Course Description:

Welcome to AMDM! This is an exciting and dynamic course in which we will work together to explore ways that math is used in the “Real World”. This course requires that you use all the skills learned in GPS Algebra, Geometry and GPS Advance Algebra in order to investigate and solve application problems.

This course will give students further experiences with statistical information and summaries, methods of designing and conducting statistical studies, and opportunity to analyze various voting processes, modeling data, basic financial decisions, and use network models for making informal decisions.

Technology Integration:
Students will use graphing calculators, the promethean board, document camera, united streaming, and edmodo.

Grade Determination:
Fulton County Grading Scale will be used for all graded assignments.
A = 100-90; B = 89-80; C = 79-70; F = 69 and below

Grading Procedures:
Classwork – 20%
Quizzes – 15%
Summative Assessment – 30%
Formative Assessment – 10%
Project – 10%
Final Exam – 15%
**Make-up Policy:** Make-up work for an absence is allowed at full credit. Make-up work should be done within a week of returning to school (this includes classwork and tests). It is the responsibility of the student to get the make-up work from the teacher and to schedule any tests missed. Quizzes will need to be made up on the day you return to school.

**Provision for Improving Failing Grades:**
Students are given opportunities to recover from a failing cumulative grade when all work required to date has been completed and the student has demonstrated a legitimate effort to meet all course requirements including attendance.

**Extra Help:**
Since MATHEMATICS can be a difficult subject, please seek help immediately from the teacher when you need it. It does you no good to wait until test time. You should utilize the time spent in class as much as possible, and also come to enrichment sessions after school on MONDAY and WEDNESDAY for extra individual help.

**Standards for Mathematical Practice**
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.
Georgia Mathematics Performance Standards:

Course Standards

Unit IV
Data Analysis and Probability
Students will explore representations of data and models of data as tools in the decision making.

MAMDMD2. Students will build the skills and vocabulary necessary to analyze and critique reported statistical information, summaries, and graphical displays.

MAMDMD3. Students will apply statistical methods to design, conduct, and analyze statistical studies.

MAMDMD4.
Students will use functions to model problem situations in both discrete and continuous relationships.
   A. Determine whether a problem situation involving two quantities in best modeled by a discrete (pattern identification, population growth, compound interest) or continuous (medication dosage, climate change, bone decay) relationship.
   B. Use linear, exponential, logistic, piecewise and sine functions to construct a model.

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Students will explore the applications of functions, their characteristics and their use in modeling. Vectors and matrices are employed for solving problems.

MAMDMA2. Students will use a variety of network models to organize data in quantitative situations, make informed decisions, and solve problems.
   a. Solve problems represented by a vertex-edge graph, and algorithm to Euler paths, and minimal spanning trees.
   b. Construct, analyze, and interpret flow charts to develop an algorithm to describe processes such as quality control procedures.
c. Investigate the scheduling of projects using PERT.
d. Consider problems that can be resolved by coloring graphs.

**MAMDMA3. Students will create and analyze mathematical models to make decisions related to earning, investing, spending, and borrowing money.**

a. Use exponential functions to model change in a variety of financial situations.
b. Determine, represent, and analyze mathematical models for income, expenditures, and various types of loans and investments.

**Topics Covered/Units of Study**

**Unit IV: Using Functions in Models and Decision Making**
- Using Scatterplots in Reports
- Recursion and Linear Functions
- Recursion and Exponential Functions
- Comparing Models
- Newton’s Law of Cooling

**Unit V: Using Functions in Models and Decision Making**
- Analyzing Linear Regression Equations
- Compare Linear and Exponential Functions
- Introduce Step and Piecewise Functions
- Concentration of Medicine

**Unit VII: Networks and Graphs**
- Euler Circuits and Paths
- Weighted Graphs
- Hamiltonian Circuits and Paths
- Minimal Spanning Trees
- Coloring Maps and Scheduling