

Course: Permutations and Combinations

Teacher: Ms. Little

Grade Level: High School

Overview: This course is an introduction to permutations and combinations. We will answer questions such as: “I own five different shirts, four different pairs of trousers and two sets of shoes. How many different outfits could you see me in?” And “How many flushes are possible in poker?” Permutation and Combinations problems show up a lot in math competitions, and at more advanced levels Permutations and Combinations are also used to determine probability.

Topics to be covered:

- The Multiplication Principle
- Permutations
- Factorials
- The Labeling Principle
- Combining the Multiplication and Labeling Principles
- Poker Hands Probability
- The Stocking Property
- Pascal’s Triangle
- The Binomial Theorem