Standard #: MAFS.912.S-CP.1.5

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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. ★

	Grade: 912
Cluster: Understand independence and conditional probability and use them to interpret data. (Algebra 2 - Additional Cluster) - Clusters should not be sorted from Major to Supporting and then taught in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.	**Date Adopted or Revised:** 02/14
Content Complexity Rating: Level 2: Basic Application of Skills & Concepts - More Information	**Date of Last Rating:** 02/14
Status: State Board Approved	

Related Courses

Course Number	Course Title
1200330:	Algebra 2 (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
1200340:	Algebra 2 Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
1207310:	Liberal Arts Mathematics (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
1210300:	Probability & Statistics with Applications Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
0800320:	First Aid and Safety (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
1200335:	Algebra 2 for Credit Recovery (Specifically in versions: 2014 - 2015, 2015 - 2019 (course terminated))

Related Access Points

Access Point

Access Points Number	Access Points Title
MAFS.912.S-CP.1.AP.5a:	Select or make an appropriate statement based on real-world examples of conditional probability.

Related Resources

Problem-Solving Task

Name	Description
Breakfast Before School:	The purpose of this task is to assess a student's ability to explain the meaning of independence in a simple context.
Rain and Lightning:	This problem solving task challenges students to determine if two weather events are independent, and use that conclusion to find the probability of having similar weather events under certain conditions.
The Titanic 2:	This task lets students explore the concepts of probability as a fraction of outcomes and using two-way tables of data.
The Titanic 3:	This problem solving task asks students to determine probabilities and draw conclusions about the survival rates on the Titanic by consulting a table of data.
Unexpected Answers:	This lesson is designed to introduce students to statistical situations where the probabilities or outcomes might not be what is first expected. The lesson provides links to discussions and activities motivated by the idea of unexpected answers. Finally, the lesson provides links to follow-up lessons designed for use in succession with an introduction to probability and unexpected answers in probability.

Lesson Plan

Name	Description
Casino Royale:	This lesson will use different games of chance to understand the difference between dependent and independent conditional probability.
	This lesson unit is intended to help you assess how well students are able to: • make sense of a real life situation and decide what math to apply to the problem

Medical Testing:	• understand and calculate the conditional probability of an event A, given an event B, and interpret the answer in terms of a model • represent events as a subset of a sample space using tables, tree diagrams, and Venn diagrams • interpret the results and communicate their reasoning clearly
Modeling Conditional Probabilities 2:	This lesson unit is intended to help you assess how well students understand conditional probability, and, in particular, to help you identify and assist students who have the following difficulties representing events as a subset of a sample space using tables and tree diagrams and understanding when conditional probabilities are equal for particular and general situations.

Teaching Idea

Name	Description
Conditional Probability and Probability of Simultaneous Events:	This lesson is designed to further students' practice with probability as well as introduce them to conditional probability and probabilities of simultaneous independent events. The lesson provides links to discussions and activities related to conditional and simultaneous probabilities as well as suggested ways to integrate them into the lesson. Finally, this lesson provides links to follow-up lessons designed for use in succession with this one.

Perspectives Video: Expert

Name	Description
Let's Make a Math Deal:	Should I keep my choice or switch? Learn more about the origins and probability behind the Monty Hall door picking dilemma and how Game Theory and strategy effect the probability.

Assessment

Name	Description
Sample 1 - High School Algebra 2 State Interim Assessment:	This is a State Interim Assessment for 9th-12th grades.
Sample 2 - High School Algebra 2 State Interim Assessment:	This is a State Interim Assessment for 9th-12th grades.
Sample 3 - High School Algebra 2 State Interim Assessment:	This is a State Interim Assessment for 9th-12th grades.

Text Resource

Name	Description
The Logic of Drug Testing:	This informational text resource is intended to support reading in the content area. This article explores the reliability of drug tests for athletes, using mathematics. The author attempts to address this issue by relating drug tests to conditional probability. Throughout the text, various numbers that affect the calculation of a reliable probability are discussed. Numbers such as test sensitivity, test specificity, and weight of evidence are related to Bayes' theorem, which is ultimately used to calculate the conditional probability.
Understanding Uncertainty: What Was the Probability of Obama Winning?:	This informational text resource is intended to support reading in the content area. The article examines various factors that changed the uncertainty of whether Barack Obama would win the 2008 election. Specifically,the article discusses probability, the science of quantifying uncertainty. The article questions common methods for assessing probability where symmetrical outcomes are assumed. Finally, the author explains how to use past evidence to assess the chances of future events.

Student Resources

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The Titanic 2:	This task lets students explore the concepts of probability as a fraction of outcomes and using two-way tables of data.
The Titanic 3:	This problem solving task asks students to determine probabilities and draw conclusions about the survival rates on the Titanic by consulting a table of data.

Parent Resources

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The Titanic 2:	This task lets students explore the concepts of probability as a fraction of outcomes and using two-way tables of data.

The Titanic 3:	This problem solving task asks students to determine probabilities and draw conclusions about the survival rates on the Titanic by consulting a table of data.