

DRAW 3-D

A step-by-step guide to perspective drawing

by
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Introduction

3-D means 'three dimensional.' The surface you draw on is two-dimensional. It goes side to side and up and down. That's easy. How do you add depth to your drawings? That's a little tricky.

Fortunately, the basics are pretty simple, and you won't need much beyond the basics to make some pretty cool drawings. Your drawing experience will take on a whole new dimension. Literally.

In this book, I'll teach you the basics of linear perspective, a technique of drawing first developed almost 500 years ago during the Renaissance. Some of it looks complicated, and for good reason - some of it is complicated! The clever artists who figured this out weren't trying to make it simple. They were trying to make their pictures look real.

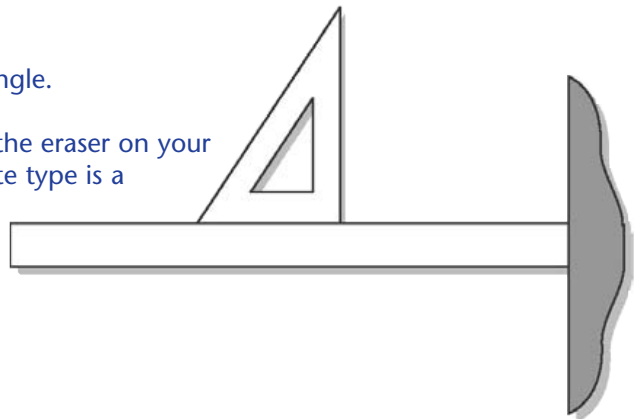
You'll need a few supplies, some patience, and a positive attitude. After many years of drawing, I sometimes mess up perspective drawings. You can probably expect a few disasters as you learn ... just smile and go with the flow. After all, with each mistake you learn another way *not* to do it!

The best way to learn is to do, so grab a pencil and get started!

What you need ...

Find a comfortable place to draw – with decent light, so you can see what you're doing.

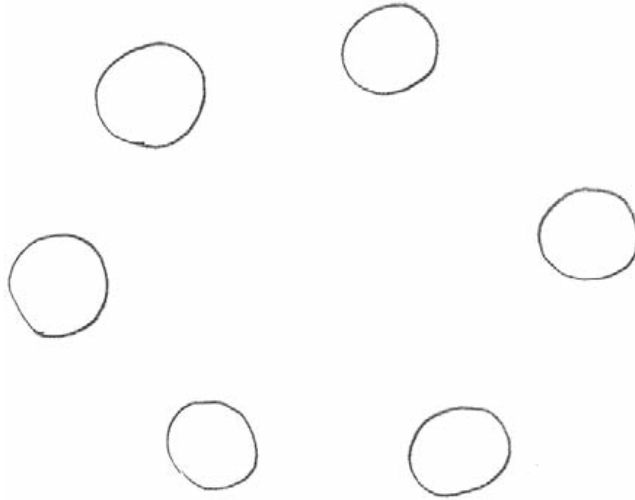
- 1** A mechanical pencil works best for this type of drawing.
- 2** Have a ruler or straightedge handy. It's very difficult to draw in perspective without one.
- 3** If you have one, use a T-square and triangle.
- 4** You'll probably want a separate eraser (the eraser on your pencil will disappear quickly). My favorite type is a kneaded type, available in art supply and craft stores
- 5** Patience: pay attention to the concepts. Do plenty of practice drawings!



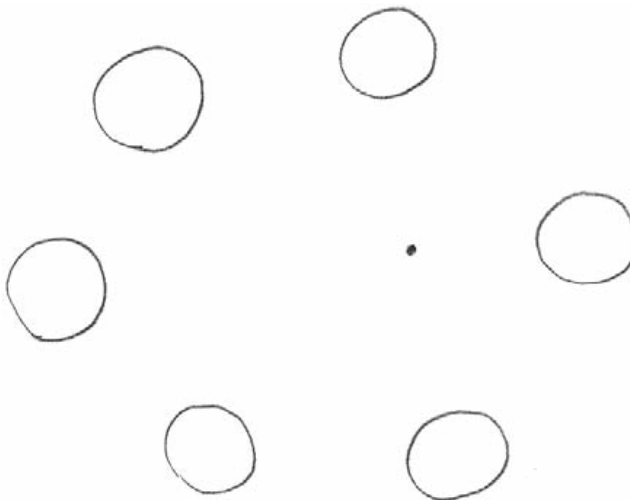
Contents

The starting point	4
Your name in 3-D	8
Draw a box in 3-D	10
Two boxes, one vanishing point	11
Four boxes, one vanishing point	13
More depth with a vanishing point	14
The Horizon (eye level)	15
Perspective in action: a road	16
Perspective in action: an interior	26
Dividing spaces evenly	32
A bridge	34
Two-point perspective	36
A ramp	38
Vanishing points and camera lenses	42
Horizon and eye level	44
Curved objects in 3-D	46
A 3-D checkerboard	48
Perspective in action: a house	50
Adding shadows in 3-D	55
More shadows in 3-D	58
3-point perspective	60
Another way to divide space	61
4-point perspective?	62
Multiple vanishing points	63

The starting point

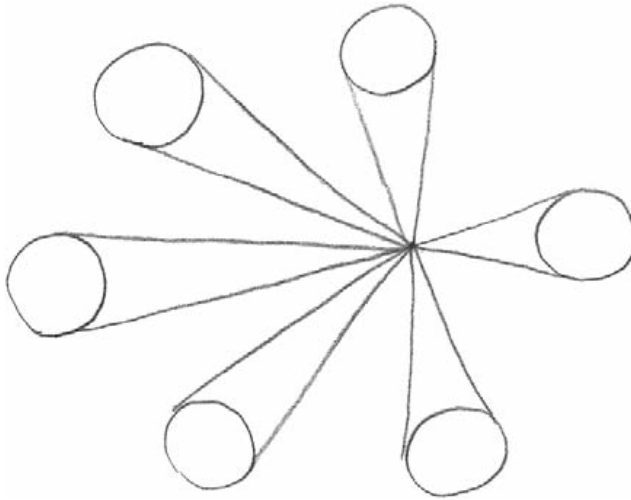


1 Draw six circles.



2 Make a dot somewhere in the middle of the circles.
Congratulations - you've just drawn a vanishing point!

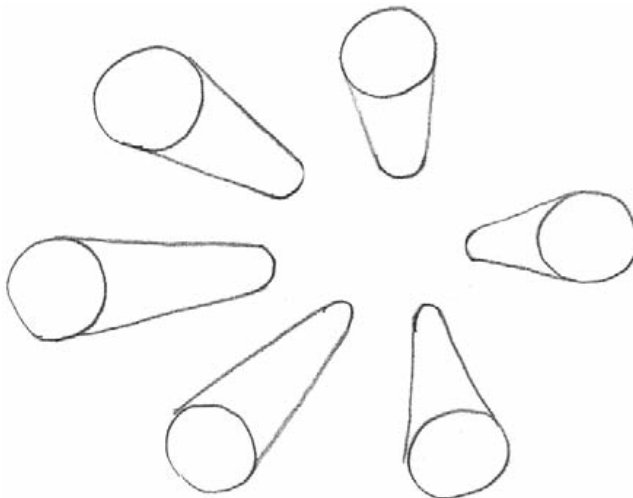
Vanishing point: where lines going away from you in the drawing come together, or converge.



- 3** Using a ruler, make straight lines from the dot to the outside edges of the circles.

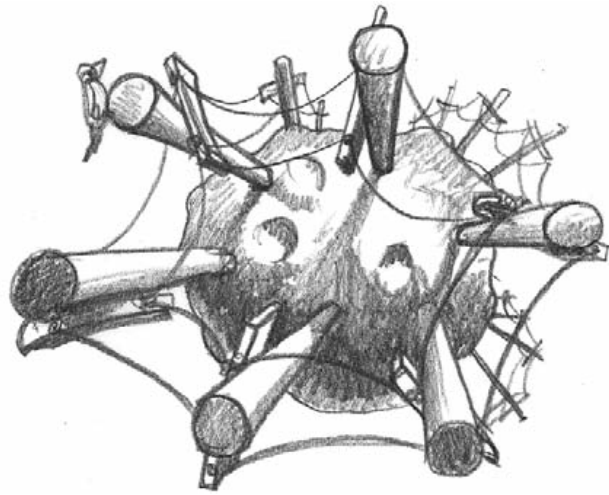
Look at your drawing. Does it look like something going far away from you, or rushing toward you?

That's the whole point of the vanishing point.

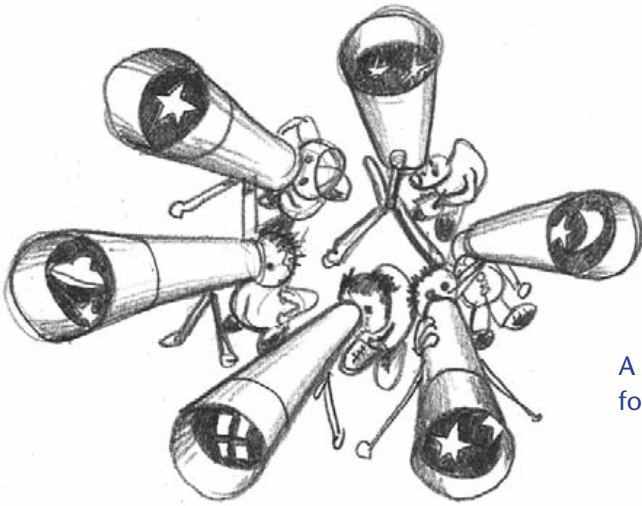


- 4** Now make curved lines to 'chop off' the far ends. Erase the dot and lines close to it.

So what have you drawn?



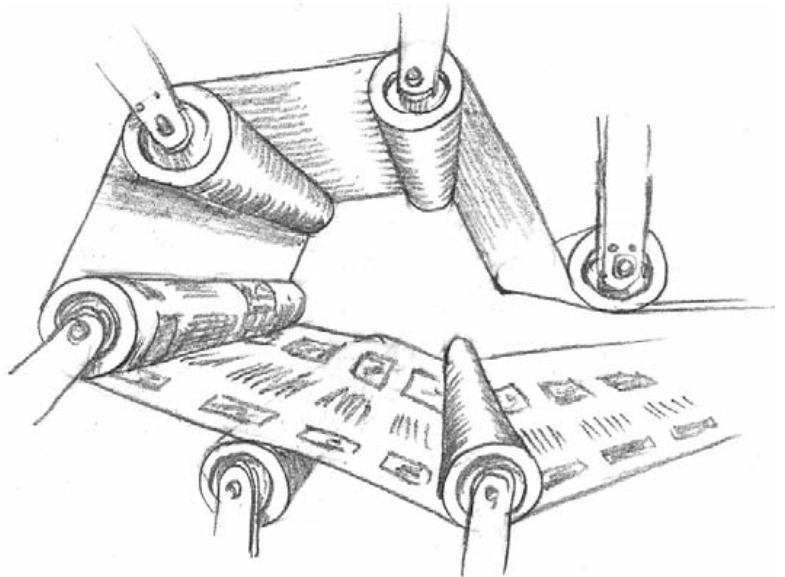
Power poles on a distant asteroid?



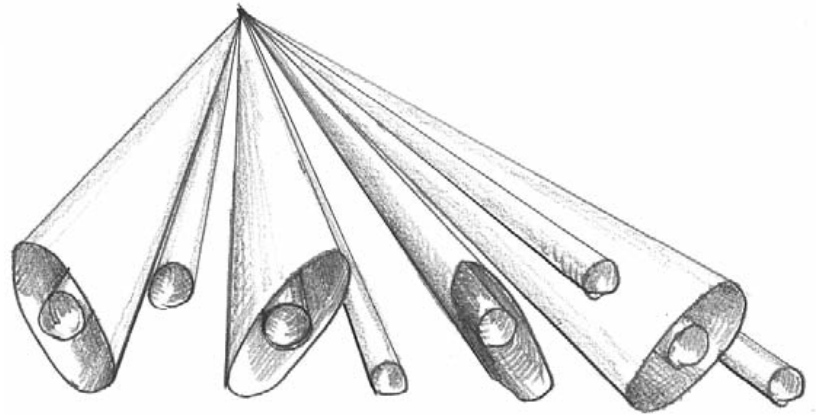
A convention of astronomers searching for power poles on a distant asteroid?

A printing press, rolling out the latest news about a convention of astronomers discovering power poles on a distant asteroid?

Or is it something else? Whatever it is, you're now drawing in 3-D!



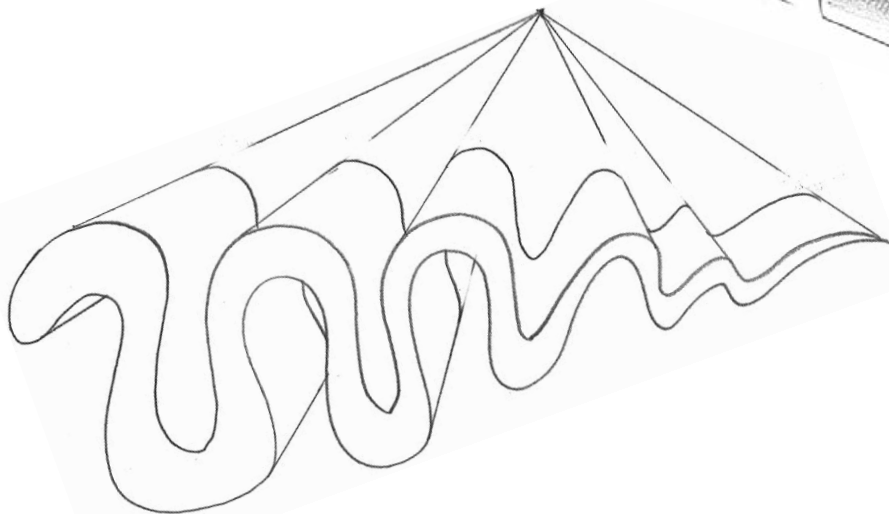
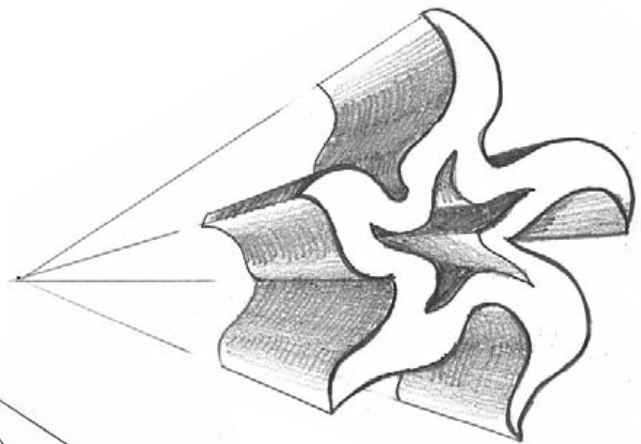
Contents



On your own:

Instead of just circles, make other shapes, and practice making lines to a vanishing point.

Then try 'chopping off' the far end. Copy my examples or make up your own. Have fun!



Contents

Your name in 3-D

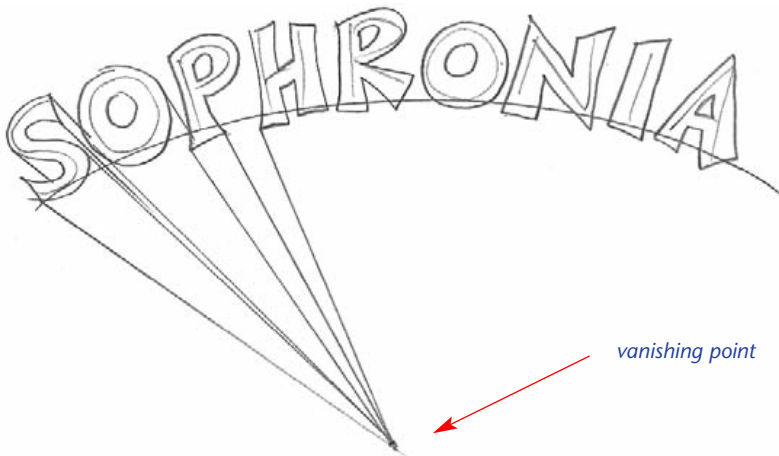
If your name is Sophronia, you can just trace this one. Otherwise, you'd better follow the instructions.



- 1 Draw a curved line. Lightly write your name on it.



- 2 Make the letters wider.



- 3 Add a vanishing point. Starting at one end, using a straightedge, make lines to connect every edge and angle with the vanishing point.



4 Make sure you've got every line in place!



5 'Chop off' the backs of each letter by carefully copying the shape of the front.



6 Erase guide lines you no longer need.

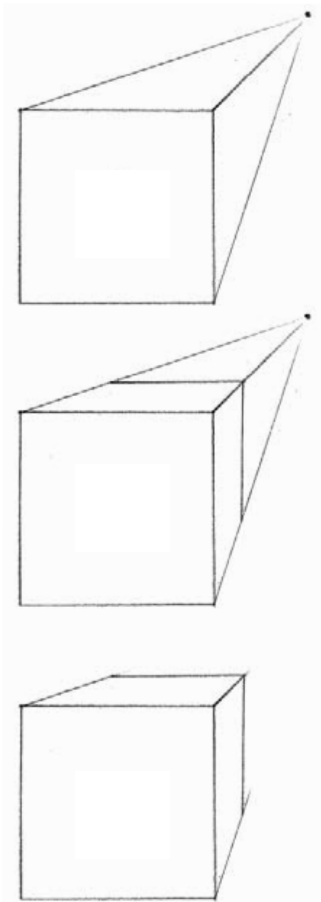


On your own

Add shading to your letters. If your name is Sophronia, and you simply traced this, do another, using your best friend's name.

Contents

Draw a box in 3-D



← vanishing point

1 Draw a square. Make a small dot for the vanishing point, and connect the three corners to it with straight guide lines.

2 Repeat the shape of the front to make the back – one horizontal line, one vertical.

3 Erase guide lines.

Lines and lines

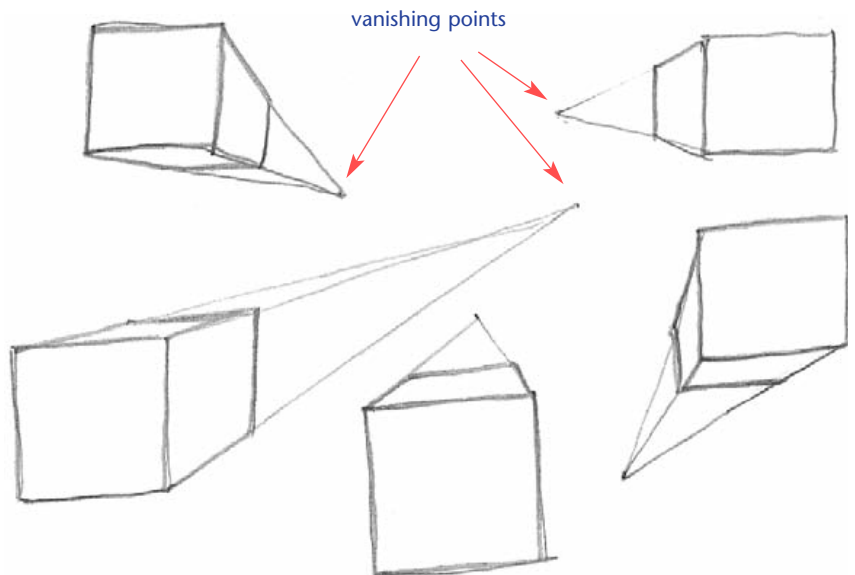
Guide lines help you set up your drawing. Usually, you'll erase them later, so draw guide lines lightly!

Horizontal lines go from side to side, like the *horizon*.

Vertical lines go up and down.

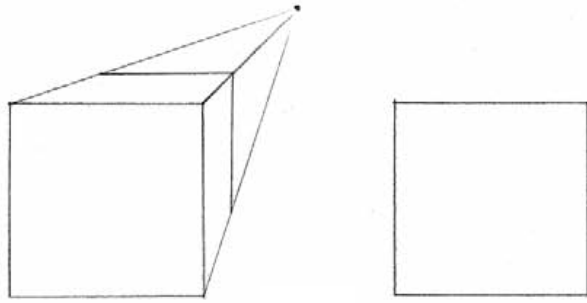
On your own:

Practice drawing boxes with the vanishing point in different directions. Also place some vanishing points closer to the box, and place some farther away.

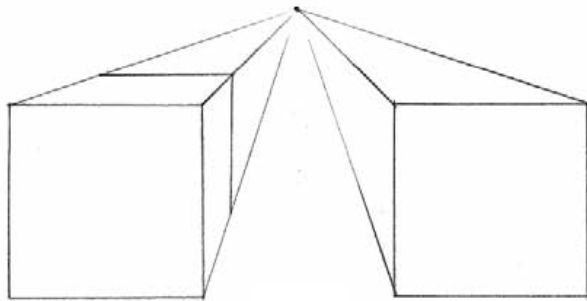


Two boxes, one vanishing point

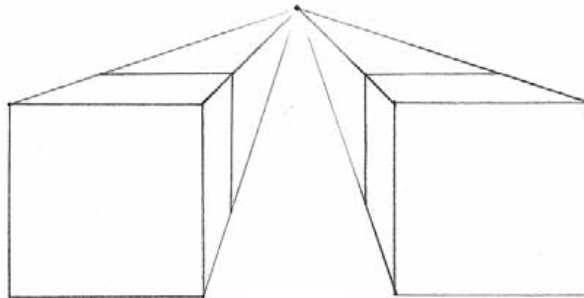
- 1 Draw a box with a vanishing point like the one on the previous page. Add another square next to it.



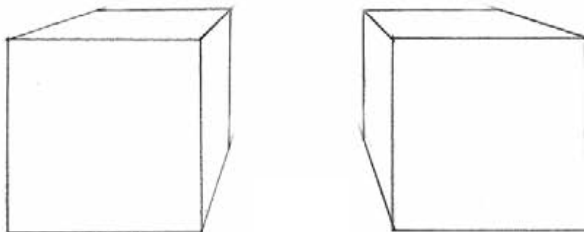
- 2 From three corners of the second square, draw straight guide lines to the vanishing point.



- 3 Add horizontal and vertical lines for the back edges of the second box.



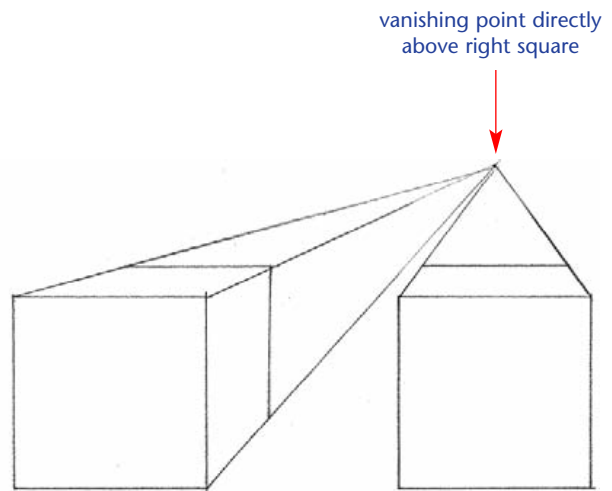
- 4 Erase guide lines. Nice!



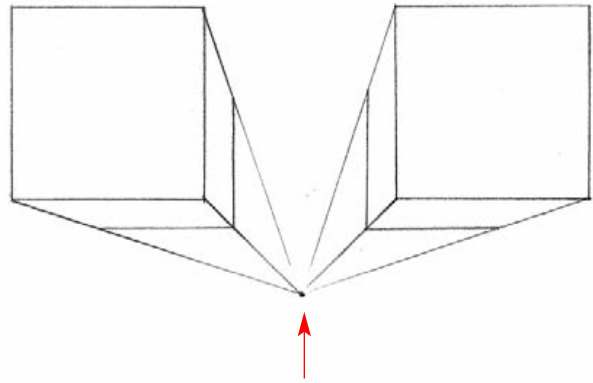
Practice!

- 1 Draw two squares with a vanishing point directly above one of them. Add guide lines and back edges.

LOOK! One box needs only two guide lines instead of three – and only one back edge shows.



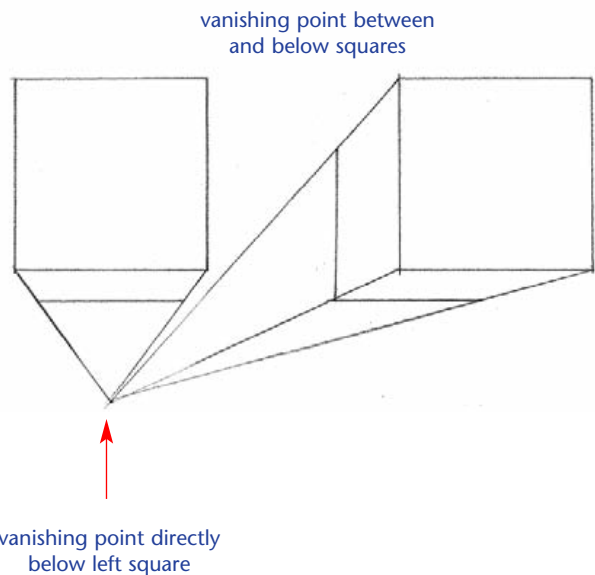
- 2 Draw two squares with a vanishing point below and between them. Add guide lines and finish.



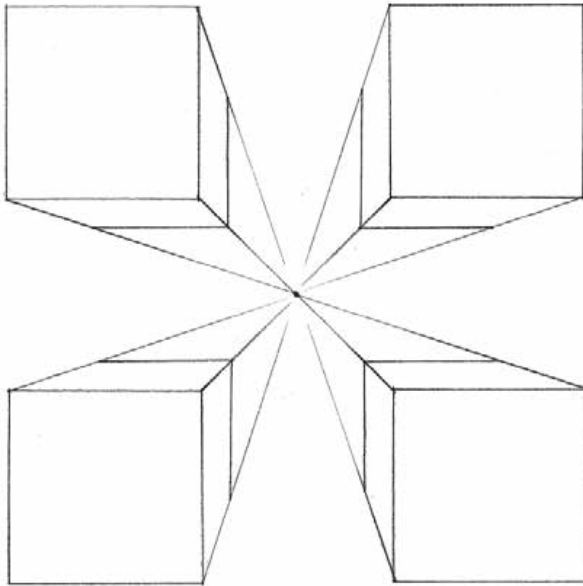
- 3 Draw two squares with a vanishing point directly below one of them. Add guide lines and finish.

Can you see how this is the same as the first drawing, only upside-down?

It works the same, no matter where you place the vanishing point.



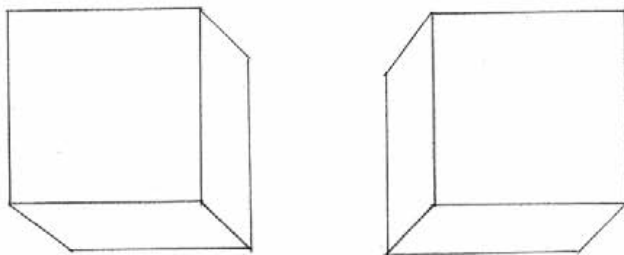
Four boxes, one vanishing point



Draw four squares with a vanishing point directly in the middle of the group.

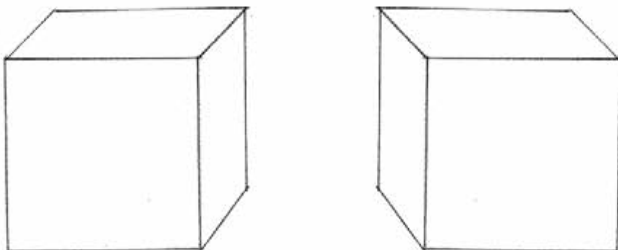
Add guide lines and back edges.

Erase your guide lines. (I've left mine to show you how I drew them.)

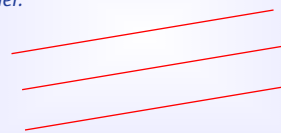


Now compare your vanishing point drawing to four boxes drawn using parallel lines to create depth. Can you see the difference?

Parallel lines look OK with one box, but with several boxes the vanishing point makes the drawing look a lot better.



Parallel lines go in the same direction. Unlike the lines to the vanishing point, parallel lines will never run into one another.

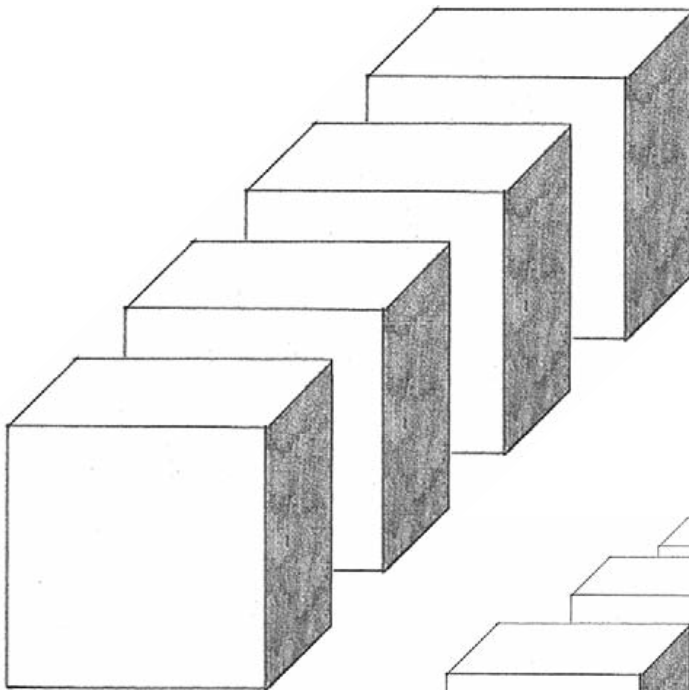
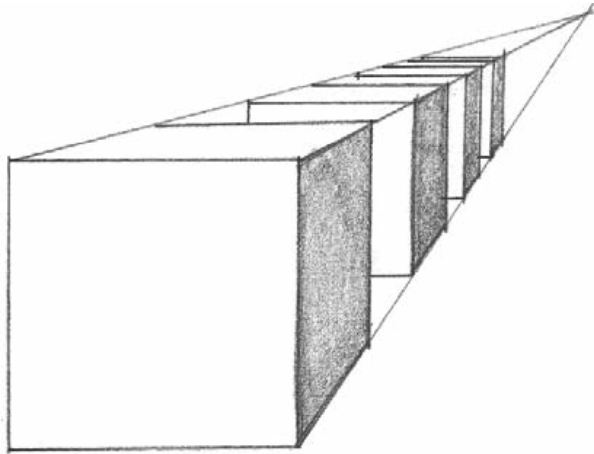


More depth with a vanishing point

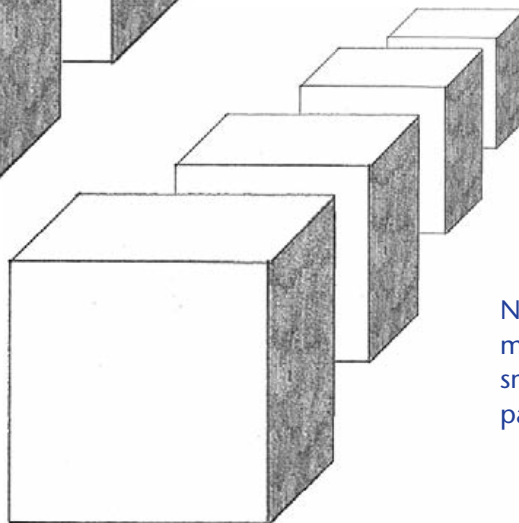
Practice!

Draw a box in perspective, using a vanishing point. Now add a second box behind it, using the same vanishing point guide lines. Then add another box, and another.

Notice how much smaller they get. This example really creates the feeling of a picture going into the distance.

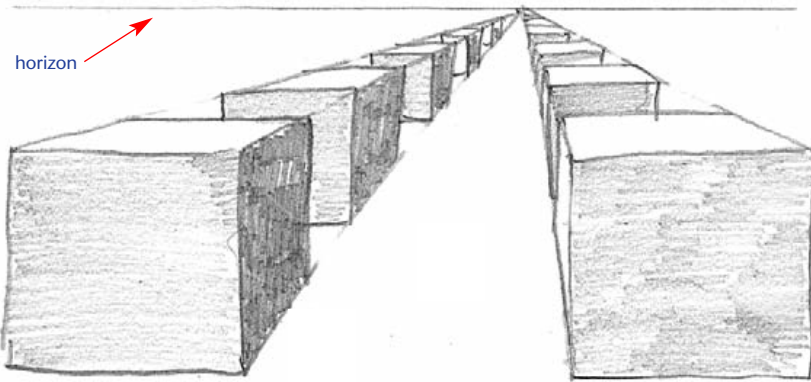


Look at the difference between four boxes drawn to a vanishing point, and four boxes drawn with *parallel* lines. Though all four boxes are exactly the same size, the most distant one actually looks bigger, because your eye expects to see them in perspective.

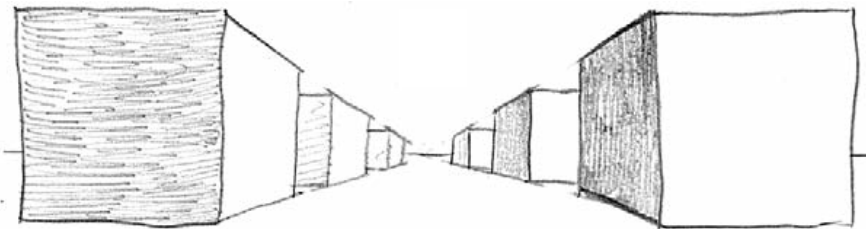


Now compare the effect of simply making the more distant boxes smaller, while still drawing with parallel lines. It just looks weird!

The Horizon (eye level)



Perspective drawing started with buildings, which sit on the ground. If you follow the ground level for as far as you can see, you come to the horizon, where sky and earth appear to meet.



The horizon also represents your eye level in the drawing. If you walked up to the blocks in this drawing, where would your eye be? How much taller are the blocks than you?



Even if you can't actually see it, the horizon is always there. To draw a building like the one at the left, you have to know where the horizon lies.

If you look closely, you can see a dotted line in the drawing representing the horizon.

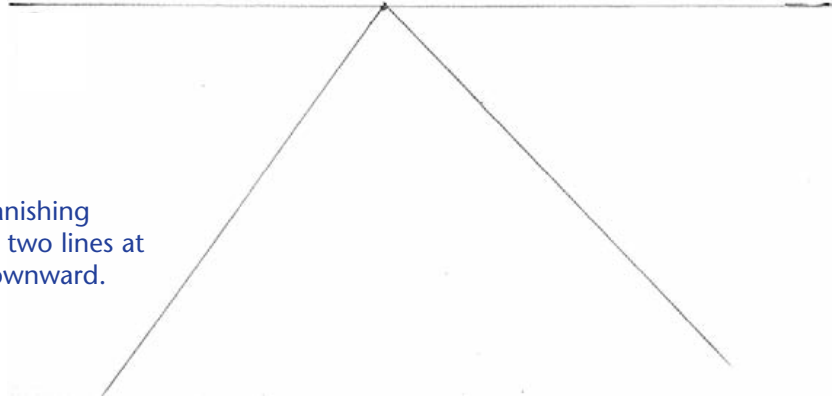
Look through magazines for pictures with buildings in them. Look for perspective at work. Locate the horizon and vanishing points.

Perspective in action: a road

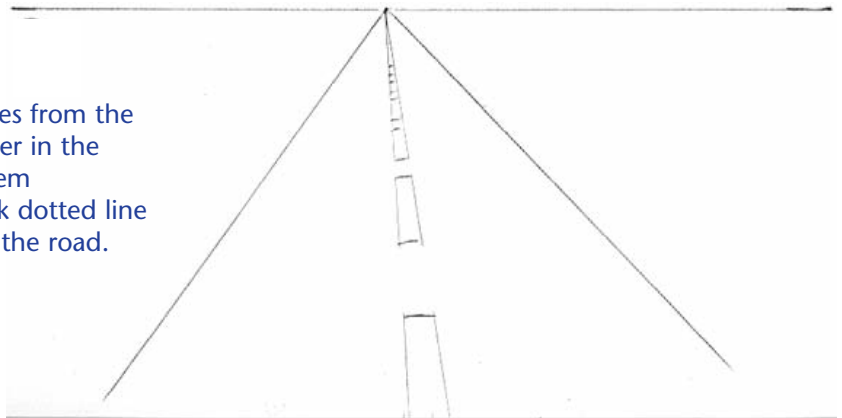
1 Draw a horizontal line for the horizon near the middle of your paper. Leave plenty of room above and below it. Place a vanishing point near the center of the horizon.



2 From the vanishing point, draw two lines at an angle downward.



3 Draw two more very light lines from the vanishing point, close together in the center of the road. Divide them horizontally to make the thick dotted line running down the middle of the road.



In this photo, you can see the lines converging on a vanishing point.

I wanted to take a picture of a real road, but that seemed a little dangerous. So instead of a real road, you get a railroad. The principle remains the same.



We hope you've enjoyed this preview!

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