Standard #: MAFS.912.S-CP.1.1

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Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not"). ★

	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 1: Recall - 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))
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.1a:	Describe events as subsets of a sample space using characteristics or categories. For example: When rolling a die the sample space is 1, 2, 3, 4, 5, 6. The even numbers would be a subset of the sample space.
MAFS.912.S-CP.1.AP.1b:	Describe the union of events in a sample space. For example: Event A contains soccer players, event B contains football players. The union of the sets is football players and soccer players all together.
MAFS.912.S-CP.1.AP.1c:	Describe the intersection of events in a sample space. For example: Event A contains soccer players, event B contains football players. Intersection of the sets is players that participate in both soccer and football.
MAFS.912.S-CP.1.AP.1d:	Describe the complement of events in a sample space. For example: Event A contains soccer players, event B contains football players. The complement of Event B is all players that are not football players.

Related Resources

Tutorial

Name	Description
An Event as a Subset of a Sample Space:	This tutorial will help the learners with their understanding of describing events as a subsets of a sample space by focusing on some particular examples.
An event as a subsets of a sample space using tables and diagrams:	This tutorial will help the learners with their understanding of describing events as subsets of a sample space by using tables and tree diagrams.
Intersection of Two Subsets:	This tutorial will help the learners in learning how to determine the intersection of two subsets of a sample space by examining some particular examples.

Lesson Plan

Name	Description
Human Venn Diagram:	This activity is to strengthen students understanding of Venn diagrams, where the class becomes the problem. The class will be able to physically move and see how and why elements belong in each section of the Venn diagram.
	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 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.

Video/Audio/Animation

Name	Description
MIT BLOSSOMS - Taking Walks, Delivering Mail: An Introduction to Graph Theory:	This learning video presents an introduction to graph theory through two fun, puzzle-like problems:"The Seven Bridges of Königsberg" and "The Chinese Postman Problem". Any high school student in a college-preparatory math class should be able to participate in this lesson. Materials needed include: pen and paper for the students; if possible, printed-out copies of the graphs and image that are used in the module; and a blackboard or equivalent. During this video lesson, students will learn graph theory by finding a route through a city/town/village without crossing the same path twice. They will also learn to determine the length of the shortest route that covers all the roads in a city/town/village. To achieve these two learning objectives, they will use nodes and arcs to create a graph and represent a real problem. This video lesson cannot be completed in one usual class period of approximately 55 minutes. It is suggested that the lesson be presented over two class sessions.

Problem-Solving Task

Name	Description
Return to Fred's Fun Factory (with 50 cents):	The task is intended to address sample space, independence, probability distributions and permutations/combinations.
The Titanic 1:	This task asks students to calculate probabilities using information presented in a two-way frequency table.

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.

Virtual Manipulative

Name	Description
Venn Diagrams for Set Operations:	This manipulative can be used to explore the set operations of unions, intersections, complements, and differences.

Student Resources

Name	Description
Return to Fred's Fun Factory (with 50 cents):	The task is intended to address sample space, independence, probability distributions and permutations/combinations.
The Titanic 1:	This task asks students to calculate probabilities using information presented in a two-way frequency table.
Venn Diagrams for Set Operations:	This manipulative can be used to explore the set operations of unions, intersections, complements, and differences.

Parent Resources

Name	Description
Return to Fred's Fun Factory (with 50 cents):	The task is intended to address sample space, independence, probability distributions and permutations/combinations.
The Titanic 1:	This task asks students to calculate probabilities using information presented in a two-way frequency table.
Venn Diagrams for Set Operations:	This manipulative can be used to explore the set operations of unions, intersections, complements, and differences.