Perspective Workshop

Perspective is a technique used by artists to create a convincing illusion of depth and space in an artwork presented on a two dimensional surface. Applying perspective in artwork is key to drawing with great accuracy and quality.

In this two part workshop, Candice Eisenfeld first looks at a painting and examines how perspective has been created. She then guides participants in applying what they have learned to their own artwork. It is recommended that the workshop is followed sequentially. However, participants can skip sections with which they may be familiar.

Part One
One-Point Perspective Principles
Exercise One - Practicing the Basics

Part Two
Artists' Application of One-Point Perspective
Exercise Two - Adding Complexity

One-Point Perspective Principles

We will learn about the basics of one-point perspective by examining Eisenfeld's painting, *Aspen Forest*. Look at the painting on the left, and answer the following questions.

What item appears to be the furthest back in space?
See the letter A on the image on the right.

What item appears to be the closest?
See the letter B on the image on the right.

The horizon line is the point at which the sky and the land divide. It is always the most far away place in any landscape picture. Notice where each tree trunk is rooted on the ground. The tree trunks that are rooted closer to the horizon line are farthest away from you. The tree trunks that are rooted far from the horizon line are closest to you.

Now compare how the artist has drawn the objects that appear to be far away and the objects that appear to be close up and answer the following questions.

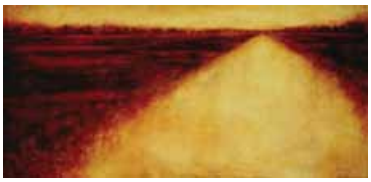
- What differences in **size** do you see in the objects in the painting?
  1. the objects that are closer to you are smaller than those further away
  2. the objects that are closer to you are larger than those further away
  3. the objects that are closer to you and farther away are the same size

- What differences in **brightness** do you see in the objects in the painting?
  1. the objects that are closer to you are brighter than those further away
  2. the objects that are closer to you are duller than those further away
  3. the objects that are closer to you are of the same color brightness as those further away

- What difference in **clarity** do you see in the objects in the painting?
  1. the objects that are closer to you are more detailed than those further away
  2. the objects that are closer to you are less detailed and more blurred than those further away
  3. the object that are closer to you have the same level of detail and sharpness as those further away

- Where are the objects **placed** in the painting in relation to the horizon line?
  1. the objects that are closer to you are nearer to the horizon line than those further away
  2. the objects that appear to be closer to you and further away are the same distance from the horizon line
  3. the objects that are closer to you are further from the horizon line than those that appear far away

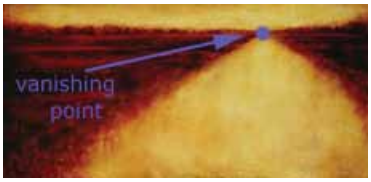
- Which of the following statements is true?
  1. the objects that are closer to you overlap those that are further away
  2. the objects that are closer to you are partially hidden by the overlap of those that are further away
  3. the objects that are closer to you do not overlap those that are further away



In a landscape like the one pictured (right), which includes a man-made object, like a building, a road or a table, we use an extra technique to show that the building, road or table appears to go back in space. In order to understand this concept, you need to first understand the word parallel. The pair of lines on the left are **parallel**. These lines will never cross.

The pair of lines on the right are not parallel. If these lines were stretched longer, they would cross one another.

Look at the road in this picture, entitled Passage. If we were walking on this road, we can assume that the road was built to be the same width for the entire length. Therefore, the sides of the road are parallel to one another.



However, when the road looks like it is going away from you, the sides of the road appear to merge. This is an illusion because we know that the sides of the road never meet. The point on the horizon line in which the two sides of the road appear to meet in a drawing is called the **vanishing point**.

Based on our discussion thus far, let's review and summarize what we have learned about creating an illusion of space on a two-dimensional surface.

Principles

1. Objects that are closer to you are drawn larger. Objects that are farther away are drawn smaller.
2. Objects that are closer to you are clearer to see and have more detail. Objects that are farther away are less detailed.
3. The closer objects are to the horizon line, the farther away they appear.
4. Objects that are closer to the viewer may overlap objects that appear further away.

Terms

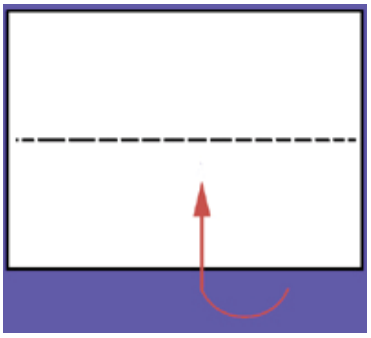
1. **Horizon line** - the point at which the sky meets the land.
2. **Vanishing point** - the point on the horizon line in which lines appear to meet
3. **Parallel Lines** - straight lines that never meet
4. **Right Angle** - two lines that are perpendicular to one another form a right angle, for example, if you draw a square, the corner is a right angle

Now let's complete an exercise where we will apply what we have learned.

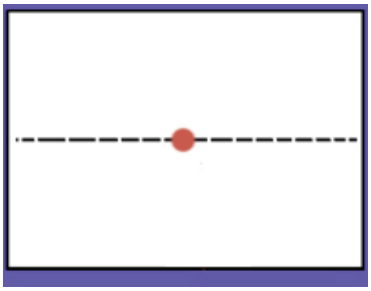
In this exercise we will try some of the methods we have already seen practiced by other artists to create the illusion of space. Before beginning this exercise, make sure you have a piece of paper, pencil, and a ruler. Color crayons or markers are optional.

Let's get started.

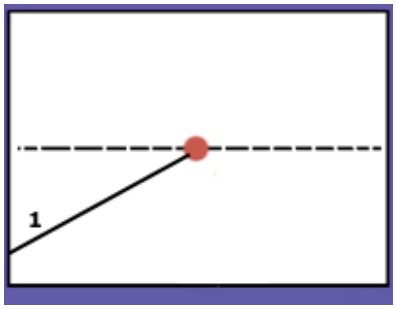
Step One
Fold your paper like a hot dog bun, that is, fold the longest section of the paper in half. The crease will be the **horizon line**.



Step Two
Unfold your paper and place a dot halfway along the crease of the paper. This will be the **vanishing point**.

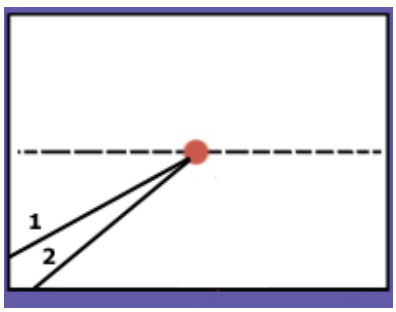


Step Three
We will draw a sidewalk. To do this, you will need to draw at least four lines.



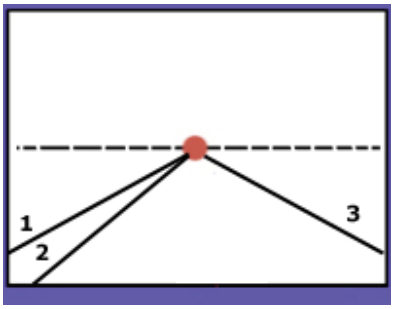
Line One
Use a ruler and draw a line that connects the bottom left hand corner of your paper to the **vanishing point**, as shown in the figure on the left.

Line Two
Move your ruler a few inches over from the corner towards the center, and draw another line, connecting with the **vanishing point**.



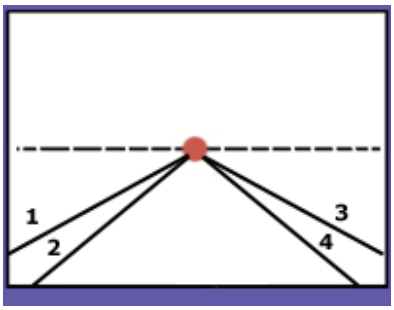
Line Three

Draw a line that connects the bottom right hand corner of your paper to the vanishing point, as you did on the left hand side for Line One on the previous page.



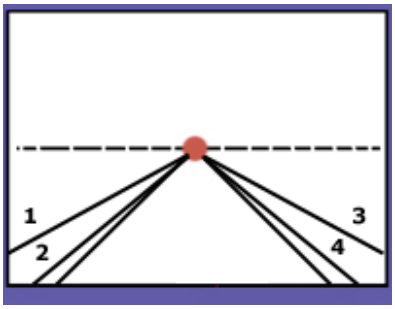
Line Four

Move your ruler a few inches over from the corner towards the center, and draw another line, connecting to the **vanishing point**. When you have finished, your drawing should look like the image on the right.



The lines that define the edges of our sidewalk are also **orthogonals** because they originate from the **vanishing point** and do not overlap.

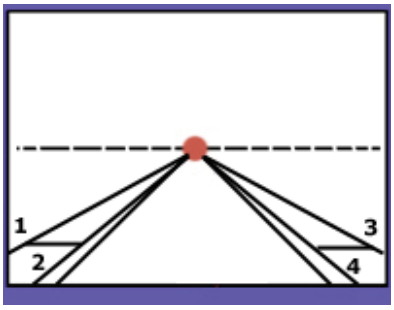
Our sidewalk is currently a bit basic. If you would like, you can add an inner curb by drawing an additional line or **orthogonal** about one half inch towards the center from the last line drawn on each side.



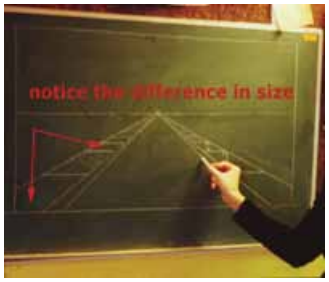
Step Four

Align the ruler so that it is parallel with the long side of your sheet of paper, as shown in the following picture.

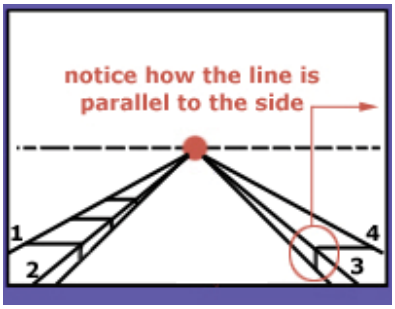
Draw a line that connects **Line 1** and **Line 2**, and a line that connects **Line 3** and **Line 4**.



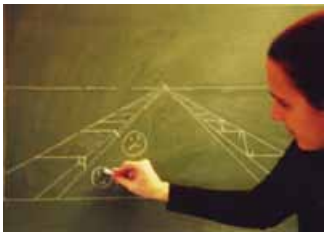
Move your ruler higher up the page and continue to draw additional lines that are parallel to the connecting lines you have just drawn. As you do this, though, **be sure to make the distance between the lines that you are drawing, smaller and smaller as they get closer to the horizon line**.



Now create a right angle between the lines that you have just drawn and the curb line. This line will be vertical and parallel to each other and the side edges of the paper.

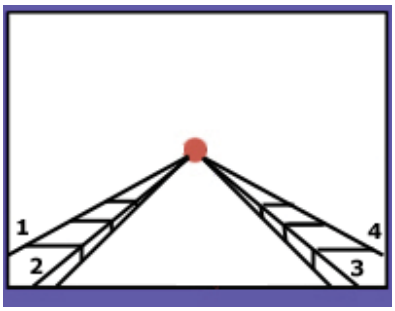


A very common mistake is to not draw the lines vertically, but to draw them diagonally, that is, at a slant. Be careful not to make this mistake.

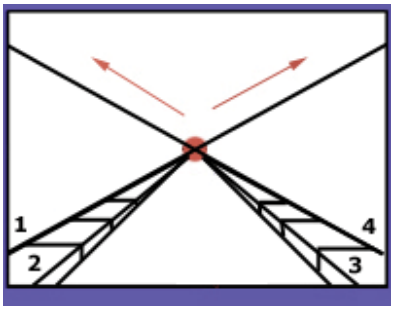


Step Five

Congratulations! you should now have two sidewalks, one on the left and one on the right. Let's now add some buildings along the side walk. When you look at a building, the horizon line is not visible through the building. To portray a realistic picture, you should therefore **erase the horizion line before drawing any buildings**.

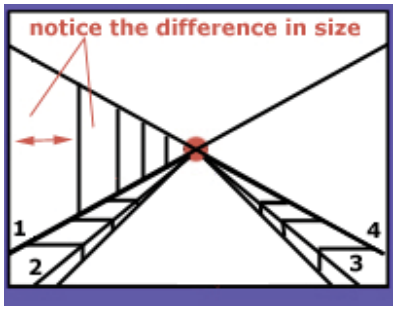


Next, we will extend the **Lines 1** and **Line 3** as indicated in the diagram below. The lines you have drawn that start at the vanishing point are **orthogonals**. The **orthogonals** above the **horizon line** will converge downward and those below the **horizon line** will converge upward. In your drawing objects above the **horizon line** will be drawn slanting down, and those above the **horizon line**will slant up. For example, the sidewalks you first drew were below the **horizon line**and they slant downwards. The buildings you are about to draw, are above the **horizon line** and slant upwards.



Now align the ruler so that it is parallel this time with the short side of your sheet of paper. Just as you did with the sections of the sidewalk, you will also continue to draw additional parallel lines, with smaller and smaller gaps between them as they approach the vanishing point.

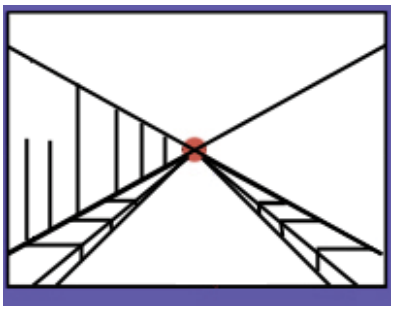
Notice that the buildings seem to grow smaller as they get closer to the vanishing point, just like the sidewalk.



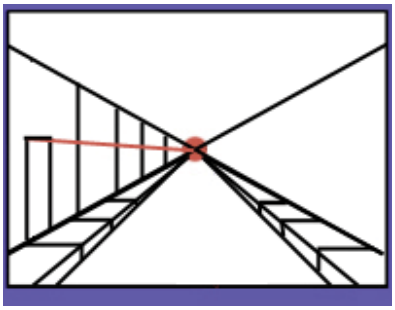
If this seems weird -- because we know that walls and buildings really don't slant, stand at the end of a wall and look down the wall a distance. You should see that the line that is created where the wall intersects with the roof, seems to be angling.

Step six

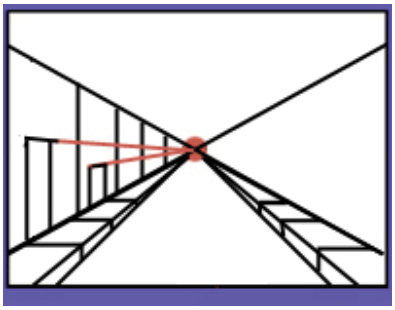
Let's add some doors to the buildings. The sides of the doors will be parallel, with the short side of the paper, just like the sides of the buildings. Draw the sides of a door as shown below.



Drawing the top of the door can be tricky. You will draw the top by placing one end of the ruler at the vanishing point and the other end of the ruler where you would like the top of the door to appear. If the top of the door is above the horizon line, the angle of the line will go up. If the top of the door is below the horizon line, the angle of the line will slope downwards. In our drawing the top of the door will angle upward.



Now add a door where the top of the door will angle downward so that you can see the difference.



Congratulations you have completed the first exercise and applied the basic principles or perspective to a drawing. In Part 2 of this workshop we will create a more complex composition using these same principles.

In part one of this workshop, you learned the basics of one-point perspective. Now let's look at some very famous paintings and see how each artist has employed these same principles to achieve perspective. Answer each question that follows the image. To verify your answer, position the mouse over the checkmark.

Image One
the Delivery of the Keys (www.uic.edu/depts/ahaa/classes/ah111/perugin1.jpg), by Perugino Pietro, a Sistine Chapel fresco completed in 1482

- Where is the **horizon line**?
  1. the base of the stairs in front of the dome building
  2. the base of the mountains
  3. the top of the mountains

- Where is the **vanishing point**?
  1. the top of the mountains
  2. the door of the dome building
  3. to the left of the door of the dome building to the right of the door of the dome building

- What object, person or thing is the **closest**?
  1. the man wearing the brown cloth with a white band
  2. the man offering the key
  3. the man to the right of the clock with his back to us

Image Two
School of Athens in the Vatican (www.vatican.va), by Raphael, a painting completed in 1510-11.

- Where is the **vanishing point**?
  1. above the first arch that appears to be the furthest away
  2. above the second arch that appears above the first arch
  3. behind the two figures walking in front of the first arch

- What is the **closest** object?
  1. the person with his chin on his hand on the stairs
  2. the person half sitting up on the stairs
  3. the figure on the far right in the gold robe, not facing us

Image Three

The Last Supper, by Leonardo Di Vinci.
http://www.sinera.org/tot-art/angles/expos/davinci/3.jpg

- Where is the **vanishing point**?
  1. the head of Jesus
  2. Behind the head of Jesus
  3. at the feet of Jesus

- What is the **closest** object?
  1. the tablecloth
  2. the dinner guests
  3. the architecture

Now that you have had a chance to utilize perspective in your own drawing, and to see how other artists have used perspective, let's try a more challenging exercise where you will create a more complex composition.

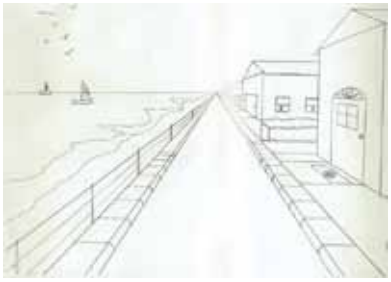
In this exercise, you can draw anything, but you must include the following:

- a man made object
- a vanishing point
- a horizon line
- objects that are close and objects that are further away

and apply the following principles you have learned in regards to:

- overlap
- size difference
- detail difference
- object placement

Here are a few examples of drawings that use the basic principles of perspective:



When you have finished your drawing, you may want to apply color to the image.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Congratulations you have finished the workshop on Perspective Basics which should help you achieve more convincing drawings in the future!
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~