

## Algebra 8

<b>Text:</b>	Brown, Dolciani, Sorgenfrey, & Cole (1990): <i>Algebra: Structure and method</i> , Houghton Mifflin: Boston, MA.
<b>Supplemental Materials:</b>	Houghton Mifflin's Review Masters and Progress Tests Houghton Mifflin's Teacher Resource Book Teacher-made quizzes and tests
<b>Course Description:</b>	Students will develop a firm understanding and foundation of sound mathematical principles including: simple variable concepts to basic linear and quadratic equations, systems of equations, functions and graphing, the development of an extensive vocabulary as well as symbolic language, the use of mathematical and algebraic properties, solving word problems using the 5-step plan at all levels of equation use.
<b>Methods of Evaluation:</b>	Students can be evaluated through tests, quizzes, daily practice sets, homework problem sets, lab grades quarterly exams, and/or any other form of evaluation instrument the instructor finds applicable to the course.
<b>Pace of Instruction:</b>	First Semester: Chapters 1 – 5 Second Semester: Chapters 6 – 12 NOTE: In "regular" Algebra I, the fourth quarter's five chapters are not covered in as much detail as they would be covered in an Honors class. We skip some lessons like changing forms of rational numbers and do only A-level exercises.
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. Use ratios and solve proportions.</li> <li>2. Solve fractional equations.</li> <li>3. Use negative and zero exponents.</li> <li>4. Simplify numerical and variable expressions into equations.</li> <li>5. Use the substitution principal to evaluate variable expressions.</li> <li>6. Translate word sentences and problems into equations.</li> <li>7. Use a 5-step plan to solve word problems.</li> <li>8. Use a number line, opposites and absolute value.</li> <li>9. Simplify expressions using the associative, commutative and distributive properties.</li> <li>10. Add, subtract, multiply and divide real numbers, including integers.</li> <li>11. Use several transformations to solve equations.</li> <li>12. Solve word problems using equations.</li> <li>13. Solve equations with the variable on both sides.</li> <li>14. Use charts to solve word problems.</li> <li>15. Simplify and compute with polynomials.</li> <li>16. Find powers of monomials.</li> <li>17. Solve uniform motion problems.</li> </ol>

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|  | <ol style="list-style-type: none"><li>18. Solve problems involving area and perimeter.</li><li>19. Factor polynomials, concentrating on trinomials.</li><li>20. Find the GCF and LCM of several monomials.</li><li>21. Compute with polynomials.</li><li>22. Solve polynomial equations by factoring.</li><li>23. Simplify and compute with algebraic fractions.</li><li>24. Write Divide polynomials by polynomials.</li><li>25. in and use scientific notation.</li><li>26. Graph ordered pairs.</li><li>27. Graph linear equations in 2 variables.</li><li>28. Define and find the slope of a line.</li><li>29. Use slope-intercept.</li><li>30. Find the equation of a line.</li><li>31. Define functions using tables and graphs.</li><li>32. Use equations to define functions.</li><li>33. Graph linear and quadratic functions.</li><li>34. Solve systems of equations by graphing, substitution, addition and subtraction, and multiplication.</li><li>35. Solve word problems using systems of equations.</li><li>36. Solve and graph inequalities.</li><li>37. Solve combined inequalities.</li><li>38. Graph systems.</li><li>39. Define and compare rational numbers.</li><li>40. Find square roots of rational numbers.</li><li>41. Simplify radicals.</li><li>42. Approximate irrational square roots.</li><li>43. Solve equations and word problems involving square roots.</li><li>44. Apply the Pythagorean Theroem.</li><li>45. Simplify sums, differences, products and quotients of radicals.</li><li>46. Solve simple radical equations.</li><li>47. Solve quadratic equations by completing the square.</li><li>48. Use the quadratic formula.</li></ol> |
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