College and Career Ready Mathematics - Class Proposal 2011-2012
D.C. Everest Senior High School

Rationale

- Students need to graduate accomplishing the requirements according to the CCSSM. Currently, students who do not earn a C- or better in Geometry and Algebra 1 do not succeed in Algebra 2 (annual study confirms this). These students have no offering that will allow them to succeed at the Senior High.
- This course would review/remediate the core concepts from Algebra 1 and Geometry emphasized by the CCSSM. The course would then introduce and explore the non-plus standards that are in the Algebra 2 curriculum that they have not yet been exposed to.
- Struggling students would take this course their Junior year, allowing them to meet the requirements of university enrollment by taking Algebra 2 in their senior year.

Class Parameters

- 1 Math Credit
- Year-long course
- College and Career Ready sequence
- Prerequisite: completion of Geometry (no grade minimum)

Overarching Class Components

(1) Placement is teacher directed.
(2) Pre-testing with direct instruction followed with a project or lab embedding the concepts.
(3) Technology incorporating basic skills review/retention
(4) Writing to reinforce depth of knowledge and procedural skill.

Resources

To make this course successful, we will need the following essential resources:

- Access to technology (computers with Internet access)

Curriculum Attachment

- See attached draft of the curriculum framework.

D.C. Everest School District
College and Career Ready Mathematics Curriculum Framework

DRAFT

Enduring Understandings

- Algebraic properties govern the fluent manipulation of symbols in expressions, equations and inequalities.
- Being able to demonstrate logical thinking is essential for success.
- Exhibiting creativity and perseverance in mathematical problem solving, with the ability to determine when an approach is not working and a new direction is needed is an essential life skill.
- Collecting and analyzing data helps drive decision making.
- Statistics can lie as well as reveal.

Essential Questions

1. Why do we use variables or symbols?
2. How do you know you have solved the problem?
3. Describe some of the basic rules in solving equations.
4. What are the different ways to represent patterns or relationships?
5. Are there different ways to collect and interpret data?
6. How can objects be represented and compared using geometric attributes?
7. How does "formulating logical arguments" help support my understanding?
8. What are the different ways of communicating mathematics with clarity?
9. How do we use data to inform decisions?

Course Topics

The core concepts, principles, theories, and processes that should serve as the focal point of curriculum, instruction, and assessment.

Course Topics	Timeline (weeks)

Key Content/Skills

- Equations and Inequalities
- Systems of Equations
- Graphing
- Exponents/rational exponents
- Rational and irrational numbers
- Functions and function notation
- Analyze functions
- Linear and exponential models
- Transformations of functions
- Area, volume and perimeter
- Properties of Shapes
- Similarity – special right triangles
- Pythagorean Theorem
- Trigonometry
- Geometric Series

The Common Core State Standards of 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.

	• The Remainder Theorem • Identifying zeros of polynomials, graphs, factors • Prove polynomial identities • Rewrite simple rational expressions • Solve rational and radical equations with extraneous solutions • Logarithms • Radian measure • The unit circle • Trigonometric and periodic functions • Statistics and Probability	