As quadratic extension fields, the complex numbers and square-order finite fields share many expected similarities: a representation as a two-dimensional vector space over a ground field, a representation that facilitates multiplication, roots, and powers, and an involutory automorphism that fixes the ground field. Obvious differences also abound, including aspects of continuous vs. discrete structures and algebraic closure vs. the need for further extensions. These properties, along with some less familiar connections, will be provided. The classical projective planes coordinatized by these fields, and the impact of the fields upon certain geometric configurations in the planes, will be highlighted.