Abstract: Nearing the dawn of the 20th century, David Hilbert collected a list of 23 problems he believed were of the utmost importance to the mathematical world. In the very same year that Hilbert published his problems, his student, Max Dehn, provided an incredible solution to the third on the list. Hilbert’s third problem asks when two polyhedra of the same volume can be sliced into pieces and rearranged into each other. In two dimensions, it is not too hard to show that every two polygons of the same area are indeed "scissors-congruent," but is this true in three dimensions? A trip into the world of tensors will allow us to discover Dehn’s idea for how to answer this question.