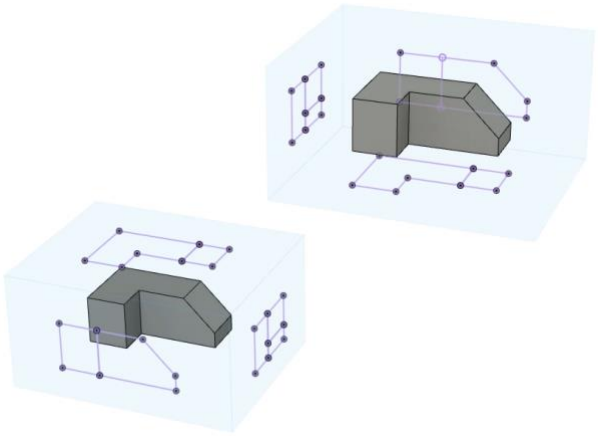
Step-by-step guide

Blueprint reading: Views and projections

Create and populate custom folders inside the Data Panel, then explore first and third angle projections.

Learning objectives:

- Review a blueprint.
- Identify areas of a blueprint.
- Identify drawing views.
- Recall First and Third Angle Projections.



The completed exercise

---

1. Open the supplied *Projection Drawings – 1st Angle.pdf* and *Projection Drawings – 3rd Angle.pdf* files. These drawings convey information from the person who designed the part to the person who will manufacture or assemble the part. Notice that these drawings have reduced information so that they convey the foundational concepts of a detailed drawing.

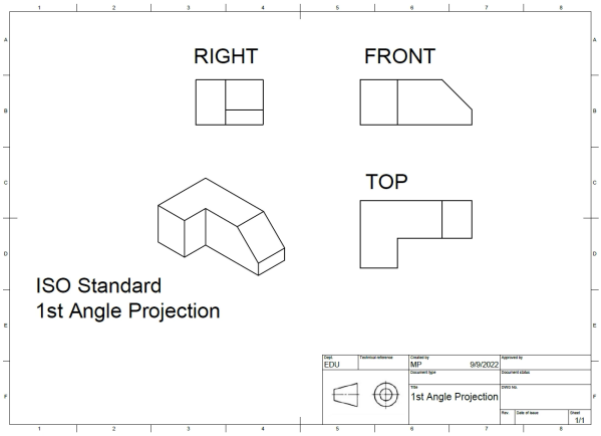


Figure 1. Open the supplied file

2. Notice that the title block describes whether the drawing is a first angle or third angle projection. The first angle projection drawing sheet uses the ISO standard.

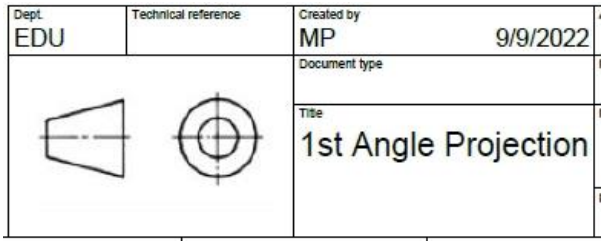


Figure 2. Explore the title block

---

3. Since the drawing sheet uses the ISO standard, the Front view is in the top right corner, the Side view is to the left of the Front view, and the Top view is below the Front view.

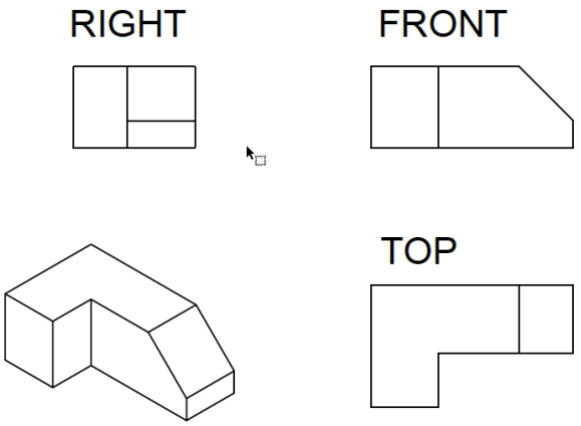


Figure 3. Explore the drawing views

---

4. Continue to the *Projections Drawing – 3rd Angle.pdf* file and notice that it looks substantially different because it uses third angle projection and the ASME standard. Notice the different locations for the Front, Right, and Top views.

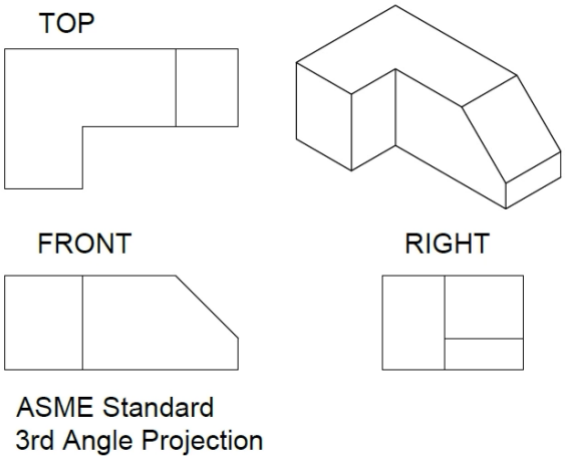


Figure 4. Explore the third angle projection's views

5. Navigate to Fusion 360 and open a new untitled document. Simply opening Fusion 360 will automatically create a new untitled document. Open the Fusion 360 Data Panel by clicking Show Data Panel in the upper left corner.

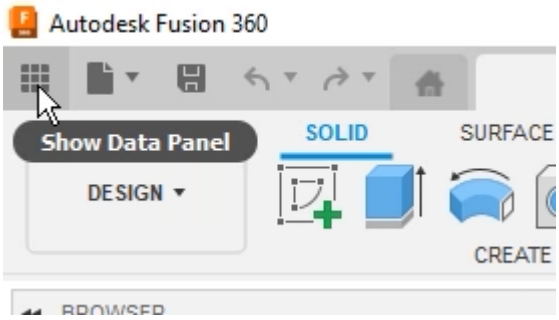


Figure 5. Open the Data Panel

6. Navigate to the Data Panel home by clicking the home icon shown in the image on the right.

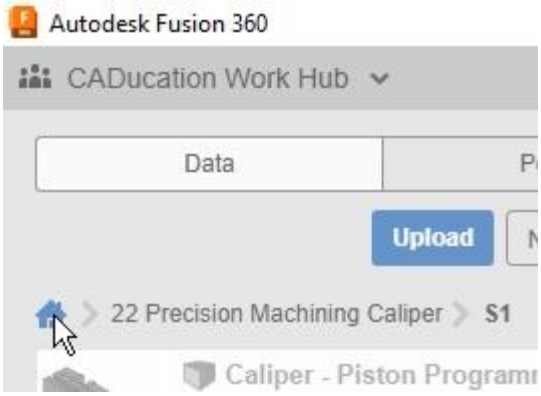


Figure 6. Navigate to the Data Panel's home

7. Create a new project inside the Data Panel by clicking New Project.

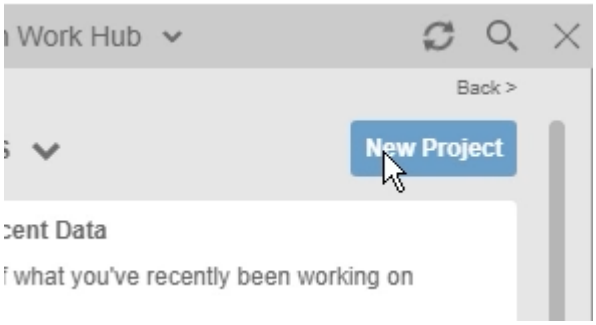


Figure 7. Create a New Project

8. Name the new project **22 Precision Machining Caliper.** Click the new project folder to open it in the Data Panel.

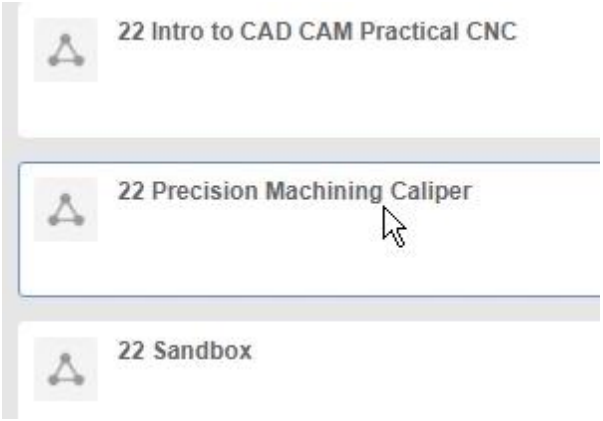


Figure 8. Rename the new project

9. Once the 22 Precision Machining Caliper folder is open, click New Folder and create a new folder inside of it. Rename this new folder as **S1**.

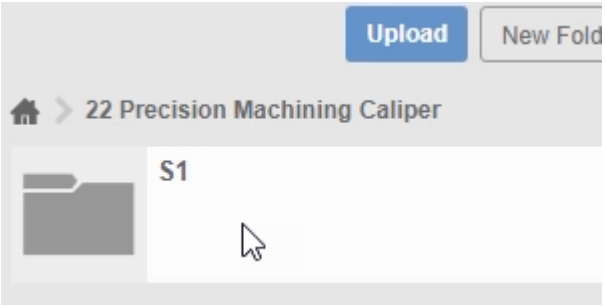


Figure 9. Create a new subfolder

10. Open the S1 folder by clicking it and upload the documents for this course's first sequence. To upload the supplied files, click the Data Panel Upload. Once the Upload dialog opens, either click Select Files and navigate to the files or drag and drop the files into the dialog Drag and Drop Here section.

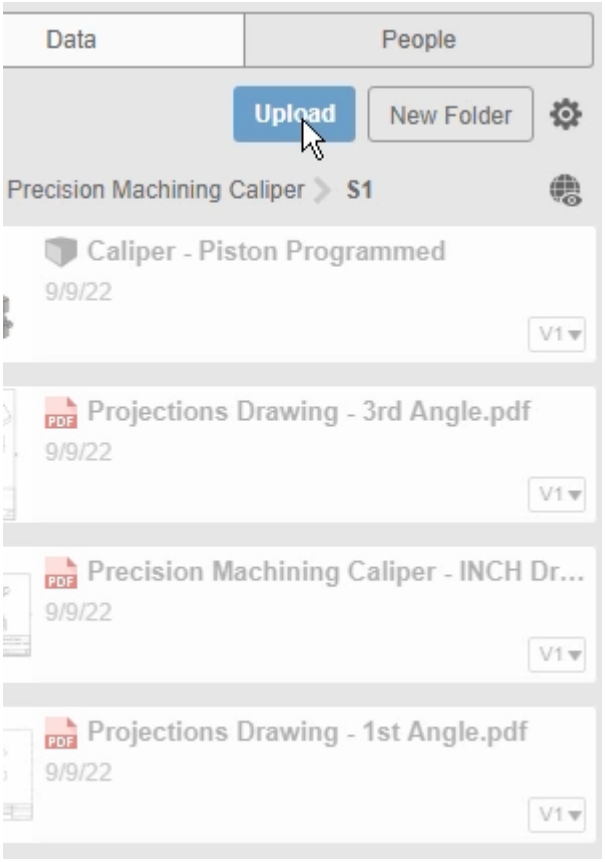


Figure 10. Upload the supplied files

11. An alternate way to upload files to the Data Panel is to click File> Open.

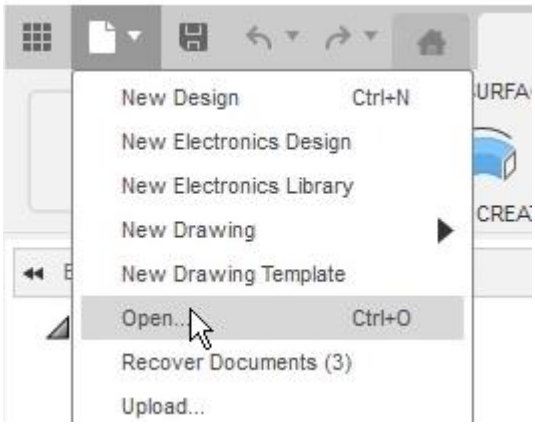


Figure 11. Open files

12. Click the Open dialog Open from my computer and navigate to the supplied course data set.

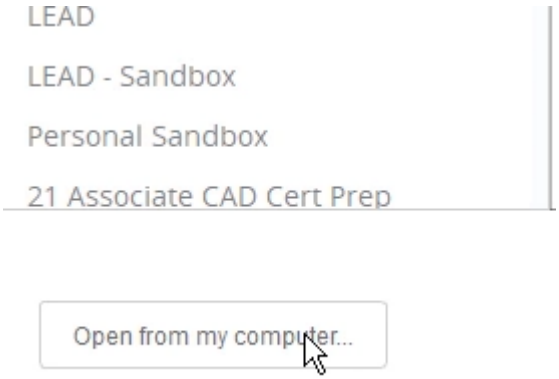


Figure 12. Open files using a different method

---

13. Choose the *Drawing Projections.f3d* file, then click Open.

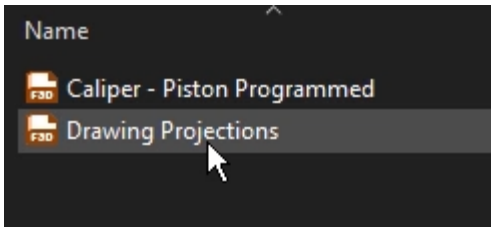


Figure 13. Open the supplied file

---

14. The file you opened is now visible inside the Fusion 360 Canvas area.

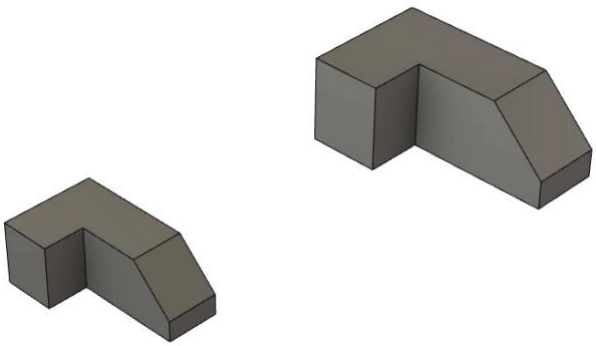


Figure 14. Explore the open file

15. Save the design.



Figure 15. Save the design

---

16. Make sure the file name is correct and the correct location is selected in the dialog Location box, then click the dialog Save.

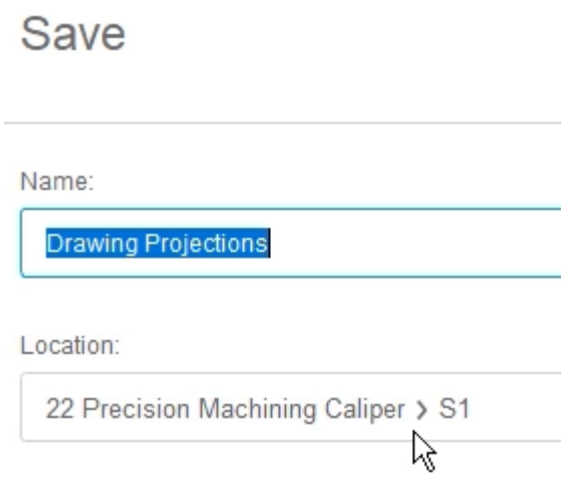


Figure 16. Choose the file name and location

---

17. The new file is now saved inside the custom project folder you created earlier in this module.

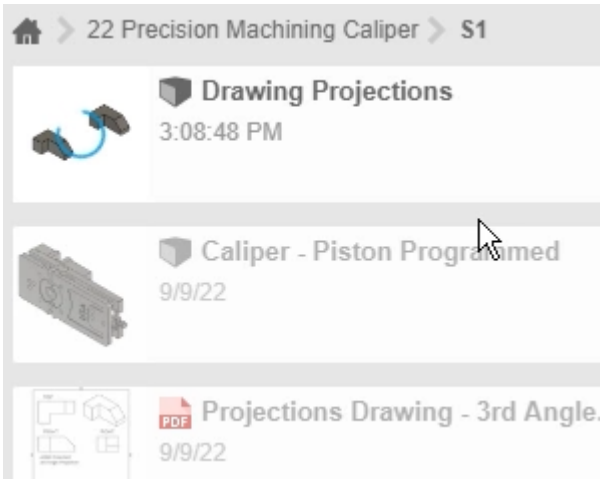


Figure 17. Inspect the Data Panel

18. Close the Data Panel by clicking hide Data Panel.

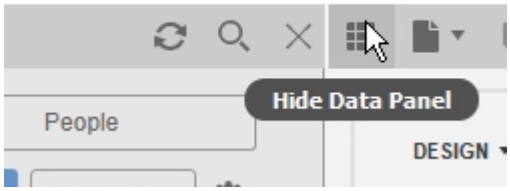


Figure 18. Hide the Data Panel

---

19. Expand the Browser Bodies folder by clicking the arrow next to it. Notice that the file currently has four bodies. Two bodies represent the first and third projections and are visible. Two hidden bodies represent the bounding box for each body.

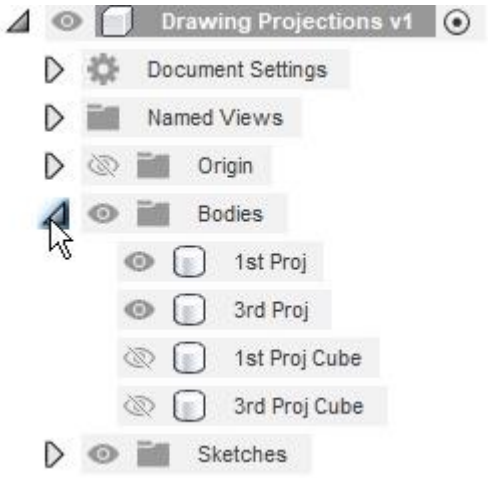


Figure 19. Explore the file Bodies folder

---

20. Expand the Sketches folder and notice the many sketches inside of it. Click the eyeball icon next to the Right and Top sketches so that the sketches become visible in the Canvas area.

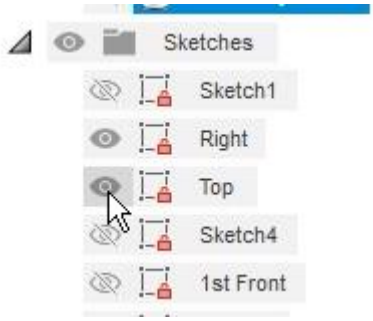


Figure 20. Show the Right sketch

21. Navigate to the model Front view by clicking the view cube Front face in the Canvas area top right corner.

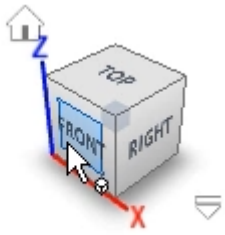


Figure 21. Navigate to the Front view

---

22. Notice that the two sketch planes form a quadrant and the first angle body is in the top right section of the quadrant. This body is to the right of the Right plane, above the Top plane, and is in front of the Front plane. The third angle body is to the left of the Right plane, below the Top plane, and behind the Front plane.

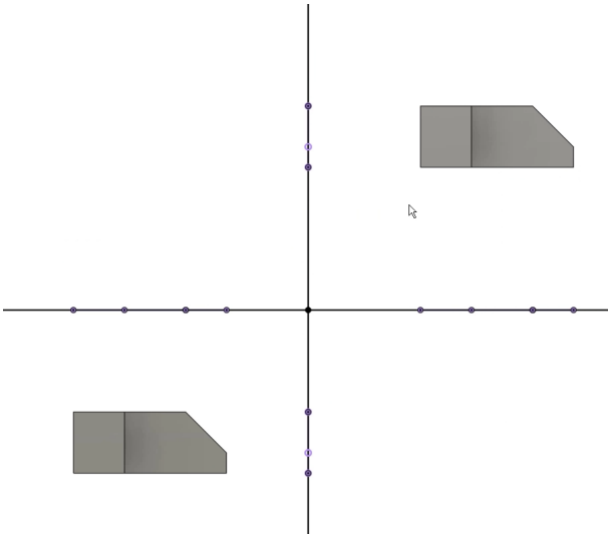


Figure 22. Inspect the bodies' positions

---

23. Use the Browser to turn off the visibility for the 3rd Proj body and the Right and Top sketches. Turn on the visibility for the 1st Front, Top, and Right sketches.



Figure 23. Turn on the visibility for the first angle sketches

24. Slightly rotate the model to an isometric view so that you can see the body and all three sketches. Click the middle mouse button or wheel and hold the Shift key, then drag the mouse to rotate the model. Notice the body is in front of the Front view, to the right of the Side view, and above the Top view.

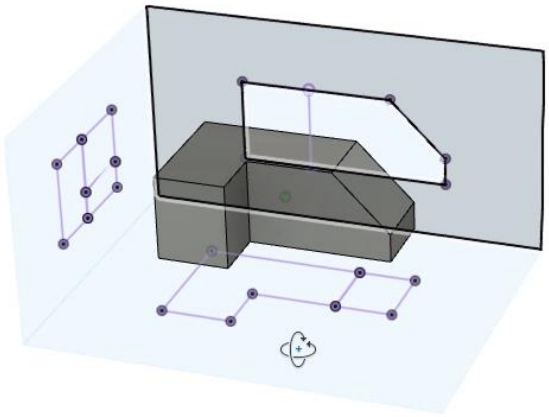


Figure 24. Reposition the model

---

25. The views you noticed in Step 24 match the projections shown in the *Projections Drawing – 1st Angle.pdf* file.

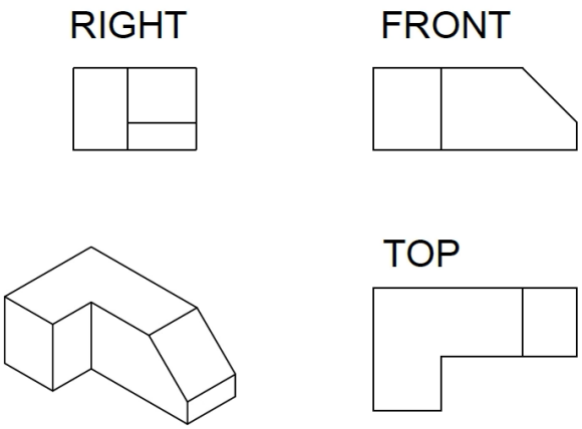


Figure 25. Inspect the supplied PDF file

26. Use the Browser to hide the 1st Proj body and show the 3rd Proj body. Turn off the 1st Front, Top, and Right sketches, then turn on the 3rd Front, Top, and Right sketches. Note the locations of the bodies and the planes on to which each view is projected.

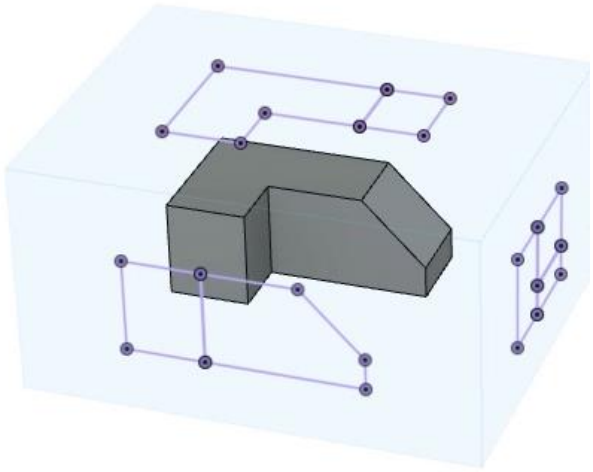


Figure 26. Inspect the third angle body and its projections

---

27. The views you noticed in Step 26 match the projections shown in the *Projections Drawing – 3rd Angle.pdf* file. Save the file.

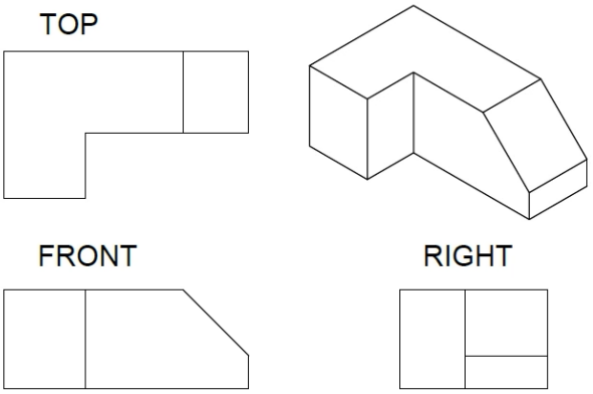


Figure 27. Inspect the supplied PDF file