



Dallas High School Home of the Dragons



ALGEBRA EXTENSIONS

2013-2014

Instructors: Natasha Beliakoff

Telephone: (503) 623-8336 ext. 3607

Email: natasha.beliakoff@dsd2.org

Office Hours: Tues-Friday 3:00-3:30, additional times by arrangement.

Course Description:

This course is meant to provide students with a strong foundation for Algebra 2. Algebra 1 content will be reviewed in greater depth and studied in the context of real world problems. Expect to learn about linear and quadratic functions, investigating exponential and logarithmic functions at lesser depth. There will be connections made to geometry, statistics, probability, and problem solving situations. This course places a strong emphasis on the CCSS Mathematical Practices, to develop skills in mathematical reasoning and modeling. Students will receive a math credit for this course toward graduation, but please note that it DOES NOT meet the Algebra 2 requirement necessary for entrance to a four-year college or university.

Prerequisite: Geometry (or concurrent enrollment), Algebra 1 (C or above)

Textbook: CPM Algebra Connections (Vol. 2): Dietiker, Kysh, Hoey, Sallee

Course Outline

Unit	Topic	Summative Assessment
(order subject to change based on pre-assessments)		Standards 1-3 will be assessed throughout the year
Unit 1	Linear Relationships	Unit Test: Standard 14
Unit 2	Quadratics	Unit Test: Standard 4
Unit 3	Inequalities	Unit Test: Standards 6, 8, 10,
Unit 4	Simplifying and Solving	Unit Test: Standards 5, 7, 9,
Unit 5	Functions and Relations	Unit Test: Standards 11
Unit 6	Probability and Statistics	Unit Project: Standards 15, 16
Unit 7	Geometry Extensions	Unit Test: Standards 12,13
Unit 8	Algebraic Extensions and Problem Solving	Unit Test: All

Standards to Be Assessed:

Use fractions, decimals and irrational numbers to solve problems.

1. Reason quantitatively and use units and descriptive models to solve problems. [N-Q 1, 2 & 3]

Use variables, expressions and equations to model and solve problems.

2. Identify, interpret and model parts of expressions such as factors, terms and coefficients. [A-SSE 1]
3. Rewrite algebraic expressions and solve equations and formulas for specific variable. [A-SSE 2] [A-CED 4]
4. Model quadratic equations and solve quadratics by factoring, completing the square, quadratic formula and algebraically. [A-SSE 3a] [A-REI 3 & 4]
5. Perform arithmetic operation on polynomials (note closure). [A-APR 1]
6. Create, solve and graph equations and inequalities in one and two variables. [A-CED 1 & 2] [A-REI 10]
7. Justify each step in solving an equation. [A-REI 1]

Solve problems using two or more equations or inequalities and check solutions for reasonableness.

8. Use equations and inequalities to represent the constraints on a model and interpret the reasonableness of the solution based on context. [A-CED 3]
9. Solve systems of equations using elimination, substitution, and graphing (linear and quadratic). [A-REI 5, 6 & 7]
10. Create, solve and graph inequalities and systems of inequalities in two variables. [A-REI 12]

Model and analyze algebraic functions

11. Define function, implement function notation, and identify the domain and range of a function. [F-IF 1 & 2]

Define trigonometric ratios and solve problems involving right triangles.

12. Define trigonometric ratios in terms of side ratios of similar triangles, and relationships with sine and cosine of complementary angles. [G-SRT 6, 7]
13. Apply trig ratios and the Pythagorean Theorem to solve problems involving right triangles. [G-SRT 8]

Use statistics to make inferences and justify conclusions about a population.

14. Interpret the slope and the intercept of a linear model in the context of the data and interpret the correlation coefficient. [S-ID 7, 8 & 9]
 15. Use data from a sample survey to describe and draw conclusion about a population. [S-IC 4 & 6]
 16. Make inferences and justify conclusion from sample surveys, experiments and observational studies. [S-IC 1, 2, & 3]
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Career Related Learning Standards: Career-related learning standards (CRLS) are fundamental skills essential for success in employment, college, family, and community life. We have integrated the Personal Management standard from the CRLS into all courses at DHS. **This standard will be assessed and communicated independent of the academic grade.** It is included below and mainly includes behaviors that will be assessed in this course.

- **Personal Management Standard:** Exhibit appropriate work ethic and behaviors in school, community and workplace.
 - Students will identify tasks that need to be done and initiate action to complete the tasks.
 - Students will plan, organize and complete projects and assigned tasks on time, meeting agreed upon standards of quality.
 - Students will take responsibility for decisions and actions and anticipate consequences of decisions and actions.
 - Students will maintain regular attendance and be on time daily.
 - Students will maintain appropriate interactions with colleagues.

Grading and Assessment:

Student's final grade for each course will be broken down into two categories:

- 1) **Academic:** based on assessments, tests, projects and performances that measure learning.
- 2) **Personal Management:** based on homework completion and other behaviors measuring the CRLS personal management standard.

The Final grade is calculated as follows: 75% of the course grade will be based on the **Academic** grade and **25%** on the **Personal Management** grade.

- Any items included in the Academic grade (PA) may be retaken and the higher grade recorded. Teachers may extend the retake time period, but as a rule all retakes need to be done within 2 weeks of the initial assessment.
- Students will complete extra preparation before retaking an assessment.
- Personal management work turned in late may be reduced by up to 50% credit.
- Retakes are not allowed on Personal Management assignments.
- Students must schedule performance retakes at their teacher's convenience. (Speech, drama, labs.)