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Throughout the national decline in mathematics enrollments, the mathematics program at Salisbury University has grown slightly with majors remaining steady and minors increasing. A possible contributing factor to this success is the discrete mathematics course taken by students early in the program which introduces them to abstract mathematical thinking. A first course in discrete mathematics provides a place where many mathematical connections can be made among counting, mathematical induction, set theory, graph theory, logic, etc. Any activities that engage students in a more constructive or active role fosters interest in and understanding of the mathematical content. We will show a nifty example where, because of varying problem solving strategies used by the textbook author verses the instructor, students were led to discover and later prove a fundamental result using induction. This result leads to an alternative method of proving and understanding the solution to the most difficult of the four basic "how many ways can we choose  $n$  from  $k$ " counting questions. We will discuss our approach to introducing students to discrete mathematical structures while giving them a deep sense of the interconnectedness of mathematical ideas. (Received September 21, 2005)