

Activity 1.5.5B Pegboard Toy Presentation (.ipn) Drawing

Introduction

There's more to designing and engineering than making 2D drawings and 3D parts. After putting in hours of hard work in designing and modeling, there is nothing more frustrating than to hear someone say, "There are problems with the final assembly." As designs become more sophisticated, the detailed prints become more complex. Fortunately, Autodesk Inventor® offers a way to convey assembly instructions to those who will build the device. Inventor's presentation (.ipn) files allow you to create exploded assembly drawings and animations intended for assembly and maintenance of products.

You have used Autodesk Inventor to create individual part (.ipt) files, assembly (.iam) files, and working drawing (.idw) files. Another file that is often used by engineers and designers is a presentation (.ipn) file. Presentation files show how components interact with other parts within an assembly. In this activity you will create a presentation file of the Pegboard Toy.

Equipment

- PLTW Gateway notebook
- Pencil
- Completed Pegboard Toy Assembly File (file extension .iam)
- Computer with 3D modeling program

Procedure

In this activity you will use Inventor's Presentation feature to create an exploded view of an assembly. The exploded view is used to show how an assembly goes together. Along with a parts list and balloons, the exploded view is typically included as part of the assembly drawing.

1. Open your 3D modeling program.
2. Select New, and then select Presentation. Your screen will look like Figure 1 below.

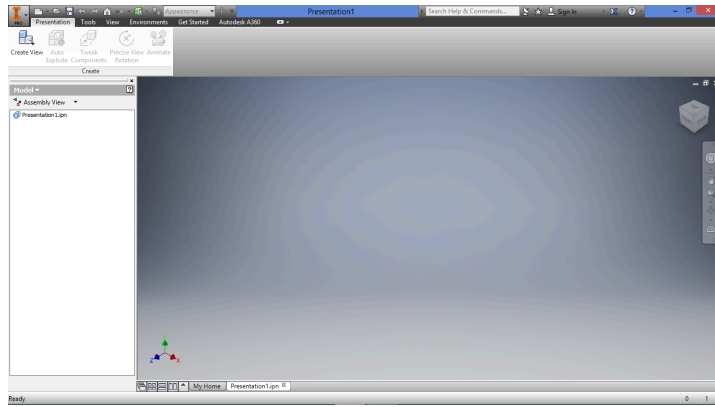


Figure 1

3. On the Create panel, select Create View. A Select Assembly pop-up will appear. See Figure 2.

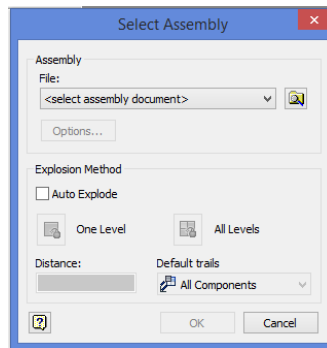


Figure 2

4. Select the folder button to Open an Existing File and browse to find the assembly file you will use to create the exploded view. For this handout the pegboard toy assembly will be used. Select OK to choose the view that will be used to create the exploded view.
5. Now that the assembly file has been selected, it is time to create the exploded view. Select Tweak Components from the Presentation panel. A Tweak Component pop-up will appear. See Figure 3.

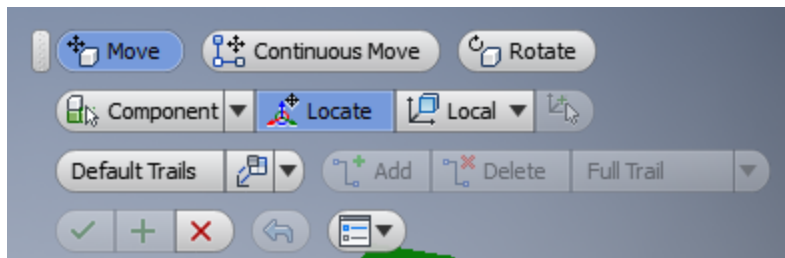


Figure 3

6. To tweak a component, you must determine three things.
 - a. The Component
 - b. The Direction
 - c. The Distance

7. Select the top of the round peg. Notice the XYZ axes placed at the location that you selected. The axis in gold is the direction the component will move. Type 3 as a distance for the component to move and hit enter. See Figure 4.

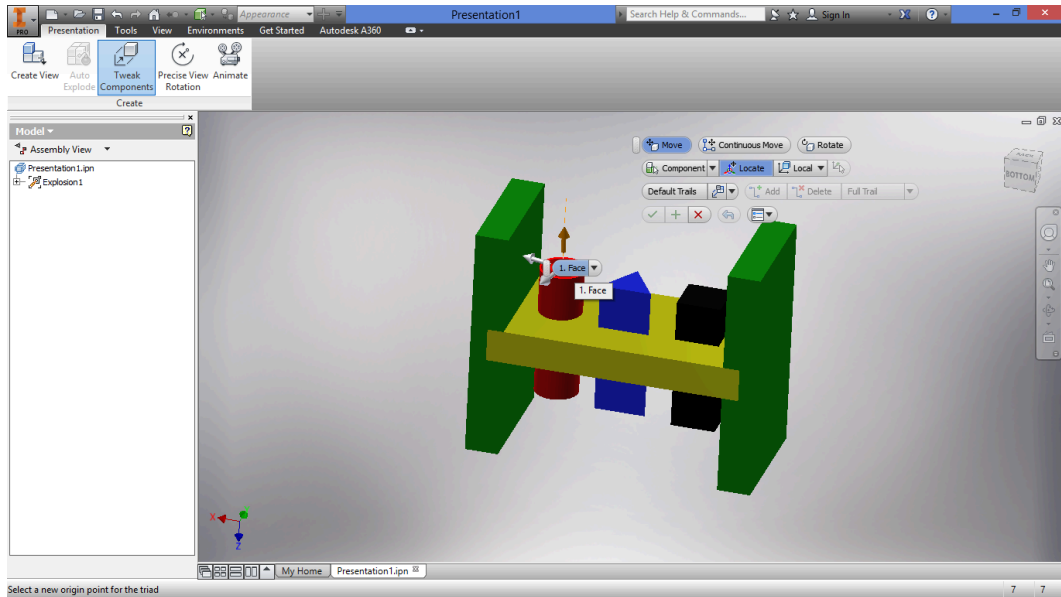


Figure 4

8. Your screen should look similar to Figure 5.

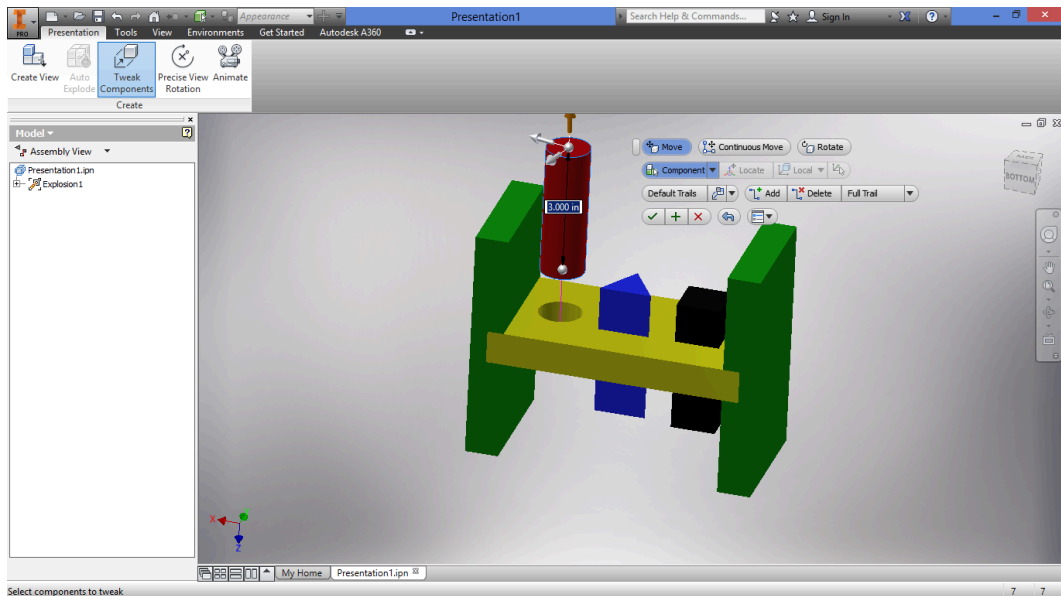


Figure 5

9. To repeat the same tweak for the other parts, meaning if you have multiple parts that you want to move the same distance and direction, simply click on the other pieces. Your screen should now look similar to Figure 6. If you want the pieces to move different distances or directions, click on the green checkmark after each tweak, then repeat step 7 for each of the other pieces.

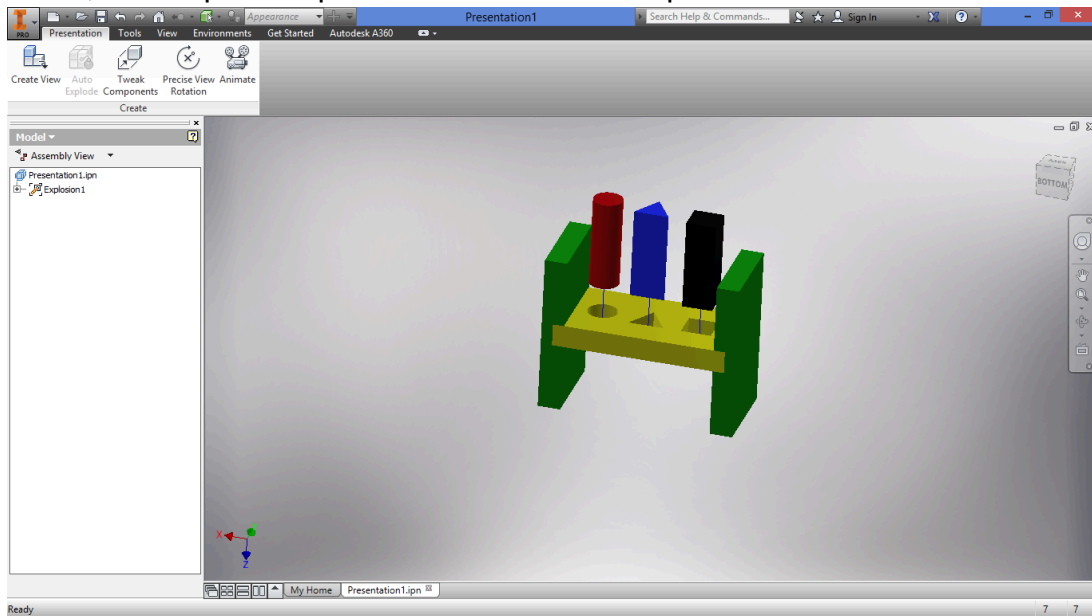


Figure 6

10. Select the side of the leg (end) and enter a tweak distance of 3. See Figure 7.

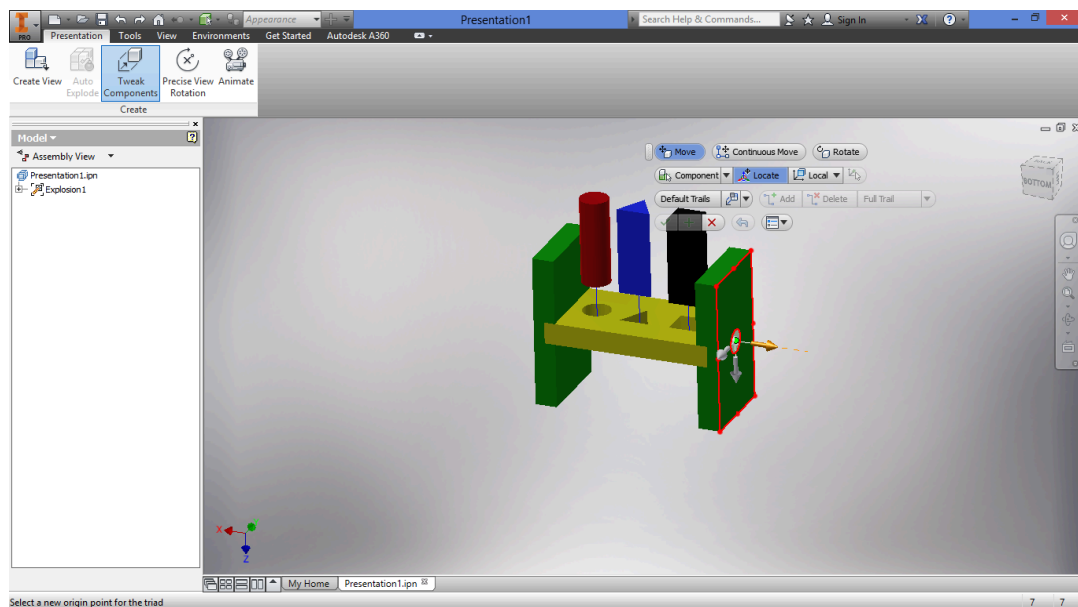


Figure 7

11. Select the check mark and then Clear. Repeat for the other leg. Your screen should look similar to Figure 8.

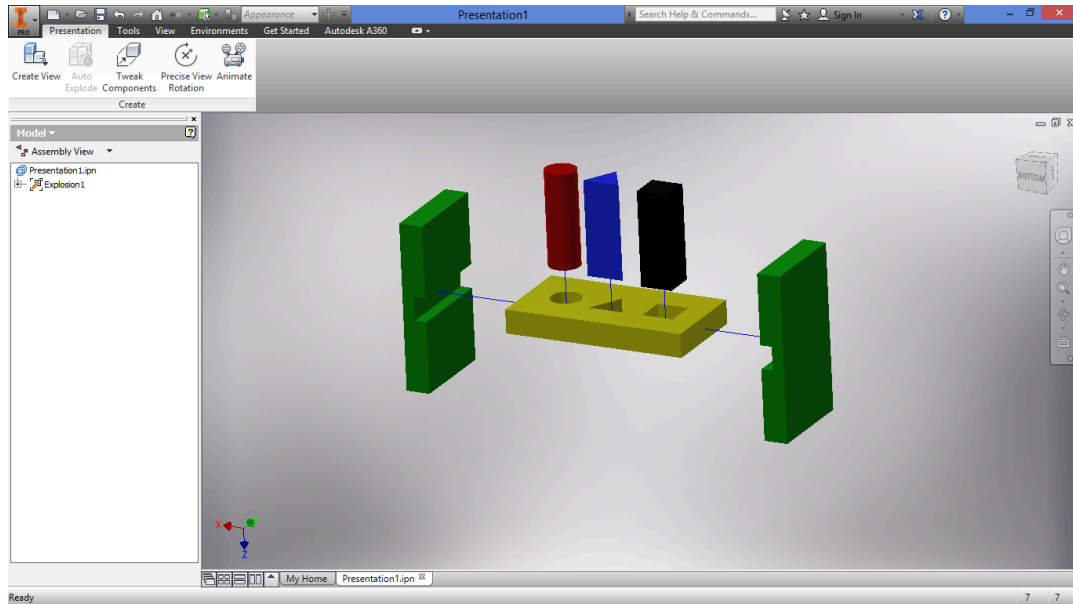


Figure 8

12. Now that the exploded view has been created, use the Animate option to put it together. Select Animate from the Create panel. An Animation pop-up will appear. See Figure 9. Press the Play button to animate the presentation.

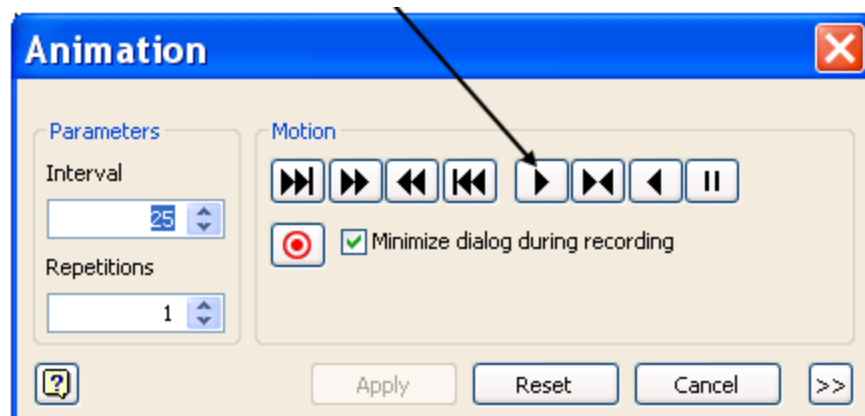


Figure 9

13. Select Save As to determine file path and name.

For more information and “how-tos” on .IPN files, use the Tutorials and Show Me Animations tabs located on the Videos and Tutorials panel under Get Started. Play around with different options to make your presentation look cool.