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Projective Geometry as a Vehicle for Schooling the Imagination.

The ability to form geometric images in one’s mind, to hold them, and to set them in movement is a skill that is often unnoticed, but which is crucial for mathematical thinking. This skill can be trained. It is best developed not by just showing pictures, but by always asking the listener to imagine more than what you’ve shown them so far. The students become raptly engaged. This talk will use projective geometry as an example of how this can be done. The subject lends itself particularly well to this purpose, especially if the students are asked to make a lot of drawings. One makes a drawing and then watches it transform as certain points move off to the infinite and return on the other side. (Received September 20, 2009)