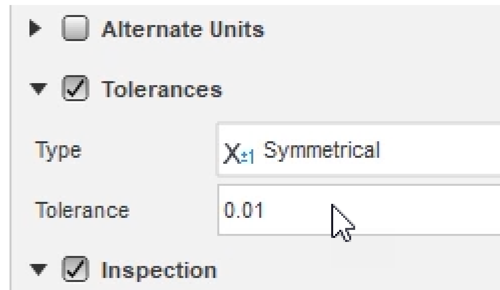
Create a blueprint

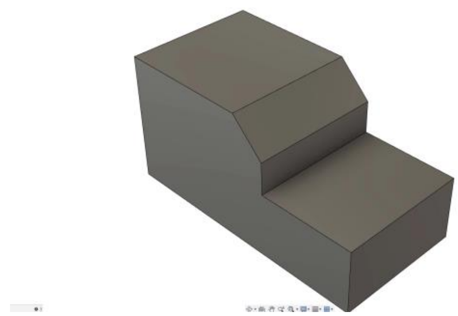
In this module, you'll explore the various options available in creating a drawing.

Learning objectives:

- Import a CAD model.
- Update a title block.
- Apply dimensions and tolerances.
- Apply GD&T symbols.



The completed exercise

1. Upload and open the supplied *Simple Block.f3d* file.	 *Figure 1. Open the supplied file*
2. Before creating a drawing, it is a good idea to make sure the model was created in the appropriate scale; click Inspect> Measure to open the Measure tool.	 *Figure 2. Open the Measure tool*

3. Click one of the model's edges and notice the dimension listed in the Measure dialog. The edge shown in the image on the right is 2 inches long which is correct for this part. Close the Measure dialog.

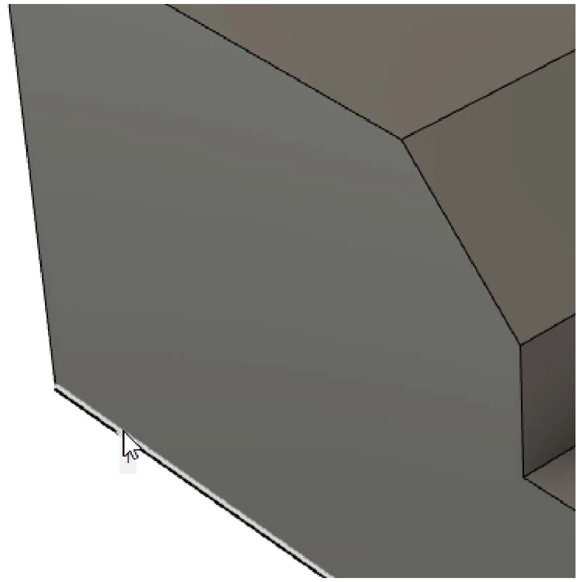


Figure 3. Measure one of the part's edges

4. Navigate to the Drawing> From Design workspace.

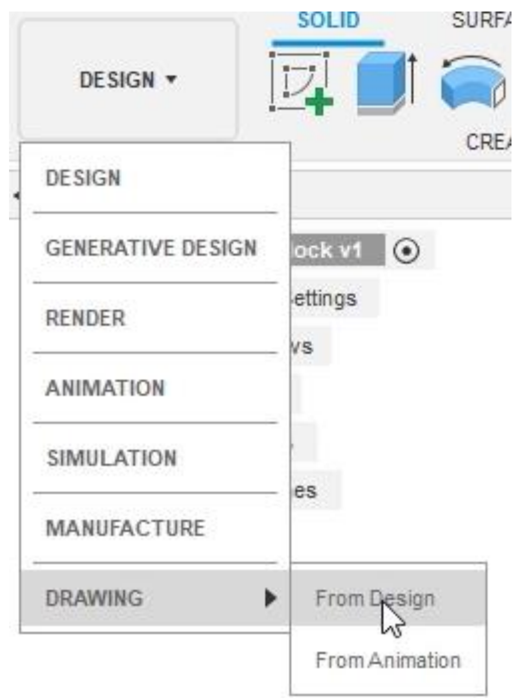


Figure 4. Navigate to the Drawing workspace

5. Explore the various options in the Create Drawing dialog and use the image on the right as a guide to configure the drawing's options. OK the dialog.

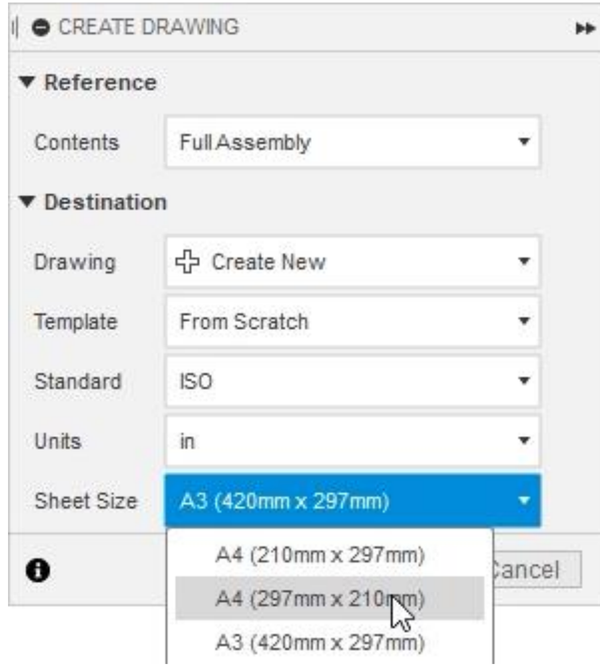


Figure 5. Explore the drawing options

6. Click above the title block to place the model's front view.

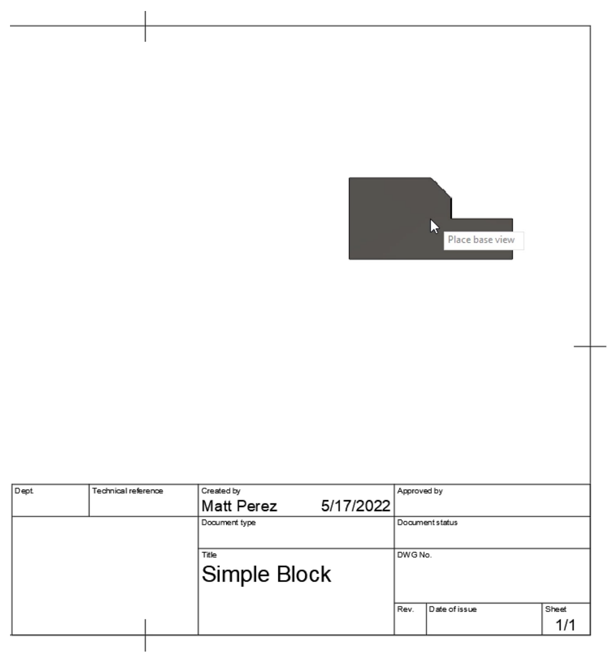


Figure 6. Place the drawing view

7. Note the various options available for customizing the view's visual style in the Drawing View dialog. Click the Visible Edges option in the Style section, then click the Full Length option in the Tangent Edges section. OK the dialog. The drawing view you placed in Step 6 is updated to match the visual styles you chose in the Drawing View dialog.

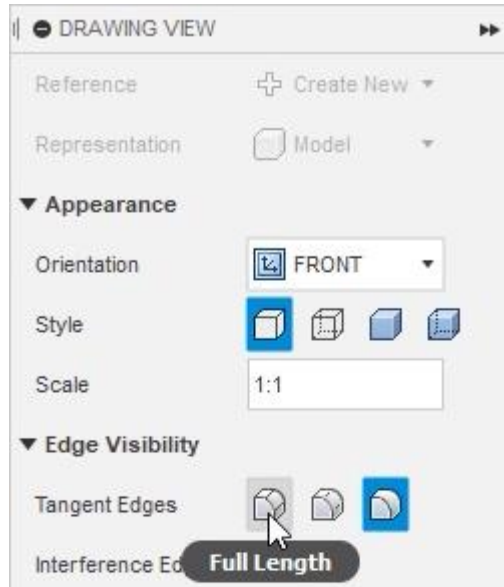


Figure 7. Adjust the view's visual style

8. Click Create> Projected View.

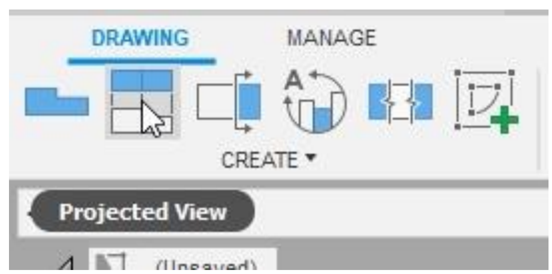


Figure 8. Open the Projected View tool

9. Click to the left of the front view to place a side view, then click below the front view to place a top view. Click above into the right of the front view to place an isometric view. After placing the isometric view, right-click the sheet and choose OK from the menu.

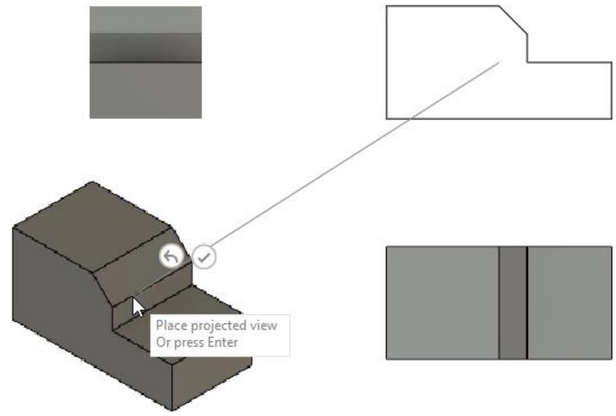


Figure 9. Place the projected views

10. Notice that the side and top views are linked to the base view that you first placed. However, the isometric view can be repositioned without affecting the base view. Click and drag the isometric view to a new location on the drawing sheet.

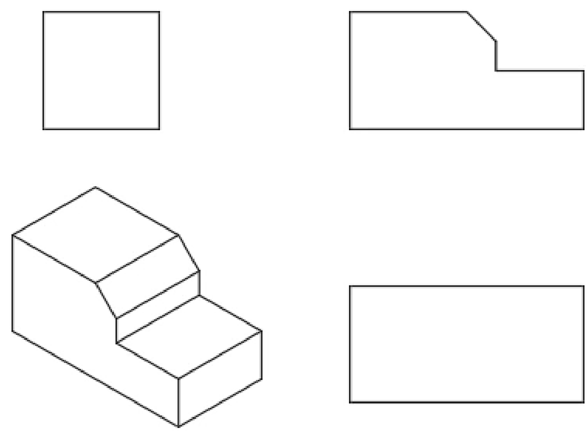


Figure 10. Reposition the isometric view

11. Double-click the drawing's base view and notice that you can change the drawing's scale in the Scale box. Close the dialog without making any changes.

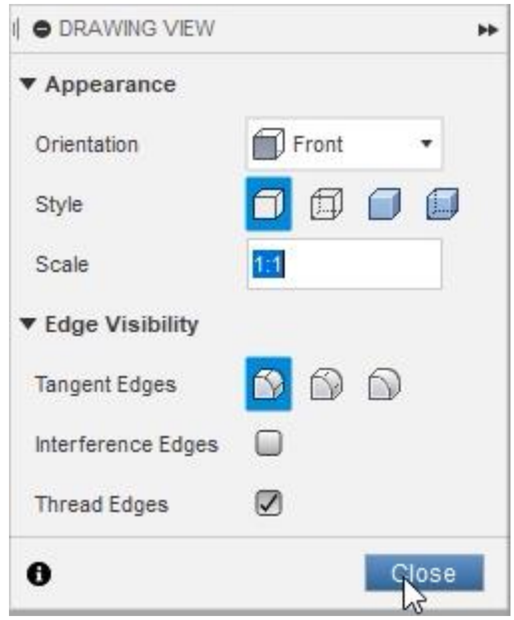


Figure 11. Change the drawing's scale

12. To edit the title block's properties, right-click the title block and choose Edit Properties from the menu.

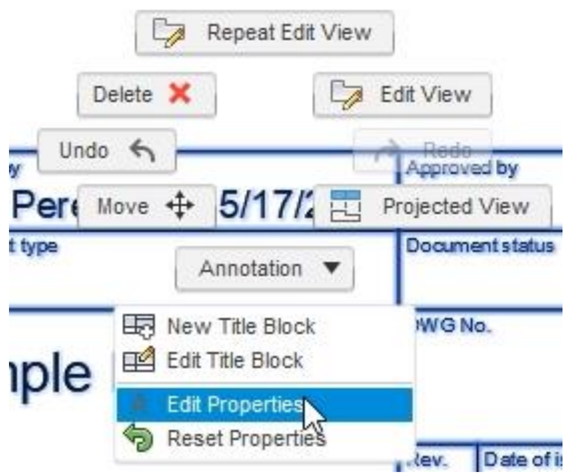


Figure 12. Update the title block's properties

13. Click the asset you want to modify and type the information that needs to be displayed. Press Enter after you finish.

Figure 13. Update the title block's information

14. Click the dialog's Finish Properties to accept the changes and update the title block.

Figure 14. Accept the changes

15. Click Dimensions> Dimension.

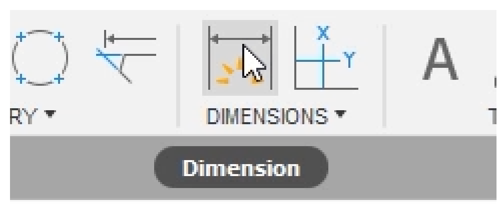


Figure 13. Open the Dimension tool

16. Click one of the drawing's edges to select it, then click to place the dimension onto the sheet.

Figure 14. Dimension the drawing

17. Continue to add dimensions to the other drawing views.

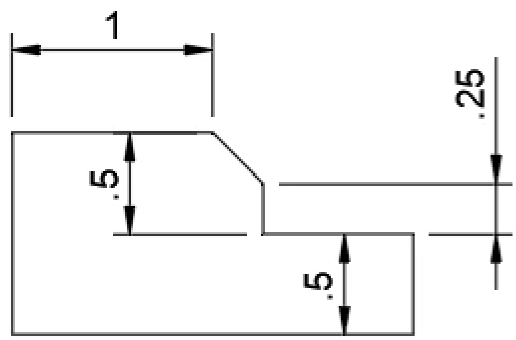


Figure 15. Dimension the drawing

18. To create an angle dimension, select two lines and click to place the angle dimension.

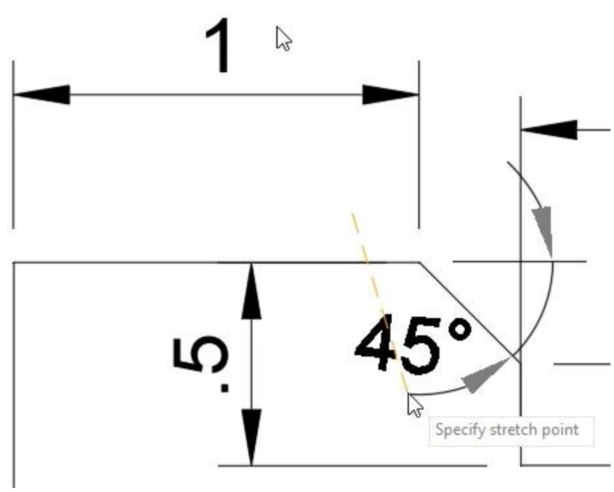


Figure 16. Reposition the dimensions

19. A drawing can be confusing if dimensions overlap each other. You can use the Dimensions> Dimension Break tool to break a dimension's lines and increase the drawing's clarity.

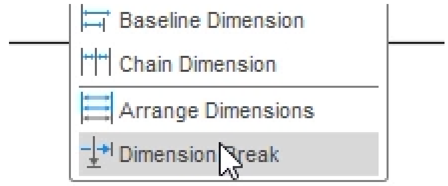


Figure 17. Use the Dimension Break tool to clarify a drawing

20. Click Symbols> Datum Identifier.

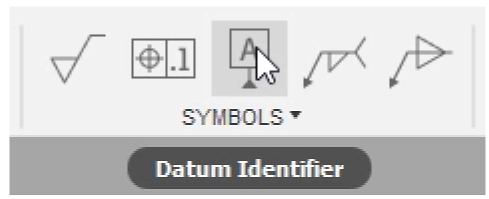


Figure 20. Open the Datum Identifier tool

21. Click the drawing view's bottom edge shown in the image on the right to place the first datum. Right-click and choose the green checkmark to place the identifier.

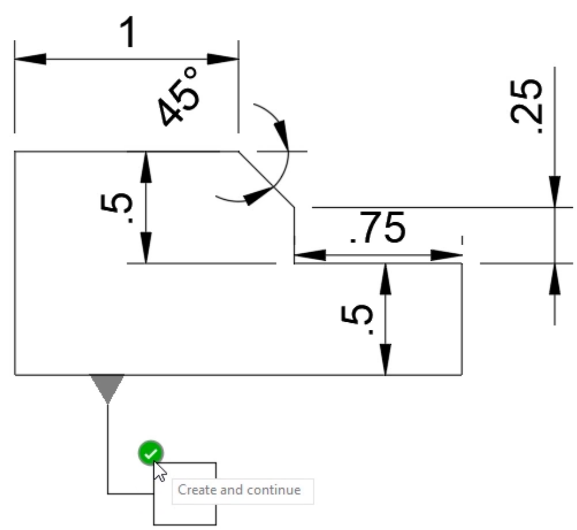


Figure 21. Place the datum identifier

22. This datum needs to be A since it is the first one you placed; OK the dialog.

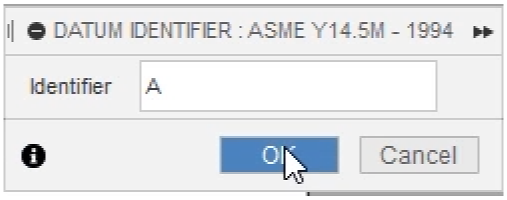


Figure 18. Choose the datum identifier

23. Repeat Steps 18 through 20 to create Datum B. Reposition the datums if they need to be moved after you create them.

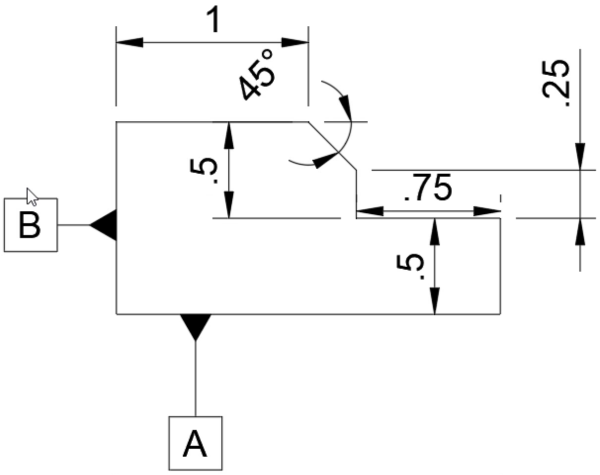


Figure 19. Create Datum B

24. Notes can also be easily added to a drawing view; click Text> Leader Note.

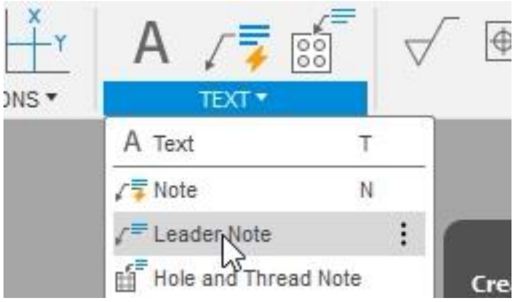


Figure 20. Open the Leader Note tool

25. Click once to select a drawing view’s edge, then click it again to place the note’s position.

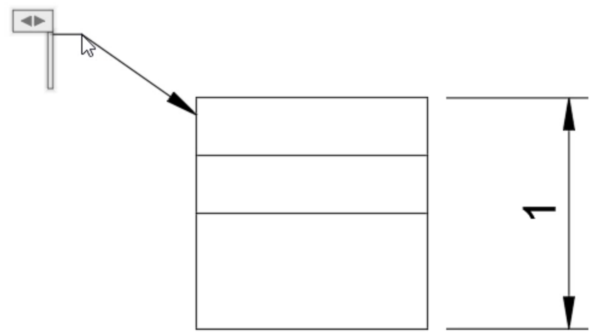


Figure 21. Place the leader note

26. After typing the information you want to see in the leader note, left-click on the drawing sheet to finalize it. Close the Text dialog.

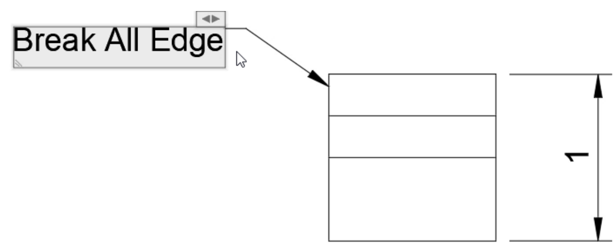


Figure 22. Finalize the Leader note

27. Tolerance values can be added to a dimension by double-clicking it.

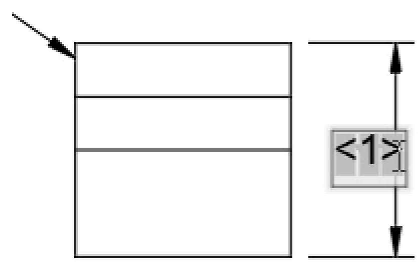


Figure 23. Double-click one of the dimensions

28. Activate the Dimension dialog's Tolerances option, then type the tolerance you want to use into the Tolerance box. Activate the Inspection option, then close the dialog to apply the tolerance to the dimension.

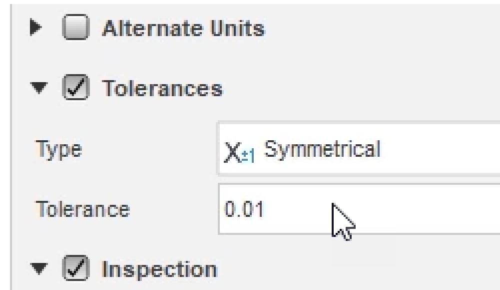


Figure 24. Describe the tolerance

29. Notice that the dimension is updated with the new tolerance information.

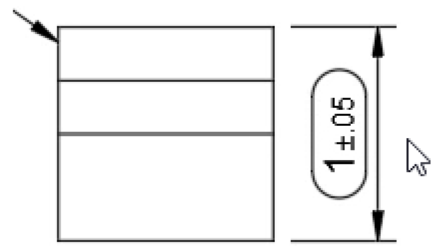


Figure 25. Inspect the result

30. Save the file.

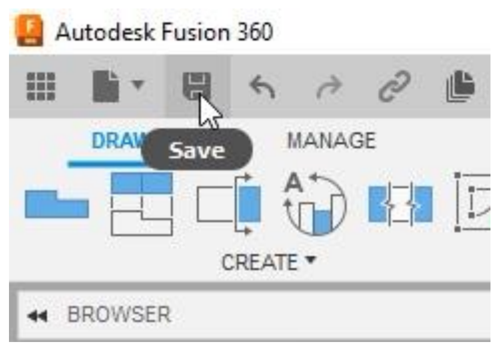


Figure 30. Save the file

31. Choose the name you want to use for the drawing file, then click the Save dialog's Save.

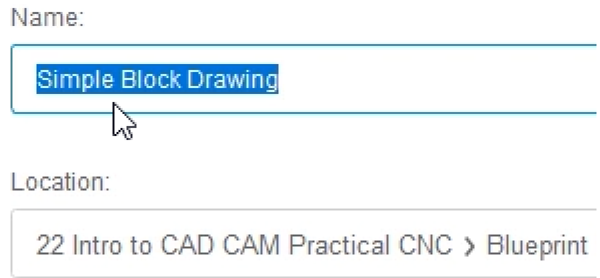


Figure 31. Save the file

32. New sheets can be added to the drawing by clicking Quick Add in the screen's lower left corner.

Figure 26. Add a new sheet to the drawing

33. Click on each sheet thumbnail to navigate through the drawing's sheets. Use the skills you learned in this module to populate the new sheet, then continue to the next module.

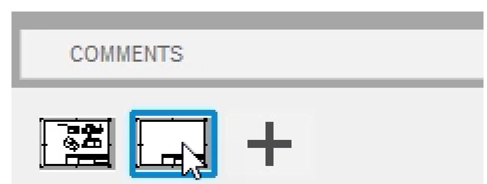


Figure 33. Navigate through the drawing's sheets