

## Connections within Rectangular & Annular Celtic Knots and Star Polygons

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We explain what Celtic knots are and investigate various properties about them. For rectangular knots, we discuss the number of strands in a given knot, how we know if a knot has loose ends or rounded corners, and the length of the longest diagonal in a knot. We explain methods for calculating the number of strands in a rectangular knot using modular arithmetic. We describe how a rectangular knot can be transformed into an annular knot by connecting the opposite sides to each other. We explore why the number of strands in an annular knot sometimes differs from the number of strands in its rectangular counterpart. We also discuss the similarities and differences between annular knots and star polygons. In the future we hope to use our work on rectangular & annular knots as well as star polygons as a tool for high school students to explore and apply concepts from trigonometry, geometry and symmetry.