



AUGUSTUS R. JOHNSON  
HEALTH SCIENCE & ENGINEERING MAGNET SCHOOL



*"A National Magnet School of Distinction"*

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### **Summer Learning for Honors Geometry**

Dear Parent/Guardian(s) and Upcoming Honors Geometry Students

Welcome to Geometry. The topics in Geometry can be abstract but they have practical applications and serve as a foundation for further study in mathematics and other college level mathematics. Mathematics is a series of building blocks. A student of mathematics must have sufficient Algebra I skills to be proficient in Geometry. Much of the work reviews Algebra I skills necessary for success in Geometry. In addition to Algebra, I skills, students in geometry must possess some fundamental Geometry skills learned in middle school mathematics. The work also covers a few of the topics covered in middle school Geometry. Teachers will expect students to have completed all practice problems within the assignment. During the first few days of school, every student will take a test on the content in their class's review.

Although some of the topics listed here may be reviewed in Geometry, you are expected to already have some familiarity with them, so that we can quickly move beyond the basics to higher-level discussions. Algebra I is a prerequisite to Geometry. "DON'T PANIC if you're rusty (or just haven't ever seen!) some of this material. The ARJ Math Department teachers are all available to help you. It's very important, however, that you get this material at your fingertips right away, because we'll be drawing on these skills frequently.

In order to prepare for Honors Geometry, you will complete the summer assignments in Delta Math. You will need to go to [deltamath.com](http://deltamath.com), create an account, enter the code **728061**, and join the Safford – Honors Geometry Summer Assignments Section to begin. Students should complete this review by September 1, 2021 at 8:15 AM. This assignment will count as a test grade.

Concepts:

1. arithmetic skills, including: multiplication tables; base ten number system; arithmetic with whole numbers, decimals, and fractions; arithmetic with signed numbers
2. real number line concepts and terminology, including: order; average; the words "at least" and "at most", the symbols for greater than and less than
3. absolute value:  $|x|$  as distance from  $x$  to 0;  $|x - y|$  as distance between  $x$  and  $y$
4. order of operations concepts
5. exact versus approximate answers (particularly as related to  $\pi$ ,  $\sqrt{2}$ , etc.)
6. working with whole number exponents; exponent laws
7. ratios and proportions
8. arithmetic with polynomials: combining like terms; FOIL; more advanced use of the distributive law
9. factoring: greatest common factor; factoring trinomials; difference of squares; the zero-factor law
10. solving any linear equation/inequality in one variable, particularly those involving fractions, decimals, and radicals
11. graphing basics, including: coordinate plane terminology; plotting points; the midpoint and distance formulas
12. working with lines: writing equations and graphing; slope; parallel and perpendicular lines
13. basic calculator skills, including: keying in expressions correctly; graphing functions

The following is a list of websites to visit for additional Algebra help or practice material:

✓ [Khan Academy](#)

Take control of your learning by working on the skills you choose at your own pace. ... Math, science, computer programming, history, art, economics, and more.

✓ [Algebasics](#)

Has video tutorials explaining the basics of algebra, equations, ratio and proportion, absolute value, polynomials, factoring, linear equations, radicals, applications, and much more.

✓ [Algebra-Class](#)

Offers help with solving equations, graphing equations, writing equations, inequalities, functions, exponents and monomials, polynomials, and the quadratic equation. It also has a list of resources.

✓ [Algebra Help](#)

Contains lessons on topics that include equations, simplifying, factoring, distribution, and trinomials, as well as equation calculators and worksheets. This site also has an extensive list of math resources and study tips.

✓ [Help Algebra](#)

Covers topics such as fractions, percents, decimals, algebraic expressions, addition, multiplication, and word problems. Each section includes explanations and examples.

✓ [College Cram](#)

Allows students to choose the algebra subject they are struggling with from a drop-down menu, select the appropriate chapter, and pick your resources. The pages will feature formula solvers, bottomless worksheets, flashcards, quizzes, interactive overviews, and brief lessons and study sheets.

✓ [Interactive Mathematics](#)

Has a large section on algebra, including information on factoring and fractions, the quadratic equation, exponents and radicals, systems of equations, matrices and determinants, and inequalities.

✓ [Math Expression](#)

Has videos, worksheets, and lessons to help you develop your algebra skills. Math topics include algebra, exponents, symmetry, fractions, measurements, angles, and more. The site also includes a list of useful resources.

✓ [Purple Math](#)

Contains lessons with explanations on everything from absolute value and negative numbers to intercepts, variables, and factoring. In addition, this site includes a forum that allows students to ask questions and receive answers, as well as a list of homework tips and guidelines

Thanks, and have a great summer,

Mr. Courtney Safford, Ed.S.

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[Geometry Webpage](#)

Mathematics Teacher

A. R. Johnson Health Science & Engineering Magnet School