Common Core Standards - Resource Page

The resources below have been created to assist teachers' understanding and to aid instruction of this standard.

Domain	Standard: S.CP.2 - Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent. *(Modeling Standard)
Conditional Probability and the Rules of Probability **Understand independence and conditional probability and use them to interpret data**	Questions to Focus Learning What is an independent event? How can it be determined if two events are independent? The occurrence of some events can change the probability other events occur. Student Friendly Objectives *Reasoning Targets* I can use examples of random phenomena to show that two events are independent if the probability of their intersection is the product of their probabilities. I can use examples of random phenomena to show that if the product of two events is the probability of their intersection, the two events are independent. Vocabulary event dependent events independent events intersection joint probability probability Teacher Tips It is often helpful to develop the concept in S.CP.3 before establishing the independence rule in S.CP.2. The rule P(A) * P(B) = P(A and B) for independent events follows generally from P(A|B) = P(A and B)/P(B) since P(A|B) = P(A). Build on work with two-way tables from S.ID.5 to develop understanding of conditional probability and independence.

Vertical Progression

S.CP.3 - Understand the conditional probability of A given B as P(A and B)/P(B), and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B. *(Modeling Standard)

S.CP.4 - Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results. *(Modeling Standard)

S.CP.5 - Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer. *(Modeling Standard)

The above information and more can be accessed for free on the Wiki-Teacher website.
Direct link for this standard: S.CP.2