

3D Design and 3D Printing – Session C

TechResort Innovators Sessions #2107C

What do I need?

- A laptop with 3D Builder installed

What is 3D Builder?

In the previous session you learnt how to use 3D Builder to make a 3D Badge.



How are we going to be using 3D Builder?

In this session we're going to design a 3D maze in 3D Builder.

By the end this session you should have designed a 3D maze suitable for a ball bearing to fit through.

Once you've understood what you are doing turn over the page and get started.

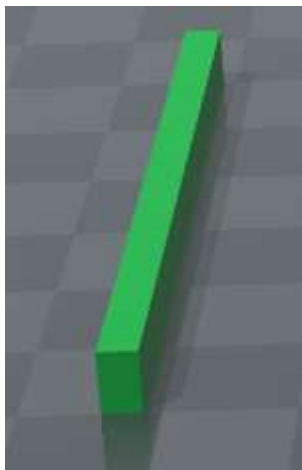
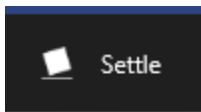
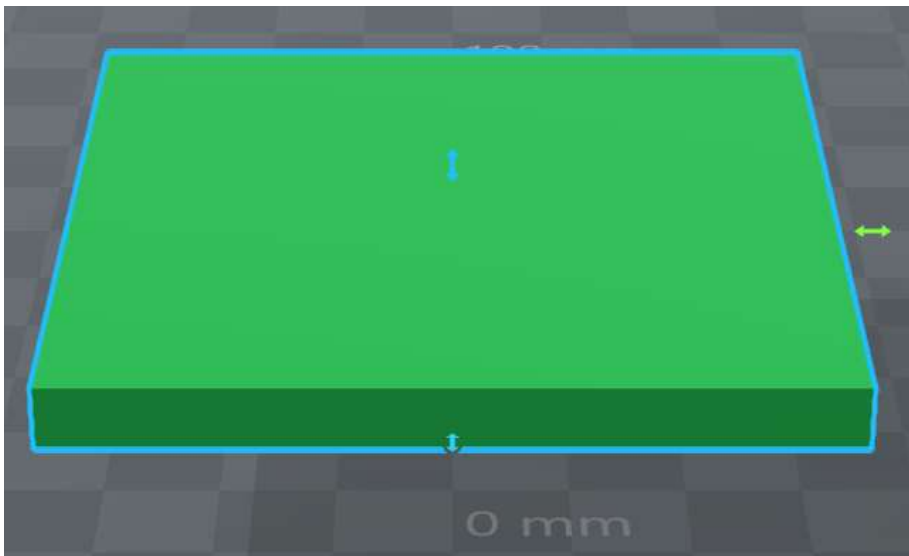
Select 'Insert' and then a 'Cube' to start with.

Choose the 'Scale' tool to change size and then enter the values as below:

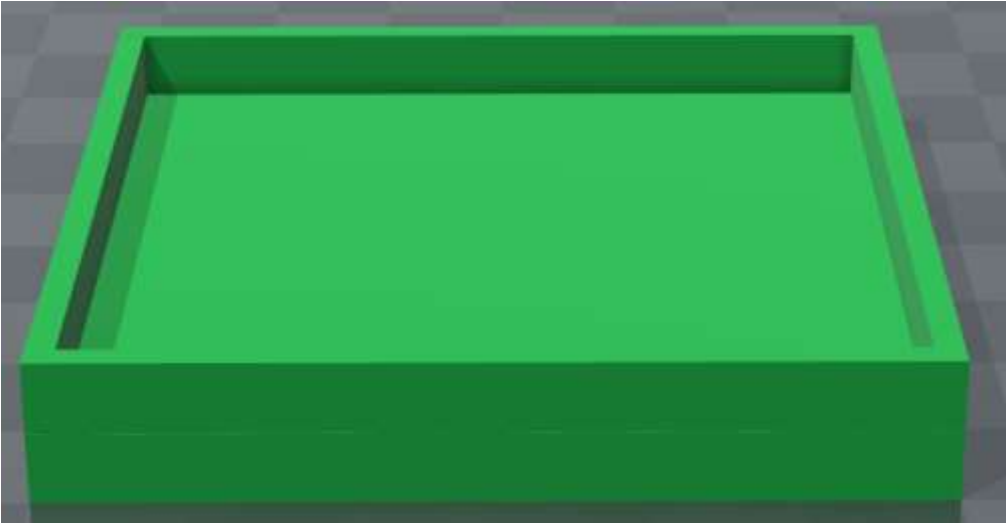


Throughout this document you'll see numbers written as 1mm x 2mm x 3mm, X (horizontal), Y (vertical), Z (depth)

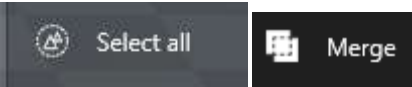
Set the values to what is written, and follow the steps to try and match your screen to the photos.



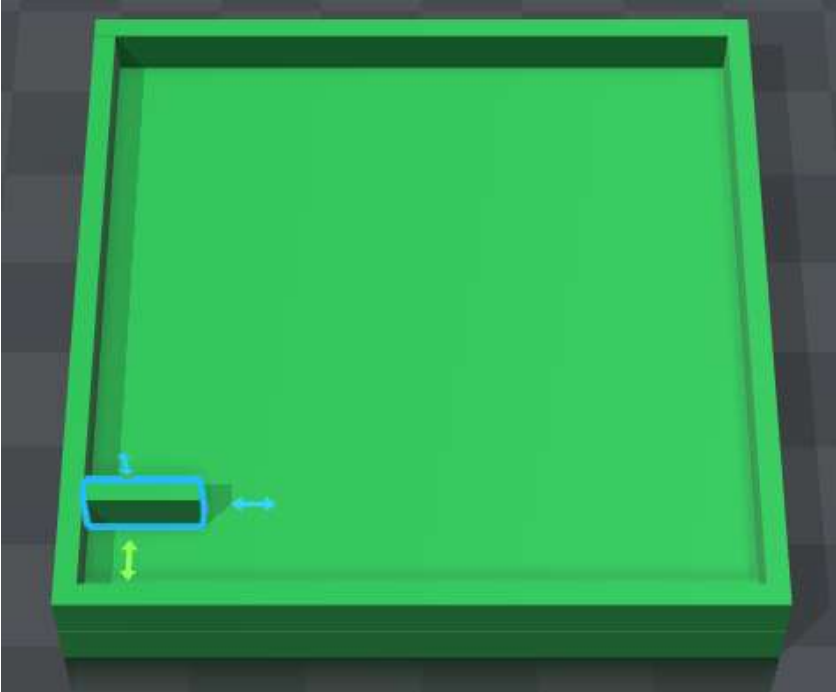
2mm x 62mm x 6mm




Set the Z of the four cuboids to 7mm

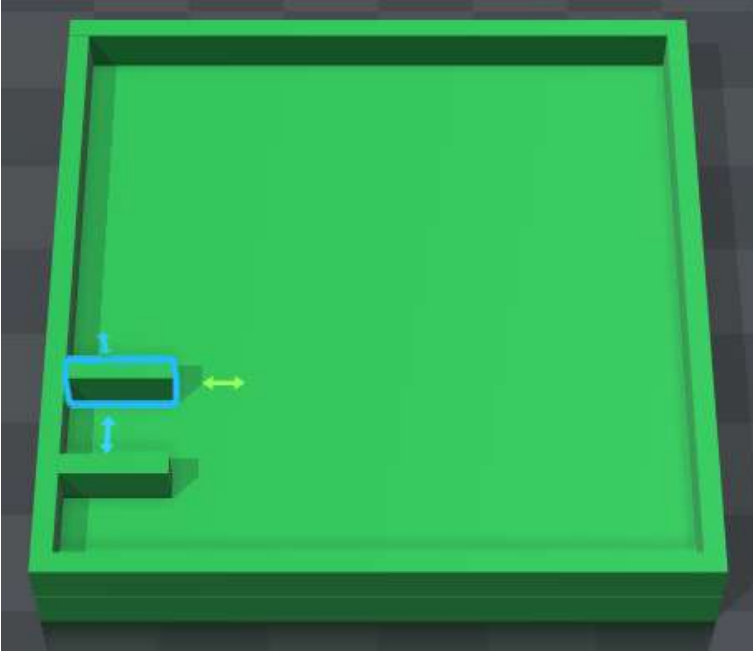


12mm x 2mm x 6mm




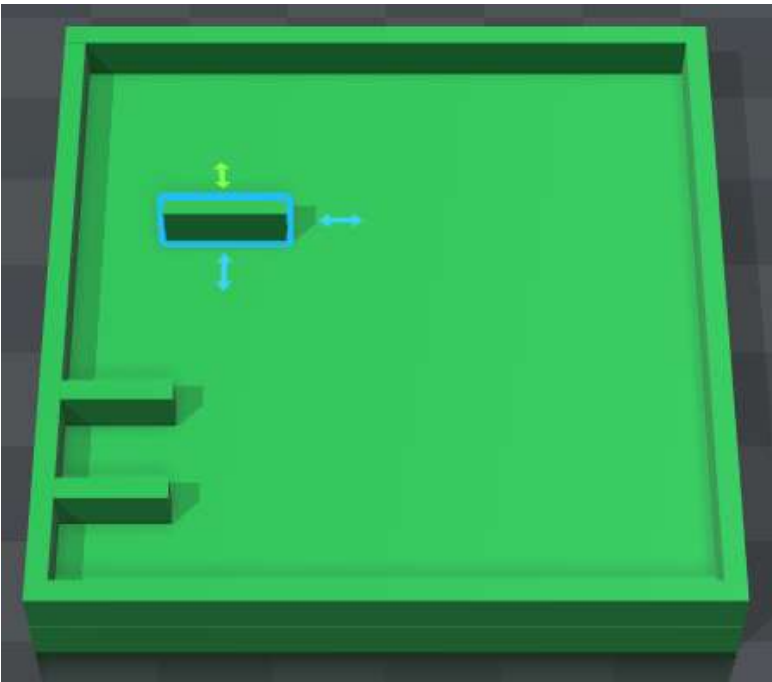
X = -25mm Y = -20mm Z = 7mm

 Duplicate



X = -25mm Y = -10mm

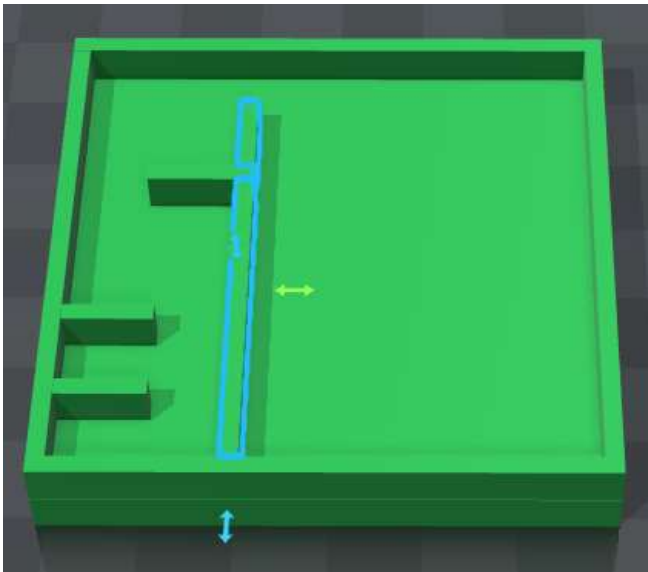
 Duplicate



X = -15mm Y = 10mm



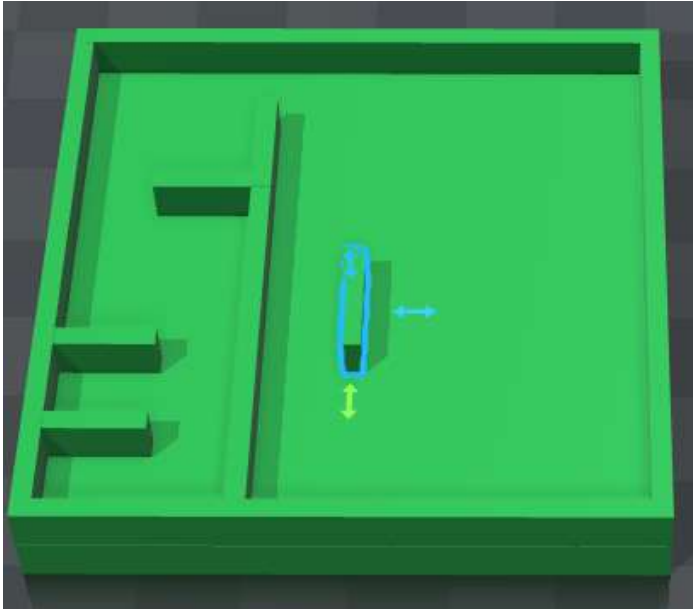
2mm x 52mm x 6mm



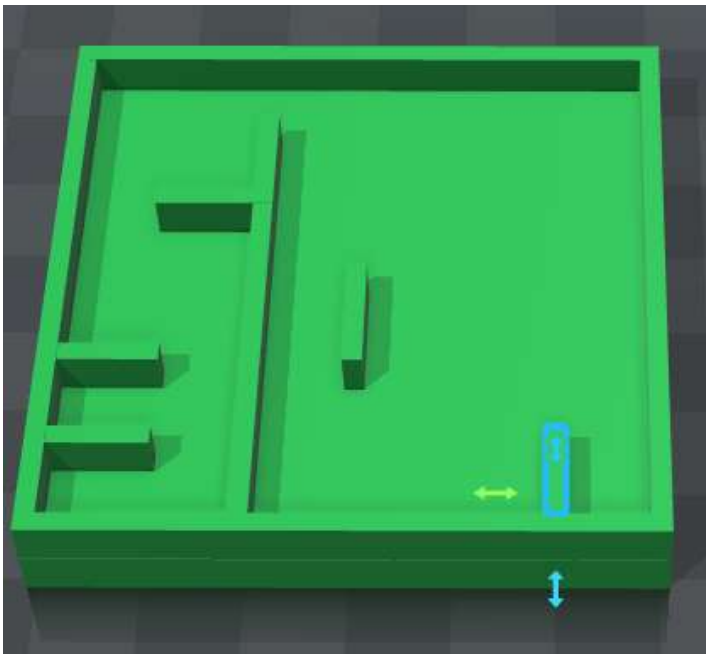
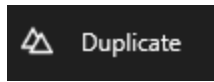
X = -10mm Y = -5mm Z = 7mm



2mm x 12mm x 6mm



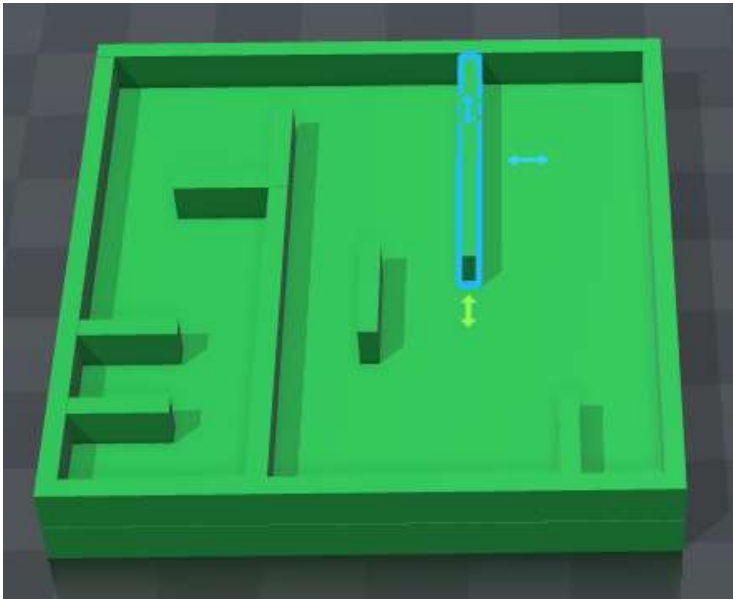
X = 0mm Y=-5mm Z = 7mm



X = 20mm Y = -25mm



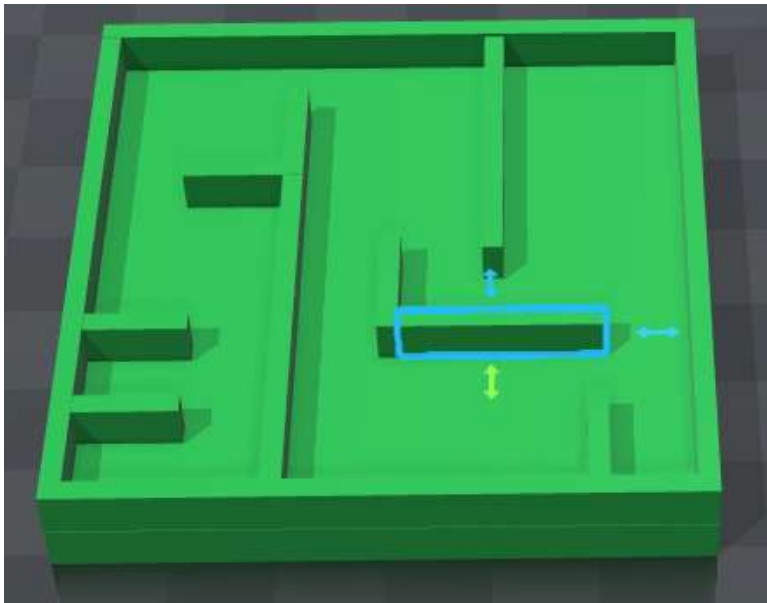
2mm x 32mm x 6mm



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



22mm x 2mm x 6mm

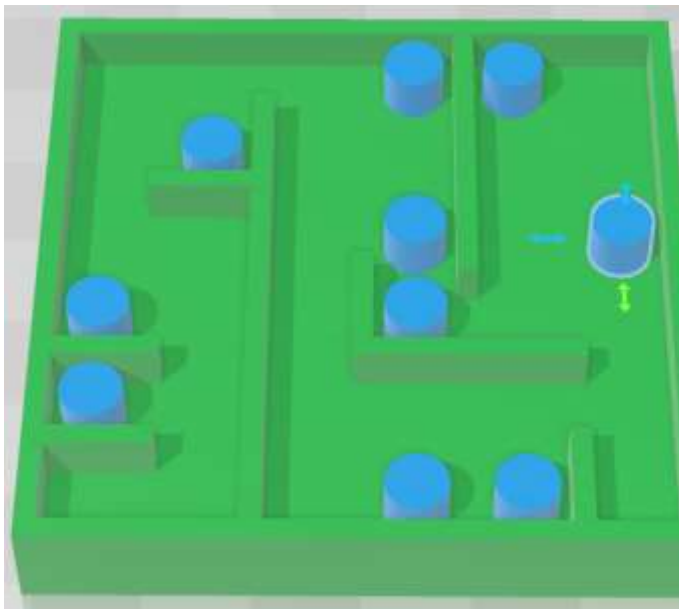


X= 10mm Y=-10mm Z = 7mm



x10

(X = 6mm Y = 6mm Z = 6mm)



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

SAVE YOUR WORK!

Deselect all

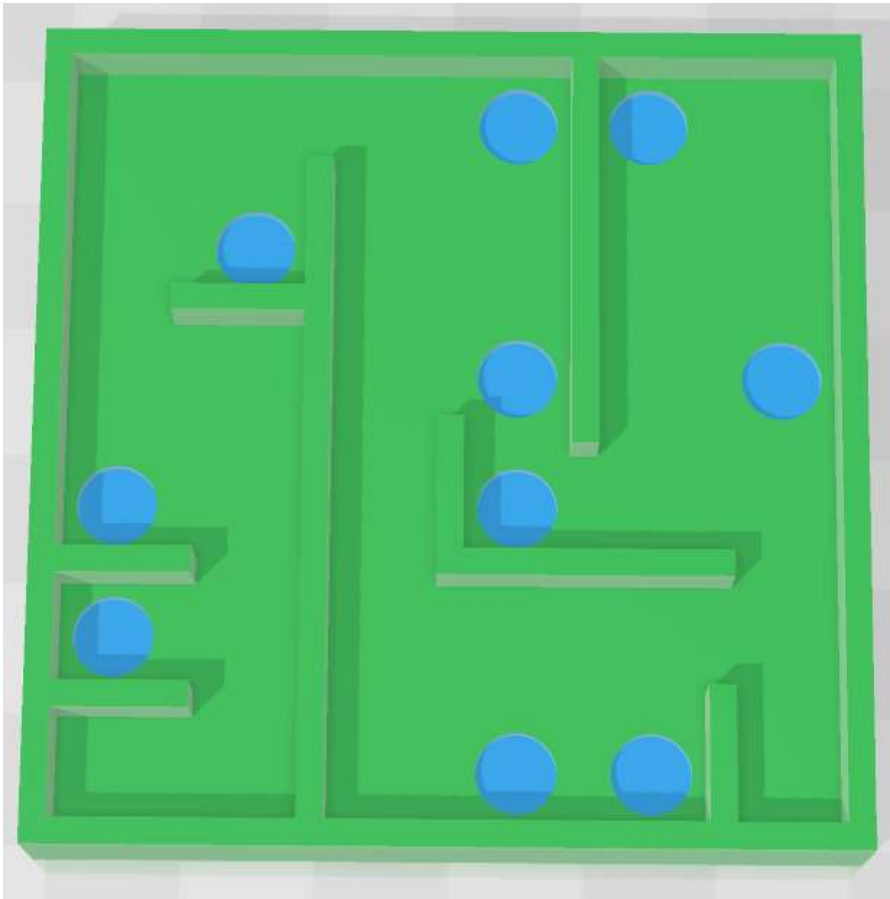
No objects Selected

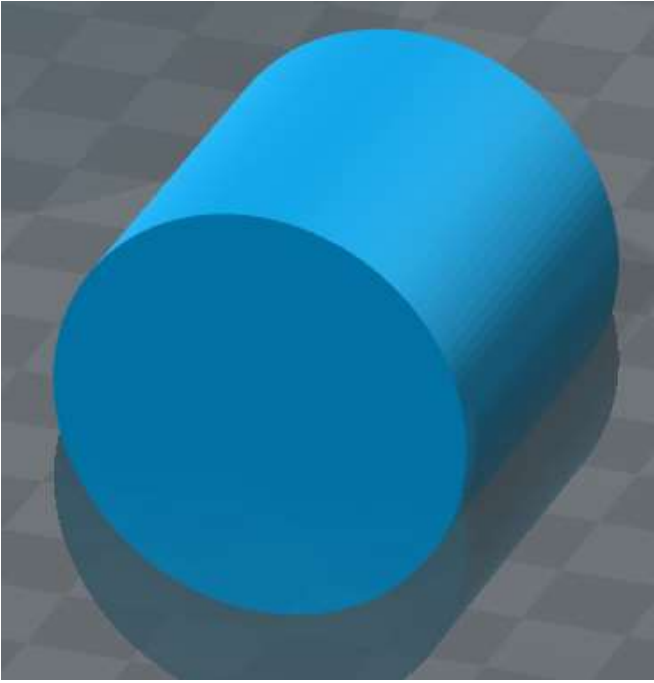
Turquoise

All Turquoise Cylinders selected

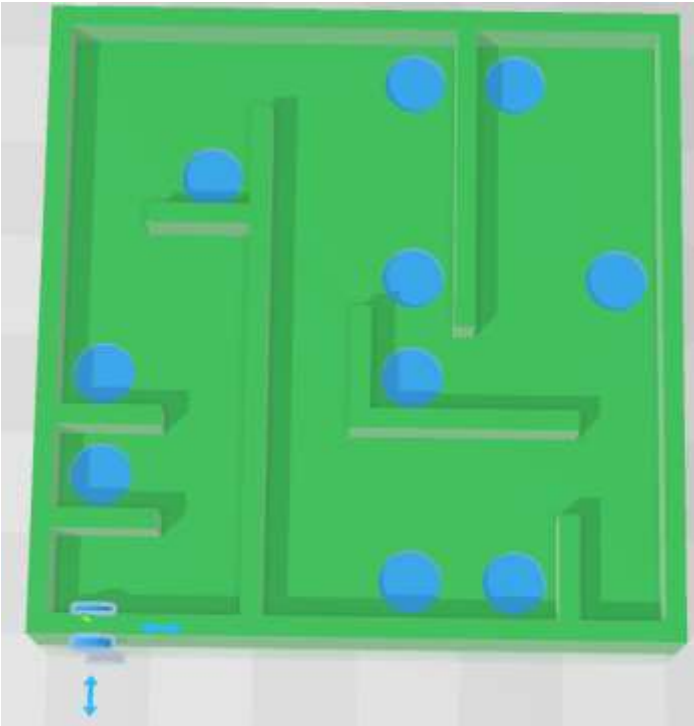
Merge

Subtract

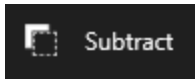


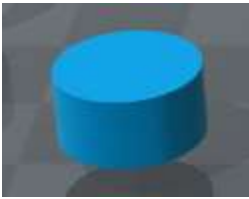
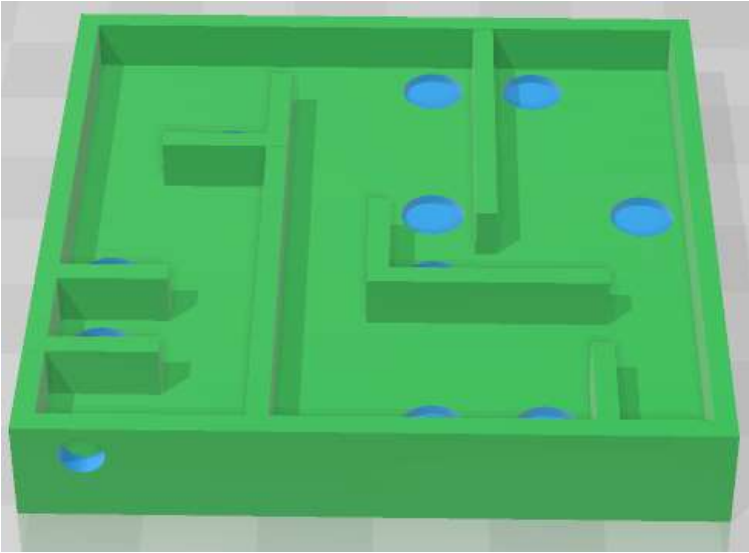


D = 4mm H = 4mm Roll = 90Deg

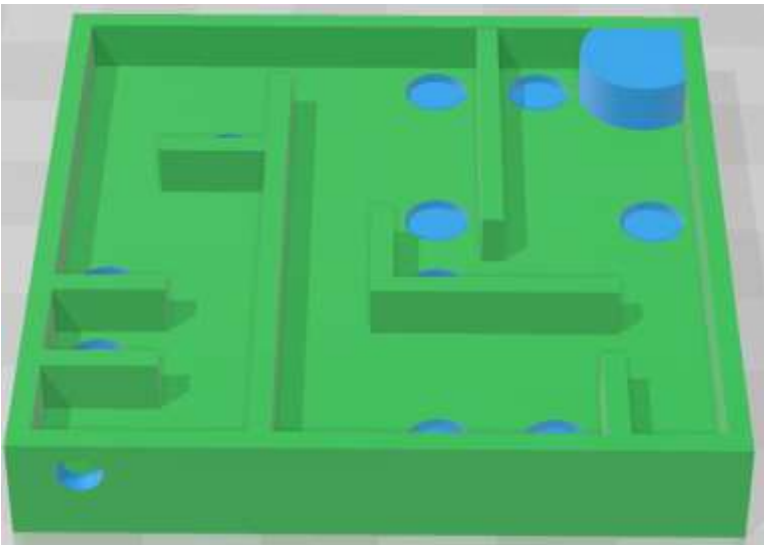


X = -25mm Y = -30mm Z = 7mm





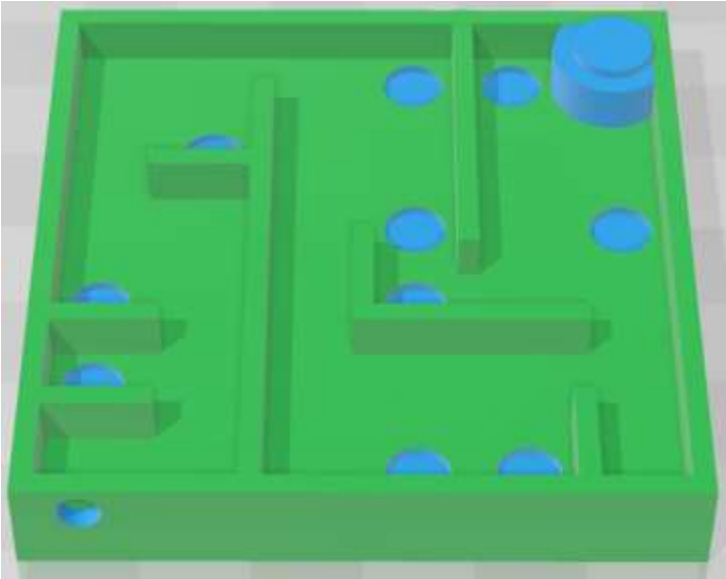
D = 12mm H = 6mm



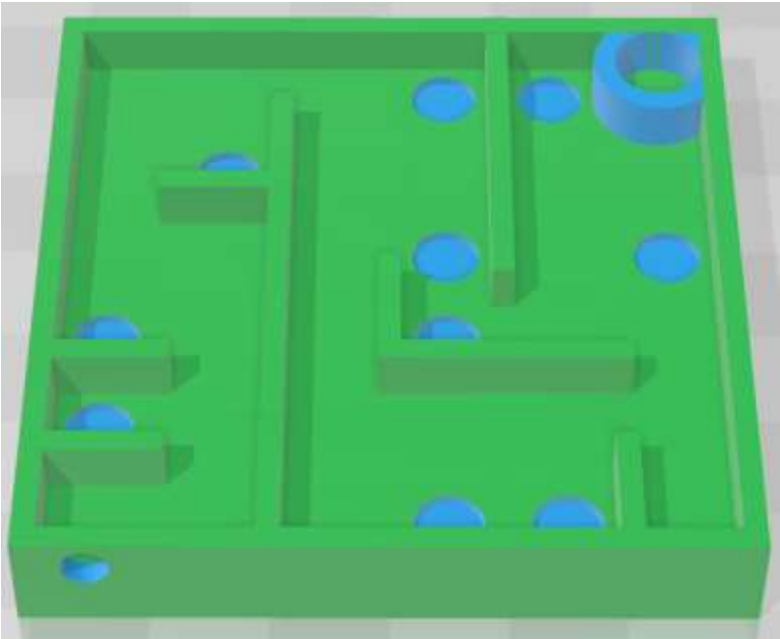
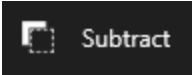
X = 25mm Y = 25mm Z = 7mm



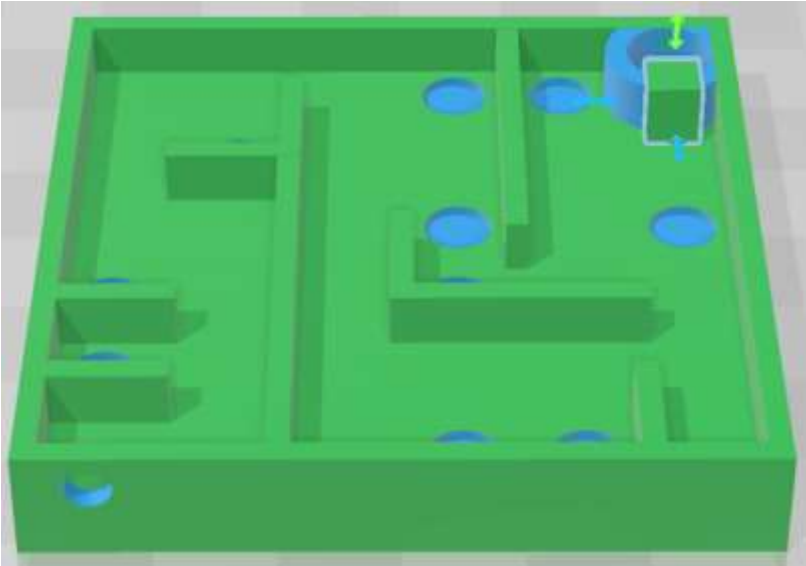
D = 8mm H = 6mm



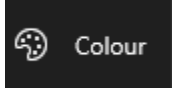
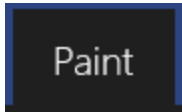
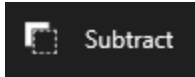
X = 25mm Y = 25mm Z = 8mm



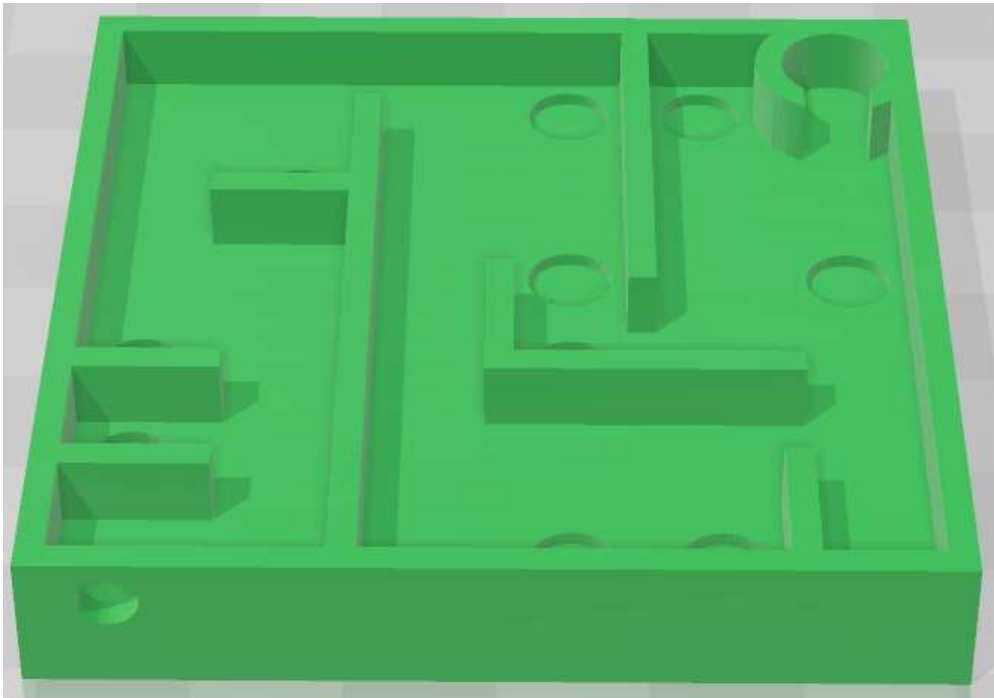
5mm x 5mm x 6mm



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



Click on ALL Blue Objects



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

Save **myMaze.STL**