

# Inflatable Structure Project: A+CAD Layout Drawing Instructions

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1. Open the A+CAD layout drawing template file named "Inflatable Structure Template.dwg" from the class web page.
2. Before doing anything else, save this file to your H-drive. Rename it somehow so that you know it is yours.
3. The file should open up on the MODEL tab. You should see a rectangle. This rectangle is 300 units wide and 100 units tall. For our purposes, we will consider each unit to be a centimeter, but A+CAD thinks they are inches. We'll deal with that later. For now, pretend they are centimeters. The rectangle represents a life-size piece of plastic that you will use to make your structure from.
4. Use the pieces of your paper model to draw the shapes you will cut from your plastic. All your shapes must fit inside the rectangle. To know how big to make your shapes, measure your paper model shapes with a ruler (use centimeters). Multiply all your measurements by 10 before adding them in A+CAD. (For example, if one of your paper pieces has a side that is 5 cm, then you would draw this as  $5 \times 10 = 50$  cm on A+CAD).
5. When finished drawing all of your shapes, you must scale your drawing down so that the computer knows we are using centimeters.
  - a) Select the SCALE command (fourth button down on the right tool bar or go to the MODIFY menu).
  - b) Select everything, including the original rectangle. Click ENTER.
  - c) Use ESNAP to select the lower left corner of your plastic when it asks for a base point. Click ENTER.
  - d) When it asks for a scale factor, put in ".393700787". Click ENTER.
6. Now add dimensions to everything on your drawing that you want dimensioned. When deciding what to dimension, think about having to mark out the shapes on your drawing. What will you want to know the length of when you are using this drawing to mark your plastic? The LINEAR and ALIGNED dimension options are the two that will likely be the most helpful, however there are a number of different ones (RADIUS, DIAMETER, ANGLE, etc...) that you might find helpful as well. These dimensions have all been adjusted to represent dimensions as centimeters, not inches.
7. When you have added all dimensions that you require, you are ready to print your drawing. Click on the layout tab labeled "17x11".
8. Double click on the text "NAME" and change it to you & your partner's names. If your names do not fit in the box, select your names, right click, and select "Properties". You can decrease the text height so that they fit.

9. Now we must adjust the viewport so that your plastic shows up correctly on the layout. The viewport is the white rectangle that you see just inside of the orange border. Double click somewhere inside the viewport. The viewport should turn bold – this means it is active.
  - a) Go to the VIEW menu, go to ZOOM, and select the EXTENTS option. Your entire drawing should appear, however it is not at a tenth scale.
  - b) Go to the VIEW menu, go to ZOOM, and select the ZOOM option (the first one). Type in “.1XP”. This will make your drawing exactly 0.1, or 1/10 of its size on the printed page.
  - c) You may need to pan some. Do this by clicking on the scroll wheel somewhere in the viewport and, while holding down the scroll wheel, dragging as necessary.
10. Double click outside your border when finished adjusting your viewport. This will lock the viewport in place.
11. Go to the VIEW menu, go to ZOOM, and select the EXTENTS option. This will cause the layout (including the boarder) to fill the screen.
12. Go to the FILE menu, select PRINT SETUP. Make sure that
  - a) The HP LaserJet 5200 printer is selected (this is the other printer in the room, by the hall windows).
  - b) The LANDSCAPE option is selected.
  - c) That 11x17 paper is selected for paper size.
  - d) Click OK when these changes have been made.
13. Go to the FILE menu and select PRINT. Do the following:
  - a) Under the SCALE/VIEW tab, make sure “Current View” is selected.
  - b) Under the ADVANCED tab, make sure that “Monochrome.ctb” is the name selected for the PRINT STYLE TABLE, and make sure that “Center on Page” is selected on the right side of the window.
  - c) When these changes have been made, Click PRINT PREVIEW. If it looks right, go ahead and print. If it does not look correct, cancel review the above steps, making any necessary changes.
14. You are finished. You will need to be sure there is paper for the printer. Ask your instructor for help if there is no large 11x17 paper.