

Heather Graham
Screws vs. Nails: The Practical Test

The purpose of this investigation was to compare the shear strength of nails and screws. Both are examples of simple machines that serve the purpose of making work easier. A nail is simply a type of wedge, otherwise a double-edged inclined plane; whereas, a screw is a type of inclined plane wrapped around a post. The results of this investigation would be beneficial to those involved in carpentry and the construction industry, as both nails and screws are often used. Since screws have a larger surface area in contact with the material it is holding, it is hypothesized that screw would have a greater shear strength. A device was constructed to test this hypothesis that provided a uniform test of nails and screws in an attempt to reduce other variables. The results of the investigation supported the hypothesis, but at a significant cost. Screws are generally more expensive than nails, despite their much greater shear strength.