

**Mathematics: Modeling Our World (MMOW)
Course 1**

Chapter 0

Scope and Sequence Chart

	Lesson 1	Lesson 2
Mathematical Modeling	•	•
Number Sense	•	•
Percentages	•	•
Preference Diagrams	•	•
Graph Theory	•	•

Chapter 1

Scope and Sequence Chart

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
Mathematical Modeling	•	•	•	•	•	•
Function & Linear Function		•	•	•	•	•
Representation of Function		•	•	•	•	•
Algebraic Expression			•	•	•	•
Matrix Operations		•	•			•
Solving Equations			•	•	•	•
Inverse of a Function			•	•	•	•
Order of Operations			•	•	•	•
Equivalent Expressions			•	•	•	
Distributive Property			•	•	•	
Frequency distribution				•		•

Chapter 2

Scope and Sequence Chart

	Lesson 1	Lesson 2	Lesson 3	Lesson 4
Scale	•	•	•	•
Unit conversion	•	•		•
Area	•		•	•
Distance		•		
Scientific notation		•	•	•
Ratios		•	•	
Delta (Δ) notation		•		
Precision			•	
Zoom factor			•	
Similarity			•	
Proportion			•	
Direct Variation Function			•	
Dilation			•	
Length-Area Relationship w/Dilation			•	
Pythagorean Theorem			•	
Monte Carlo method				•

Chapter 3

Scope and Sequence Chart

	Lesson 1	Lesson 2	Lesson 3	Lesson 4
Slope	•			
Variable	•			
Linear equations	•			
Graphing lines	•			
Collecting data	•	•		•
Scatter plots	•	•	•	•
Interpreting data	•	•	•	•
Fitting a line to data	•		•	•
Dot plots		•		
Mean		•	•	
Median		•		
Range		•		
Residual errors	•		•	•

Chapter 4

Scope and Sequence Chart

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Coordinate Systems	•	•	•	•	•
Continuous and Discrete Representations	•	•	•	•	
Rates of Change	•	•	•	•	•
Variables and Constants	•	•	•	•	•
Closed-form Equations	•	•	•	•	•
Recursive Equations		•	•	•	•
Linear Functions	•	•	•	•	•
Matrices		•		•	•
Parametric Equations			•	•	•
Graphs of Functions (time-series, path, time-lapse)			•		•

Chapter 5

Scope and Sequence Chart

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
The modeling cycle	•	•		•	•
Representing quantitative information: graphically, numerically, symbolically	•	•	•	•	•
Linear functions	•	•			
Rate of change		•			
Function notation	•	•			
Additive processes	•	•			
Recursive and closed-form descriptions	•	•	•	•	•
Recursive graphs	•	•	•		
Parametric equations		•		•	
Translations		•	•	•	
Scale-change transformations		•	•	•	
Sensitivity		•	•		•
Simulation			•		•
Multiplicative processes			•	•	•
Exponential functions			•	•	•
Relative rate			•	•	•
Growth factor			•	•	•
Sequence/subscript notation	•	•	•	•	
Growth and decay			•	•	
Exponential graphs			•	•	•
Properties of exponential functions			•	•	
Laws of exponents			•		
Compound interest			•	•	
Identifying exponential data			•	•	•
Probabilistic models					•

Chapter 6

Scope and Sequence Chart

	Lesson 1	Lesson 2	Lesson 3	Lesson 4
Decimals, fractions, percents	•	•	•	•
Estimating the occurrence of a trait in a population	•	•	•	
Variability due to sampling	•	•		
Probability	•	•	•	•
Scatter plots	•		•	•
Line graphs	•			
Mutually exclusive events	•			
Complementary events	•	•	•	•
Conditional probability		•	•	•
Two-way tables and tree diagrams		•	•	•
Independence		•		
Linear functions			•	
Domain			•	•
Distributive property			•	•
Inverse of a linear function			•	
Posterior probabilities			•	•
Rational functions				•

Chapter 7

Scope and Sequence Chart

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Probability	•	•	•		
Simulation	•	•			
Expected Value	•	•	•		
Curve Fitting and Residuals	•	•	•	•	
Law of large numbers		•			
Quadratic function		•	•	•	•
Area diagram		•			•
Equivalent Expressions			•		
Solving quadratic equations				•	•
Transforming graphs				•	•
Vertex form of a quadratic function				•	•
Completing the square					•
Quadratic formula					•