Chapter 13: Probability

Content Area: **Math**
Course(s): **Geometry CP, Geometry A, Geometry H**
Time Period: **Marking Period 4**
Length: **14 Days**
Status: **Published**

Unit Introduction

Standards

CCSS.Math.Content.HSS-CP.A.1	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").
CCSS.Math.Content.HSS-CP.A.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.
CCSS.Math.Content.HSS-CP.A.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.
CCSS.Math.Content.HSS-CP.A.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.
CCSS.Math.Content.HSS-CP.A.5	Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations.
CCSS.Math.Content.HSS-CP.B.6	Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.
CCSS.Math.Content.HSS-CP.B.7	Apply the Addition Rule, $P(A$ or $B) = P(A) + P(B) - P(A$ and $B)$, and interpret the answer in terms of the model.
CCSS.Math.Content.HSS-CP.B.9	Use permutations and combinations to compute probabilities of compound events and solve problems.
CCSS.Math.Content.HSS-MD.B.6	Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).
CCSS.Math.Content.HSS-MD.B.7	Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).

Essential Questions

- What does it mean for an event to be random?
- What is a frequency table?
- What is the difference between experimental probability and theoretical probability?

Content

- 13.1 - Experimental and Theoretical Probability
- 13.2 - Probability Distributions and Frequency Tables
- 13.3 - Permutations and Combinations
- 13.4 - Compound Probability
- 13.5 - Probability Models & Conditional Probability Formulas
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Skills

- Calculate experimental probability
- Calculate geometric probability
- Calculate probability (mutually exclusive and not mutually exclusive events)
- Find/identify sample space
- Independent and dependent events
- Interpret data in frequency tables
- Mixed counting problems
- Mutually exclusive events
- Organize data in frequency tables
- Use Multiplication Counting Principle