



Making Art Work

Great art looks good no matter where you're standing, but for art with perspective there's a special point where your view of the scene will match that of the artist. He or she uses geometry to maintain perspective, while the rest of us can use algebra and geometry to find exactly where to stand so that the flat image on the two-dimensional surface expands into the three-dimensional world of the artist. For this printout, unfortunately, your eye needs to be an uncomfortable three inches away from the red dot. This helps explain why art looks better in museums than in books and why large-screen movie theaters are so popular.

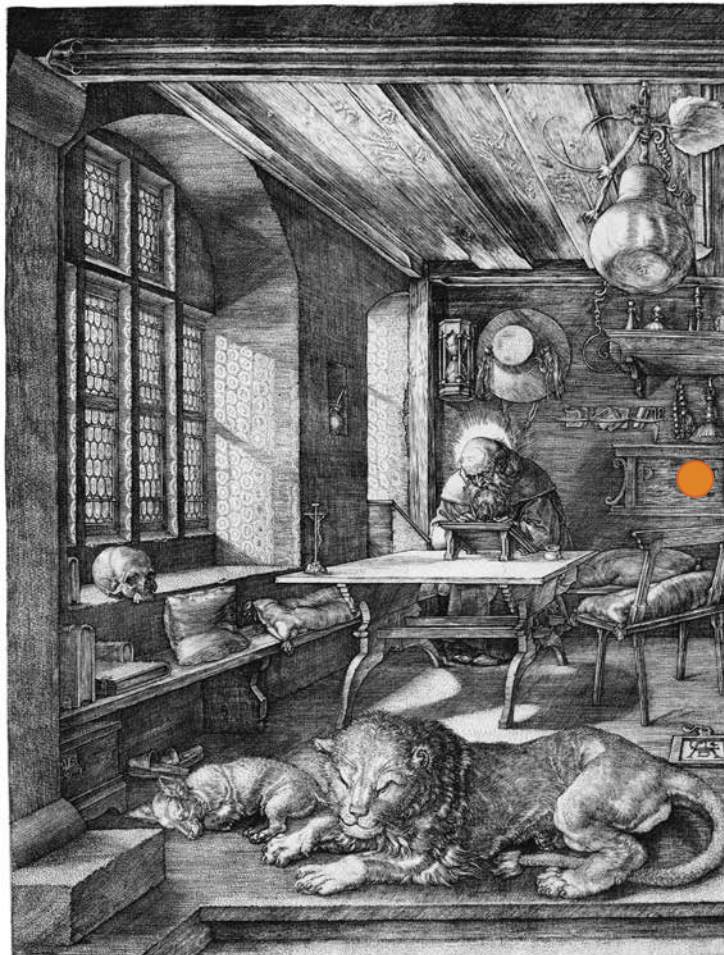


Image *St. Jerome in His Study*, by Albrecht Dürer.

Thinking about perspective led to *projective geometry*, in which “parallel” lines meet “at infinity”. That may sound strange, but ideas from projective geometry are useful in art, computer vision, and in determining where the camera was for a given photo. Perhaps even stranger but remarkable: Theorems in projective planes remain true when two of the most fundamental ideas, point and line, are interchanged.

For More Information:

Viewpoints: Mathematical Perspective and Fractal Geometry in Art, Marc Frantz and Annalisa Crannell, 2011.

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