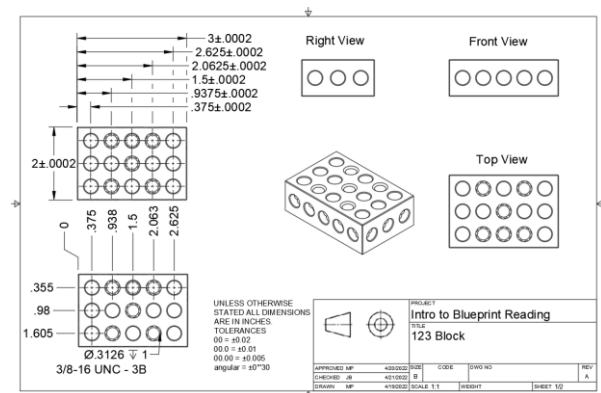


Blueprint overview

In this module, you'll explore the various aspects of drawing sheets.

Learning objectives:

- Review a blueprint.
- Identify areas of a blueprint.
- Identify drawing views.



The completed exercise

1. Upload the supplied *123 Block Drawing.f3z* file. This file has the 123 Block Drawing file and the 123 Block 3D model. Open both of these files in Fusion 360.

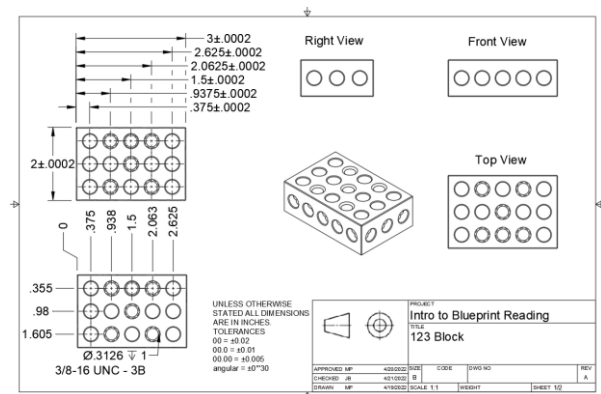


Figure 1. Open the supplied file

2. In the 123 Block Drawing tab, notice that there are two sheets displayed in the screen's lower left corner. Explore each sheet by clicking on its thumbnail.



Figure 2. Explore the drawing's sheets

3. The first sheet shows the first angle projection and the second sheet shows the third angle projection. Notice that the title block's icons represent the angle projection.

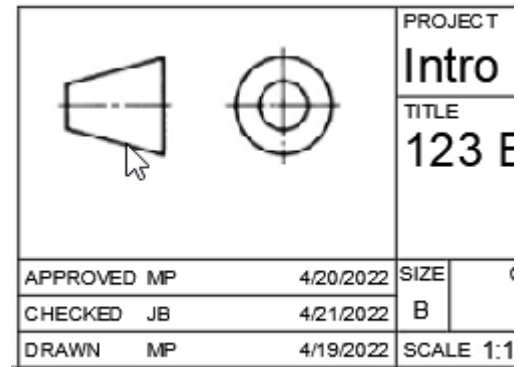


Figure 3. Inspect the title block's icons

4. Navigate to the 123 Block tab and expand the Sketches folder. Turn on the visibility for the three sketches shown in the image on the right by clicking the eyeball icon next to them. These sketches represent the first angle projection.



Figure 4. Turn on the first angle sketches

- Expand the Browser's Named Views folder and click the Projection View. This will reorient the model into the projection view that the drawing sheet uses.

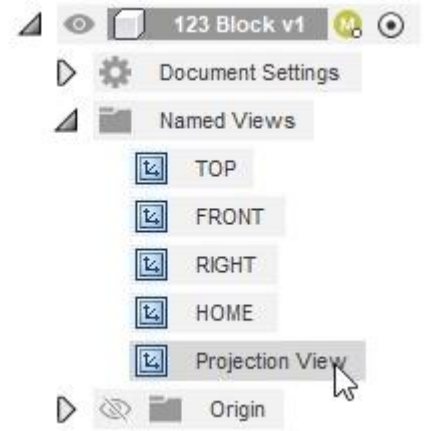


Figure 5. Activate the Projection View

- The solid model is in front of the right view, beside the front view, and is above the top view.

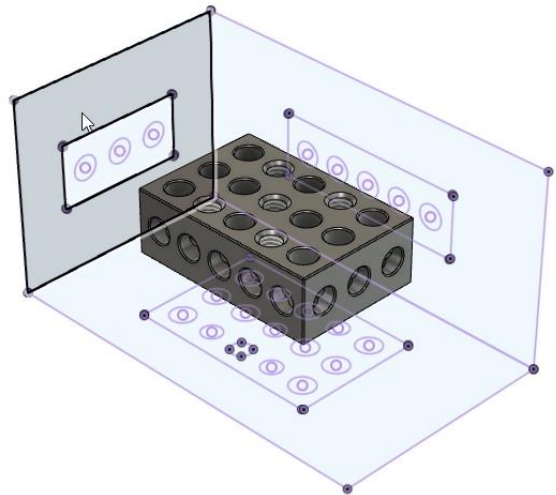


Figure 6. Notice the location of the drawing views

7. Use the Sketches folder to turn off the visibility for the sketches you activated in Step 4, then turn on the visibility for the three sketches shown in the image on the right.

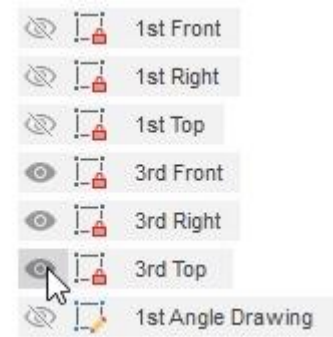


Figure 7. Activate the third view sketches

8. Notice that the 3D model is now behind the front and right views and is below the top view. Exploring these sketches helps understand the difference between first and third views.

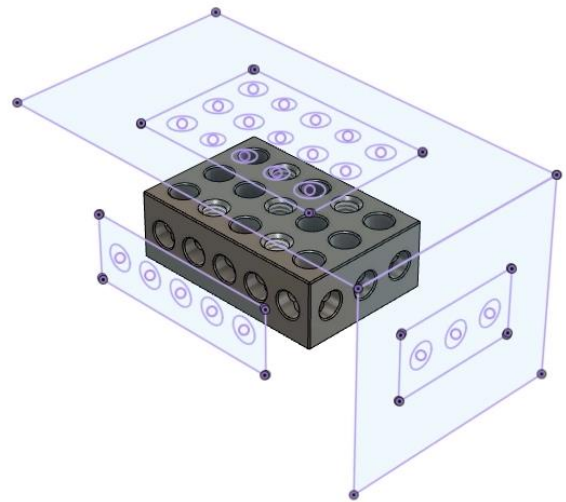


Figure 8. Notice the location of the drawing views

- 9.** Turn off the visibility for the three 3rd view sketches and turn on the visibility for the 1st Angle Drawing sketch.



Figure 9. Show the 1st Angle Drawing sketch

- 10.** Notice how the model's sketches are repositioned onto a single plane so that they can be transferred to the drawing sheet.

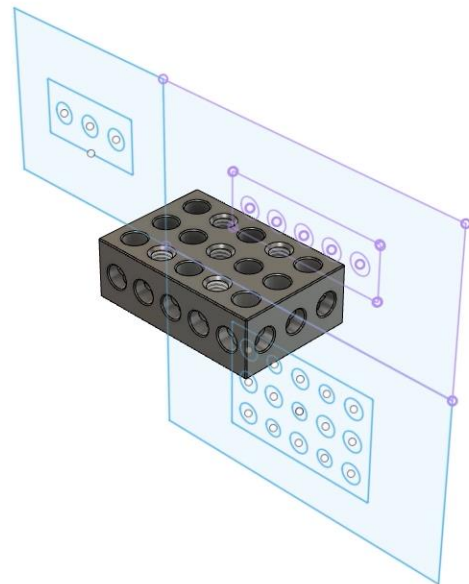


Figure 10. Inspect the sketches' new locations

- 11.** Turn off the visibility for the 1st Angle Drawing and turn on the visibility for the 3rd Angle Drawing.



Figure 11. Show the 3rd Angle Drawing

- 12.** Notice how the third angle projection sketches are flattened into a single plane differently than the first angle projection sketches.

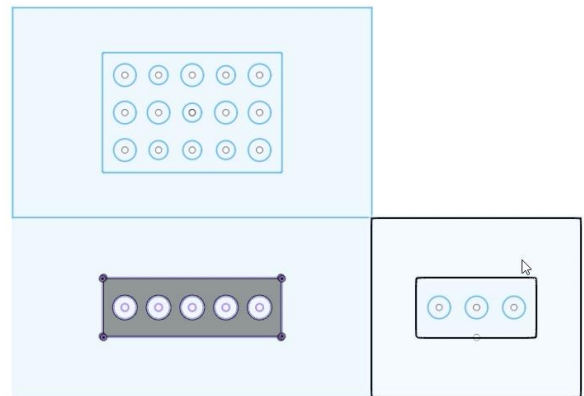


Figure 12. Inspect the sketches

- 13.** Return to the 123 Block Drawing tab and make sure you are on the drawing's first sheet. Notice that the drawing's views match the first angle projection views that you explored in the 3D model. Continue to the drawing's second sheet and notice that these drawing views match the third angle projection views that you explored in 3D model.

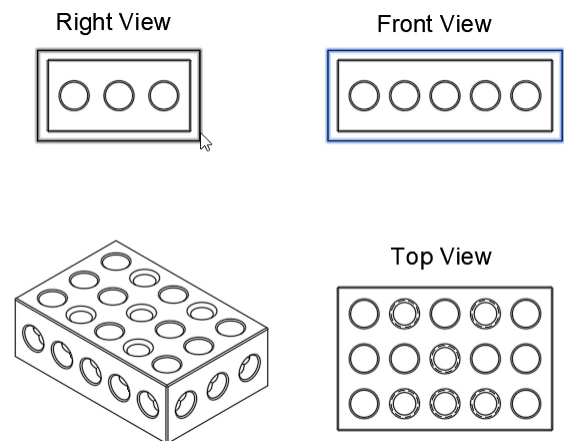


Figure 13. Inspect the sheet's drawing views

14. Explore the sheet and notice that the title block is in the sheet's lower right corner. This title block has information about the project name, projection type, who drew and approved the drawing, the scale, and much more.

PROJECT		Intro to Blueprint Reading	
TITLE		123 Block	
APPROVED MP	4/20/2022	SIZE	B
CHECKED JB	4/21/2022	CODE	
DRAWN MP	4/19/2022	DWG NO	
SCALE 1:1		WEIGHT	
SHEET 1/2		REV	A

Figure 14. Explore the title block

15. Many drawing sheets display the tolerances that need to be used when manufacturing the part.

**UNLESS OTHERWISE
STATED ALL DIMENSIONS
ARE IN INCHES.
TOLERANCES**
 00 = ± 0.02
 00.0 = ± 0.01
 00.00 = ± 0.005
 angular = $\pm 0^{\circ}30$

Figure 15. Explore the drawing's tolerances

16. Click and drag one of the drawing's views. In the image on the right, the base view is dragged to a new location which means the top view and right view automatically reposition themselves to match the base view because they are linked to the base view. Notice the isometric view is not affected by the base view's new position.

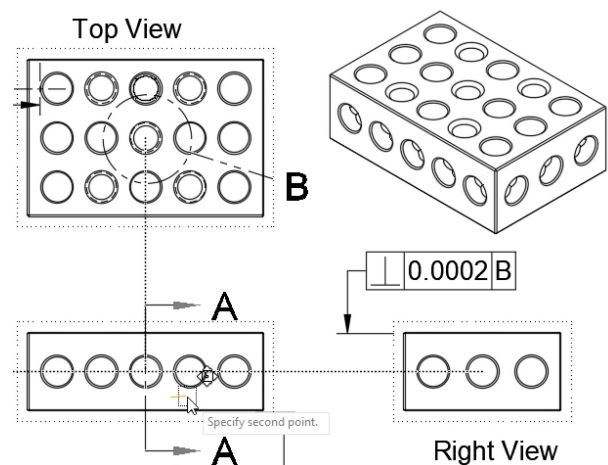


Figure 16. Reposition the drawing's base view

- 17.** On the drawing's second sheet, notice the base view has a Section A-A icon. The 3D model is sectioned across this line and the section view is illustrated on the sheet.

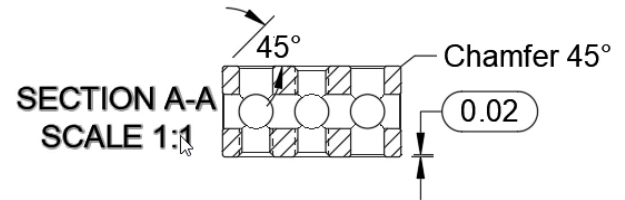


Figure 17. Inspect the section view

- 18.** The top view has a detail view icon on it. This detail view is also illustrated on the sheet.

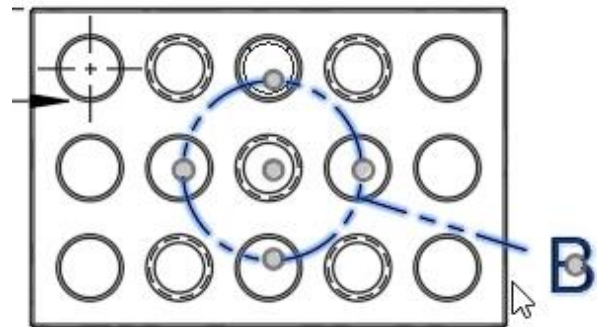


Figure 18. Inspect the detail view

- 19.** Section views and detail views can be easily added to a drawing by clicking Create> Section View or Create > Detail View.



Figure 19. Note the location of the Section View and Detail View tools

- 20.** The sheet's border has icons that indicate the center of the drawing sheet. Some sheets also display grid values along the border.

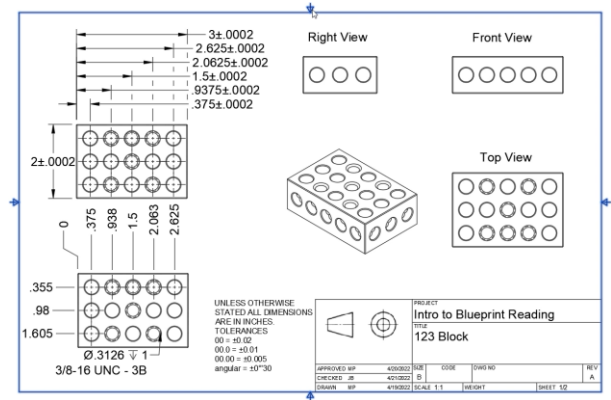


Figure 20. Inspect the sheet's border

- 21.** Expand the Browser's Document Settings and notice the various controls inside of it.

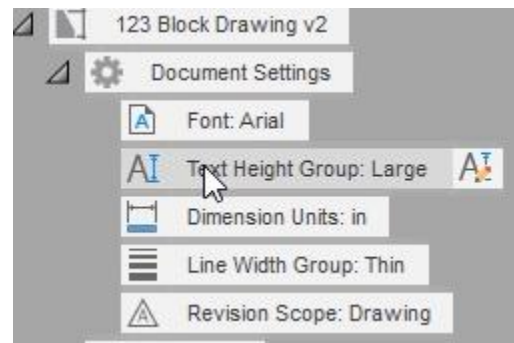


Figure 21. Inspect the Document Settings

- 22.** Expand one of the drawing's sheets, then expand the Sheet Settings. Notice that you can customize the parameters for each individual sheet.

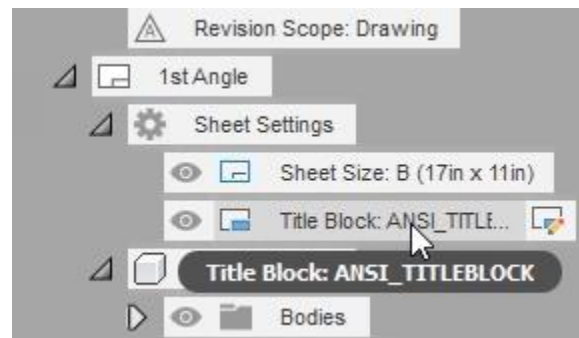


Figure 22. Inspect the sheet settings

- 23.** Explore the sheet's dimensions and notice that the dimension lines can be broken to increase the dimension's clarity.

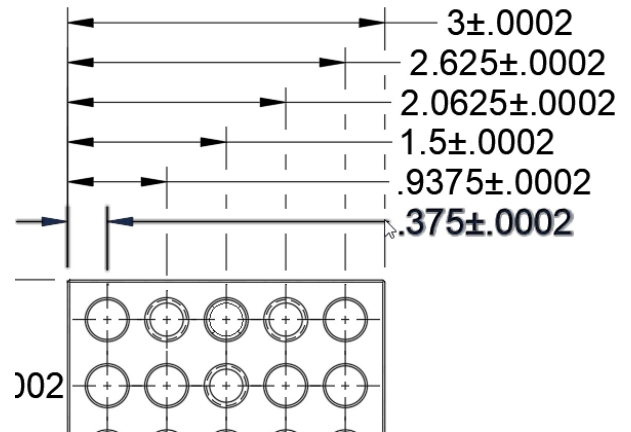


Figure 23. Inspect the dimensions

- 24.** Navigate to the drawing's second sheet and notice that several different line types are used to identify various features. For example, the center mark, detail view, and threaded holes each have a different dashed line type. Save any changes to your files and continue to the next module.

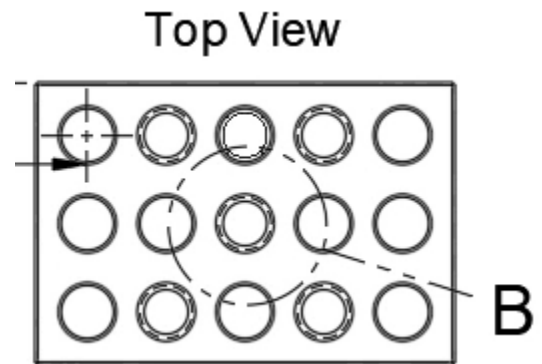


Figure 24. Inspect the various line types used on a drawing sheet