

Building 3-D Initials with a Vanishing Point

Tallahassee

Activity overview

Students will use a vanishing point for a one point perspective drawing of the initial of their choice.

Concepts

Perspective drawings from projective geometry, one point perspective drawing

Teacher preparation

Students should have some practice drawing one point perspectives by hand. They should understand vanishing points and how vertices connect with them to create the vanishing angles.

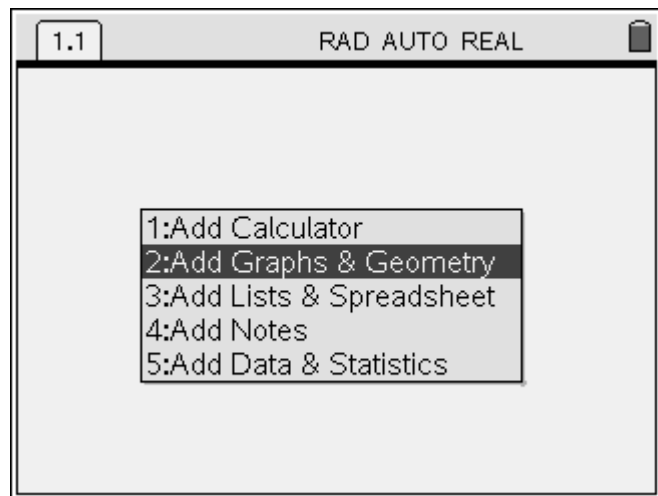
Classroom management tips

With the step by step directions below students should be able to work individually with the initial of their choice if they have some Nspire experience.

Step-by-step directions

1. Decide which of your initials that you would like to make a 3-D drawing of.

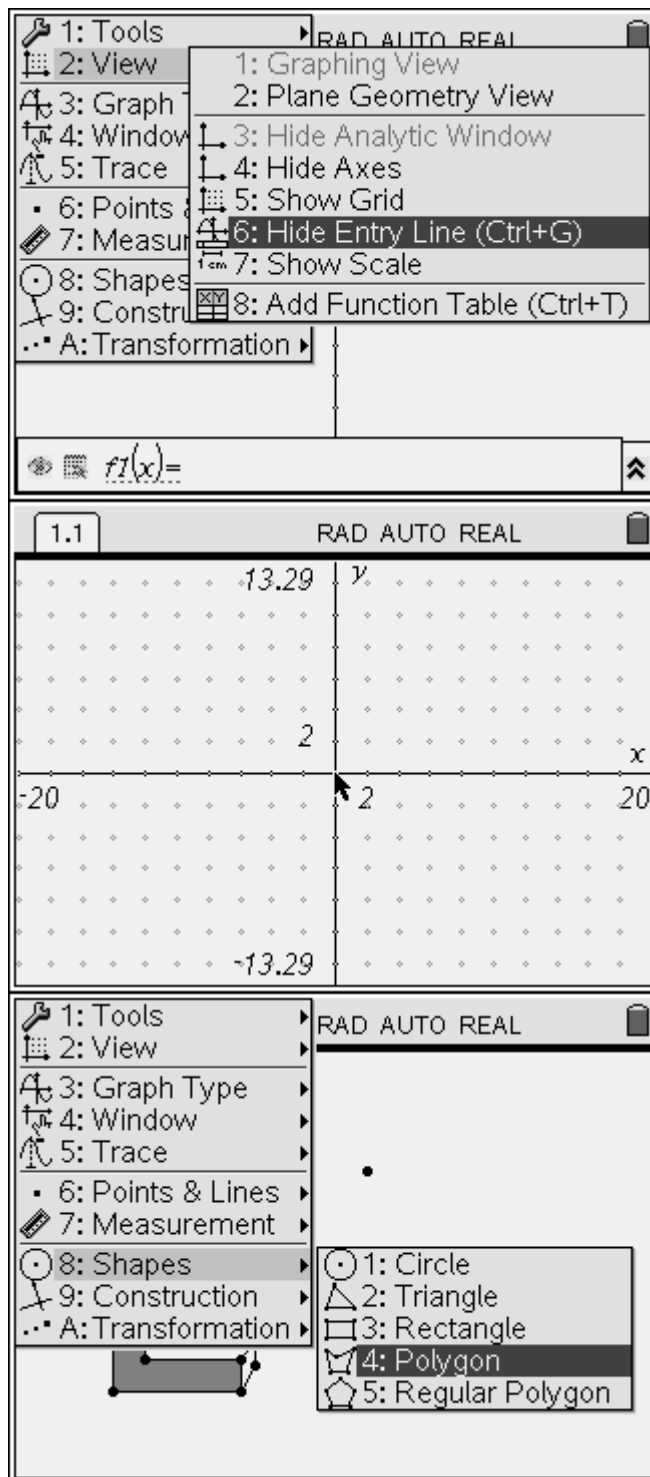
Open a new file from the home screen by selecting 2:Graphs & Geometry.



2. Under Menu select View:5 Show Grid and View: 6 Hide Entry Line.

This view will allow us to use grid to make neater block letters.

3. To create your original 2-D initial under Menu select Shapes: Polygon.

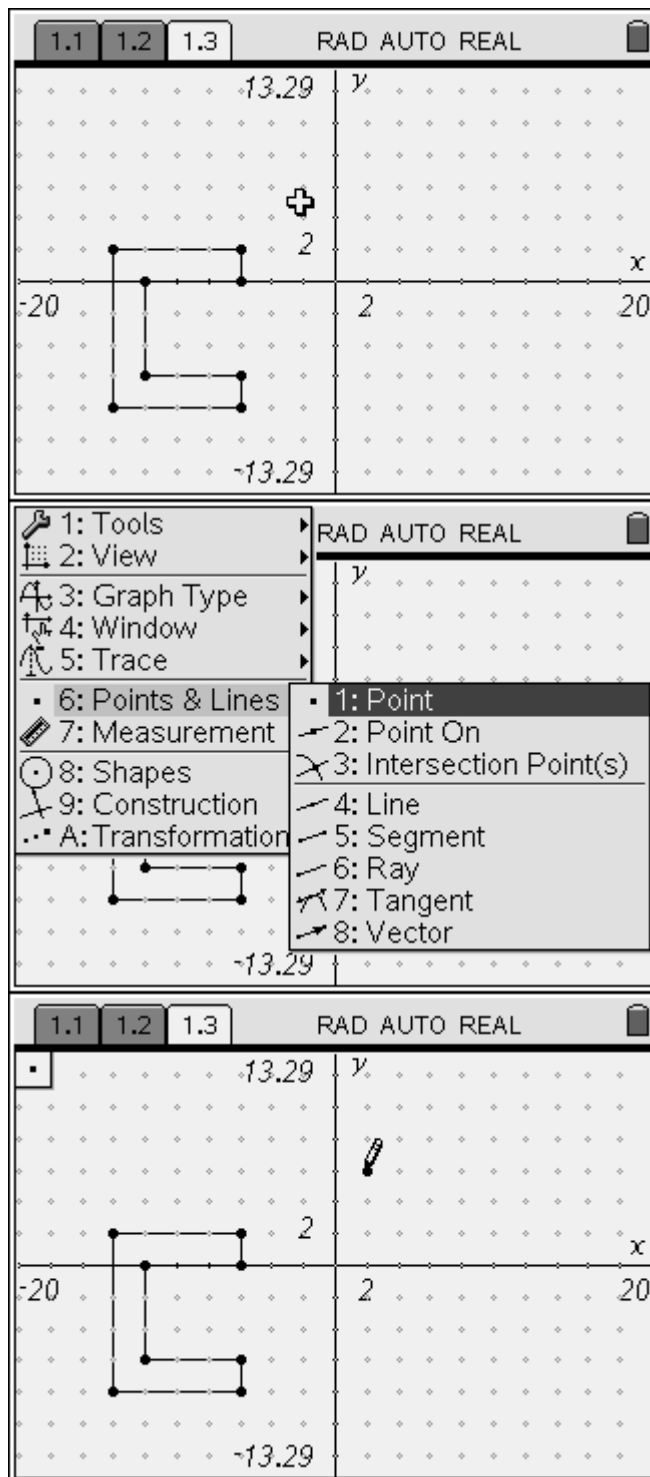


4. Pre-draw on scrap paper the 2-D initial you have chosen. Curves should be avoided, so block your letters. The initial "C" will be used as an example.

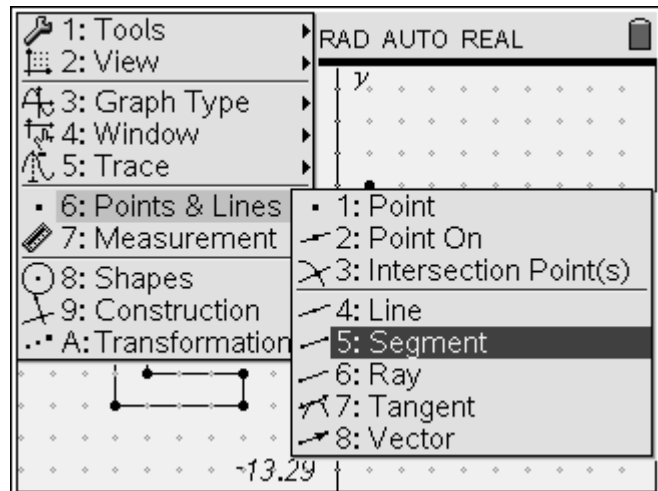
Start in the 3rd Quadrant by clicking at a good starting point. Click at every vertex and move on to next. The sides of the "polygon" initial will follow the click. Your last click should be where you started.

5. Now select the point tool from the Points & Lines menu.

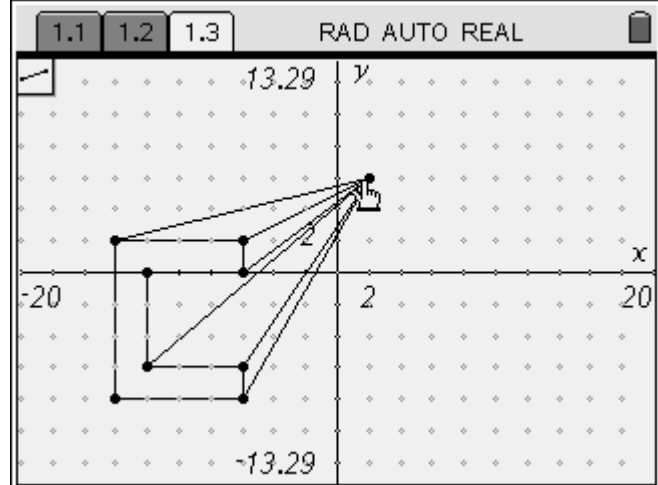
6. Select a location for your vanishing point. Somewhere in the 1st Quadrant should work well.



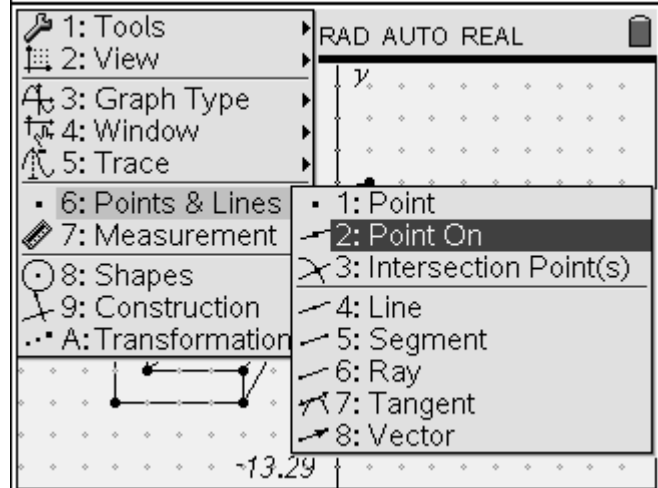
7. Select Segment from the Points & Lines menu.



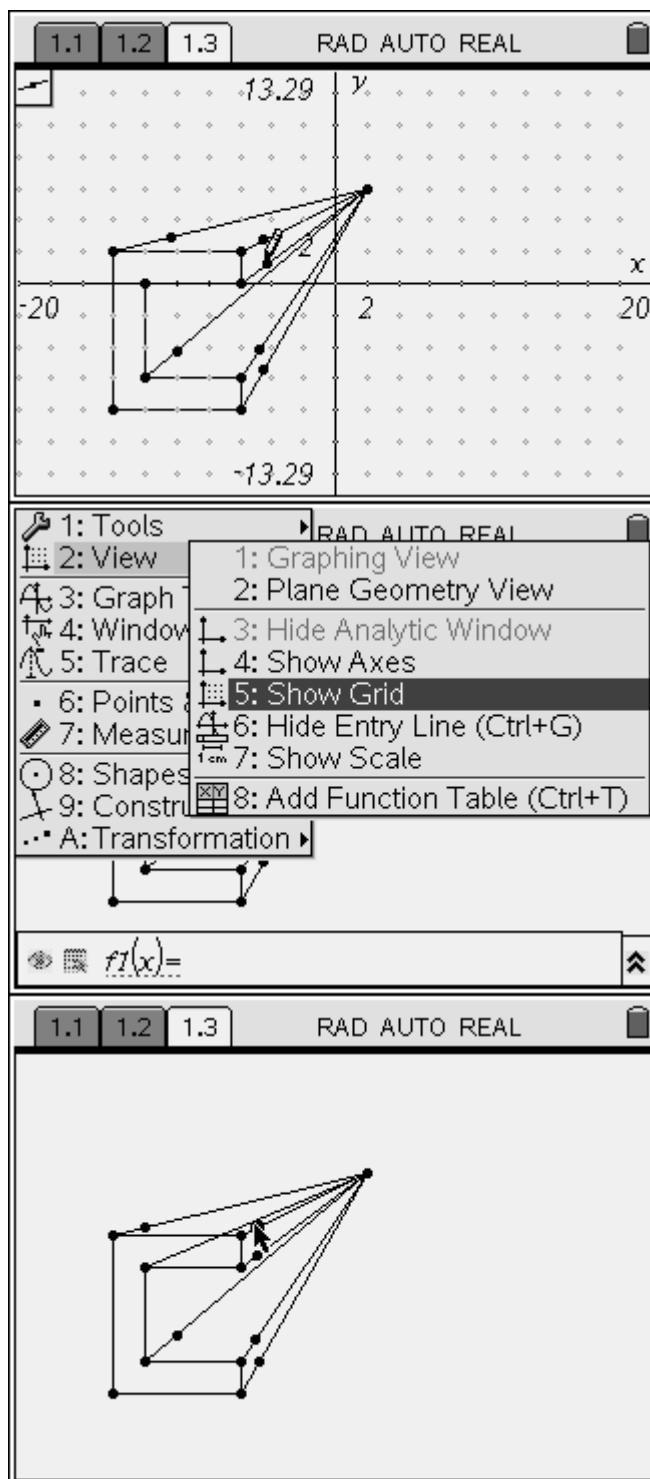
8. Create a segment from each vertex to the vanishing point.



9. Select Point On from the Points & Lines menu.



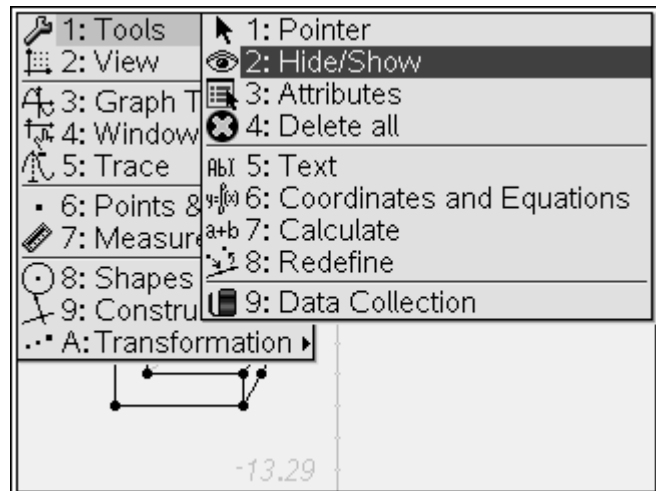
10. Set points on the lines drawn to the vanishing point. How far these points are from the vertices depends on how thick you choose to make your 3-D initial. Set these points carefully keeping vertical and horizontal lines as in original letter.



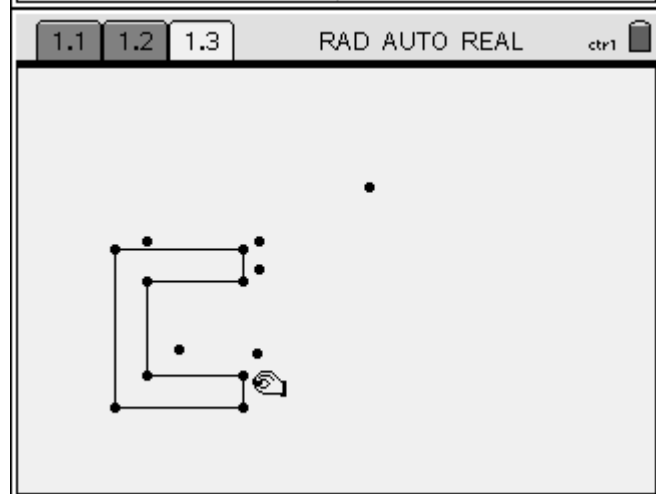
11. Now we are going to clean up our drawing area. Choose View: 4 Hide Axes and View 5: Hide Grid.

12. Screen should now look like this.

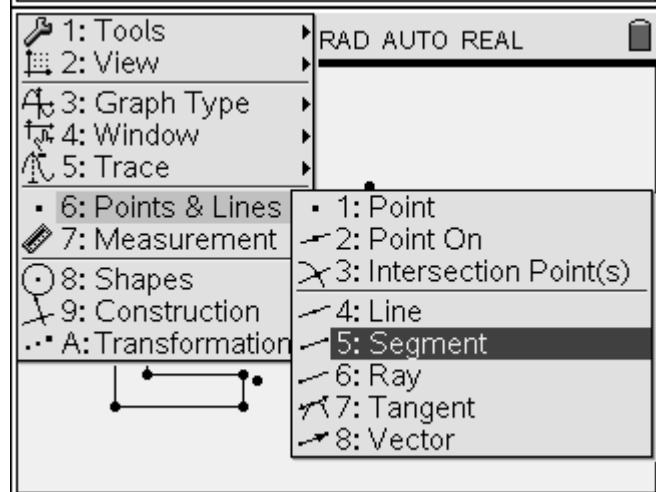
13. Now we are going to hide the extra lines we have drawn. In the Tool menu select 2: Hide/Show.



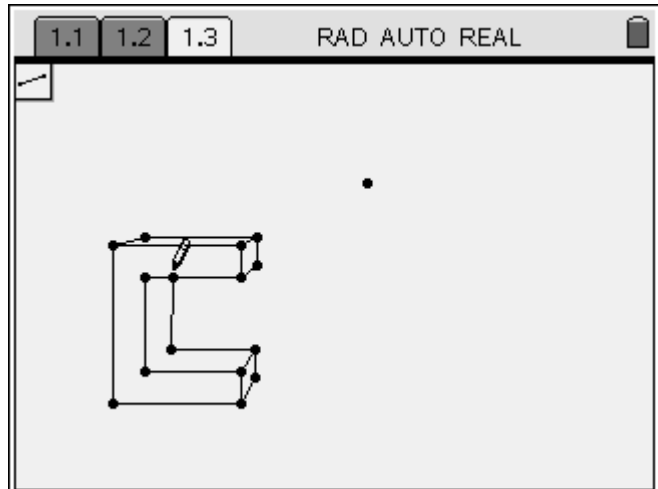
14. Click on all the lines drawn to the vanishing point and they will be hidden.



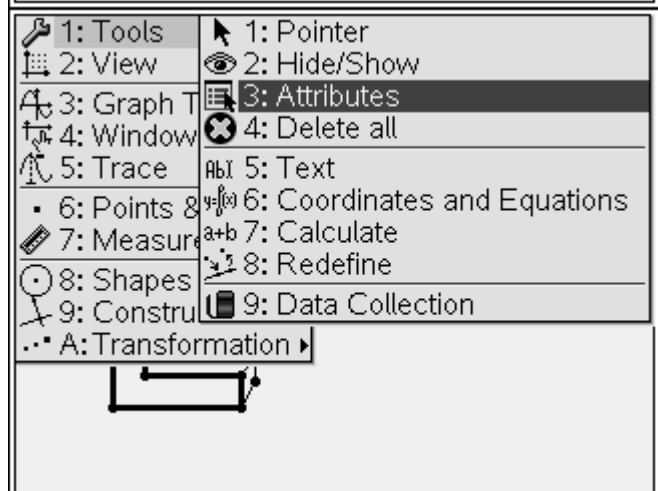
15. Now we need to select the Segment tool from the Points & Lines menu.



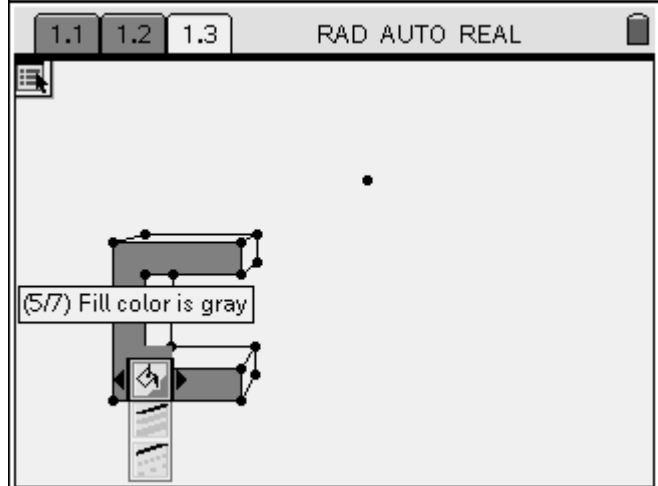
16. Connect the small segments using the points that you have set to get your 3-D effect.



17. Choose from the Tools menu 3: Attributes.



18. Click on the original polygon until it is outlined and the attribute color choice appears. Use the right arrow to select the shade of gray you like.



19. Push the Escape key to escape from the Attribute selection and we are done! You can always add a second initial on your own!

