

DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
NORTHEASTERN UNIVERSITY

CAPSULE PROGRAM
Funded by NSF grant #0833636



Tutorial 05
Creating Assembly

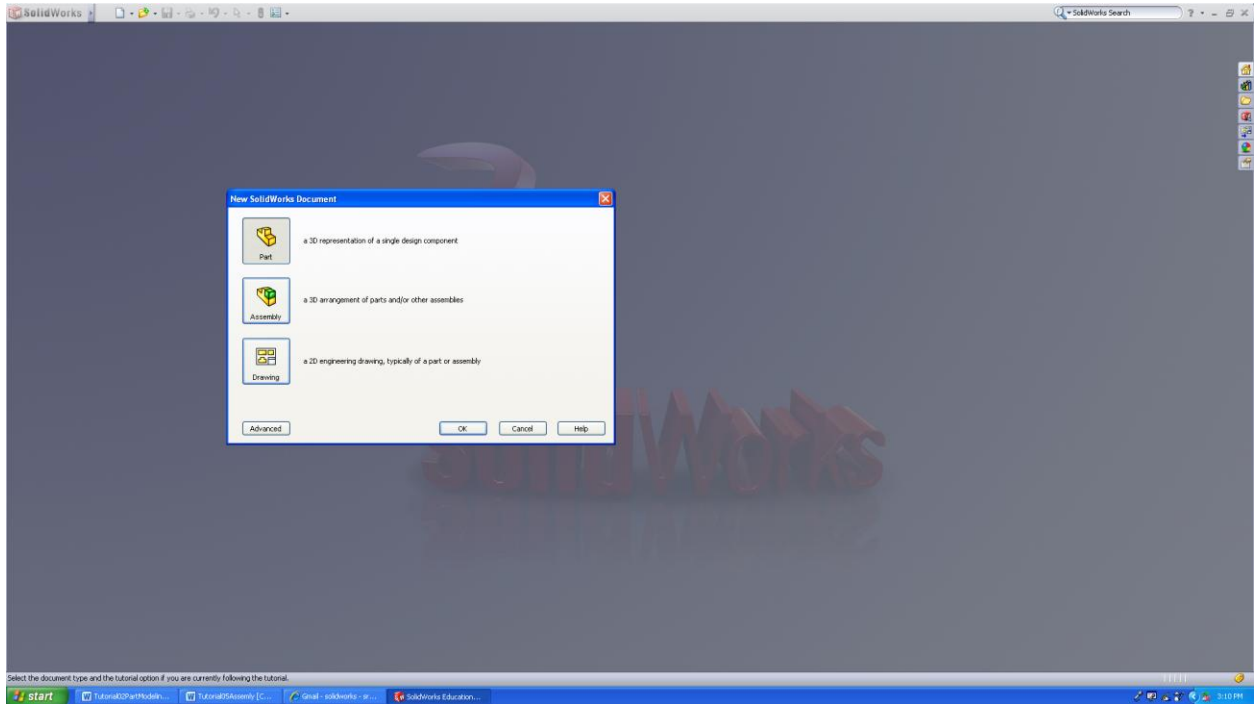
SolidWorks 2010
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BLOCK_PLATE_PIN Assembly and Exploded View

In this tutorial you create the following assembly model consisting of three parts.

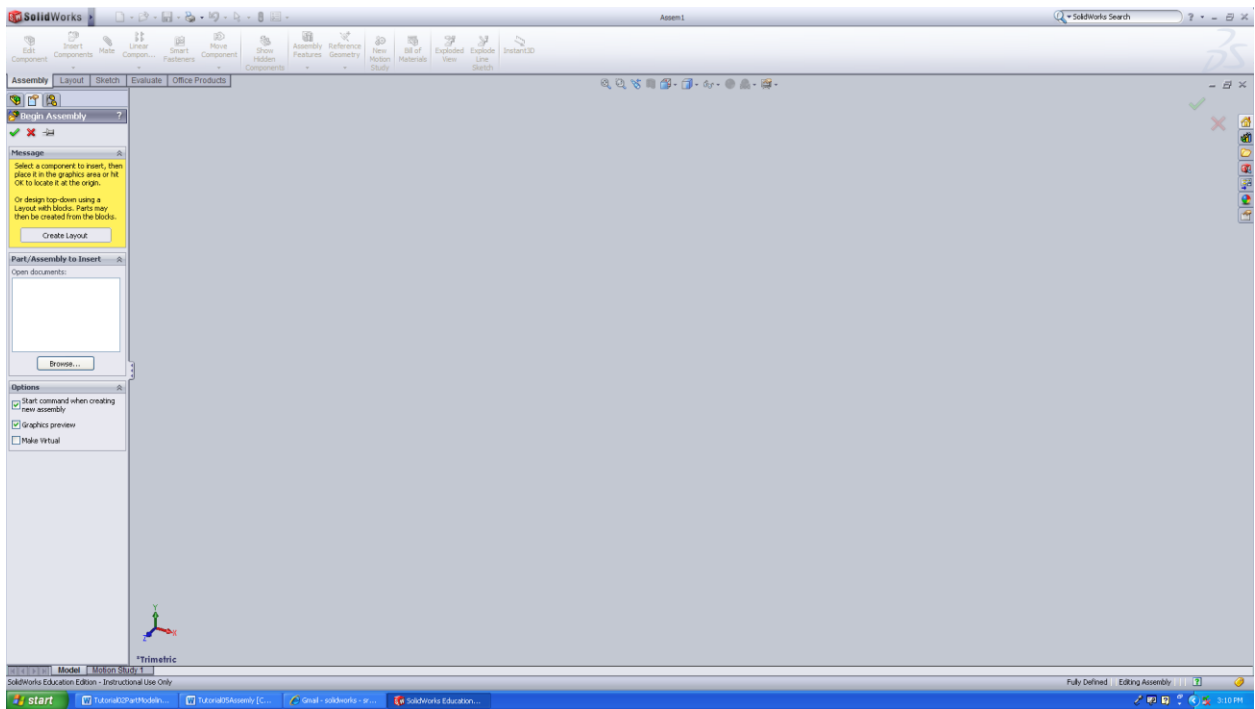
Step 1

Go to **New→Assembly** .



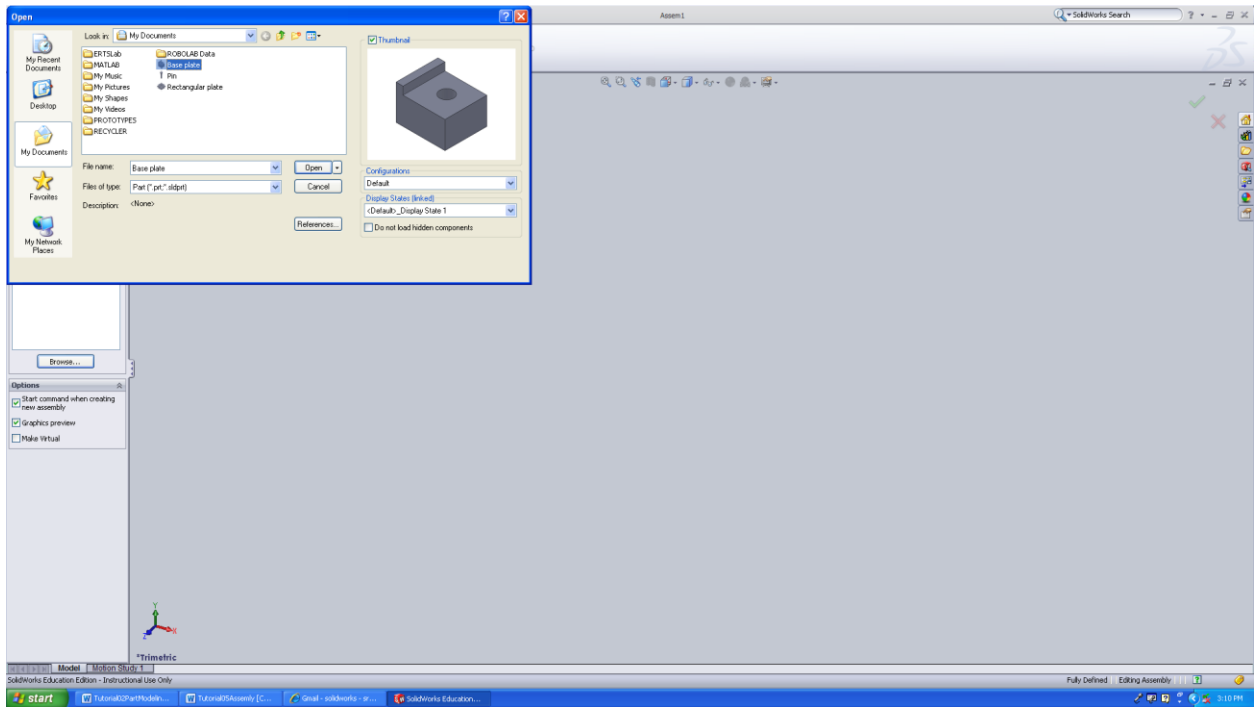
Step 2

Select **Browse** button.



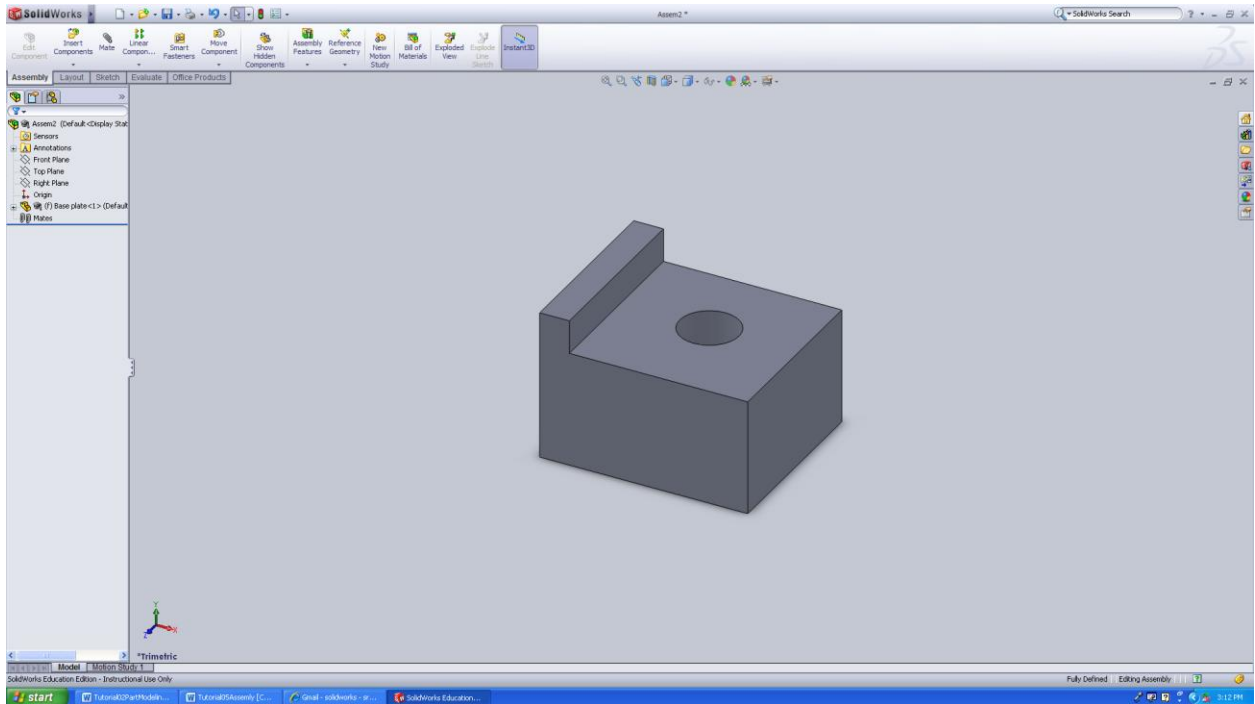
Step 3

Select **Base Plate** and click **Open**.



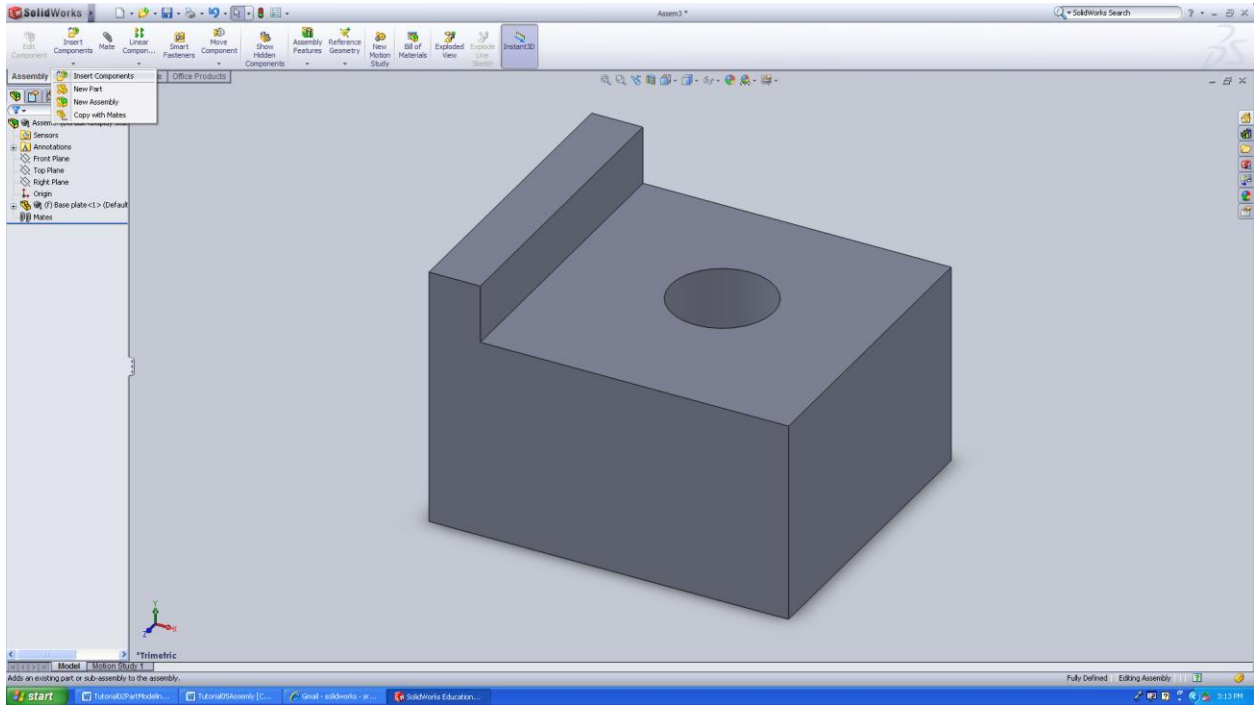
Step 4

The model will be floating with the mouse pointer. In other words the model will follow the mouse pointer and the base plate is not fixed. Click anywhere on the design window in order to fix the model.



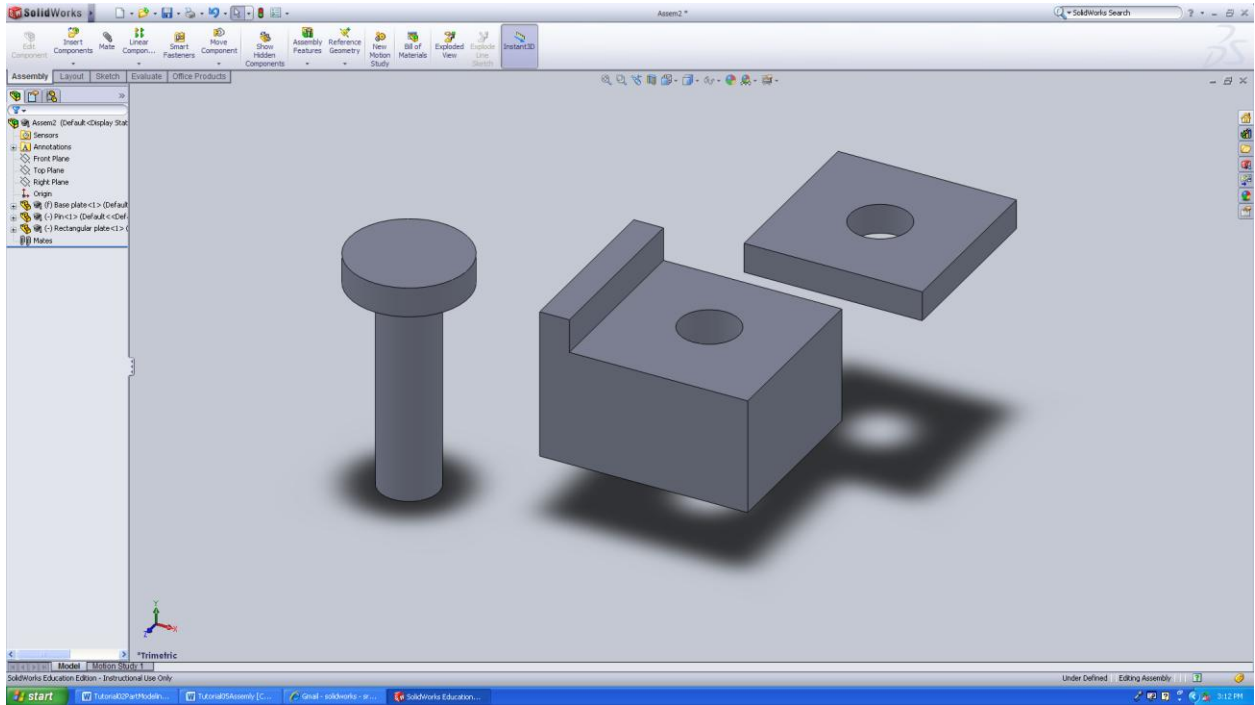
Step 5

Go to **Insert Components**→**Insert Components**. Follow the same procedure as that of the base plate.



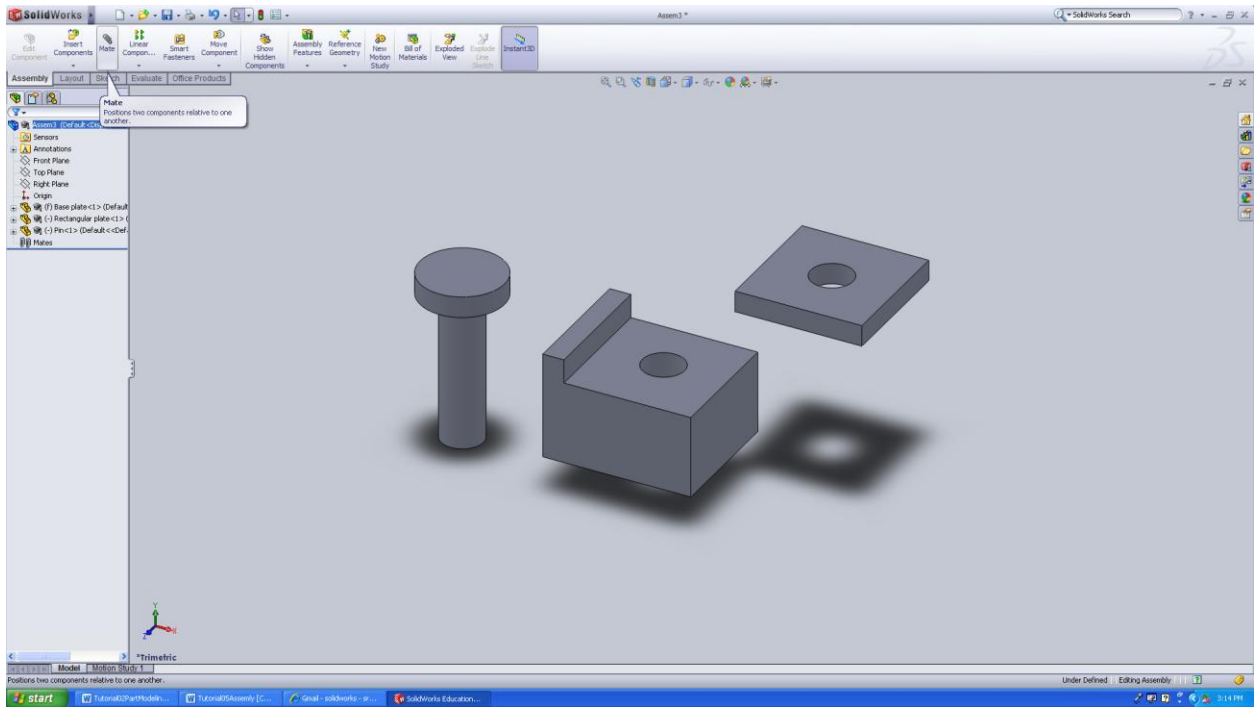
Step 6

Insert pin and the rectangular plate. Your window must have all the three components

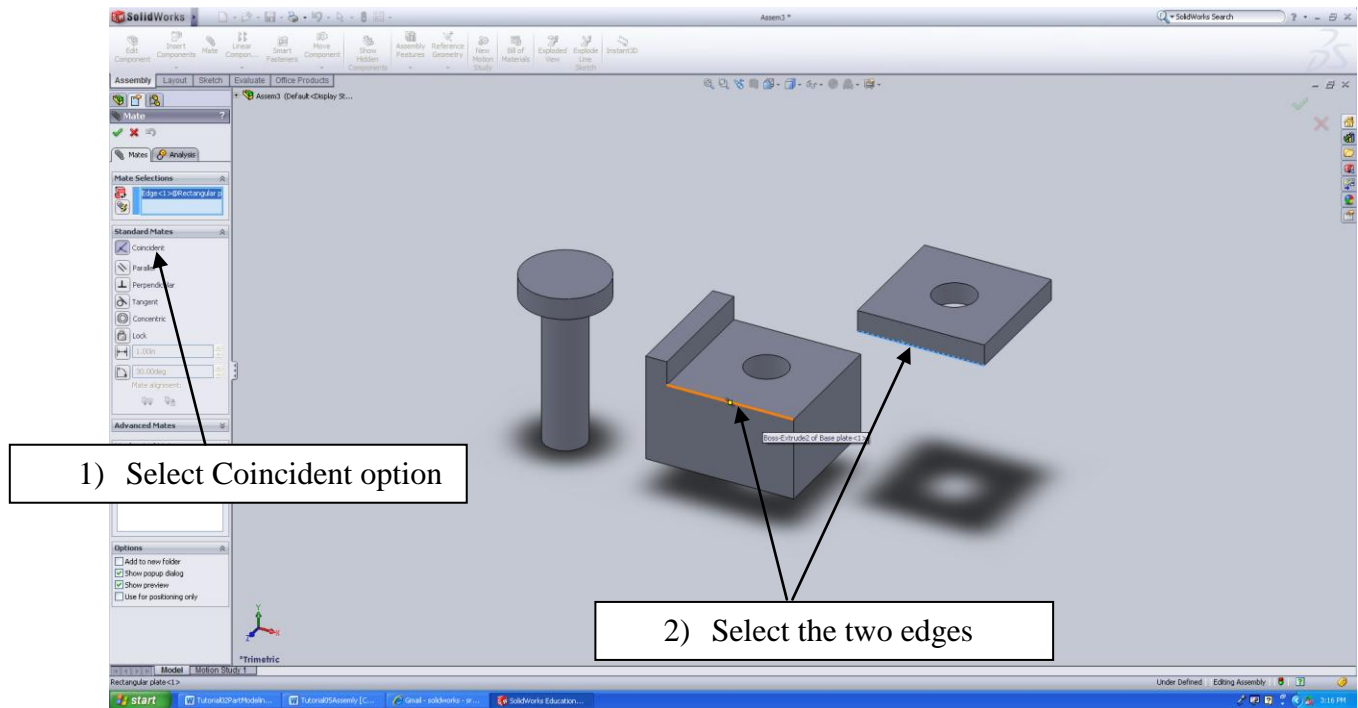


Step 7

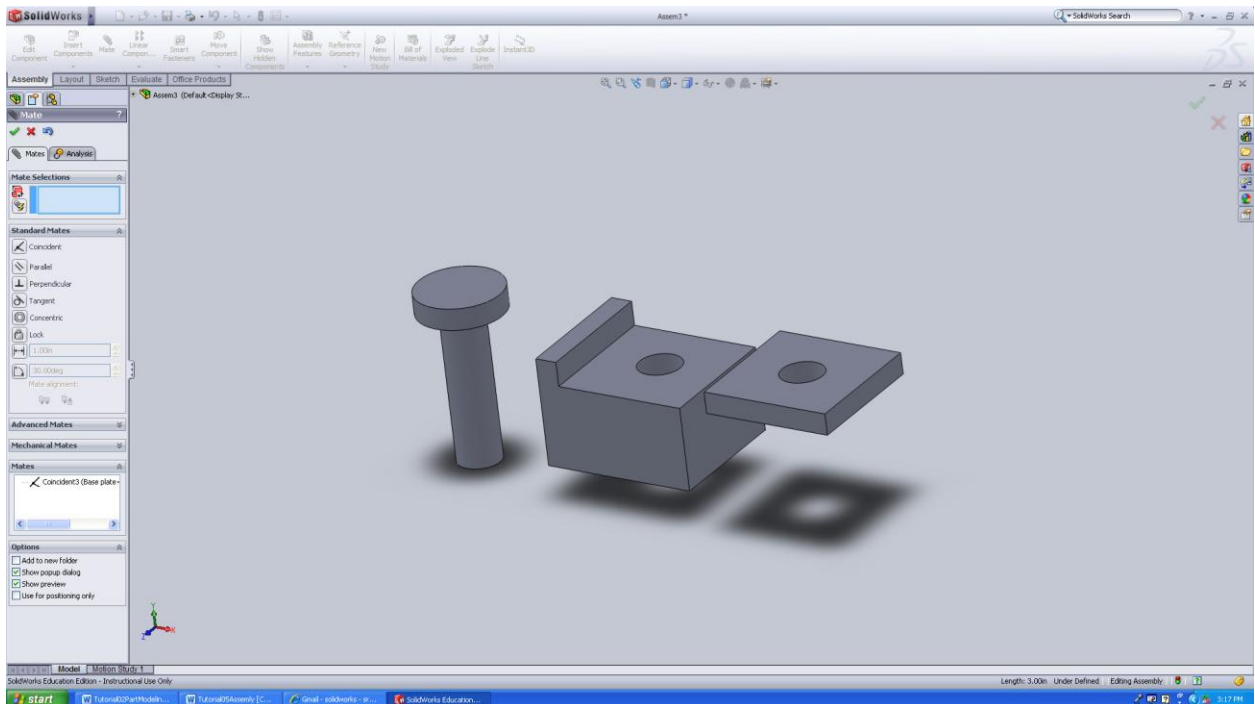
Select **Mate**.



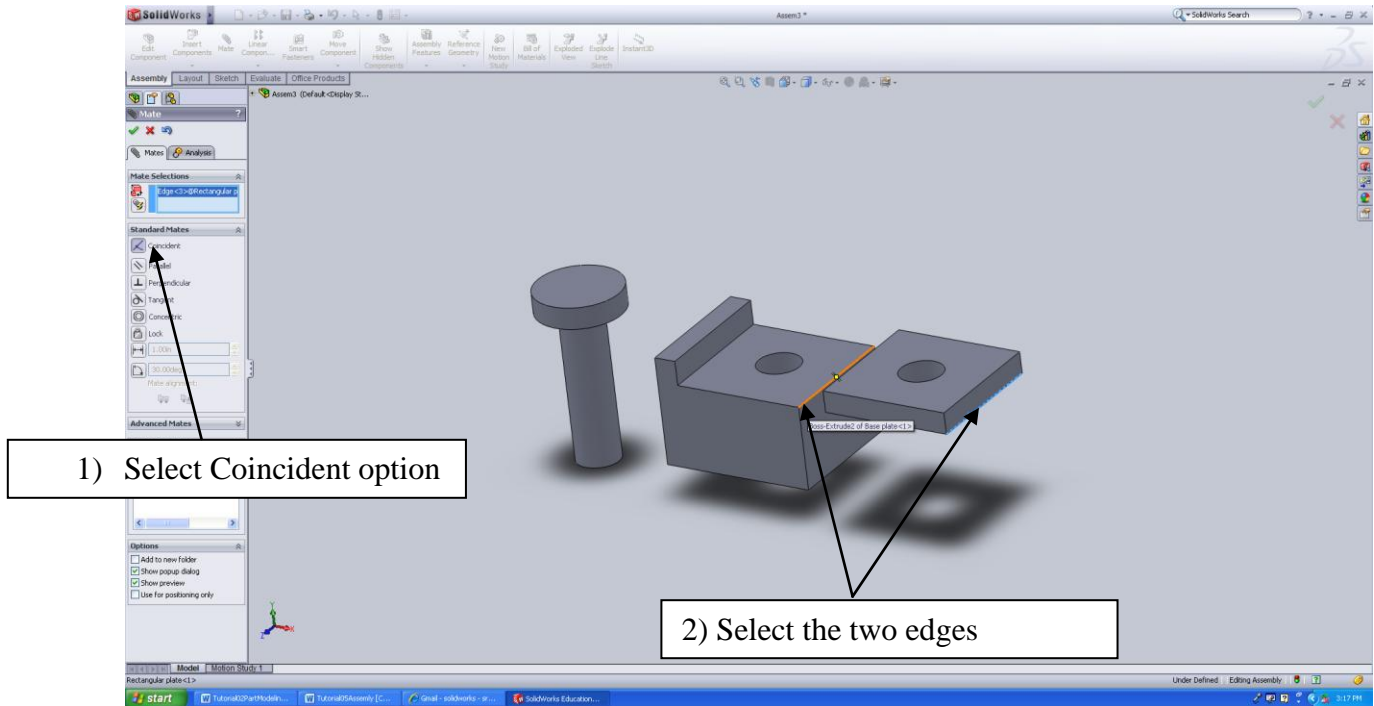
Step 8



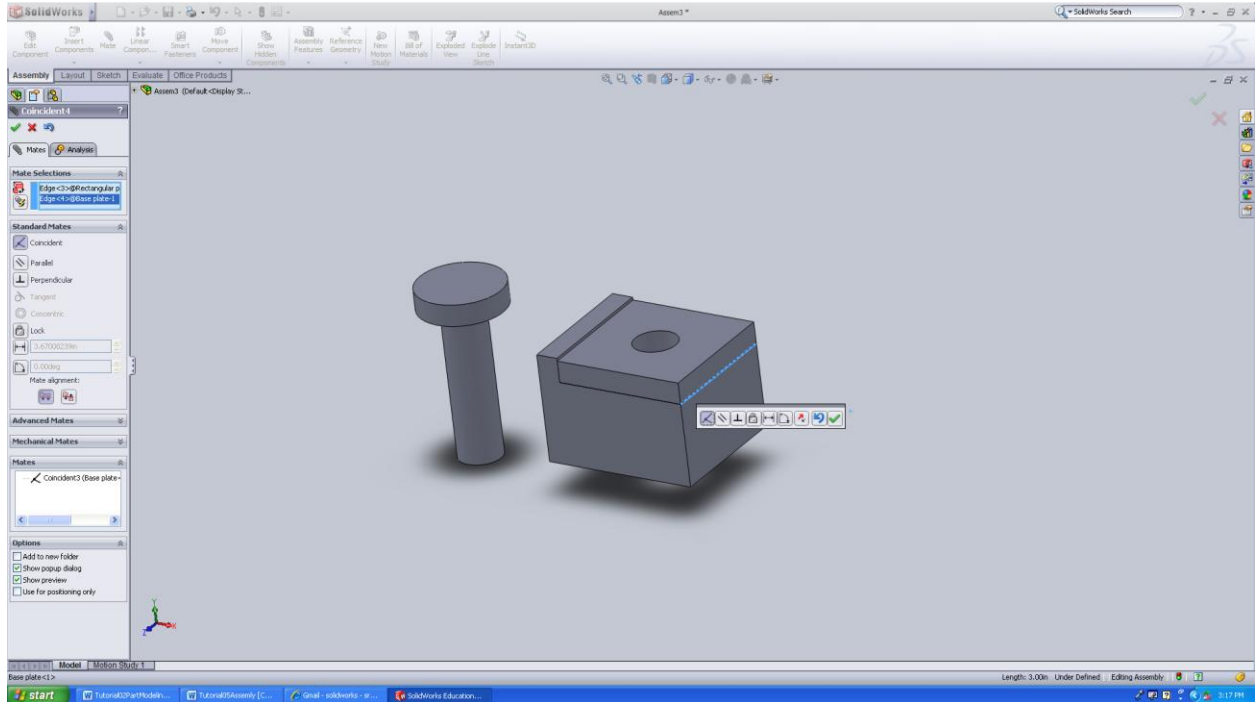
Preview of the Coincident Mate.



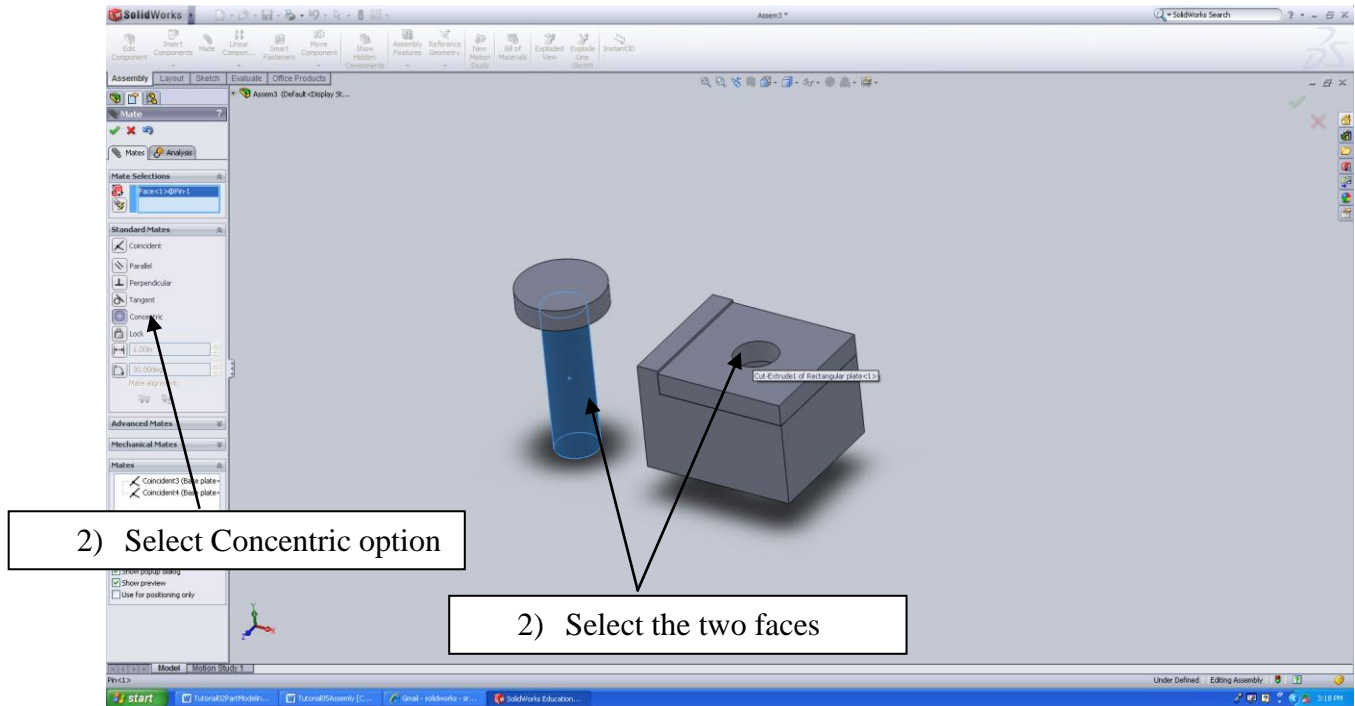
Step 9



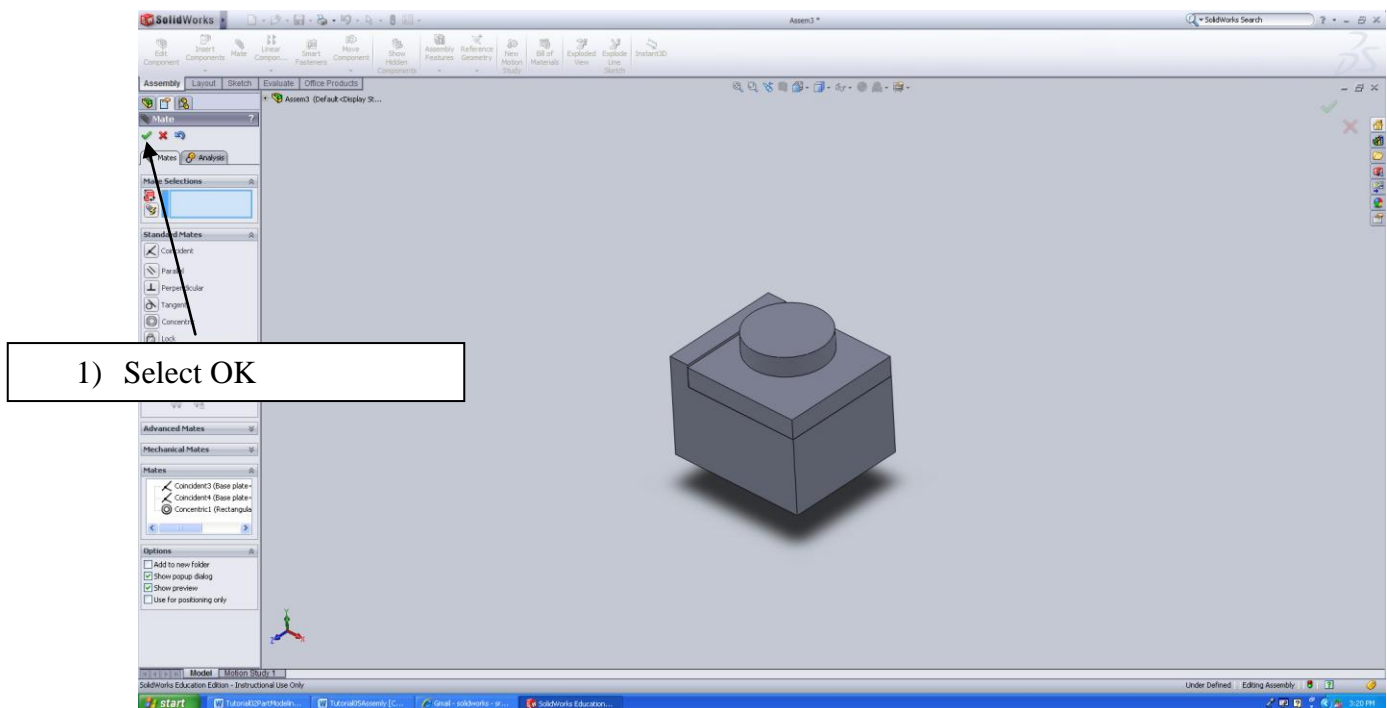
Preview of the Coincident Mate.



Step 10

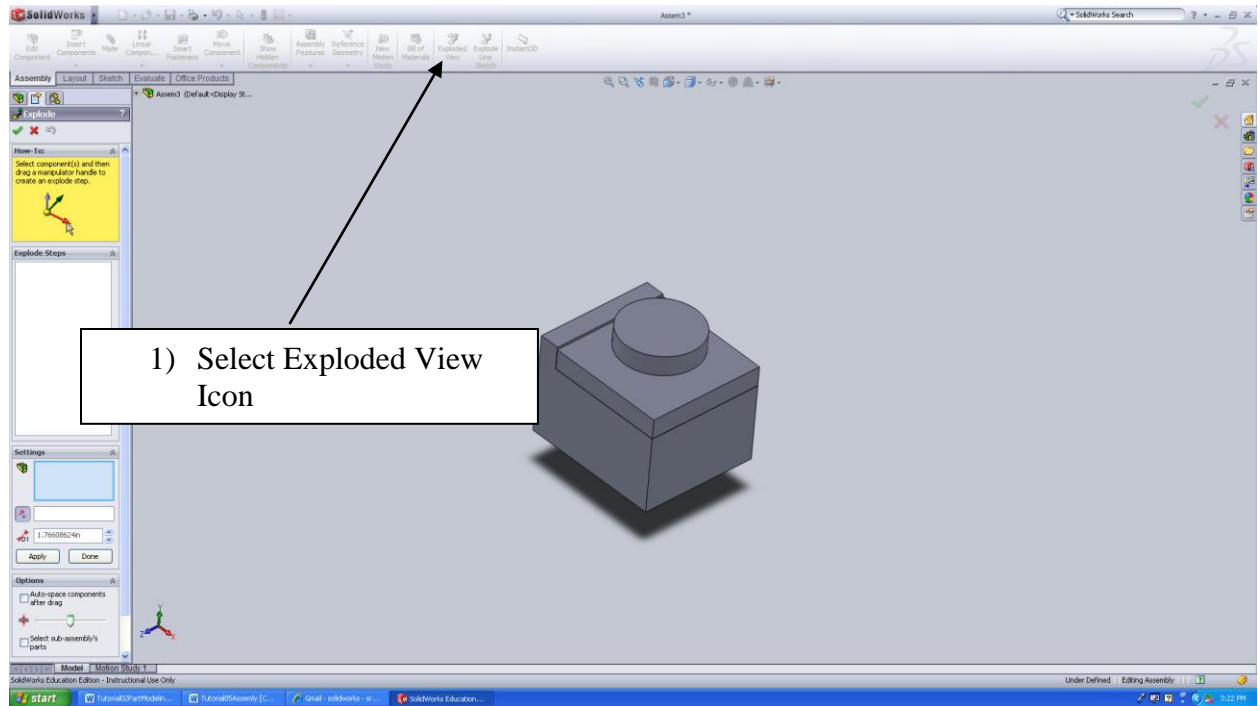


Preview of the completed mates.



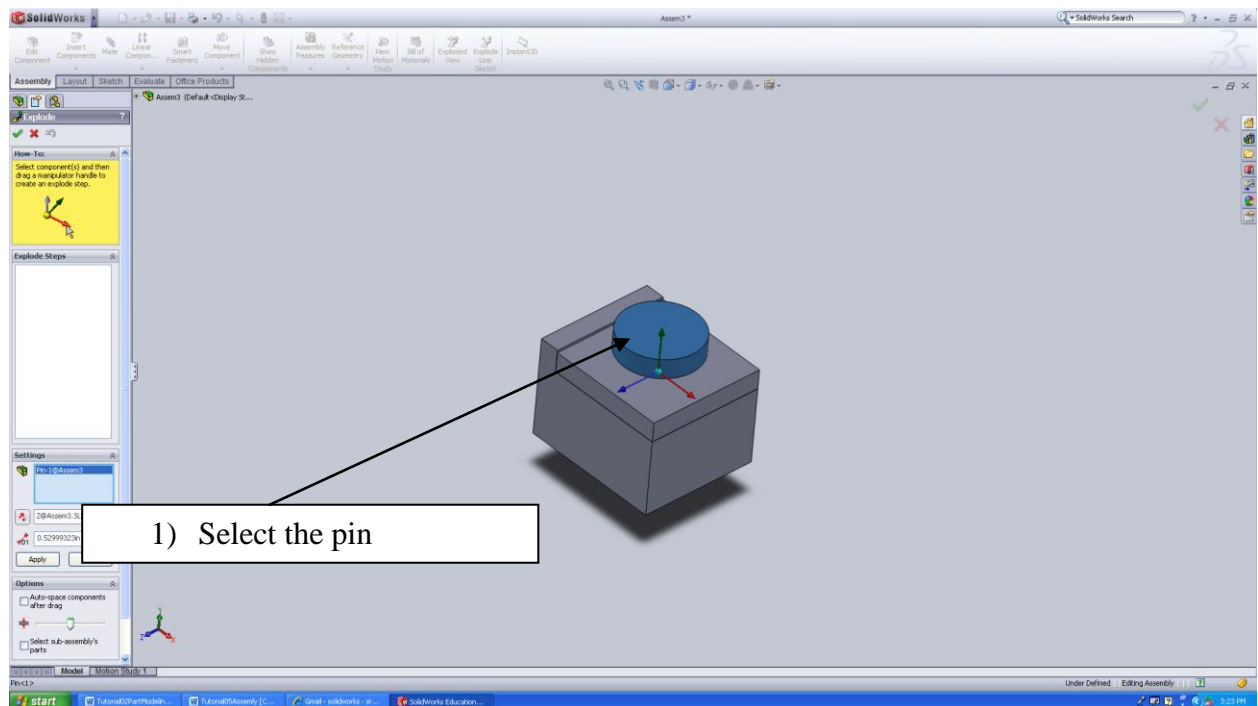
Step 11

Select Exploded View Icon



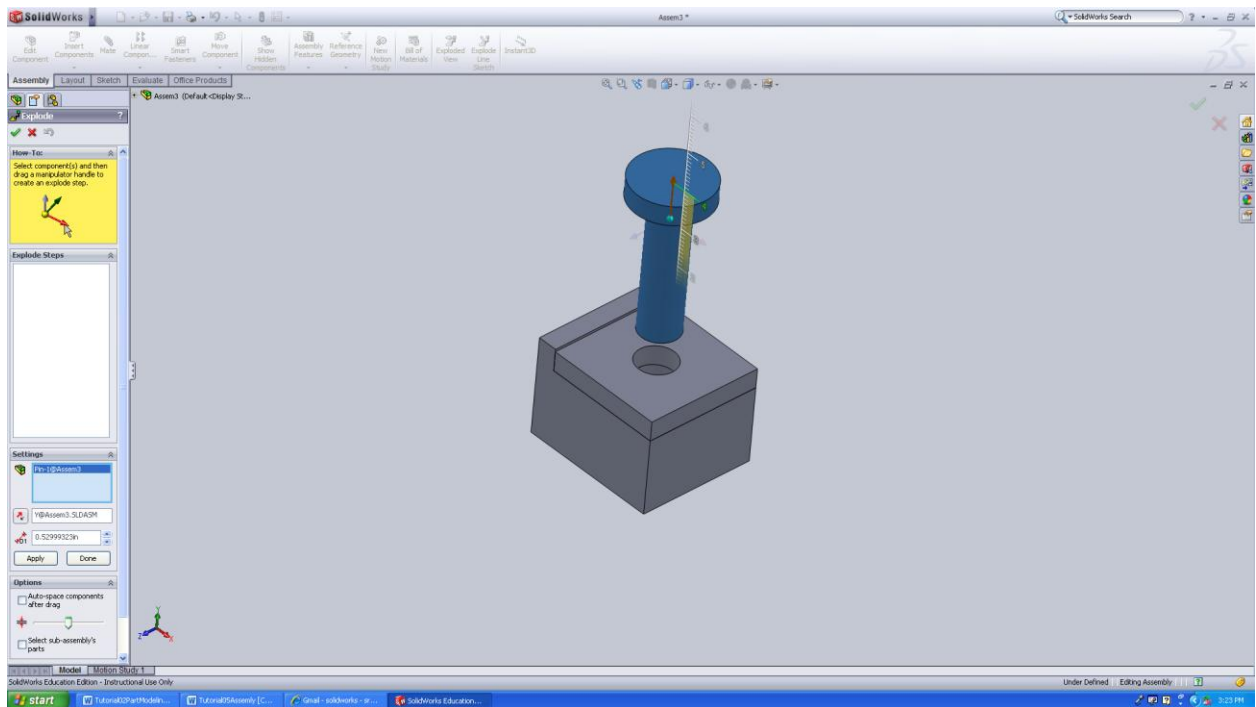
Step 12

Select the pin. Upon selection, three axes will be displayed on that part.

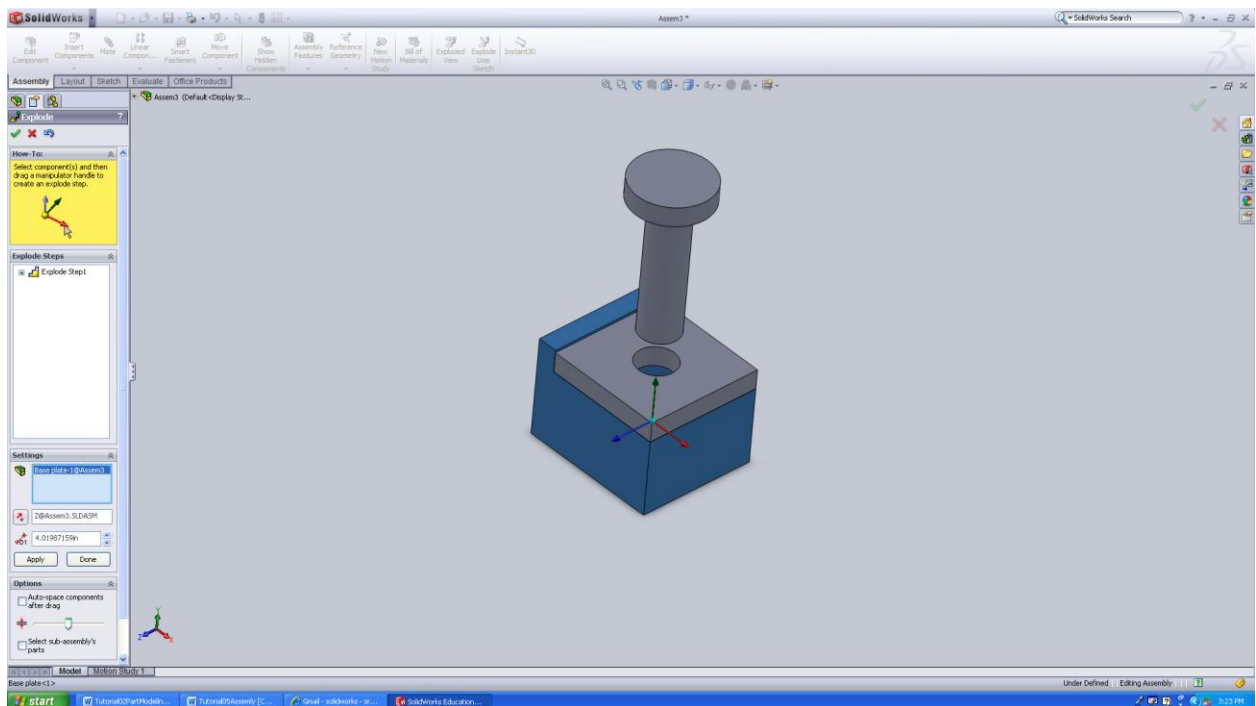


Step 13

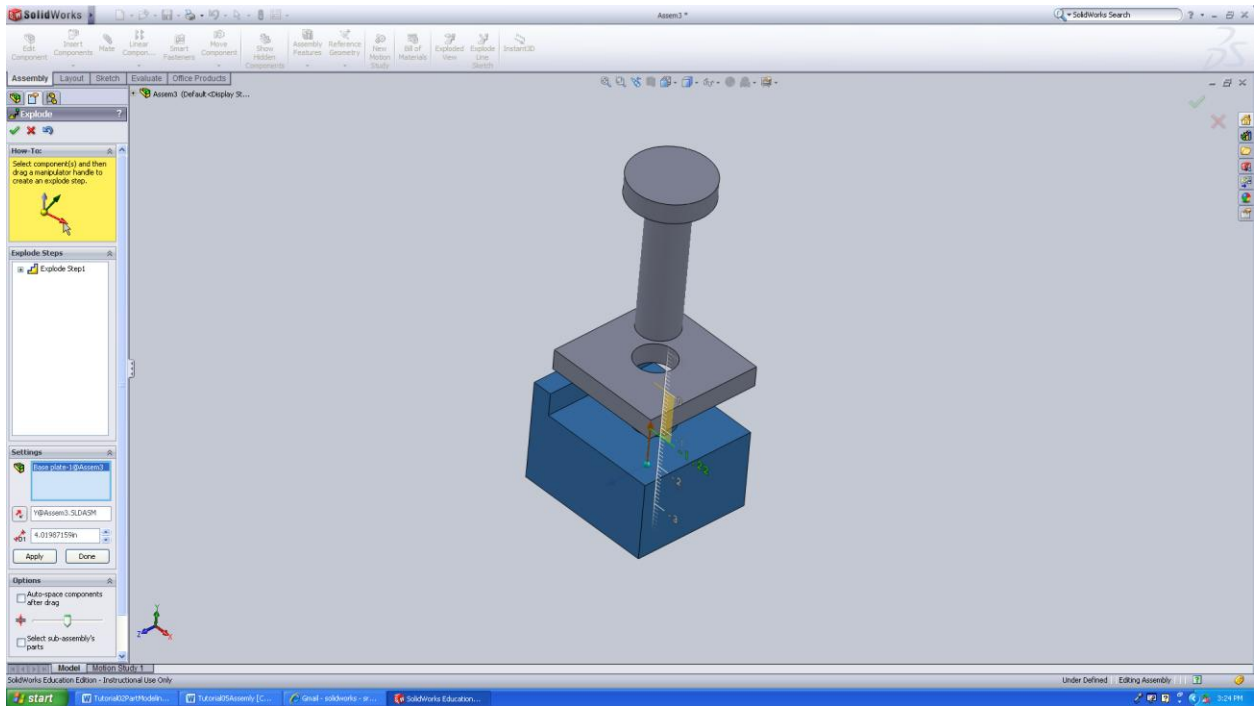
Click on the y-axis (green color) and drag it upwards till the pin is out of the block.



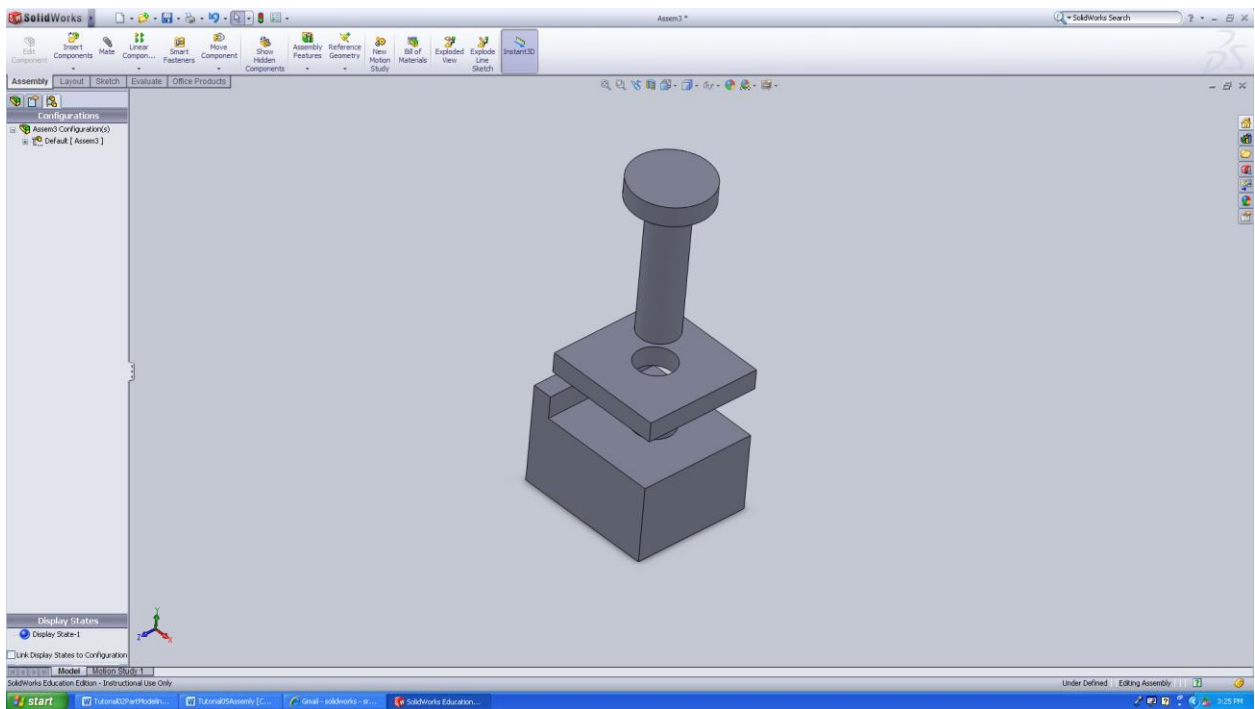
Repeat the above procedure for base plate.



Drag the base plate (green axis) in the bottom direction. Select OK (tick mark on the top right corner)

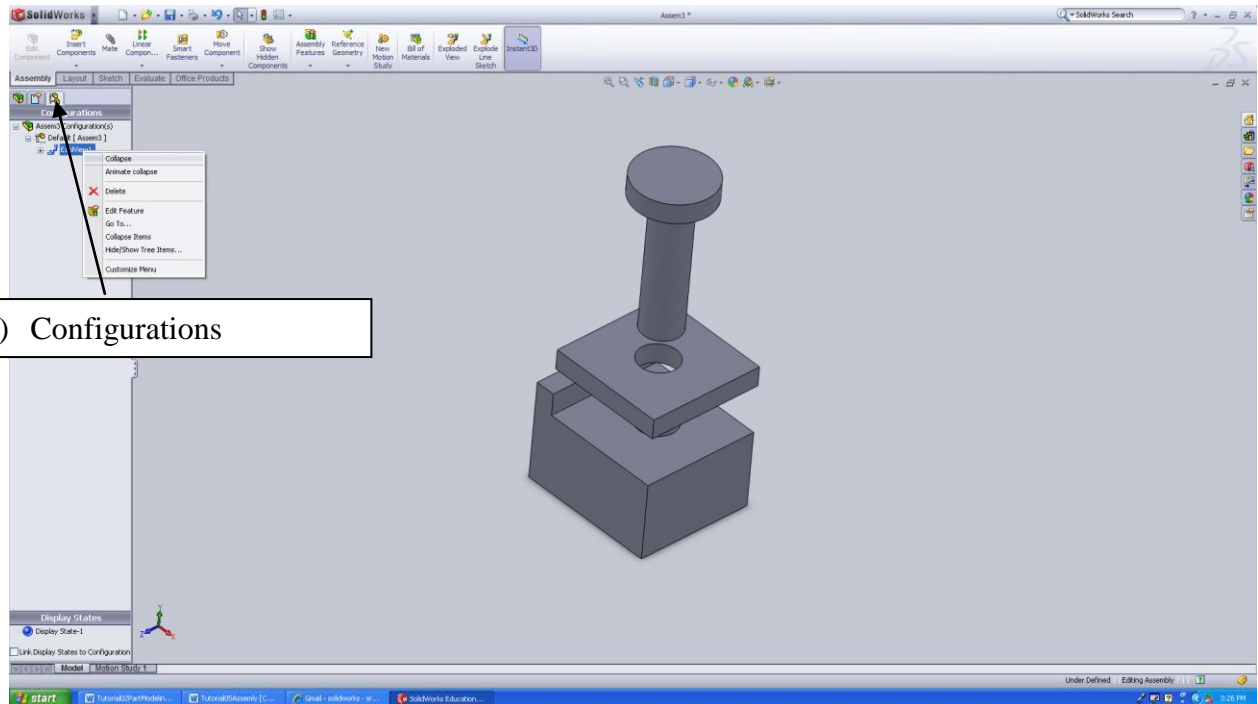


Preview of the exploded view.

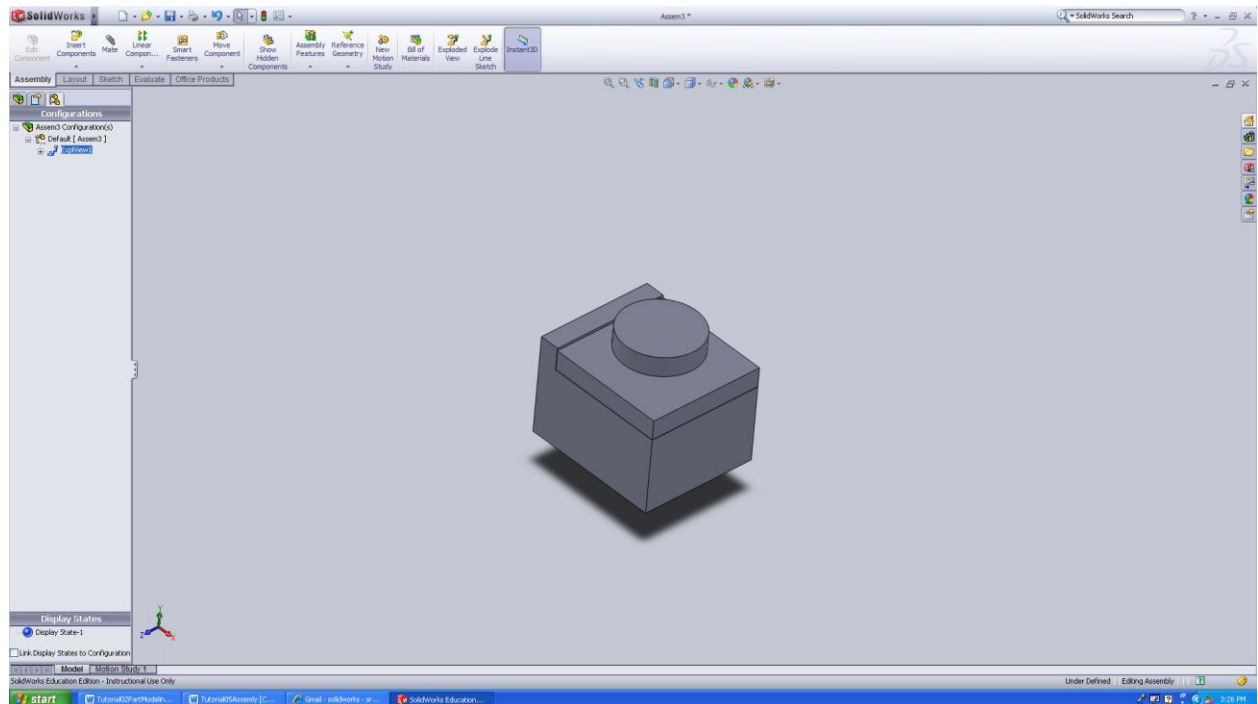


Step 14

Go to **Configurations Tab**→**Select Default**→**Right click on ExpView1**→ **Select collapse**

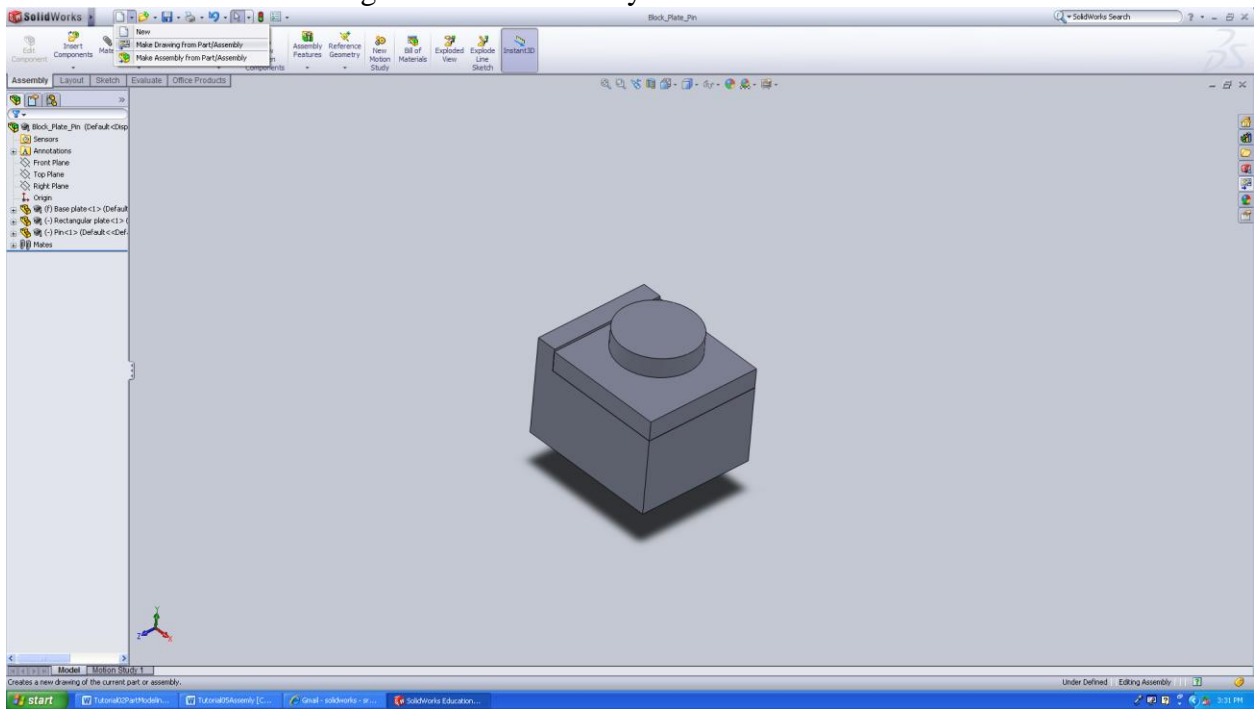


Preview of the collapsed view. Repeat the same procedure to get the exploded view again. Save the assembly as Block_plate_pin.



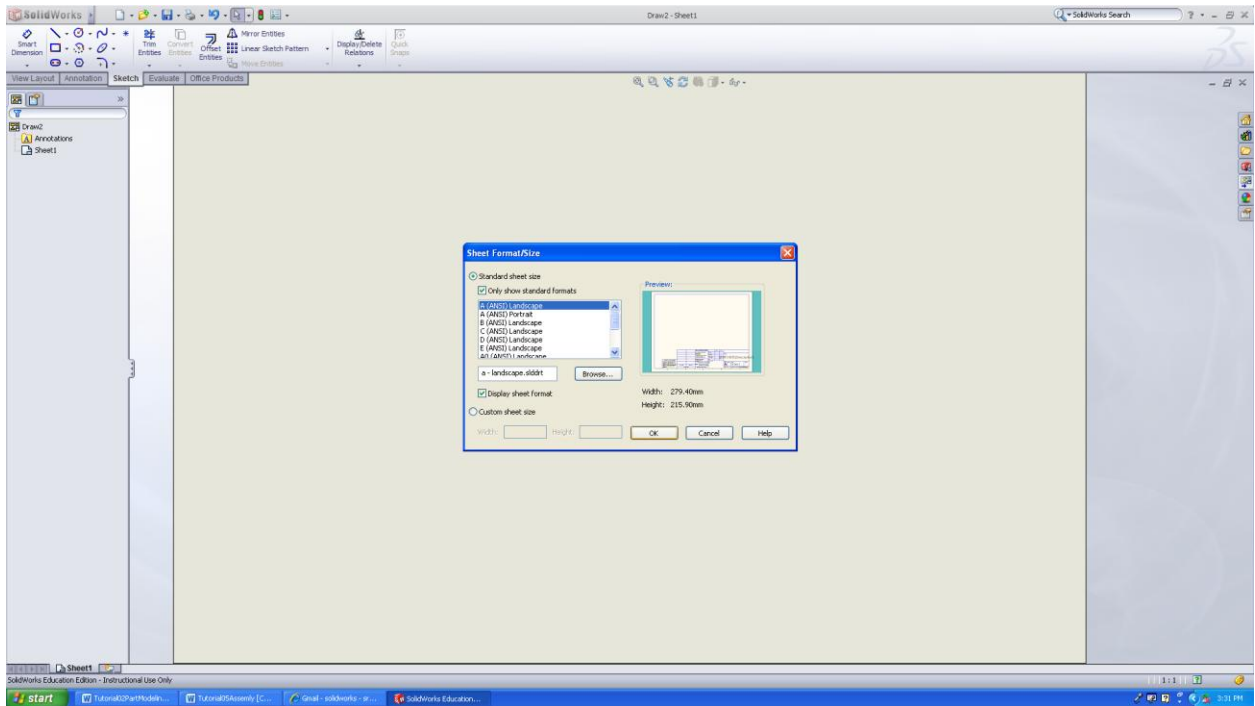
Step 15

Select New→Make Drawing from Part/Assembly



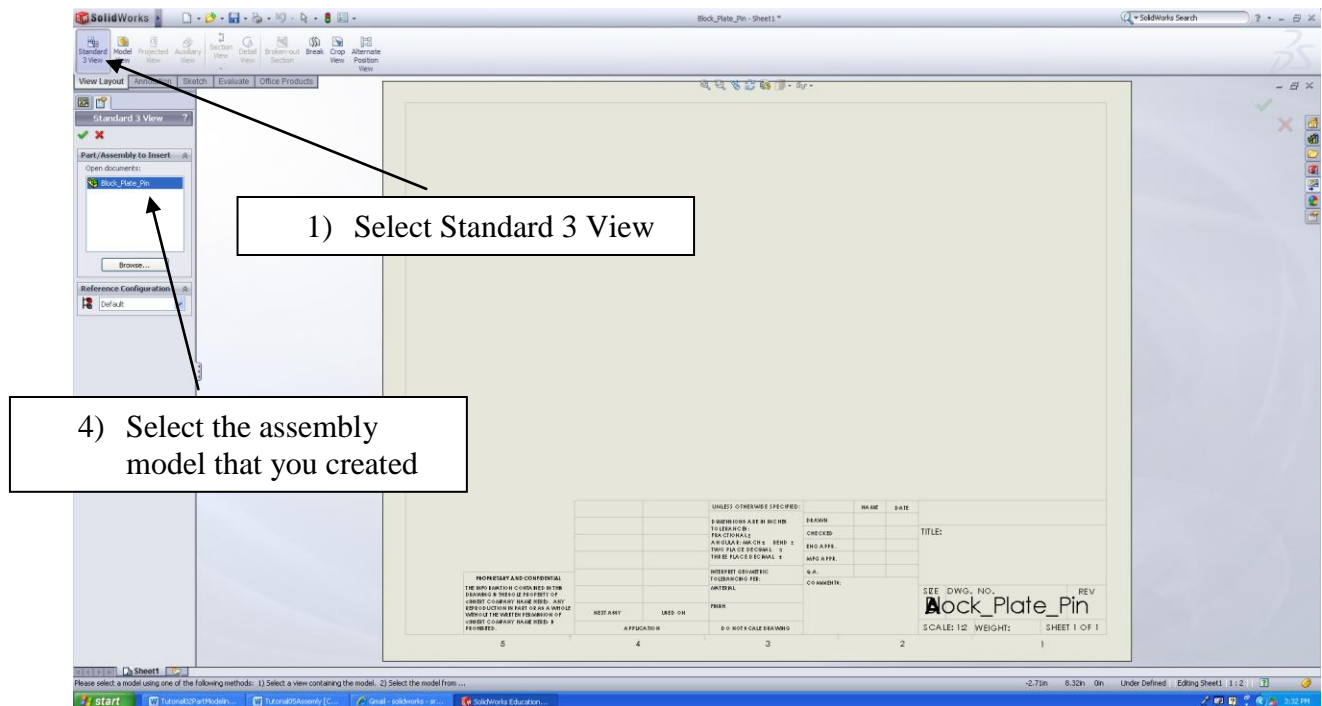
Step 16

Select A landscape option and select OK

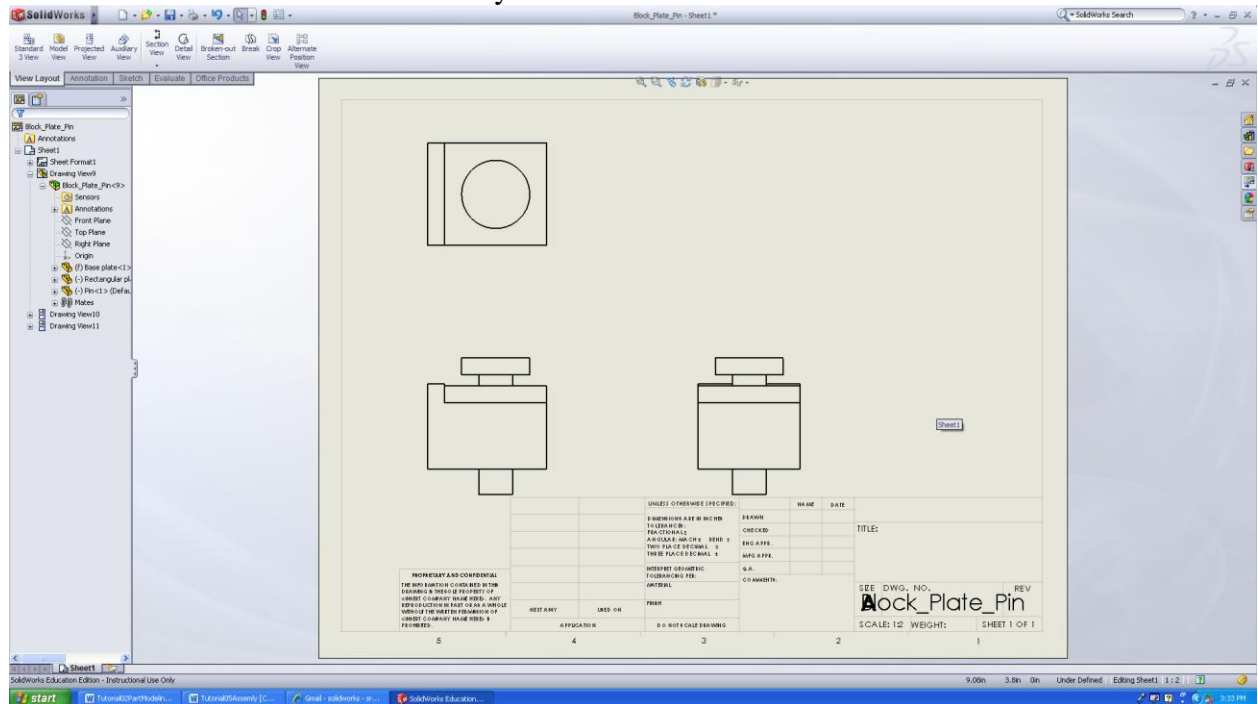


Step 17

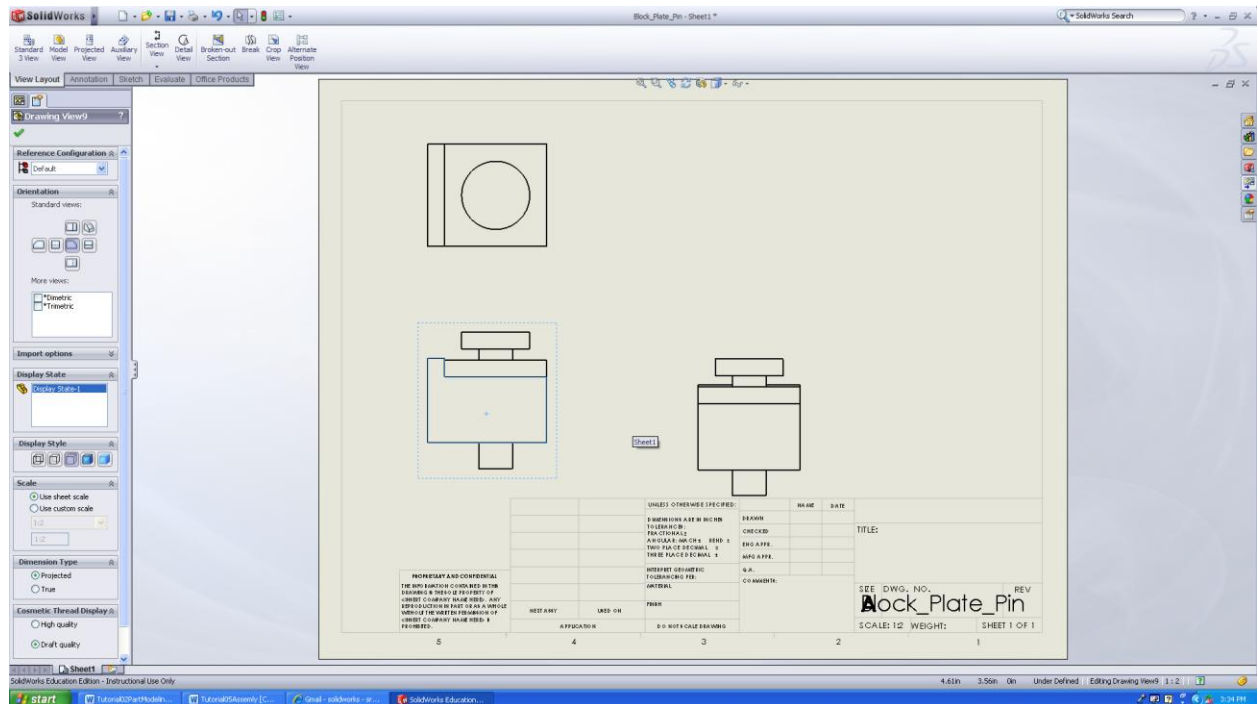
Select Standard 3 View → Select the assembly.



Preview of the 3Views of the assembly model

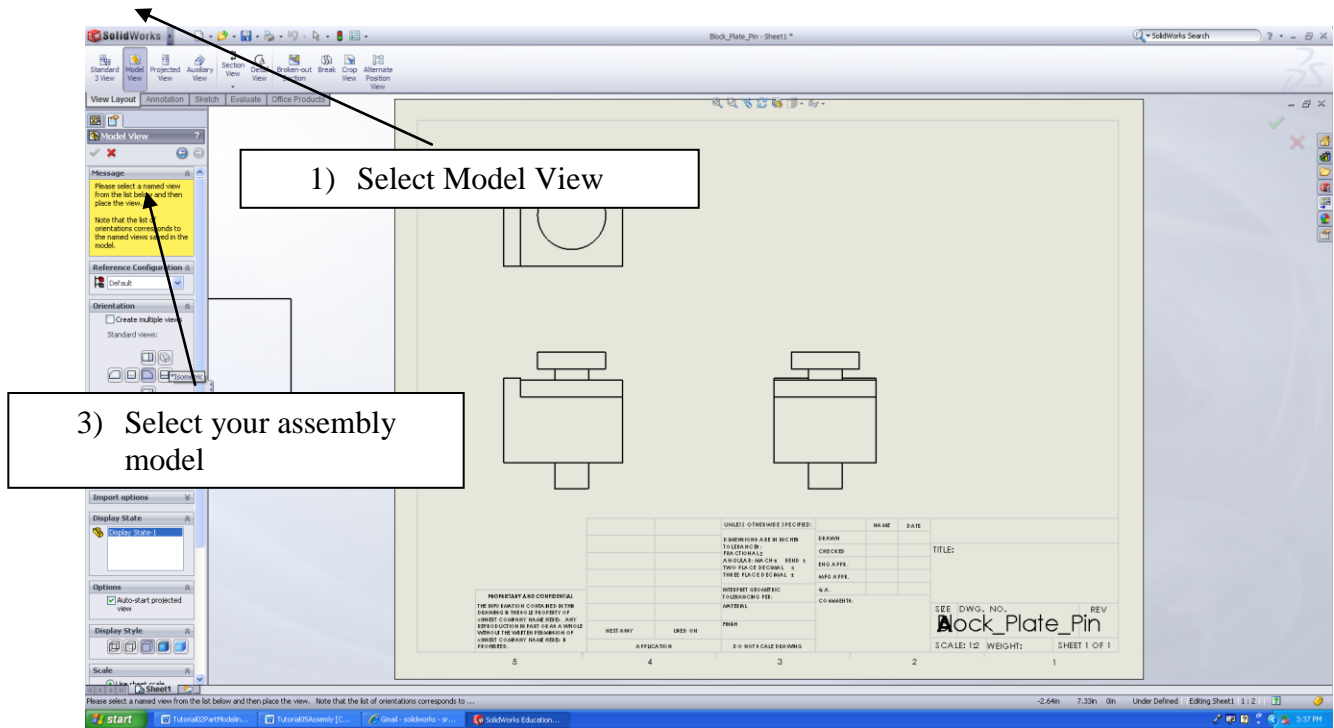


You can move the individual views by selecting and dragging it.



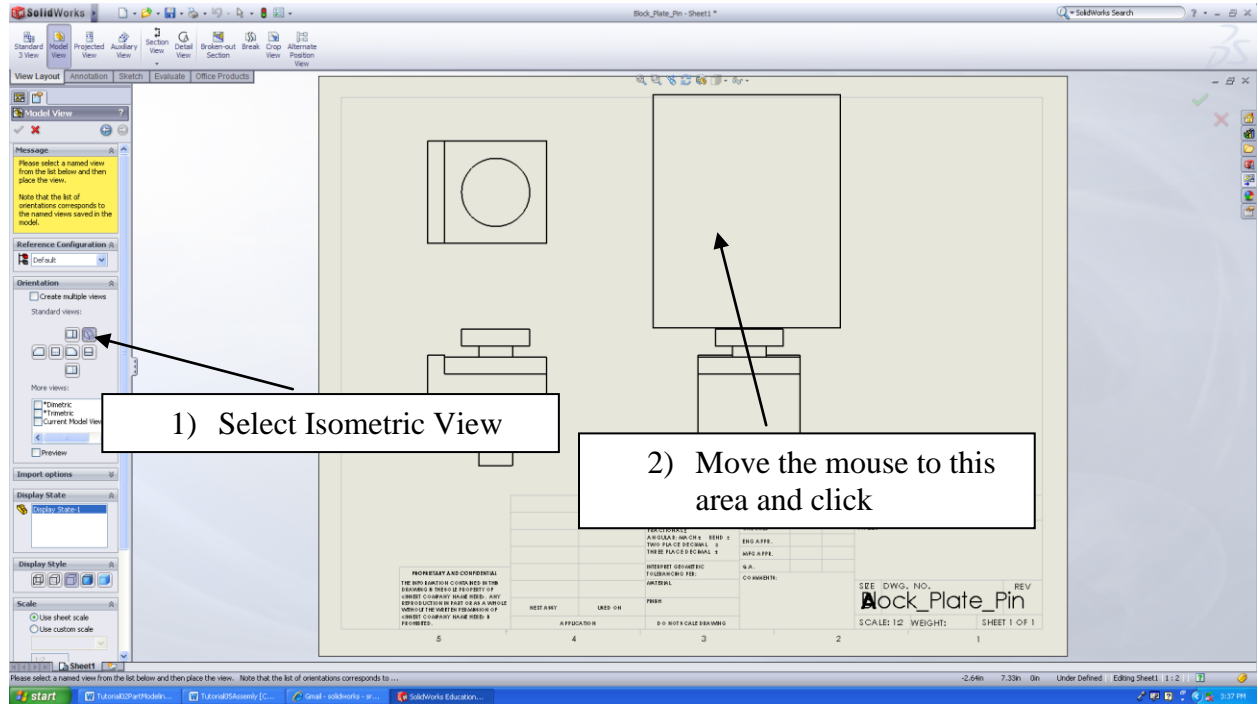
Step 18

Select Model View → Select your assembly.

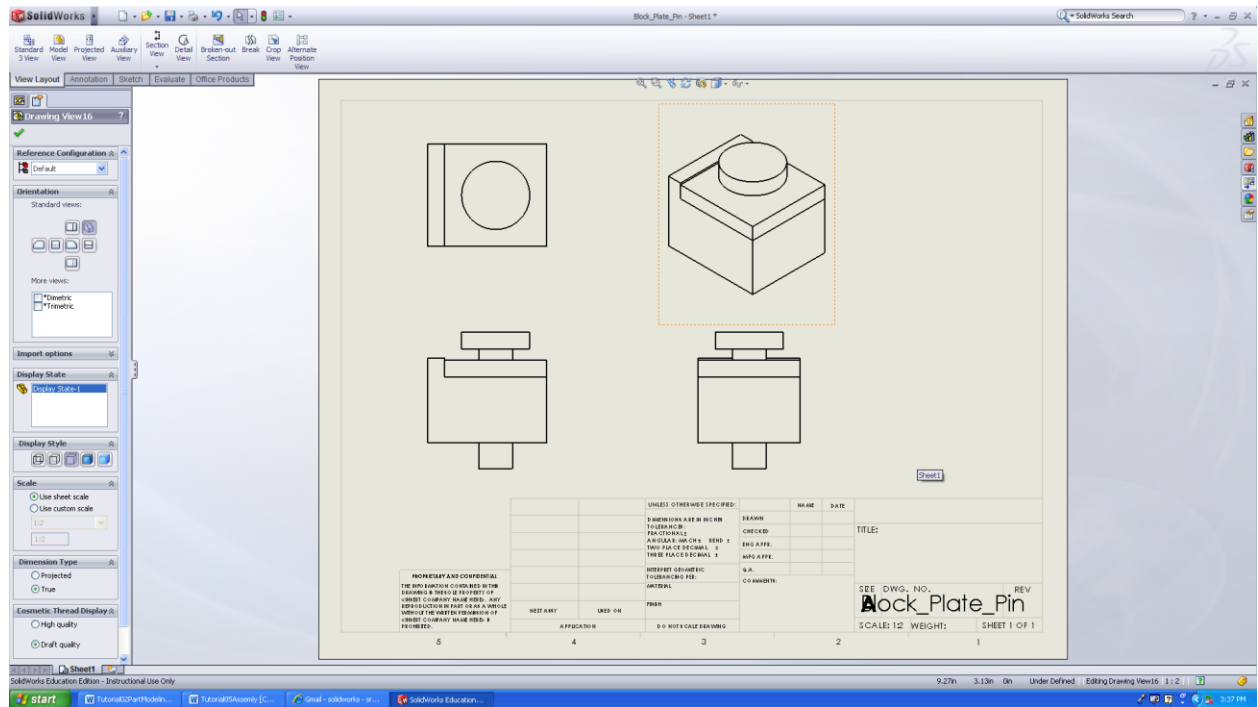


Step 19

Select Isometric View

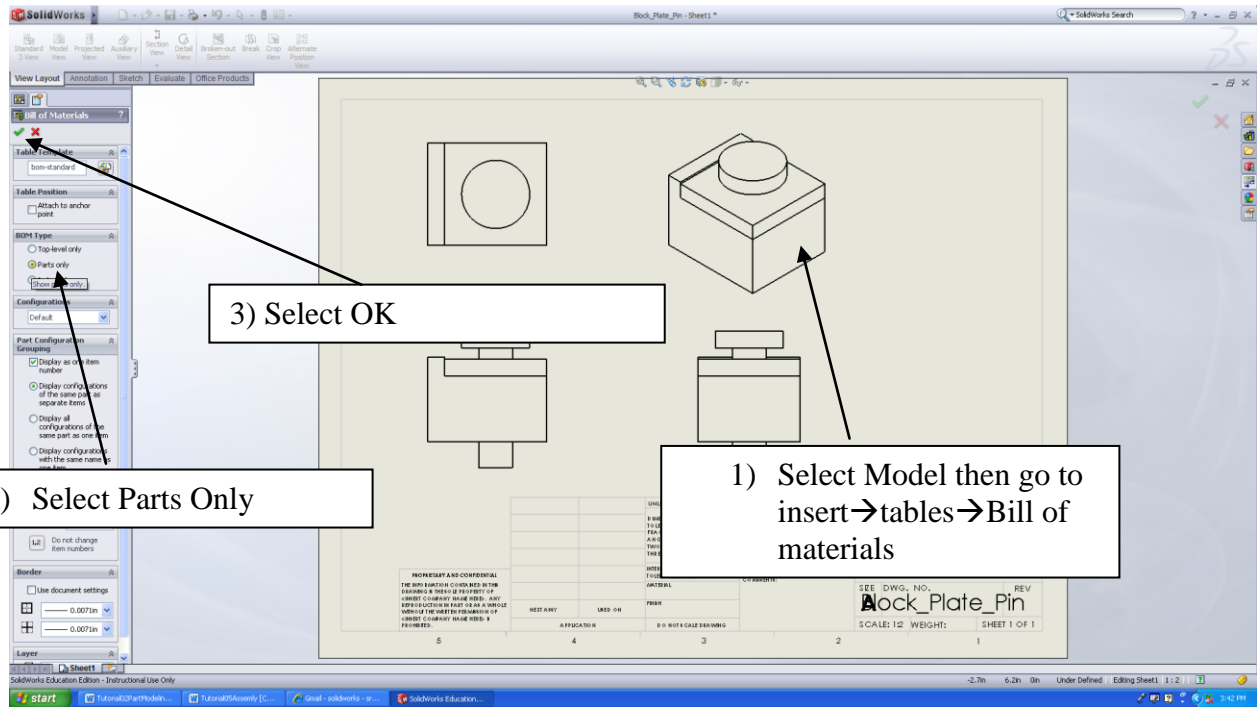


Preview of the 4 views including an isometric view.

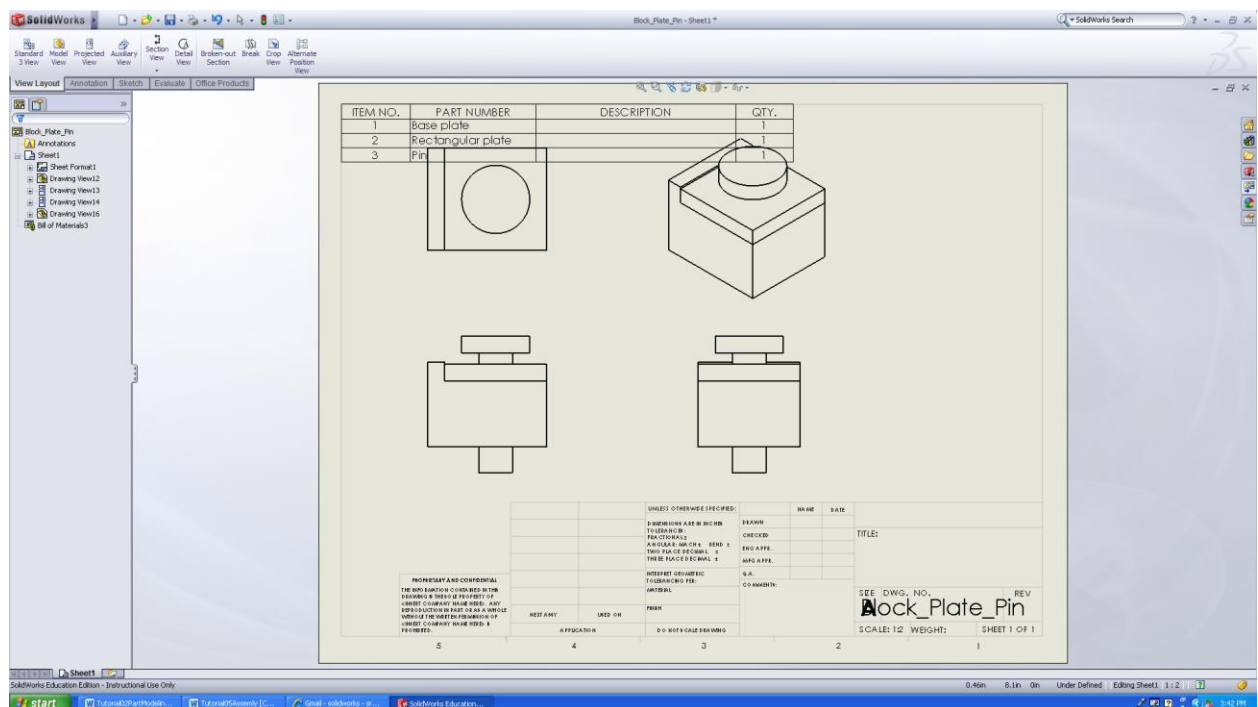


Step 20

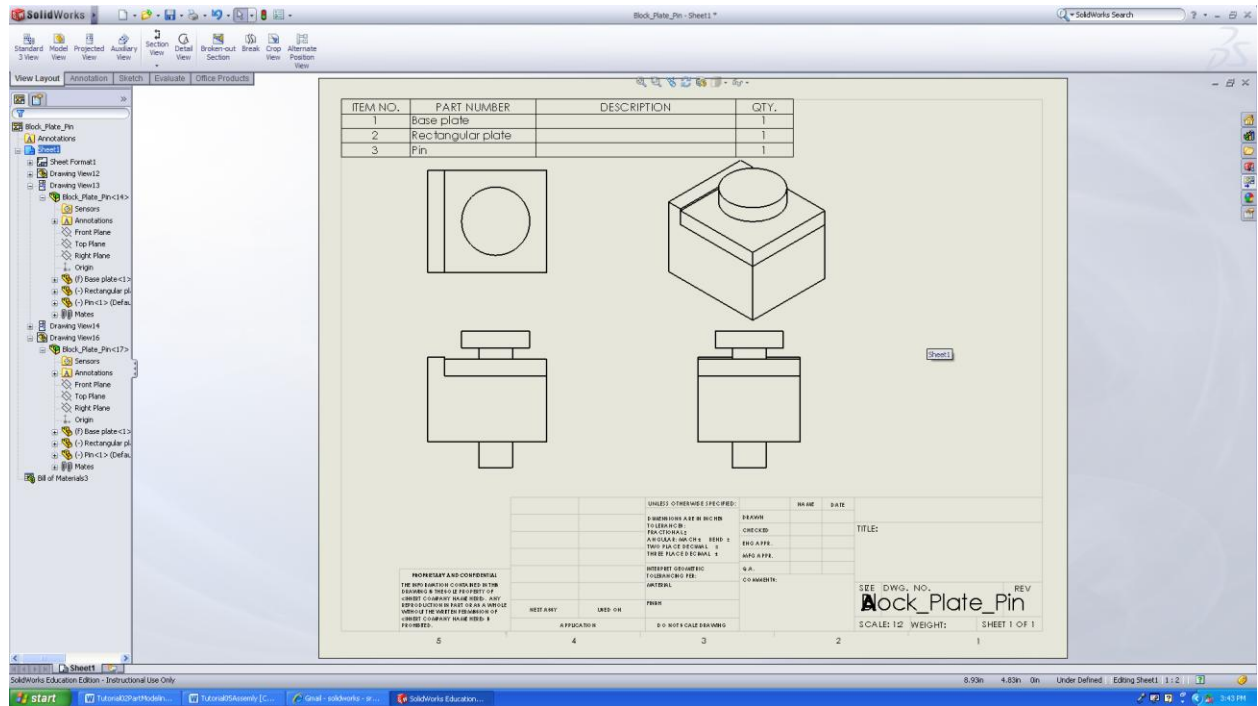
Select the **Isometric Model**. Go to **Insert→Tables→Bill of Materials**. Select **Parts Only**. Select OK.



Upon selecting OK the Bill of Materials table will follow wherever the mouse pointer travels. Click on top left corner of the sheet to fix the table.



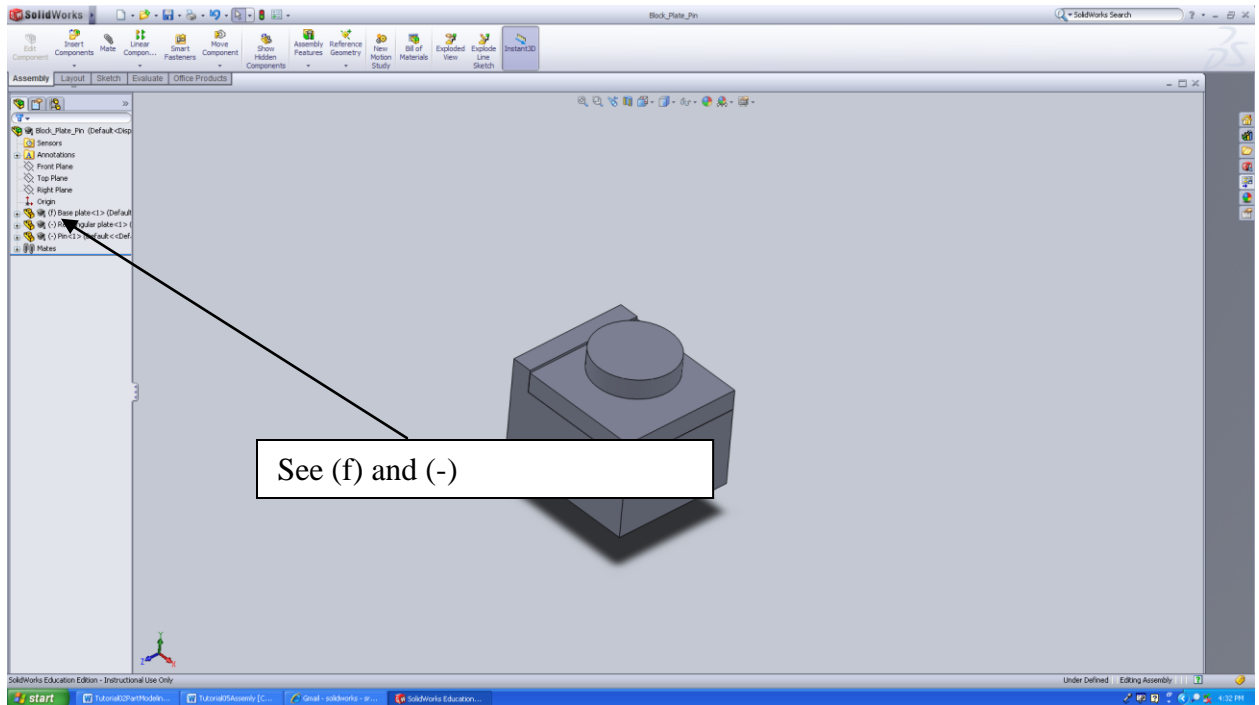
Select the parts that are overlapping with the table and move them.



Assembly Navigation Tree

Once you have added a part or component into the assembly, the assembly navigation tree gets updated with the new component.

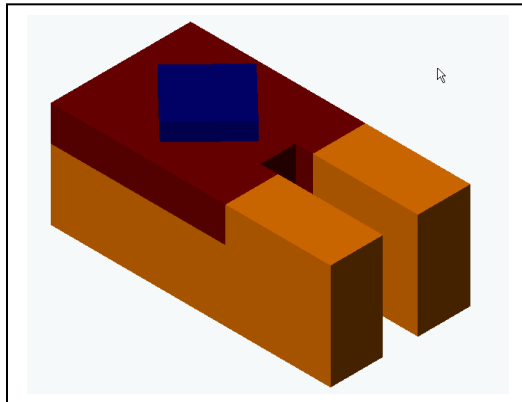
- A fixed component has a **(f)** before its name in the Feature Manager design tree.
- A floating component has a **(-)** before its name in the Feature Manager design tree.
- A fully defined component does not have a prefix.



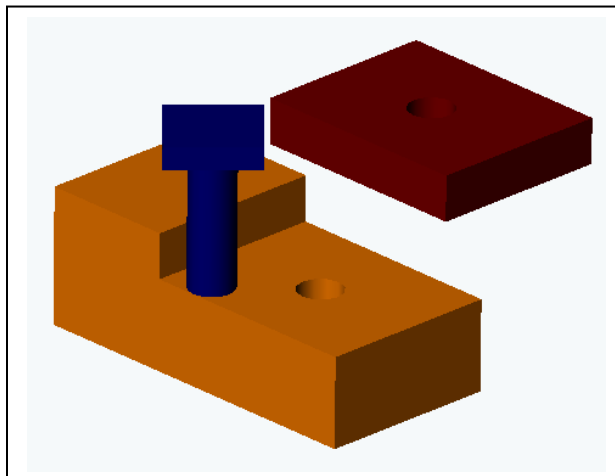
Class Hands on:

1. Do you have any other combination for constraints for fully constraining the same assembly? Modify the above Assembly with your constraints. List your constraints.
2. Create the assembly, using sub-assemblies. Create the *sub- assembly of Base Block and Base Plate*. You save this subassembly as **subassem1.sldasm**. Now insert this Subassembly to create the final assembly. Your Assembly navigation tree should have the **subassem1.sldasm** and then the **Pin.SLDPRT**. (Goal: Use of Subassemblies)
3. Create a Slot Feature in the assembly, without editing the parts/subassemblies. (Slot Dimension 3.5 X 0.5)

(Hint : Insert **Assembly Feature** **Cut**)



4. Create the following exploded view.(*parts move up and then move either way*)



- Submit the Assembly drawing of the Block_Plate_Pin with the BOM and the major dimensions as shown in the figure below.

(Hint: Double Click on the BOM table in the drawing to Edit)

