

Options FRMS Math 7B 2020	Scope and Sequence
Unit Lesson	Objectives
Probability	
Understanding Probability	
	Identify an event with a given probability as impossible, unlikely, likely, or certain.
	Describe the probability of an event as a number between 0 and 1, which represents the likelihood of the event.
	Use the fact that the sum of the probabilities of all possible outcomes is 1 to find the probabilities of complementary events.
Theoretical Probability	
	Express the theoretical probabilities of given outcomes of an experiment as a ratio.
	Use a given sample space to calculate the theoretical probabilities of events.
	Use theoretical probability to make predictions.
Experimental Probability	
	Find the experimental probability of an event, expressing it as a ratio.
	Use experimental probability to make predictions.
Experimental vs. Theoretical Probability	
	Compare experimental results to theoretical probabilities and make conjectures about the results.
	Explain possible sources of discrepancy between the theoretical and experimental probability of an event.
Compound Events and Sample Space	
	Identify the sample space for an experiment involving compound events.
	Determine outcomes in a sample space that represents a given compound event.
Probability of Compound Events	
	Find probabilities of independent compound events using organized lists, tables, or tree diagrams.

**Unit Lesson****Objectives**

Find probabilities of dependent compound events using organized lists, tables, or tree diagrams.

Simulations to Estimate Probabilities

Design a simulation to experimentally determine the probability of compound events.

Use a simulation to generate frequencies for compound events; e.g., use a coin to simulate the gender of a baby and find the experimental probability of having exactly 1 boy in a family of three children.

Unit Test

**Sampling and Comparing Populations**

Populations and Sampling

Explain that statistics can be used to gain information about a population by examining a sample of the population.

Determine when sampling is an appropriate and helpful measure of a population and when it is not.

Sampling Methods

Compare a random sample to a biased sample in a variety of real-world contexts to determine validity.

Identify and explain the process for choosing a random sample.

Inferences and Predictions

Make an inference about the whole population based on a sample by using proportional reasoning.

Examine sample size and the effect on a prediction using the results of a simulation.

Multiple Samples

Use a simulation to generate multiple samples of the same size.

Compare samples generated from simulations to draw an inference about a population.

Variation in Predictions and Estimates

Analyze the results of multiple samples by comparing the means of samples and populations.

Describe variations in estimates or predictions of multiple samples.

**Unit Lesson****Objectives**

## Analyzing Dot Plots

Informally compare shapes of two different data distributions with similar variations.

Analyze two dot plots with similar variation by comparing the measures of center.

## Comparing Measures of Center and Variability

Analyze two numerical data distributions with similar variation by calculating and comparing the measures of center to the measure of variability.

Compare the measures of center of two sets of data using a multiple of the measure of variability, expressed as a ratio.

Draw an informal comparative inference about two sets of data.

## Comparing Box Plots

Compare two data sets with different numbers of data points by comparing two box plots.

Compare two data sets by comparing the difference in the measures of center and the measures of variability.

Draw an informal comparative inference about two sets of data.

## Unit Test

**Expressions**

## Writing Expressions

Translate algebraic expressions into words.

Translate words into algebraic expressions.

## Writing and Evaluating Expressions

Write expressions to represent real-world situations.

Evaluate expressions for real-world situations.

## Using Properties to Simplify Expressions

**Unit Lesson****Objectives**

Simplify expressions using properties of operations and combining like terms.

## Adding and Subtracting Expressions

Add algebraic expressions and use them to model real-world scenarios.

Subtract algebraic expressions and use them to model real-world scenarios.

## Expanding Expressions

Use the distributive property to expand and simplify algebraic expressions.

Identify equivalent expressions.

## Factoring Expressions

Find the greatest common factor of an algebraic expression.

Rewrite algebraic expressions by factoring.

## Unit Test

**Equations**

## Writing Equations

Write equations from words.

Write equations to represent real-world situations.

## Addition and Subtraction Equations

Solve one-step addition and subtraction equations.

Solve one-step addition and subtraction equations in the real world and interpret the results.

## Multiplication and Division Equations

Solve one-step multiplication and division equations.

Write and solve one-step multiplication and division equations in the real world and interpret the results.

**Unit Lesson Objectives**Solving Two-Step  
Equations

Solve two-step equations.

Solve two-step equations in the real world and interpret the results.

Solving Multi-Step  
Equations

Solve multi-step equations.

Solve multi-step equations in the real world and interpret the results.

Equations in the Real  
World

Write and solve equations to represent real-world situations.

Performance Task:  
Technology Trends

Unit Test

**Two-Dimensional Geometry**

Angle Relationships

Identify supplementary, complementary, vertical, and adjacent angles.

Use special relationships between angle pairs to find an unknown angle measure.

Circumference

Solve problems involving the circumference of a circle.