

Our Mathematical Senses

The Geometry Vision

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Lecture - 09

Video 2B: demo: drawing the third perspective view

Remember, a straightedge is literally just a straightedge. You could use any straightedge you find lying around in your house, like the edge of a book, or of your phone, or the backside of a knife, or even just a ruler. So let's complete the third perspective view of the tile floor using our straightedge. Since this quadrilateral tile is actually a perspective view of a square, its opposite edges are actually parallel in space. So if we extend them, we should get two vanishing points, one for this pair of opposite edges. And another for this other pair.

Connecting these two vanishing points gives us the horizon line. How can we proceed from here? How can we locate the corner points of the neighboring tiles? Take a moment to pause and think. Is there any line we can draw which will help us out? There's actually another family of parallel lines hiding in plain sight. It's the diagonal lines of the tiles.

This diagonal family is also parallel to the floor plane, so it must have a vanishing point somewhere on the horizon line. And by drawing this one diagonal, we can locate this third vanishing point, to which all the lines in this diagonal family are guaranteed to converge. We can now draw new diagonals, and in the process, reveal the corner points of the neighboring tiles. Using our original two vanishing points, we can now draw the edges of these new tiles. We can continue this process, drawing more diagonals to reveal more corner points, and connecting these corner points to the original vanishing points.

Why don't you also give it a try, and see how far you can go? Thank you.