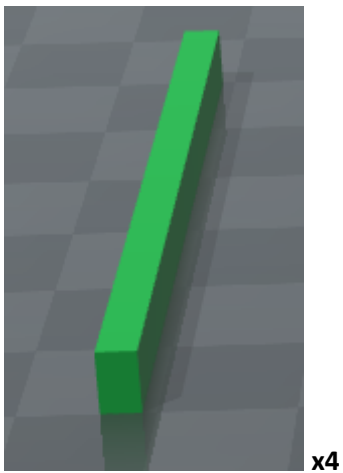
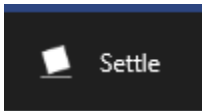
Once again, we'll print the object after the sessions (because it takes a long time) and you can collect it next time you're at TechResort.

Instead of a load of written instructions, the scheme for the ball maze is explained by pictures of the object as it builds up with a list of measurements and hints for how to put it together.

You don't have to stick precisely to the same design but you do need to make sure your ball has enough room to move around the maze once it has been printed.



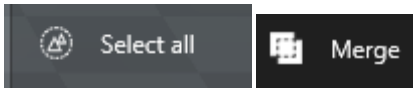
62mm x 62mm x 5mm



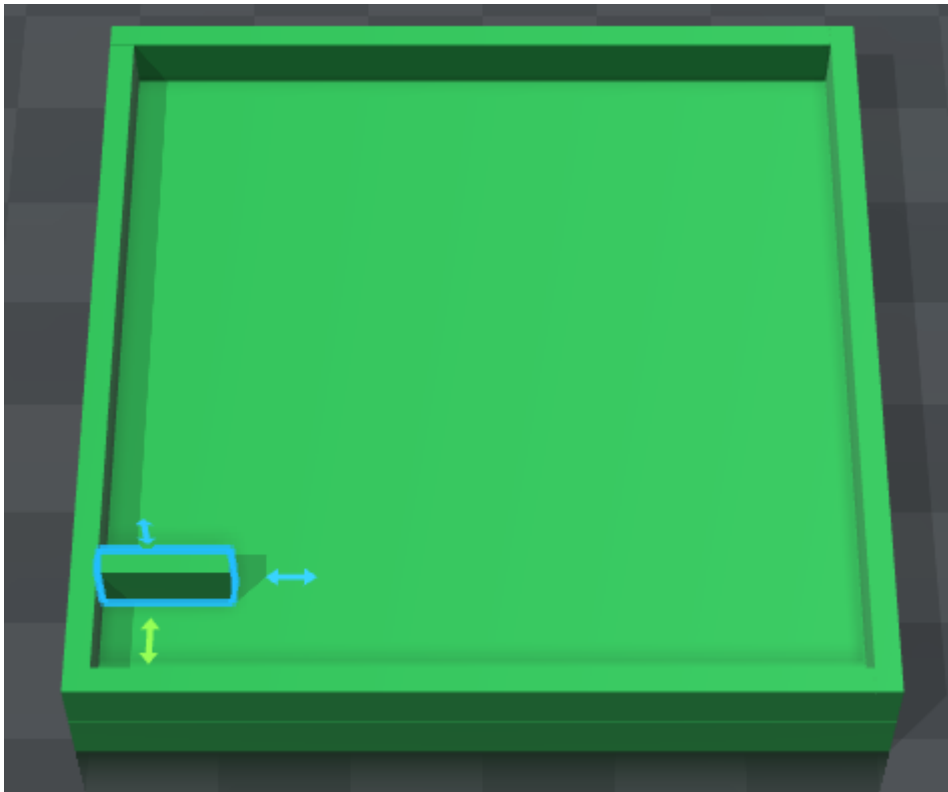
2mm x 62mm x 6mm



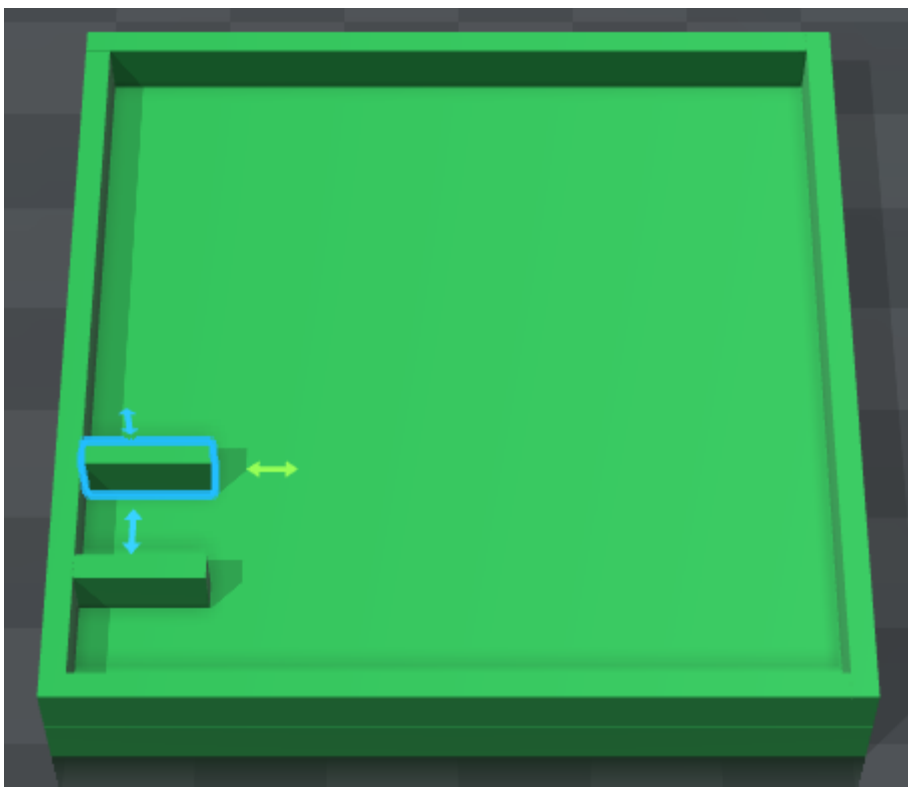
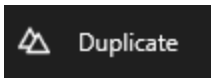
Z = 7mm




12mm x 2mm x 6mm

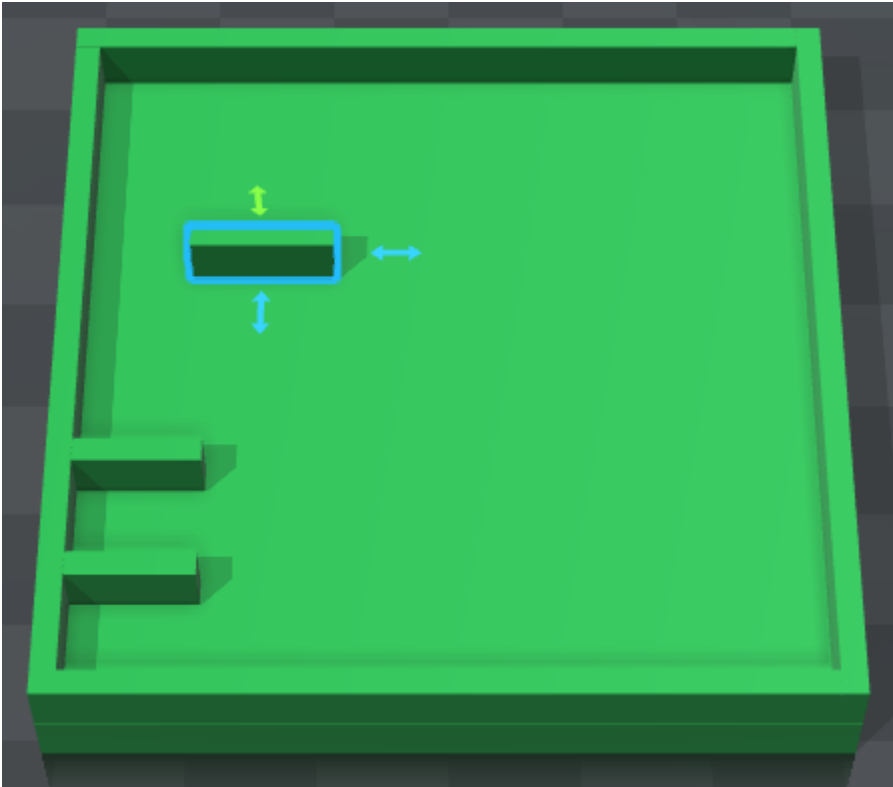


X = -25mm Y = -20mm Z = 7mm



X = -25mm Y = -10mm

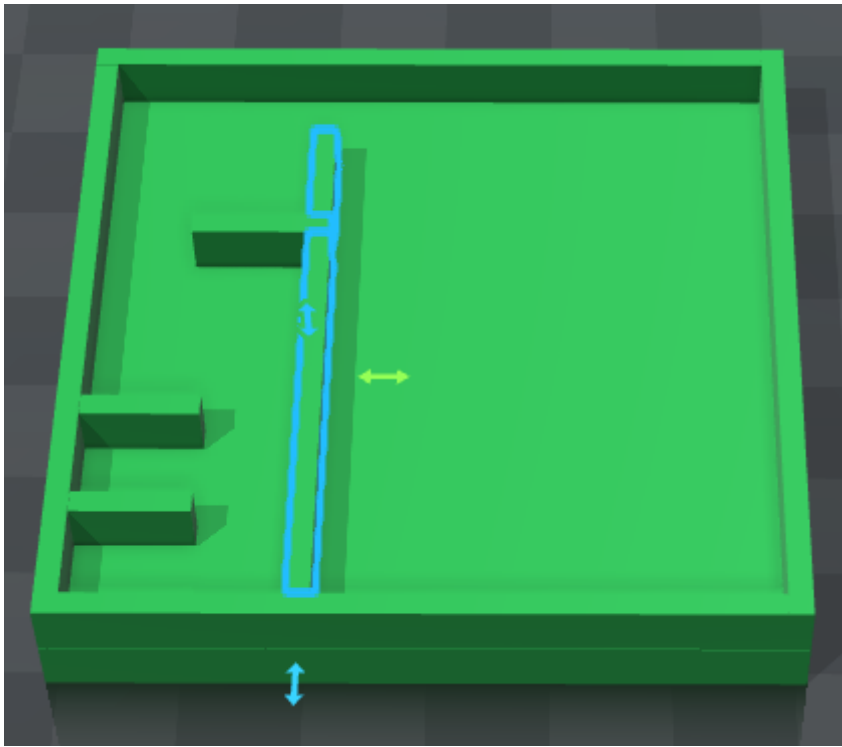
 Duplicate



X = -15mm Y = 10mm



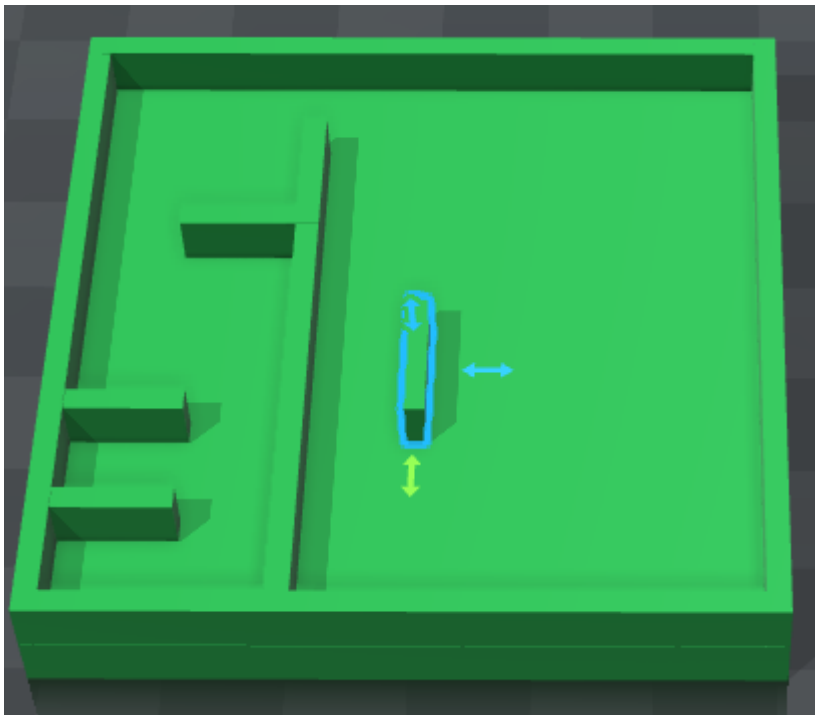
2mm x 52mm x 6mm




X = -10mm Y = -5mm Z = 7mm

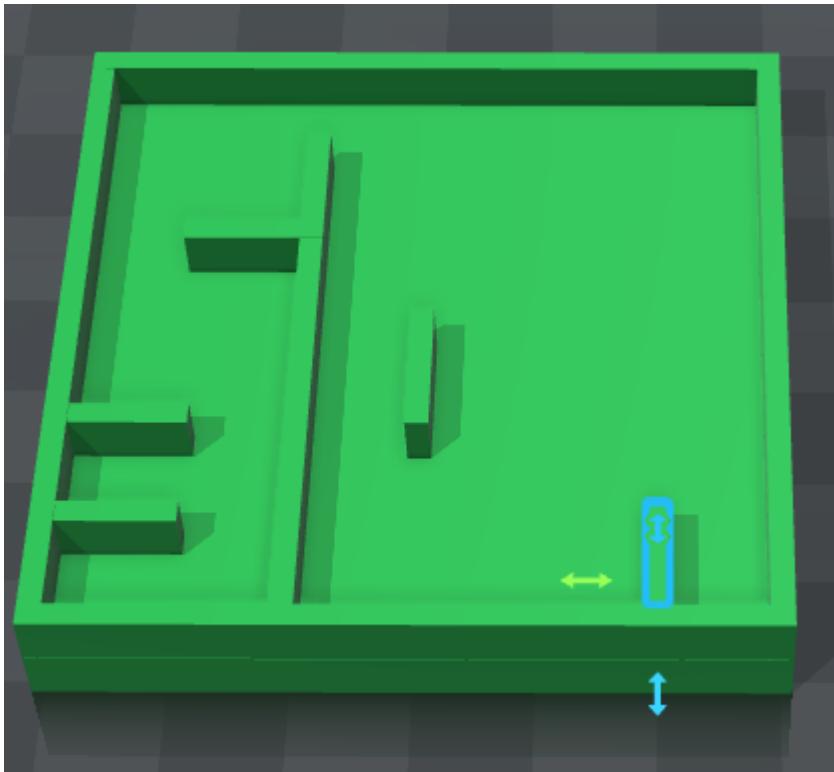


2mm x 12mm x 6mm



X = 0mm Y=-5mm Z = 7mm

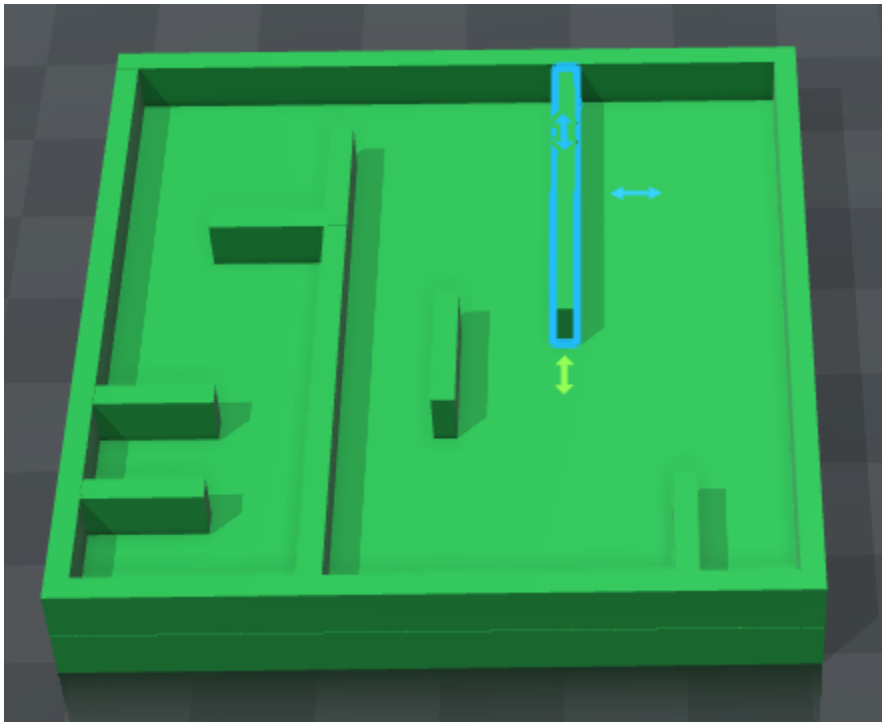
 Duplicate



X = 20mm Y = -25mm



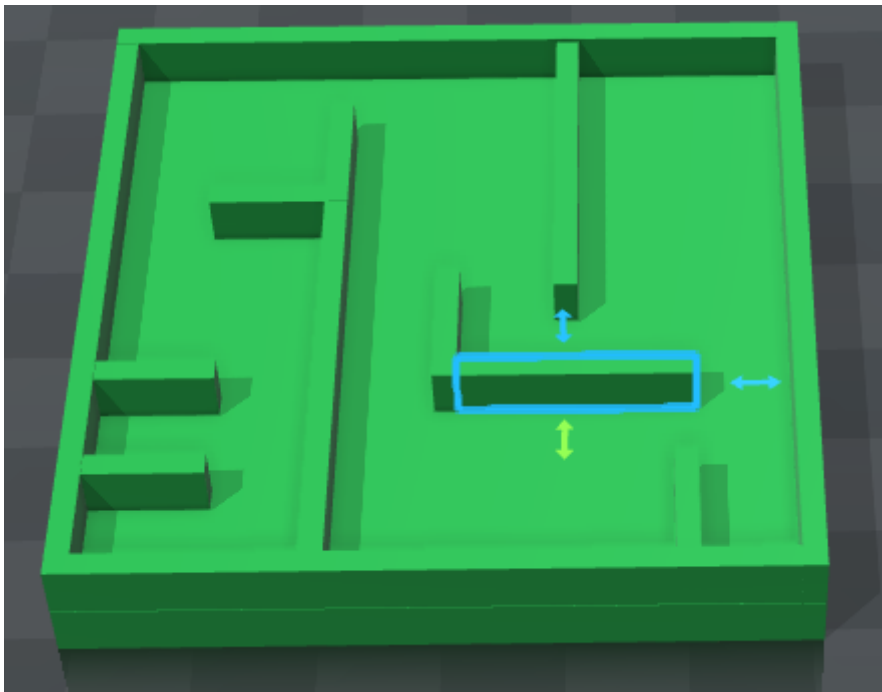
2mm x 32mm x 6mm



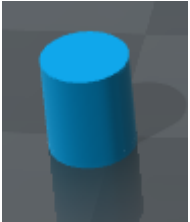
X = 10mm Y=15mm Z=7mm



22mm x 2mm x 6mm

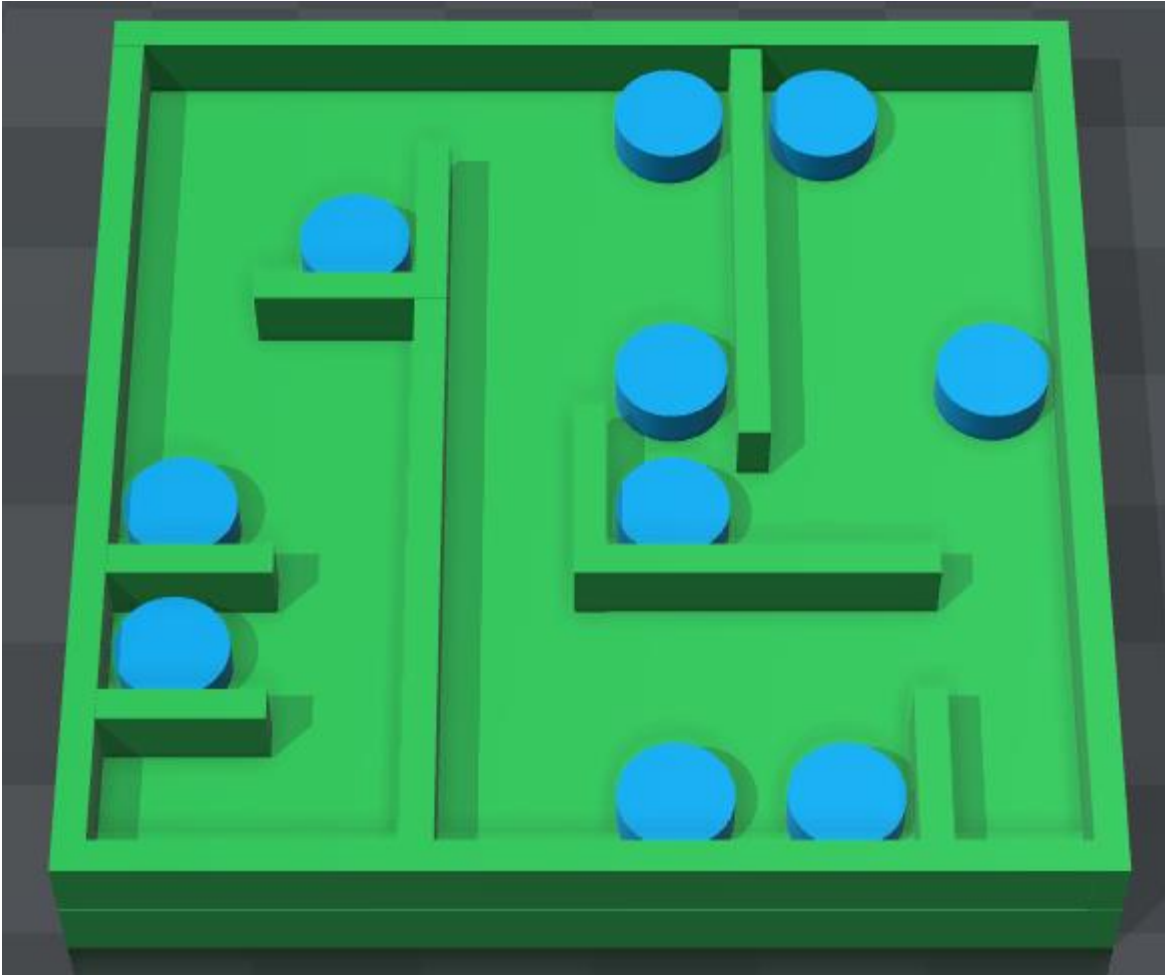


X= 10mm Y=-10mm Z = 7mm



x10

D = 5mm H=6mm



1. X = -25mm Y = -15mm
2. X = -25mm Y = -5mm
3. X = -15mm Y = 15mm
4. X = 5mm Y = -25mm
5. X = 5mm Y = -5mm
6. X = 5mm Y = 5mm
7. X = 5mm Y = 25mm
8. X = 15mm Y = -25mm
9. X = 15mm Y = 25mm
10. X = 25mm Y = 5mm

SAVE YOUR WORK!

Deselect all

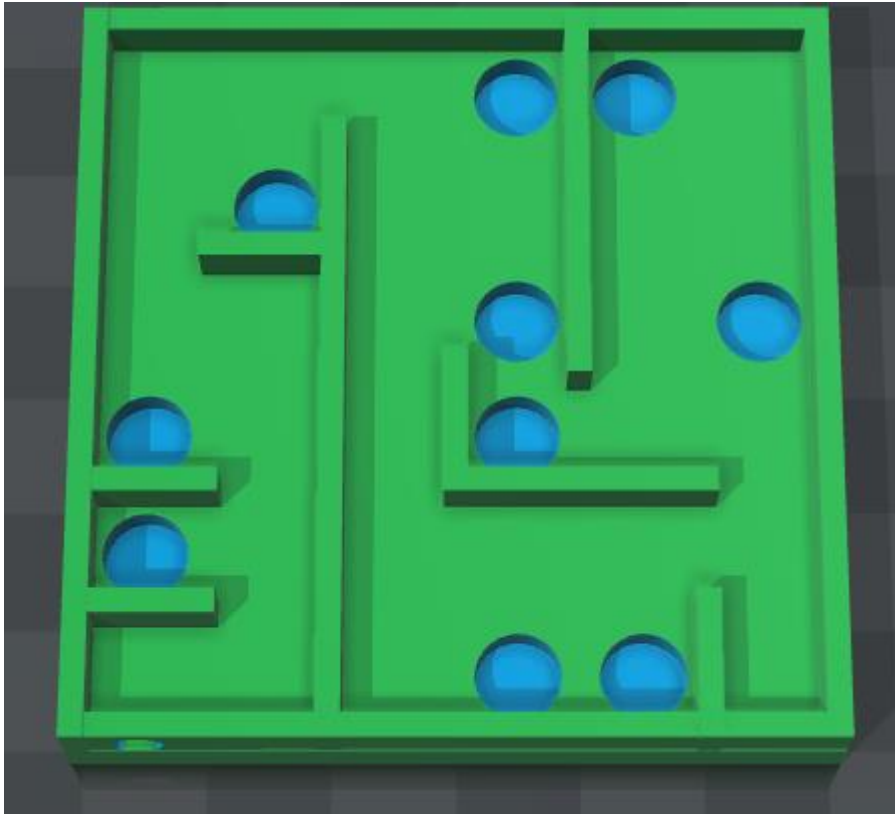
No objects Selected

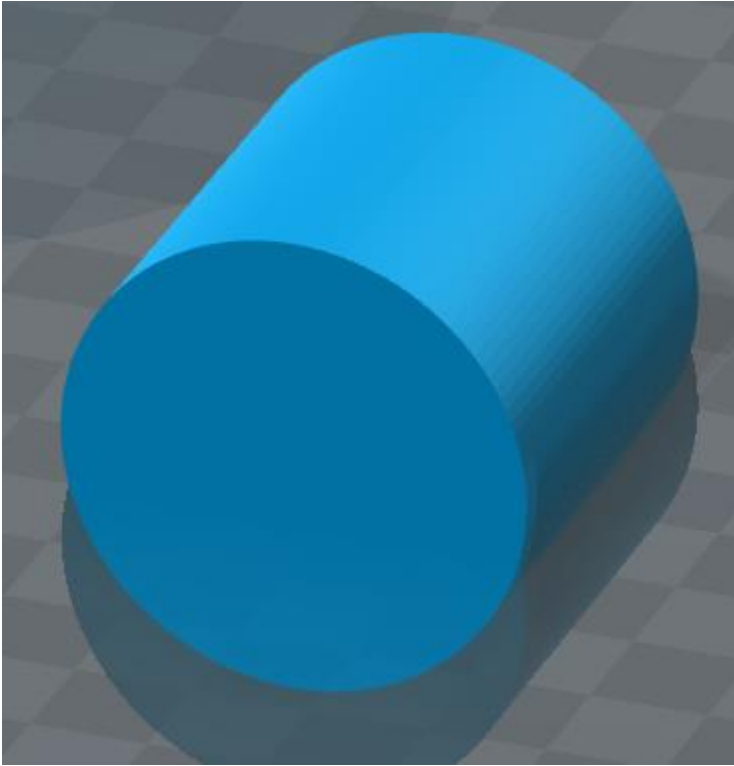
Turquoise

All Turquoise Cylinders selected

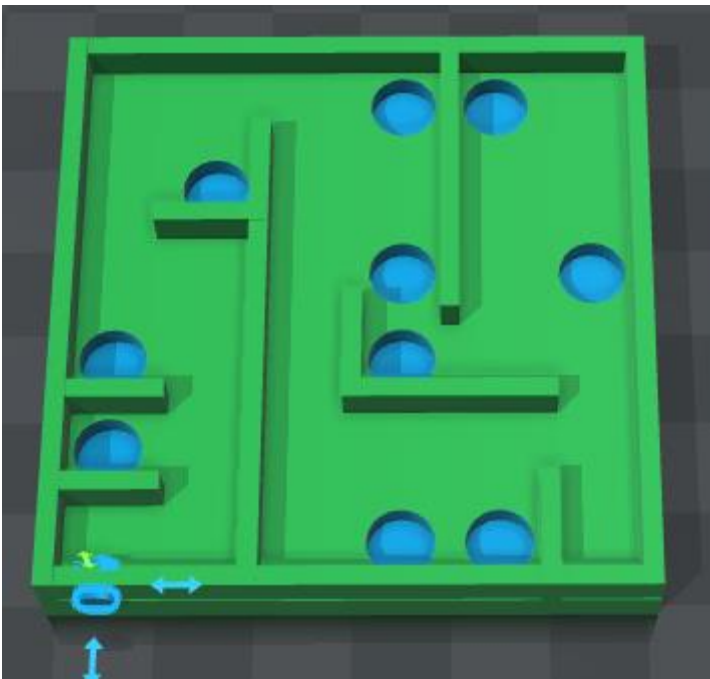
Merge

Subtract



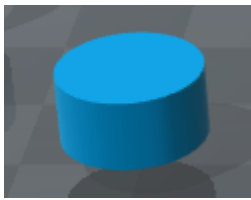
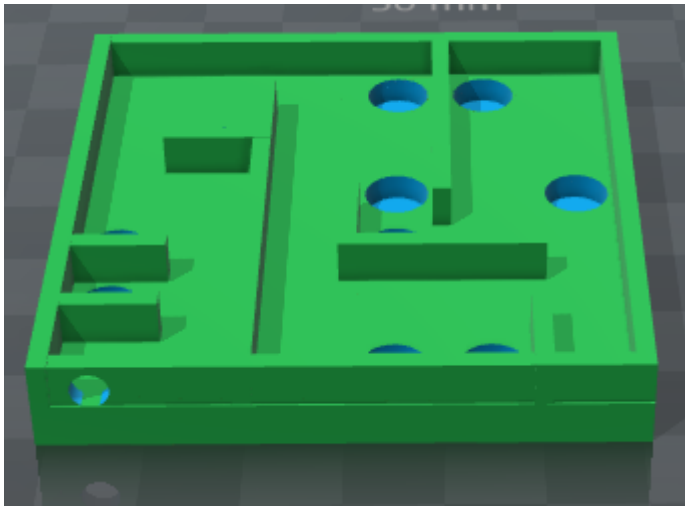


D = 4mm H = 4mm Rot = 90Deg

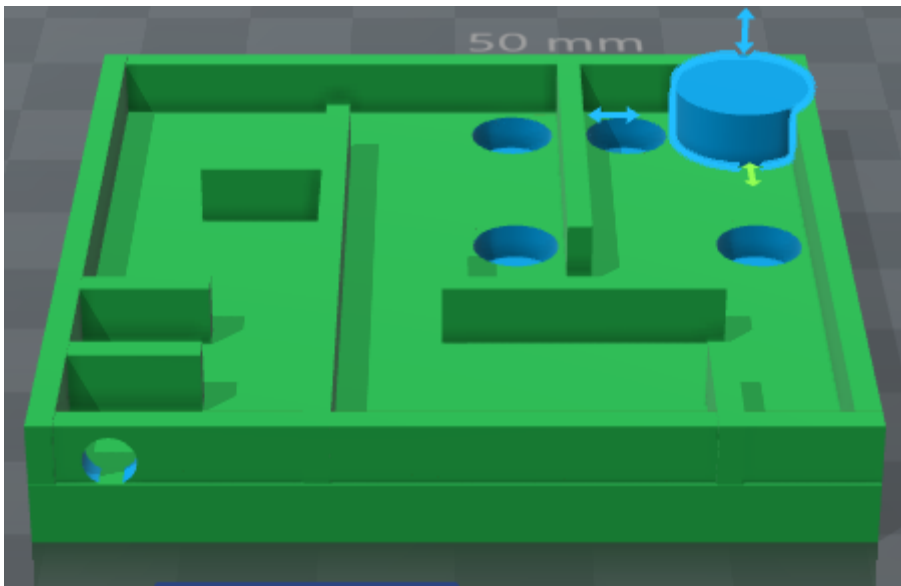


X = -25mm Y = -30mm Z = 7mm

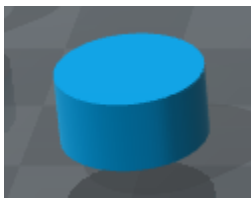




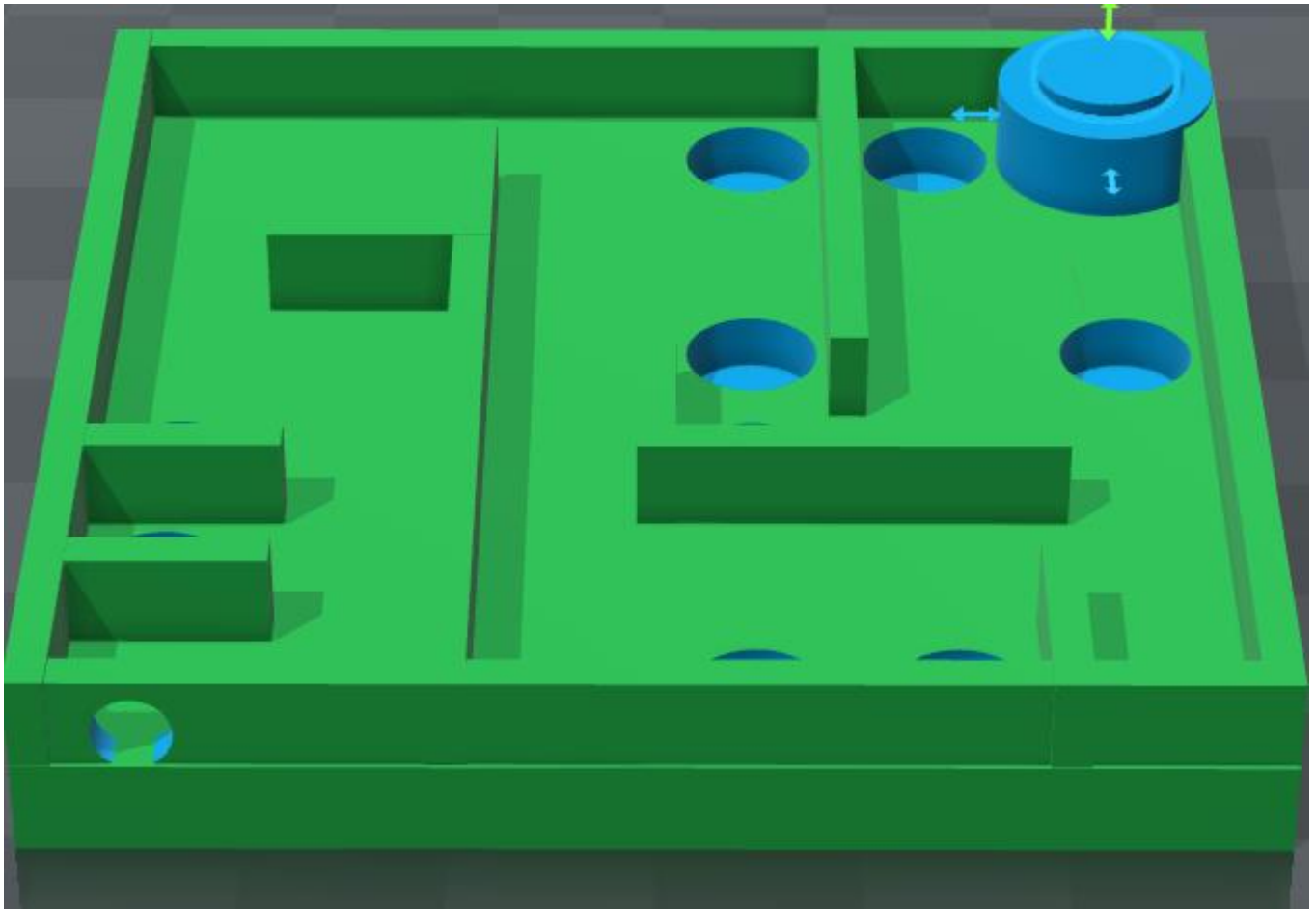
D = 12mm H = 6mm



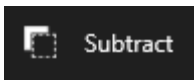
X = 25mm Y = 25mm Z = 7mm

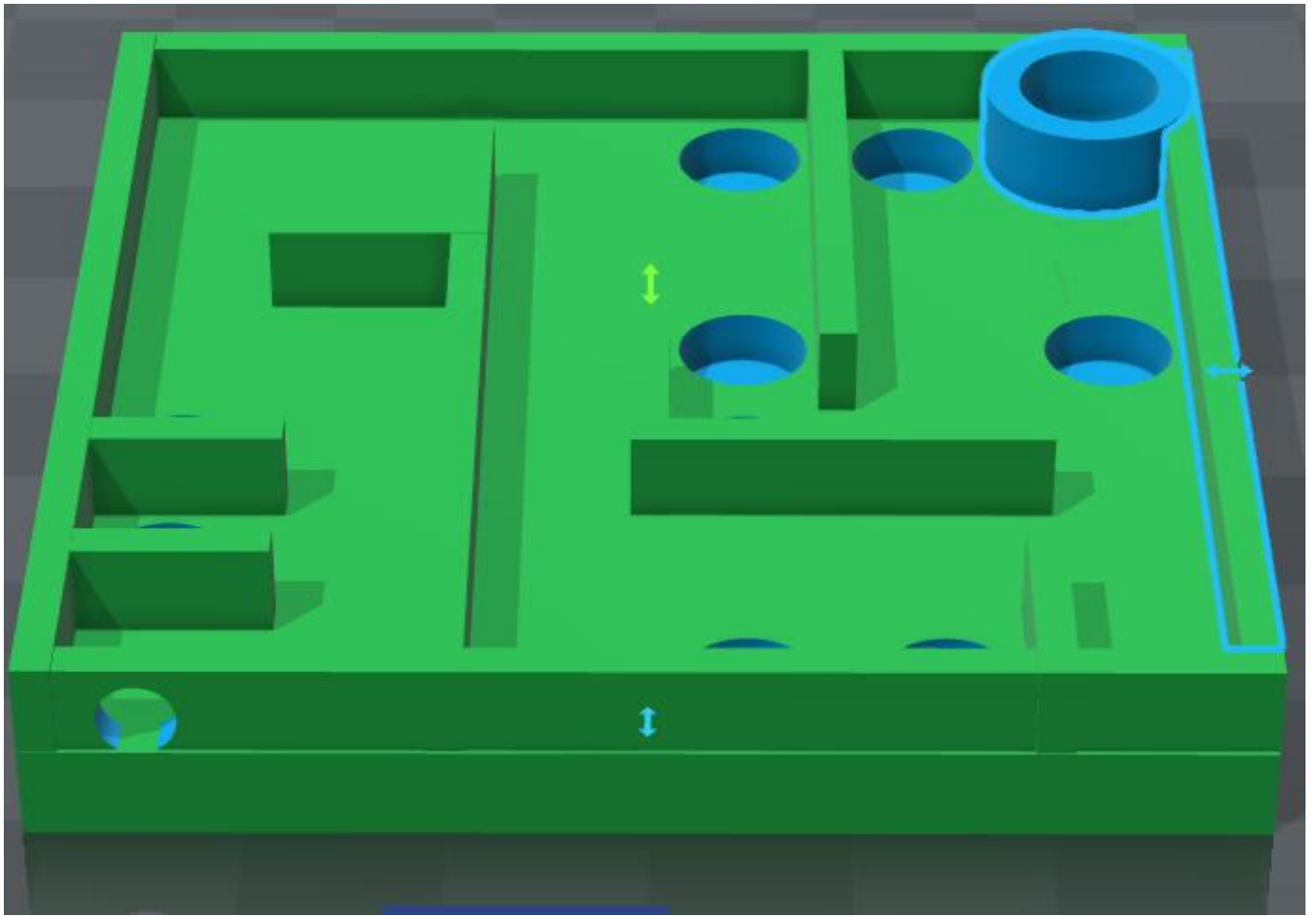


D = 8mm H = 6mm

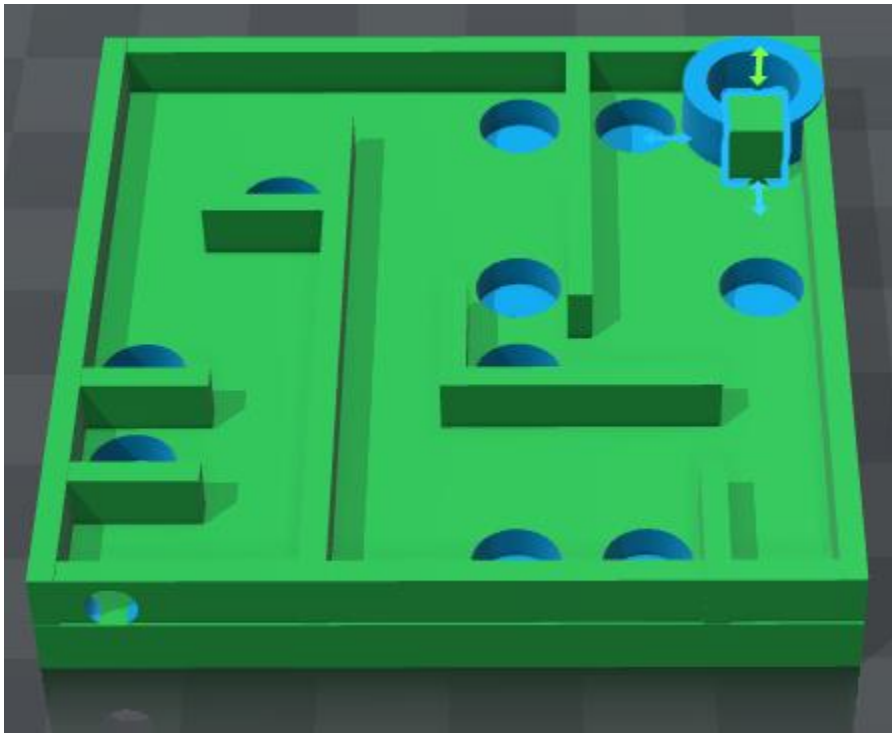


X = 25mm Y = 25mm Z = 8mm

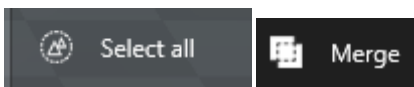
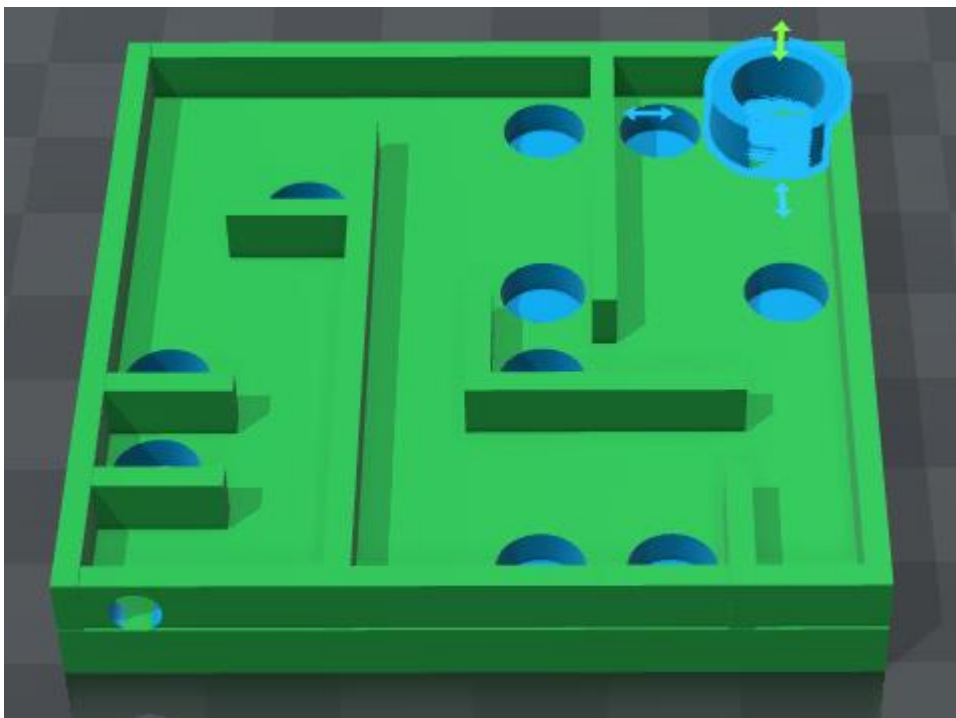
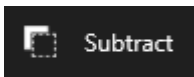




5mm x 5mm x 6mm



X = 25mm Y = 20mm Z = 8mm



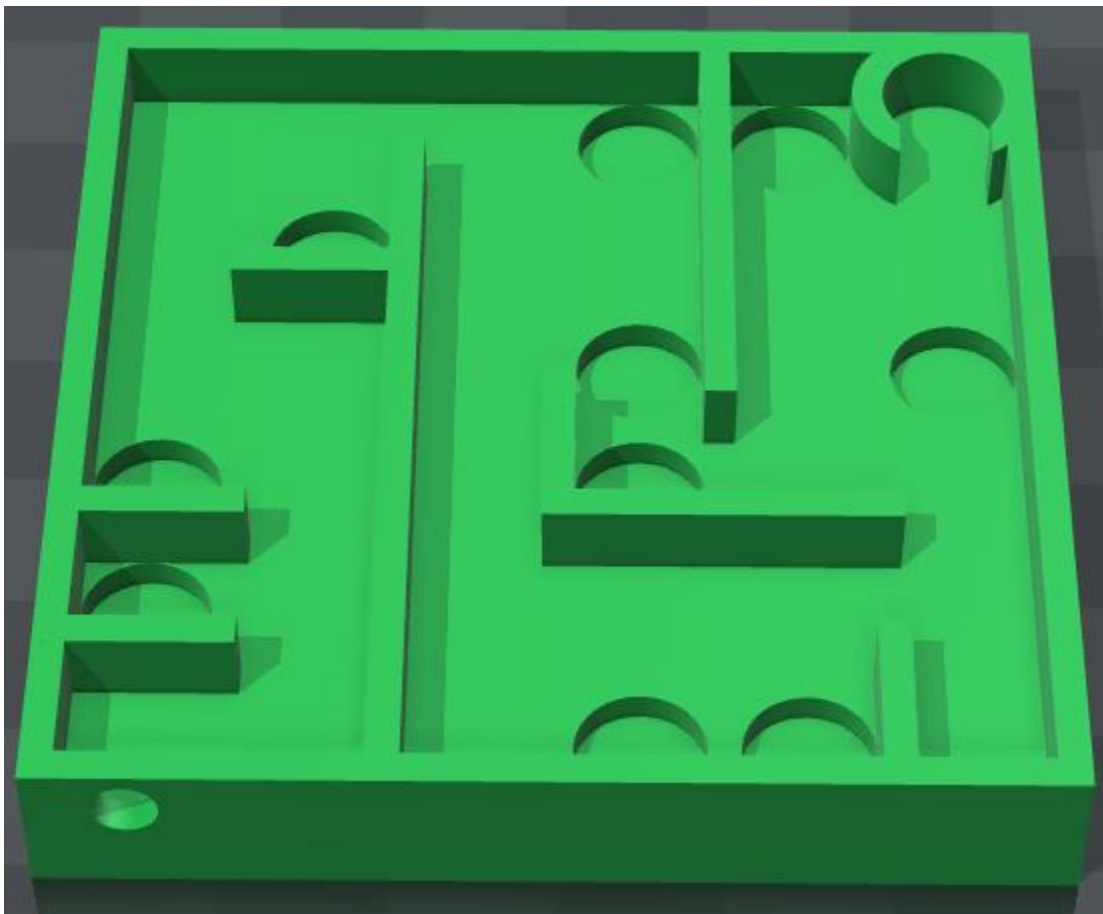
Paint

Colour

Selected  ▾

Click on ALL Blue Objects

 Colour



SAVE YOUR WORK as **myMaze.3MF** (where **my** is your first name)

Save **myMaze.STL**