# Unit 05 - Probability Distributions 

Content Area: Math<br>Course(s): Prob/Stat A<br>Time Period: Marking Period 2<br>Length:<br>3 weeks<br>Status: Published

## Unit Introduction

## Standards

| MA.S-CP.B. 9 | Use permutations and combinations to compute probabilities of compound events and <br> solve problems. |
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| MA.S-MD.A. 1 | Define a random variable for a quantity of interest by assigning a numerical value to each <br> event in a sample space; graph the corresponding probability distribution using the same <br> graphical displays as for data distributions. |
| MA.S-MD.A. 2 | Calculate the expected value of a random variable; interpret it as the mean of the <br> probability distribution. |
| MA.S-MD.A. 3 | Develop a probability distribution for a random variable defined for a sample space in <br> which theoretical probabilities can be calculated; find the expected value. |
| MA.S-MD.A.4 | Develop a probability distribution for a random variable defined for a sample space in <br> which probabilities are assigned empirically; find the expected value. |
| MA.S-MD.B. 7 | Analyze decisions and strategies using probability concepts (e.g., product testing, medical <br> testing, pulling a hockey goalie at the end of a game). |
| MA.S-MD.B.5a | Find the expected payoff for a game of chance. |
| MA.S-MD.B.5b | Evaluate and compare strategies on the basis of expected values. |

## Essential Questions

## Content

- Section 5.1: Introduction (Pgs. 238-239)
- Section 5.2: Probability Distributions (Pgs. 239-245)
- Section 5.3: Mean, Variance, Standard Deviation, and Expectation (Pgs. 245-255)
- Section 5.4: The Binomial Distribution (Pgs. 256-265)


## Skills

- Find the mean and standard deviation of a binomial distribution
- Identify distributions as symmetric or skewed
- Recognize and apply the binomial distribution

