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.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)
Conditional Probability and the Rules of Probability **Understand independence and conditional probability and use them to interpret data**	Questions to Focus Learning What does it mean to have a conditional probability? How is conditional probability calculated? The probability of an event occurring may depend on the occurrence of another event. Student Friendly Objectives *Knowledge Targets* I can define independence and dependence between two events, A and B. I can define conditional probability. *Reasoning Targets* I can use a variety of methods to calculate probabilities (e.g., tree diagrams, venn diagrams and formulas). I can determine the probability of event A given event B by calculating the conditional probability. I can prove two events, A and B, are independent by applying the definition of conditional probability. I can describe the meaning of independence in terms of the formula P(A) = P(A|B). Vocabulary A given B conditional probability dependent events independent events joint probability

	Teacher Tips This standard should be taught in conjunction with S.CP.2. Build on work with two-way tables from S.ID.5 to develop understanding of conditional probability and independence. Vertical Progression 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) 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.3