Knot Link Surfaces

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I chose to investigate knot link surfaces in the field of topology/knot theory because it seemed interesting and I saw a similar thing knot surfaces discussed. The question is can a surface exist whose boundary is a knot link which is not an unlink and whose knots are not unknots. To investigate this question I had to prove there is such a surface exist such as finding a surface and showing it has these properties or prove that its impossible to make such a surface so I made a physical model and revised new surfaces until a surfaces could be made for the boundary then used Reidemeister moves to show the boundary is indeed a non trivial knot link. As it turns out such a topology does exist. This further expands the research of topology and has application in material science and biology to make new materials and manipulate biological processes.

Awards Won: