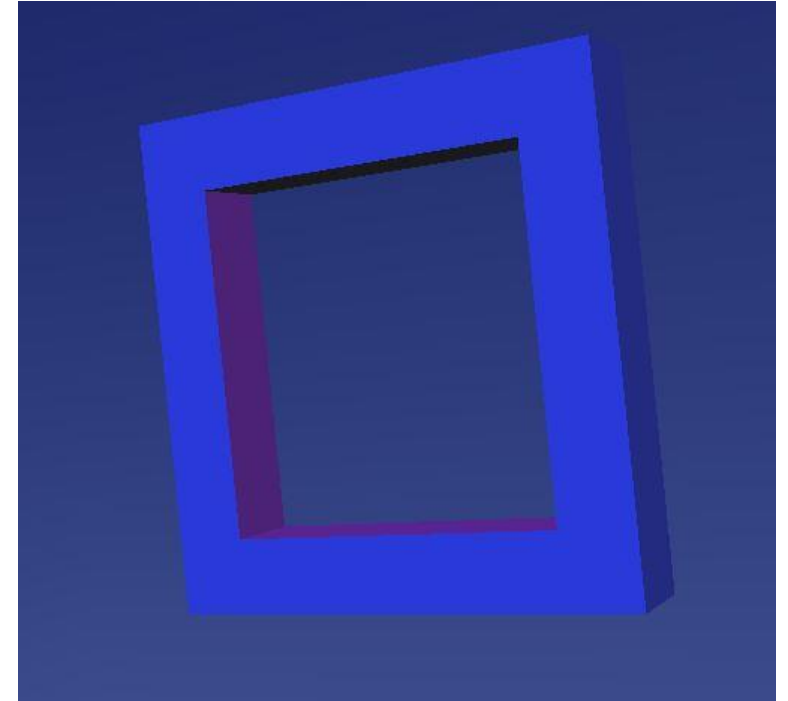


Anarkik3D Design V3.1. Tutorial 9

Method for creating and sizing 3D models.
Tools: SCALE, GRID and SNAP.



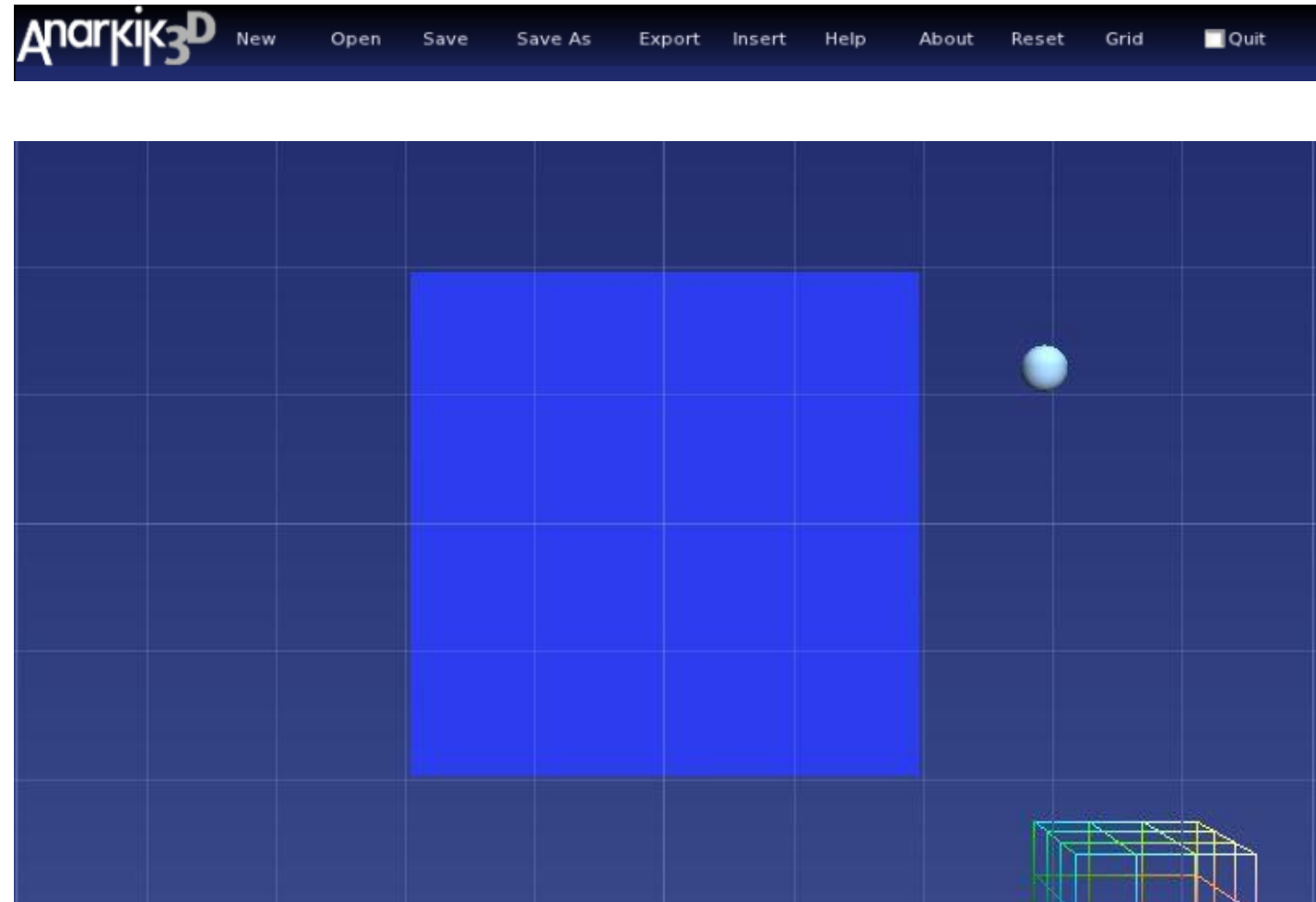
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Creating an object to size using a metric GRID, SCALING and SNAP tools:

The default mode of Anarkik3D Design is freeform modelling minus the **constraint and disruption to cognitive flow** that dimensioning can impose on creative and playful explorations in 3D digital modelling.

Where it is important to create a model to **specific dimensions** this tutorial goes through a method to do this. demonstrated through creating a frame that is 40 mm square, 6 mm depth and frame thickness of 8 mm.

1. Open a new 3D working space
 - If grid is not visible, tick grid box (next to 'quit'!) in top menu
 - Select a colour, preferably dark, to contrast with grid line colour.

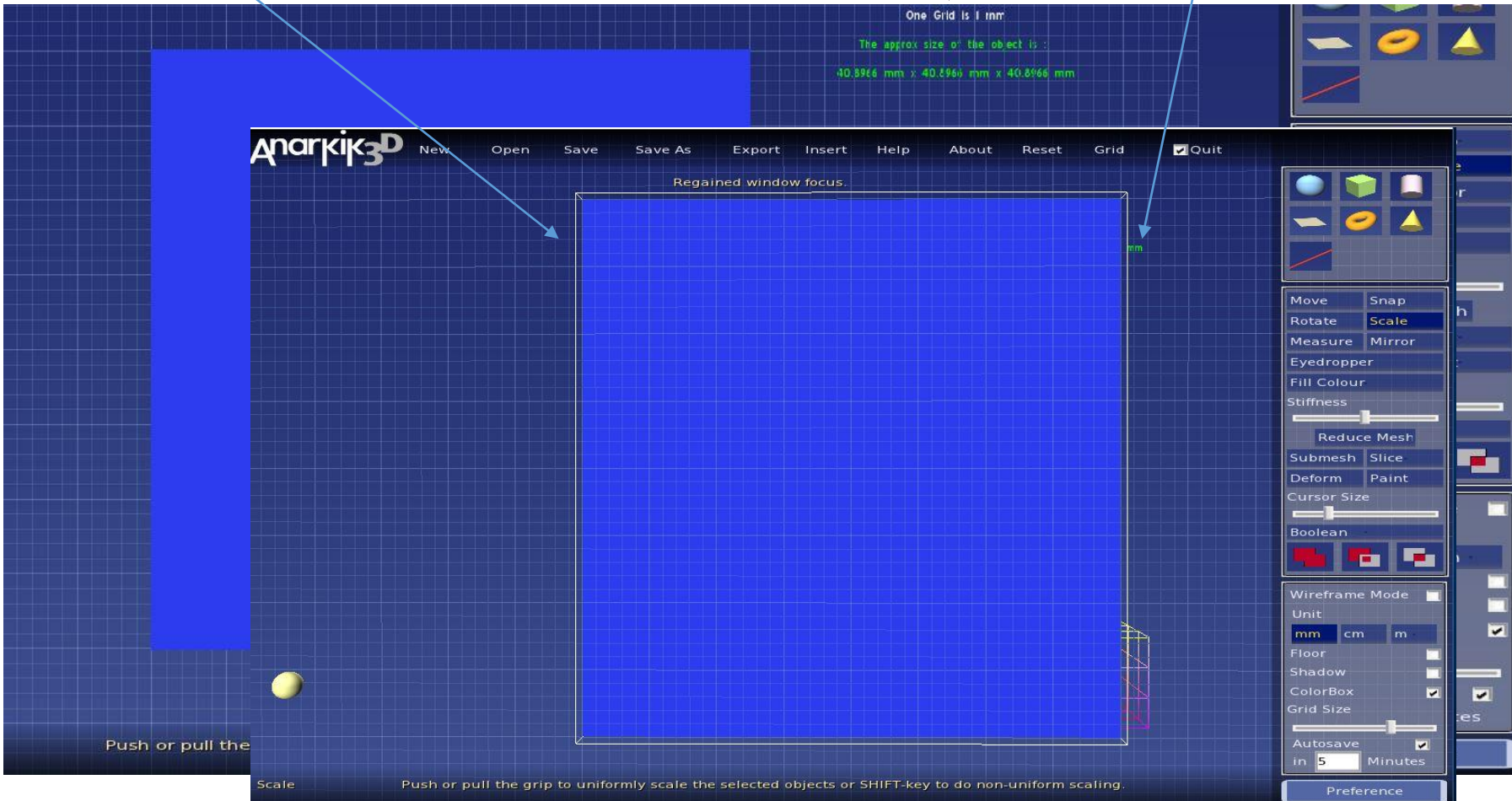
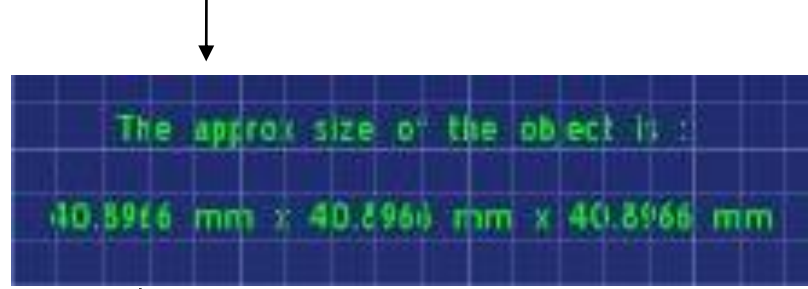


2. Create a cube and scale to approximate size required. Use TEXT* top right.

*This dimension is an approximation: it is the size of the bounding box which is about 0.978% larger than object's actual size. Example: TEXT (bounding box) reads 40.896 mm. ACTUAL size is 40 mm.

2a. MOVE cube using 'Z' KEY to position it behind grid so grid is seen right on the front of cube.

2b. Use SNAP tool to position cube more precisely and centrally onto the grid.



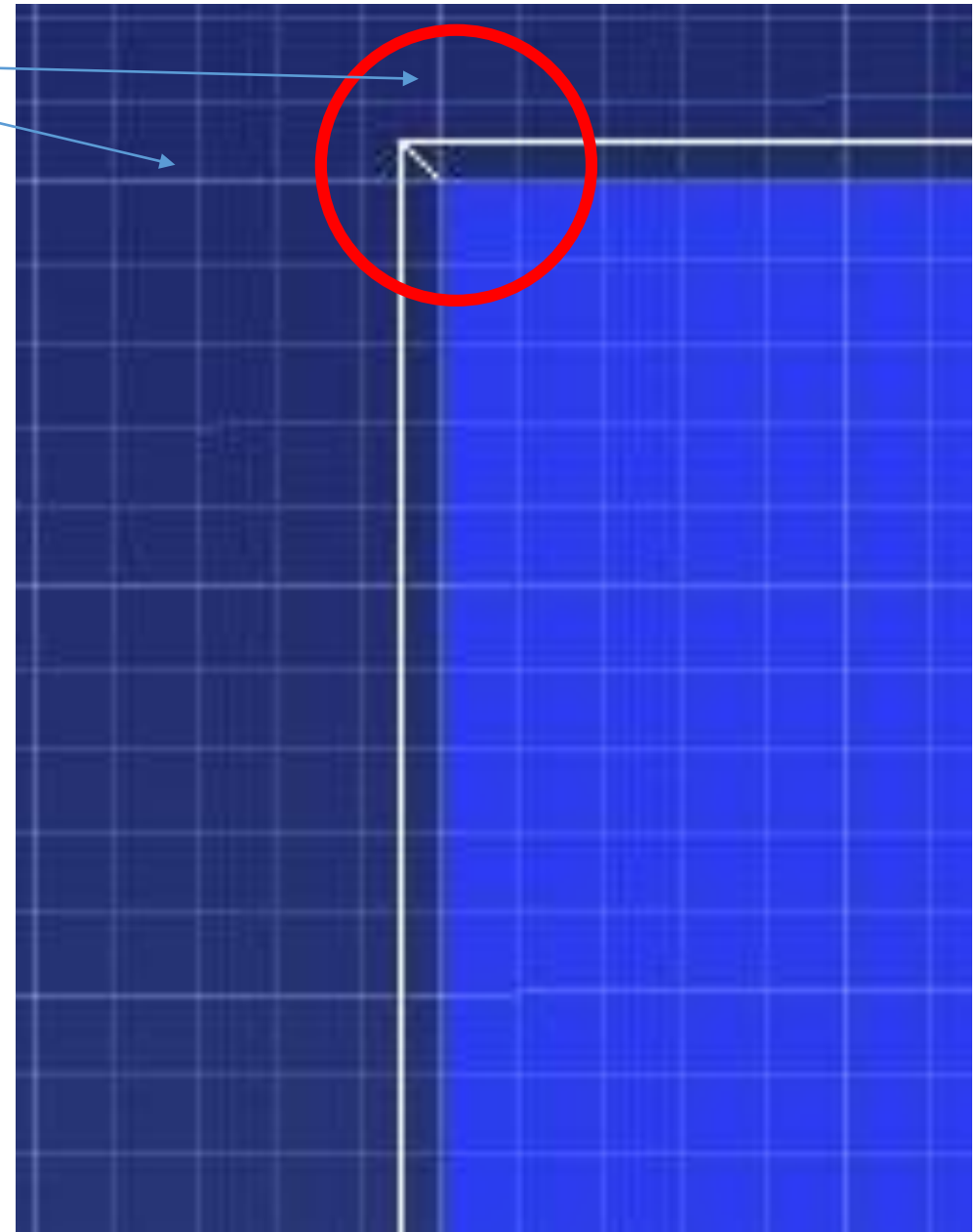
3. Now SCALE cube to size using grid lines.

Centimetres is default unit. To use millimetres for greater accuracy, go to PREFERENCE Menu and set UNIT to MM.

3a. To keep GRID on front surface when scaling, incrementally move grid using UP ARROW KEY to bring it forward, and DOWN ARROW KEY to move it backwards.

3b. 'MAGNIFY' working space to aid precise positioning: in PREFERENCE Menu use the GRID SIZE Slider bar and move marker to the right.

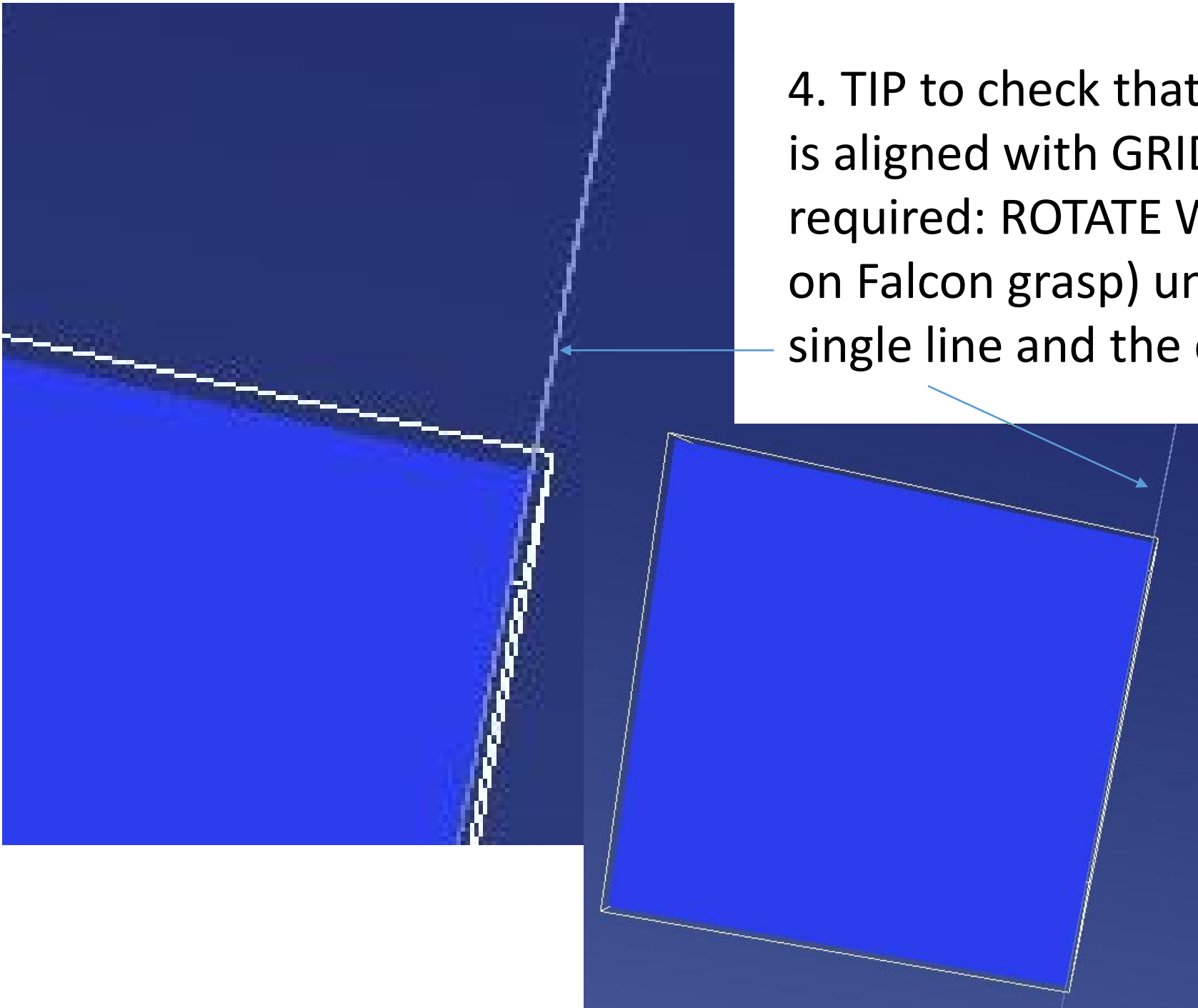
(If the GRID is at its maximum forward position 'de-magnify' working space a bit).

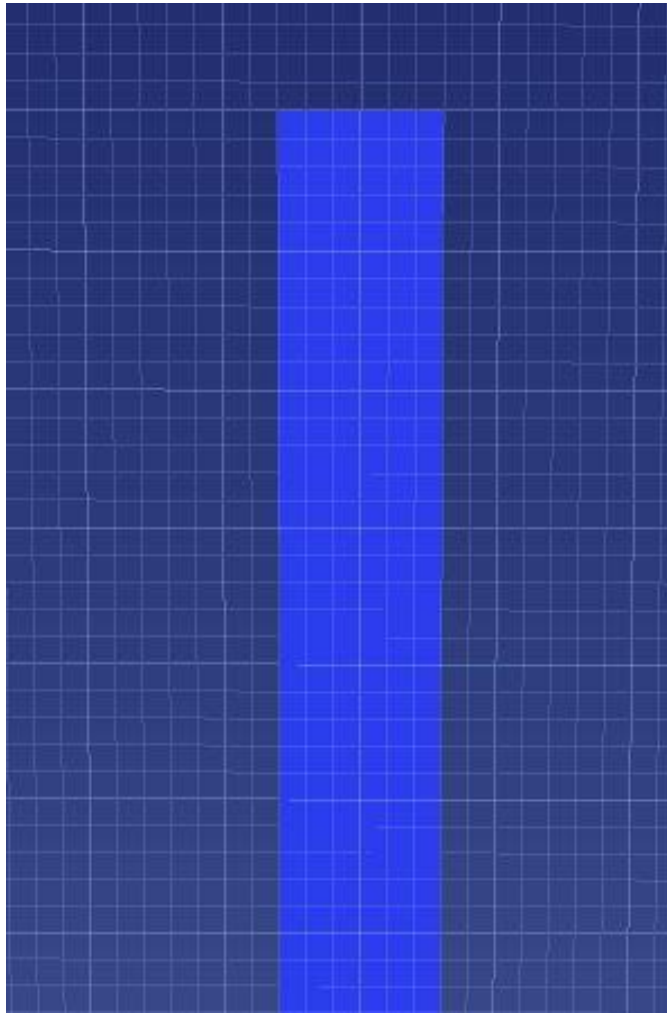


4. TIP to check that the cube's front surface is aligned with GRID and is scaled to size required: ROTATE WORLD 90° (right button on Falcon grasp) until the grid is seen as a single line and the cube is aligned with it.

5. Click the RESET Button in top menu to square up again.

6. Copy this CUBE (cube1) for next stage.



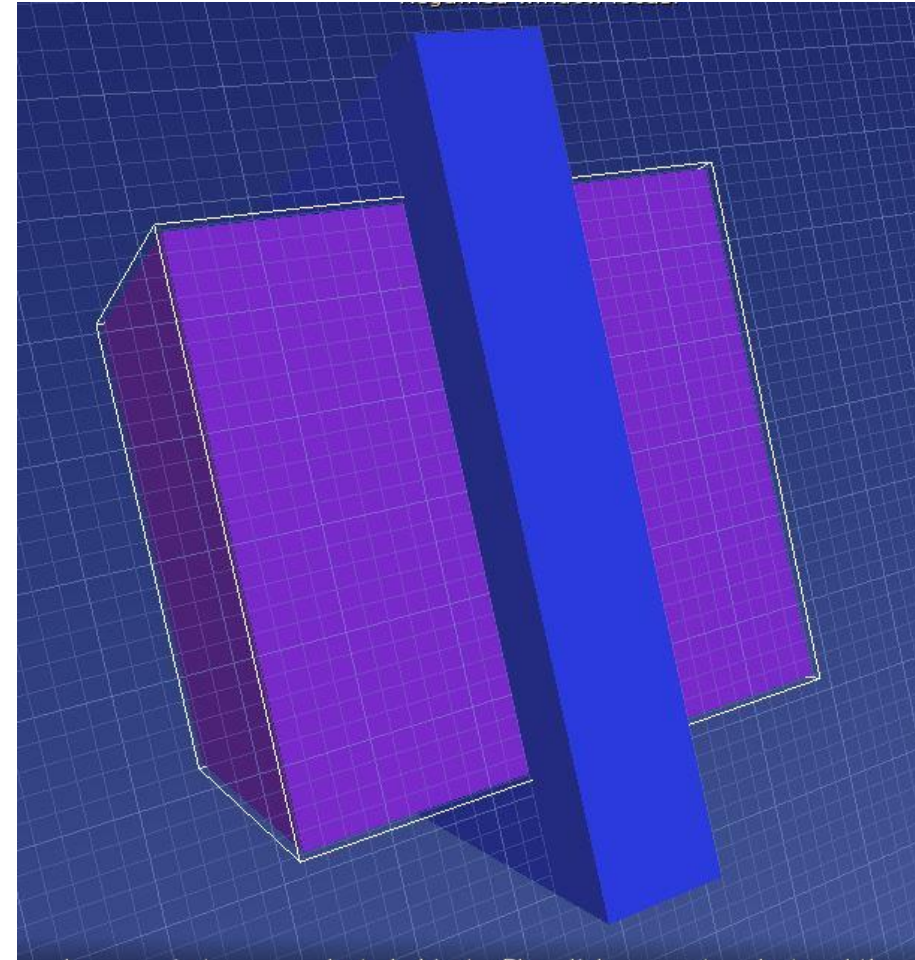


7. Scale down original CUBE (cube1), in one dimension, using 'X' KEY, to 6 mm as the depth of the 'frame'.

7a. Repeat (3) and (4) to accurately scale to size.

8. Use CTRL+F to paste CUBE2. By using **CTRL+F** CUBE2 will be pasted in the exact position it was copied from so no need to move it
8a. Roughly scale cube2 down to approx. 28.4 mm (bounding box/text size).

Tip: Use fill colour and Colourbox to give Cube2 a different colour - easier to differentiate it from 'Frame'.



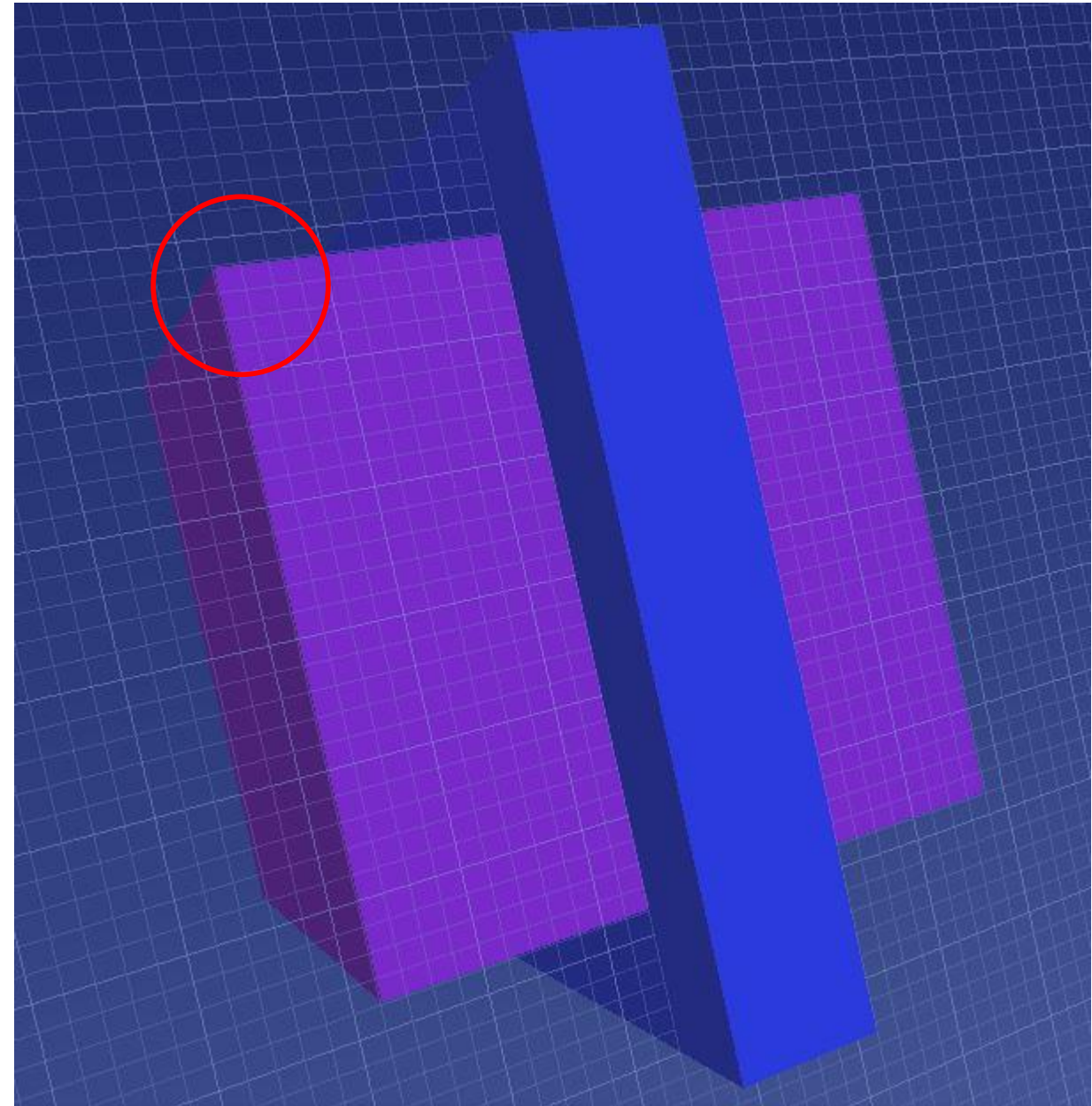
9. Scale Cube2 to exactly 28 mm using GRID:

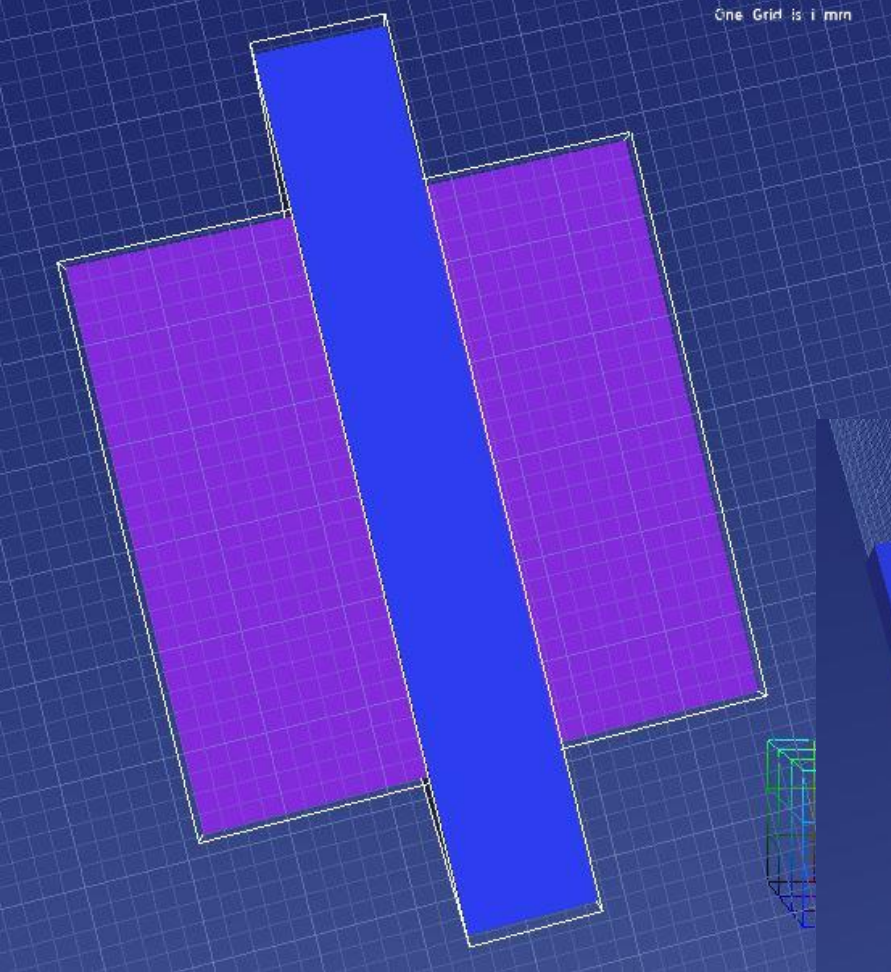
9a. Move grid backwards using DOWN ARROW key until grid lies on the surface of cube2 (use GRID SIZE Slider bar in PREFERENCE to de-magnify space if grid does not respond).

9b. Rotate world to check alignment with grid. Deselect object if bounding box is in the way.

10. Select object and tweak scale - if needed – to 28 mm.

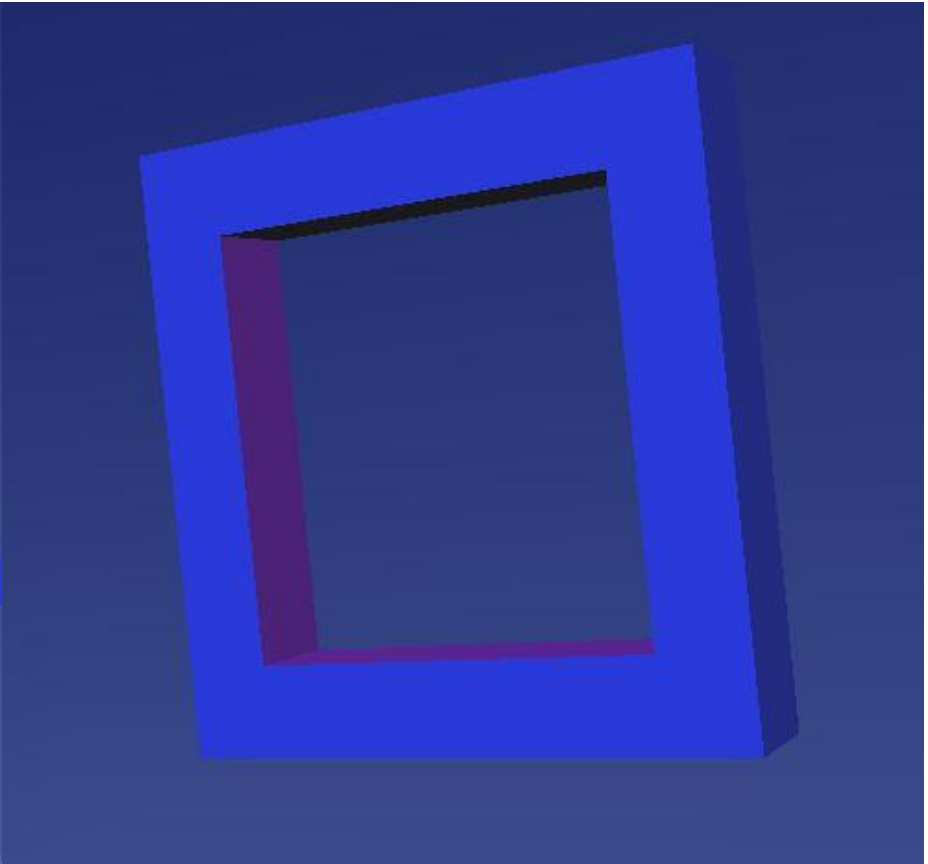
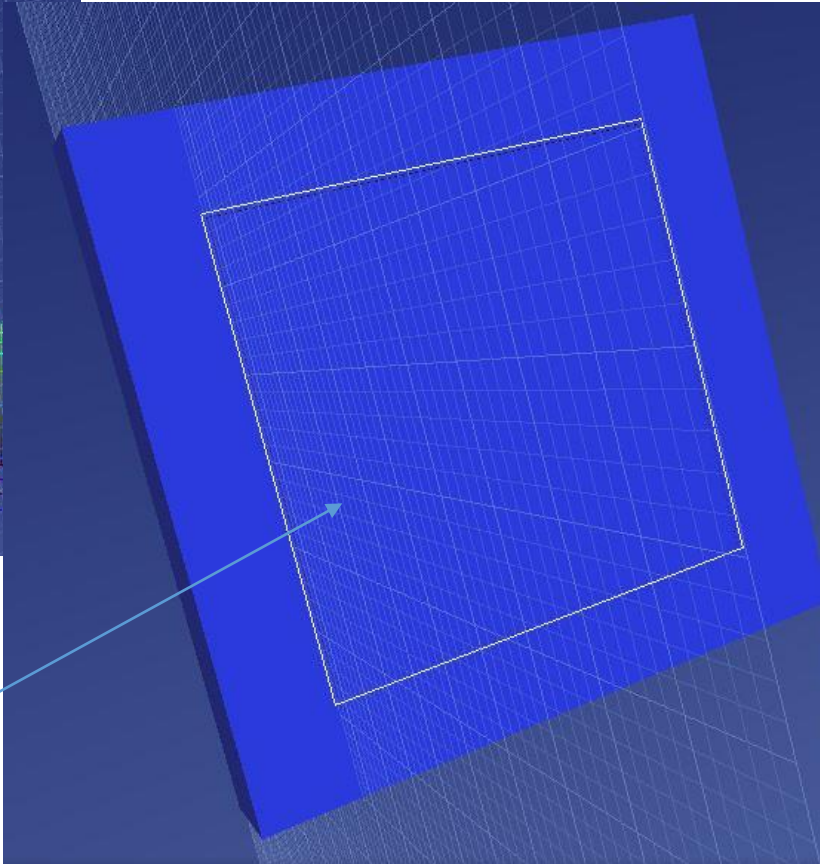
- Use ZOOM to check accuracy.





11. Select both objects, select Boolean tool, toggle KEY '1' to select CUBE2 (seen as wireframe). Click on Boolean centre icon or KEY 'X' to subtract Cube2 from 'Frame'.

Rotate world 90°, select INTERSECTION part and move or delete it to create Frame:



40 mm² x 6 mm depth, with frame thickness of 8 mm.