Standard #: MAFS.912.S-CP.1.4

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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. ★

	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))
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.4a:	Select or make an appropriate statement based on a two-way frequency table.

Related Resources

Lesson Plan

Name	Description
Comedy vs. Action Movies Frequency Interpretation:	Using a completed survey of male and female student interest in comedy vs. action movies, the students will create a two-way frequency table using actual data results, fraction results, and percent results. The students will then act as the movie producer and interpret the data to determine if it is in their best interest to make a comedy or action movie. As the Summative Assessment, the student will take on the job/role of an actor/actress and interpret the data to support their decision.
Medical Testing:	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 • 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 1: Lucky Dip:	This lesson unit is intended to help you assess how well students are able to understand conditional probability, represent events as a subset of a sample space using tables and tree diagrams, 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.

Problem-Solving Task

Name	Description
How Do You Get to School?:	This task requires students to use information in a two-way table to calculate a probability and a conditional probability.
The Titanic 1:	This task asks students to calculate probabilities using information presented in a two-way frequency table.
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.

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.

Educational Software / Tool

Name	Description
Two Way Frequency Excel Spreadsheet:	This Excel spreadsheet allows the educator to input data into a two way frequency table and have the resulting relative frequency charts calculated automatically on the second sheet. This resource will assist the educator in checking student calculations on student-generated data quickly and easily. Steps to add data: All data is input on the first spreadsheet; all tables are calculated on the second spreadsheet 1. Modify column and row headings to match your data. 2. Input joint frequency data. 3. Click the second tab at the bottom of the window to see the automatic calculations.

Student Resources

Name	Description
The Titanic 1:	This task asks students to calculate probabilities using information presented in a two-way frequency table.
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.
Two Way Frequency Excel Spreadsheet:	This Excel spreadsheet allows the educator to input data into a two way frequency table and have the resulting relative frequency charts calculated automatically on the second sheet. This resource will assist the educator in checking student calculations on student-generated data quickly and easily. Steps to add data: All data is input on the first spreadsheet; all tables are calculated on the second spreadsheet 1. Modify column and row headings to match your data. 2. Input joint frequency data. 3. Click the second tab at the bottom of the window to see the automatic calculations.

Parent Resources

Name	Description
The Titanic 1:	This task asks students to calculate probabilities using information presented in a two-way frequency table.
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.