HENRY COUNTY SCHOOLS

Advanced Mathematical Decision Making Curriculum Map

2011-2012 School Year

Georgia Performance Standards						
1st Semester			2nd Semester			
Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**	**Unit 7**
Analyzing Numerical Data	**Probability**	**Statistical Studies**	**Using Recursion in Models and Decision**	**Using Functions in Models and Decision**	**Decision Making in Finance**	**Networks and Graphs**

Key Vocabulary

MAMDMG1a,b,c,d **Unit 1** **Analyzing Numerical Data**	MAMDMD1a,b,c **Unit 2** **Probability**	MAMDMD2 MAMDMD3 **Unit 3** **Statistical Studies**	MAMDMD4 **Unit 4** **Using Recursion in Models and Decision Making**	MAMDMD4 MAMDMG2 **Unit 5** **Using Functions in Models and Decision Making**	MAMDMA3a,b **Unit 6** **Decision Making in Finance**	MAMDMA2 a,b,c,d MAMDMG1 **Unit 7** **Networks and Graphs**

❖ Aspect ratio ❖ Letterbox ❖ Pillarbox ❖ Index (indices) ❖ Paradox ❖ Weighted average ❖ Weighted sum ❖ Check digit ❖ Identification number ❖ Single-digit error ❖ Transposition error	❖ Area model ❖ Complement of a set ❖ Compound events ❖ Conditional probability ❖ Dependent events ❖ Equally likely ❖ Independent events ❖ Probability ❖ Sample space ❖ Tree diagram ❖ Venn diagram ❖ Conditional probability ❖ Intersection ❖ Union ❖ Weighted ❖ Binomial probability ❖ Expected value ❖ Paschal's Triangle ❖	❖ Alternative hypothesis ❖ Blind study ❖ Control group ❖ Data collection ❖ Double-blind study ❖ Experimental study ❖ Fact/opinion ❖ Null hypothesis ❖ Observational study ❖ Participant ❖ Placebo ❖ Placebo effect ❖ Population ❖ Population man ❖ Population parameter ❖ Psychological effect ❖ Research question ❖ Sample ❖ Sample mean ❖ Sample statistic ❖ Statistical significance ❖ Study limitation ❖ Treatment ❖ Ethics ❖ Informed consent ❖ Pilot study ❖ Primary data ❖ Questionnaire ❖ Secondary data ❖ Average ❖ Margin of error ❖ Census ❖ Cluster sampling ❖ Convenience sampling ❖ Inference ❖ Random ❖ Random assignment	❖ Arithmetic sequence ❖ Bivariate data ❖ Cause and effect ❖ Explicit function ❖ Form ❖ Direction ❖ Relative strength ❖ Iterative process ❖ Linear function ❖ Recursion ❖ Recursive routine ❖ Recursive rule ❖ Common ratio ❖ Exponential decay ❖ Exponential function ❖ Finite difference ❖ Function rule ❖ Geometric sequence ❖ Ambient temperature ❖ Constant of proportionality ❖ Difference equation ❖ Domain ❖ Exponential decay ❖ Exponential function ❖ Logistic growth ❖ Radioactive decay ❖ Amplitude ❖ Central angle ❖ Cosine ❖ Period ❖ Periodic function ❖ Sine ❖ Sinusoidal curve ❖ Trigonometric ratios	❖ Difference equation ❖ Domain ❖ Exponential decay ❖ Exponential function ❖ Finite difference ❖ Function rule ❖ Geometric sequence ❖ Geometric series ❖ Linear functions ❖ Logistic growth ❖ Range ❖ Amplitude ❖ Cyclical model ❖ Frequency ❖ Parameter ❖ Period ❖ Regression model ❖ Scatter plot ❖ Sinusoidal function ❖ Constant Function ❖ Continuous ❖ Decreasing ❖ Dependency Statement ❖ Piecewise Function ❖ Step Function	❖ After-tax income ❖ Benefits ❖ Certificate of deposit ❖ Compound interest ❖ Exponential function ❖ Future value ❖ Gross income ❖ Income ❖ Income tax ❖ Inflation ❖ Interest ❖ Investment ❖ Present value ❖ Risk ❖ Salary ❖ Savings account ❖ Simple interest ❖ Checking account ❖ Deposit ❖ Money market ❖ Principal ❖ Quarterly ❖ Retirement ❖ Time value of money ❖ Annuity ❖ Bond ❖ Expected value ❖ Finite geometric series ❖ Risk rating ❖ Stock ❖ Actual percentage rate ❖ Average daily balance	❖ Circuit ❖ Edge ❖ Euler Circuit ❖ Graph ❖ Hamiltonian circuit ❖ Path ❖ Vertex ❖ Connectivity ❖ Efficient network ❖ Minimal spanning tree ❖ Minimally connected ❖ Spanning tree ❖ Tree ❖ Weight ❖ Weighted graph ❖ Adjacency ❖ Chromatic number ❖ Planar ❖ Sameness

		❖ Random sample ❖ Random sampling ❖ Sample ❖ Sampling method ❖ Simple random sampling ❖ Stratified sampling ❖ Systematic sampling ❖ Variable of interest ❖ Bin size ❖ Distort ❖ Interval width ❖ Outlier ❖ Quartile ❖ Univariate ❖ Biased sampling method ❖ Biased statistic ❖ Natural variability ❖ Induced variability ❖ Nonresponsive sampling ❖ Statistical bias ❖ Undercoverage			❖ Balloon payment ❖ Credit card ❖ Daily periodic rate ❖ Debit ❖ Down payment ❖ Finance charge ❖ Lease ❖ Statement	
Prerequisite Skills to Maintain						
✓ Counting principles ✓ Judging the reasonableness of numerical computations and their results ✓ Ratios ✓ Percents	✓ Determining the probability of simple events ✓ Applying the concept of equally likely ✓ Understanding experimental vs.	✓ Mean of a set of numbers ✓ Computing and applying percentages ✓ Displaying data in various ways ✓ Showing familiarity with histograms,	✓ Create and Understand Scatter plots ✓ Understanding constant rate of change in linear functions ✓ Arithmetic Sequence	✓ Applying and understanding characteristics of Linear Functions ✓ Using Exponential Functions ✓ Create and Understand Scatter	✓ Using scatterplots ✓ Exponential functions ✓ Regression equations ✓ Rational expressions	✓ Modeling real world problems with graphs ✓ Adjacency matrices

✓ Proportional reasoning ✓ Pythagorean Theorem	theoretical probability ✓ Understanding set notation ✓ Solving questions involving conditional probability and compound probability	dotplots, boxplots, and frequency tables ✓ Analyzing data by center, shape, spread, and unusual features ✓ Identifying population of interest	✓ Using exponential functions ✓ Applying the rate of change ✓ Generating recursive formula for a sequence ✓ Using the concepts of a circle: radius, diameter, circumference, central angle ✓ Right triangle trigonometry	Plots ✓ Determining rate of change ✓ Analyzing regression models ✓ Graphing Functions	✓ Using sequences to describe a situation ✓ Exponential decay ✓ Using direct and indirect relationships ✓ Applying weighted averages ✓ Creating bar graphs	