

***A Comprehensive Approach to  
Balanced Mathematics***

***MATHEMATICS PLANNING FOR EIGHTH GRADE  
2007 Edition***

**8**



**Department of  
Education**

Joel I. Klein  
Chancellor

**COURSE 3 PRE-TEST**  
**AUXILIARY SUPPORT MATERIALS CORRELATION**

<b>QUESTIONS</b>	<b>TOPIC</b>	<b>REFRESHER WORKSHEET</b>	<b>HOT WORDS HOT TOPICS</b>	<b>SECTION</b>	<b>PAGE</b>
1–6	Finding the sum and difference of integers	1	Integer operations	1.5	93 95
7–12	Finding the product and quotient of integers	1	Integer operations	1.5	94–95
13–18	Evaluating integers in exponential form	2	Laws of exponents	3.4	188–189
19–21	Ratios, rates, and proportions	3	Using proportions to solve problems	6.5	310–311
22, 23	Probability	5	Theoretical probabilities	4.6	241–242 253
24, 25	Percent increase and decrease	4	Percent of increase or decrease	2.8	147–149 162
26–29	Distributive property	6	Distributive property	1.2 6.2	79, 81 286–287
30–33	Factoring algebraic expressions	6	The distributive property with common factors	6.2	288 291
34–37	Solving algebraic equations	7	Solving equations	6.4	298–305 307 336
38, 39	Writing and simplifying algebraic expressions and equations	8	Like terms Simplifying expressions	6.2	289–291 336

(Continued)

<b>QUESTIONS</b>	<b>TOPIC</b>	<b>REFRESHER WORKSHEET</b>	<b>HOT WORDS HOT TOPICS</b>	<b>SECTION</b>	<b>PAGE</b>
40	Writing and simplifying algebraic expressions and equations	8	Writing expressions involving two operations	6.1	276–281 283
41–44	Understanding similarity	9	Size and scale similar figures	8.6	424–425 427, 429
45–48	Plotting points in four quadrants	10	Writing an ordered pair Locating point on a coordinate plane	6.7	317–318 323
49, 50	Finding the distance between two points	11			
51, 52	Finding volume and surface area	12	Volume	7.7	382–387
				8.3	417 419
			Surface area	7.6	378 380–381
53	Recognizing linear relationships	13	Analyzing data	4.3	214–215
54–57	Understanding linear relationships	14			
58, 59	Choosing an appropriate graph	15	Displaying data	4.2	202–213 252

## Teaching with *Impact Mathematics*

As you move through this document and the *Impact* materials, you will note many recurring themes and underlying programmatic structures that will support your classroom teaching:

- A. The Grades 6 through 8 program is a comprehensive curriculum that completes a full year of algebra by the end of Grade 8.
- B. *Impact Mathematics* is a standards-based, integrated curriculum that includes strands on number and operations, proportional reasoning, geometry, probability and data, with a focus on the development of algebraic thinking.
- C. There is a balance of basic skills and conceptual understanding; students build new mathematical ideas and at the same time practice needed procedures.
- D. The curriculum is centered around problem sets that students work on individually or in groups. Many of the problems are open-ended, allowing students to choose or develop solution strategies.
- E. Students are asked to make conjectures based on patterns they observe and to develop convincing mathematical arguments.
- F. *Impact Mathematics* provides opportunities for students to reflect upon, critique and communicate their ideas.
- G. The concepts in each chapter connect to and build on concepts developed in earlier chapters and courses.
- H. There is an emphasis on a variety of mathematical representations, as well as modeling.
- I. Informal to formal development of concepts makes mathematics accessible and appropriate for middle grades students.
- J. There is strong content progress from grade to grade with minimal reteaching of topics. Important topics are revisited in greater depth and formality.
- K. The contexts used for developing concepts and practicing skills include real-world applications, as well as mathematical settings.
- L. To maintain students' ongoing interest in all areas of mathematics, *Impact Mathematics* uses narrative and realistic contexts, personalization in the form of cartoons in which middle grades students explain how they approach problems, and opportunities for students to choose or create their own problems.
- M. Manipulatives and calculators are used to support the content learning only when appropriate. Students need and gain experiences with pencil and paper along with graphing technology.
- N. The teaching process is designed around a three-step instructional cycle: Introduce, Develop, and Assign & Assess.
- O. The curriculum balances structured learning, direct instruction, and creative problem-solving. Student discovery plays as significant a role in the learning process as teacher-directed instruction.
- P. Assessment tools are broad, encompassing the processes of problem solving, reasoning, communication, connections, concepts, applications, representational strategies and procedures.
- Q. All suggested lessons should be taught. Those lessons identified as RECOMMENDED may be taught as introductory in approach. Those lessons identified as SUGGESTED may be taught as enrichment lessons if time permits.

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <b>N: Notes</b> <b>LP: Links to the Past</b> <b>LC: Literature Connections</b>
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### CHAPTER 1: LINEAR RELATIONSHIPS

Algebraic Representations: *Coordinate Graphs—Develop; Tables and Graphs—Develop*

Algebraic Reasoning: *Patterns and Numeric Forms—Develop*

Functions and Relations: *Linear Expressions/Equations—Develop*

Coordinate Geometry: *Coordinate Representations—Develop*

<b>WEEK 1</b>	<p><b>1.1 Direct Variation</b></p> <p>Recognizing linear relationships and writing linear equations.</p> <p>Understanding the connection between a linear equation in the form <math>y = mx + b</math> and its graph.</p> <p><i>Suggested per period pacing:</i></p> <ol style="list-style-type: none"> <li>Explore, p. 4; Investigation 1: PS A, pp. 6–7.</li> <li>PS B, p. 8; PS C, p. 9; S&amp;S, p. 9.</li> <li>Investigation 2: PS D, p. 10; PS E, p. 11; S&amp;S, p. 12.</li> <li>Investigation 3: T&amp;D, p. 12; PS F, p. 13; PS G, p. 14 (odd numbers); PS H, p. 14 (odd numbers); PS I, #1, 2; S&amp;S, p. 15.</li> <li>IYOW, p. 23; QQ, p. 23, A357.</li> </ol> <p style="text-align: right;"><i>(continued)</i></p>	<p><b>Course 3 Pretest:</b> Questions 1-12; 45-48.</p> <p><i>For students who have difficulty with Course 3 Pretest:</i></p> <p>Refer to Course 3 Support Materials, found on page 2 of this book.</p> <p><i>For additional practice or homework:</i></p> <p><b>Hot Words, Hot Topics</b> 6.7: Graphing on a Coordinate Plane, pp. 316–319.</p> <p><b>Skills Intervention for Algebra</b> Skill 27: Ordered Pairs, pp. 53–54.</p>	<p><b>ALGEBRA STRAND</b></p> <p><i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i></p> <p><b>8.A.3</b> Describe a situation involving relationships that matches a given graph.</p> <p><b>8.A.4</b> Create a graph given a description or an expression for a situation involving a linear or nonlinear relationship.</p> <p><i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i></p> <p><b>8.A.15</b> Understand that numerical information can be represented in multiple ways: arithmetically, algebraically, and graphically.</p> <p><b>8.A.16</b> Find a set of ordered pairs to satisfy a given linear numerical pattern (expressed algebraically); then plot the ordered pairs and draw the line.</p> <p><b>8.A.19</b> Interpret multiple representations using equation, table of values, and graph (POST MARCH IN GRADE 8).</p> <p style="text-align: right;"><i>(continued)</i></p>	<p><b>N:</b> While executing mini-lesson, include as Do Now operations with signed numbers and plotting points.</p> <p><b>LP: Course Two:</b> 5.1:Proportional and non-proportional relationships, pp. 305-311</p>
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PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
<b>WEEK 1 (continued)</b>	<p><b>Note:</b> The recommended pacing is based on the mandated 375 minutes, or seven to eight 45–60 minute periods per week.</p> <p><b>Note:</b> Quick Quizzes and Pre-Chapter assessments can be found in Impact Assessment Resources, Volumes A and B.</p>		<b>GEOMETRY STRANDS</b> <i>Students will apply coordinate geometry to analyze problem solving situations.</i> <b>8.G.15</b> Graph a line using a table of values (POST MARCH IN GRADE 8). <b>8.G.18</b> Solve systems of equations graphically (only linear, integral solutions, $y = mx + b$ format, no vertical/horizontal lines) (POST MARCH IN GRADE 8). <b>8.G.20</b> Distinguish between linear and nonlinear equations: $ax^2 + bx + c$ ; $a = 1$ (only graphically) (POST MARCH IN GRADE 8).	

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<b>WEEK 2</b>	<p><b>1.2 Slope</b></p> <p>Understanding the connection between a linear equation in the form <math>y = mx + b</math> and its graph.</p> <p>Understanding and applying the idea of slope.</p> <p><i>Suggested per period pacing:</i></p> <p>6. T&amp;D, p. 24; Investigation 1: PS A, p. 25; [Recommended: PS B, p. 26]; PS C, pp. 27–28; S&amp;S, p. 29.</p> <p>7. Investigation 2: Explore, p. 29; PS D, p. 30; *PS E, p. 30; S&amp;S, p. 31.</p> <p>8. Investigation 3: Explore, p. 31; E, p. 32; PS F, p. 32; PS G, p. 33; [Recommended: PS H, #1, 4, p. 34]; S&amp;S, p. 35; {Suggested: Lab Investigation, pp. 36–37}.</p> <p>9. IYOW, p. 43; QQ, pp. 44–45; TE, A359.</p> <p><i>*Graphing calculator is suggested.</i></p>	<p><i>For additional practice or homework:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>6.8: Slope and Intercept, pp. 324–330.</p> <p><b>Skills Intervention for Algebra</b></p> <p>Skill 32: Slope of a Line, pp. 63–64.</p> <p><i>Standardized test review:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>7.1: Naming angles, pp. 343–346.</p>	<p><b>ALGEBRA STRAND</b></p> <p><i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i></p> <p><b>8.A.3</b> Describe a situation involving relationships that matches a given graph.</p> <p><b>8.A.4</b> Create a graph given a description or an expression for a situation involving a linear or nonlinear relationship.</p> <p><b>8.A.5</b> Use physical models to perform operations with polynomials.</p> <p><b>8.A.8</b> Multiply a binomial by a monomial or a binomial (integer coefficients).</p> <p><i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i></p> <p><b>8.A.15</b> Understand that numerical information can be represented in multiple ways: arithmetically, algebraically, and graphically.</p> <p><b>GEOMETRY STRANDS</b></p> <p><i>Students will apply coordinate geometry to analyze problem solving situations.</i></p> <p><b>8.G.13</b> Determine the y-intercept of a line from a graph and explain the meaning of slope as a constant rate of change (POST MARCH IN GRADE 8).</p> <p style="text-align: right;"><i>(continued)</i></p>	<p><b>LP: Course 2:</b></p> <p>5.2: Speed and the Slope Connection: E, p.321;</p> <p>Investigation 1: Walking and Jogging, pp. 322-325 (slope);</p> <p>Investigation 4: Changing the Starting Point, pp. 330-333.</p>

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WEEK 2			<p><b>8.G.14</b> Determine the y-intercept of a line from a graph and be able to explain the y-intercept (POST MARCH IN GRADE 8).</p> <p><b>8.G.16</b> Determine the equation of a line given the slope and the y-intercept (POST MARCH IN GRADE 8).</p> <p><b>8.G.18</b> Solve systems of equations graphically (only linear, integral solutions, <math>y = mx + b</math> format, no vertical/horizontal lines) (POST MARCH IN GRADE 8).</p>	

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
WEEK 2-3	<p><b>1.3 More Explorations with Lines</b></p> <p>Understanding the connection between a linear equation in the form <math>y = mx + b</math> and its graph.</p> <p>Understanding and applying the idea of slope.</p> <p>Using a linear graph to gather information.</p> <p>Fitting a line to data.</p> <p><i>Suggested per period pacing:</i></p> <p>10. *Explore, p. 46; Investigation 1: PS A, p. 47.</p> <p><i>*Graphing calculator is suggested.</i></p>	<p><i>For additional practice or homework:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>4.3: Line of Best Fit, p. 218.</p> <p>6.2: Simplifying expressions, pp. 284–290.</p> <p><i>Standardized test review:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>4.4 Statistics, pp. 222–228.</p> <p><b>Skills Intervention for Algebra</b></p> <p>Skill 29: Graphing Functions, pp. 57–58.</p>	<p><b>ALGEBRA STRAND</b></p> <p><i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i></p> <p><b>8.A.4</b> Create a graph given a description or an expression for a situation involving a linear or nonlinear relationship.</p> <p><b>8.A.5</b> Use physical models to perform operations with polynomials.</p> <p><b>8.A.8</b> Multiply a binomial by a monomial or a binomial (integer coefficients).</p> <p><i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i></p> <p><b>8.A.16</b> Find a set of ordered pairs to satisfy a given linear numerical pattern (expressed algebraically); then plot the ordered pairs and draw the line.</p> <p><b>GEOMETRY STRANDS</b></p> <p><i>Students will apply coordinate geometry to analyze problem solving situations.</i></p> <p><b>8.G.17</b> Graph a line from an equation in slope-intercept form (<math>y = mx + b</math>) (POST MARCH IN GRADE 8).</p> <p><b>8.G.18</b> Solve systems of equations graphically (only linear, integral solutions, <math>y = mx + b</math> format, no vertical/horizontal lines) (POST MARCH IN GRADE 8).</p>	
	<p><b>Review and Self-Assessment</b></p> <p>11. Review and assessment, pp. 64–67.</p> <p>12. Test.</p>			

<b>PACING</b>	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <b>N: Notes</b> <b>LP: Links to the Past</b> <b>LC: Literature Connections</b>
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### CHAPTER 2: QUADRATIC AND INVERSE RELATIONSHIPS

Numbers and Number Sense:

Algebraic Reasoning and Representations:

Functions and Relations:

Geometry:

<b>WEEK 3</b>	<b>2.1 Quadratic Relationships</b> Recognizing quadratic relationships from graphs, equations, and tables. Understanding the connections between a quadratic equation and its graph.  <i>Suggested per period pacing:</i> 13. Explore, p. 70; Investigation 1: *PS A, pp. 72–73. 14. Investigation 2: PS B, p. 74; PS C, p. 76. 15. IYOW, p. 81; QQ, p. 82.	<b>Course 3 Pretest:</b> Questions 38-40; 53-57. <i>For additional practice and homework:</i> <b>Hot Words, Hot Topics</b> 6.7: Graphing on a coordinate plane, p. 316.  <i>Standardized test review:</i> <b>Hot Words, Hot Topics</b> 7.5: Area pp. 372–377, pp. 392–393.	<b>COMMUNICATION STRAND</b> <i>Students will communicate their mathematical thinking coherently and clearly to peers, teachers, and others.</i> <b>8.CM.4</b> Share organized mathematical ideas through the manipulation of objects, numerical tables, drawings, pictures, charts, graphs, tables, diagrams, models, and symbols in written and verbal form.  <b>ALGEBRA STRAND</b> <i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i> <b>8.A.5</b> Use physical models to perform operations with polynomials. <b>8.A.8</b> Multiply a binomial by a monomial or a binomial (integer coefficients).  <b>GEOMETRY STRAND</b> <i>Students will apply coordinate geometry to analyze problem solving situations.</i> <b>8.G.19</b> Graph the solution set of an inequality on a number line (POST MARCH IN GRADE 8). <b>8.G.21</b> Recognize the characteristics of quadratics in tables, graphs, equations, and situations (POST MARCH IN GRADE 8).	<b>LP: Course 2</b> 9.2: Graphs and Equations, Investigation 3, PS F, p. 630. 5.2: Speed and the Slope Connection, Investigation 1: PS B, p. 346; S&S, p. 347; Investigation 2: PS D, p. 349.
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<b>WEEK 4</b>	<p><b>2.2 Families of Quadratics</b></p> <p>Recognizing quadratic relationships from graphs, equations, and tables.</p> <p>Understanding the connections between a quadratic equation and its graph.</p> <p>Solving real world problems involving quadratic and inverse relationships.</p> <p><i>Suggested per period pacing:</i></p> <p>16. T&amp;D, p. 84; Investigation 1: PS A, pp. 84–85, #1, 2; [Recommended: *Investigation 2: pp. 87–89].</p> <p>17. Investigation 3: PS E, pp. 90–91; [Recommended: *PS F, p. 91]; S&amp;S, p. 92.</p> <p>18. [Recommended: Investigation 4: pp. 93–95]; {Suggested: Lab Investigation, p. 96}.</p> <p><i>*Graphing calculator is suggested.</i></p>	<p><i>Standardized test review:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>6.3: Evaluating expressions and formula, pp. 292–293.</p> <p>6.4: Solving linear equations, pp. 296–297.</p> <p>1.4: Factors and multiples, pp.84-85.</p>	<p><b>ALGEBRA STRAND</b></p> <p><i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i></p> <p><b>8.A.4</b> Create a graph given a description or an expression for a situation involving a linear or nonlinear relationship.</p> <p><b>8.A.5</b> Use physical models to perform operations with polynomials.</p> <p><i>Students will perform algebraic procedures accurately.</i></p> <p><b>8.A.8</b> Multiply a binomial by a monomial or a binomial (integer coefficients).</p> <p><i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i></p> <p><b>8.A.15</b> Understand that numerical information can be represented in multiple ways: arithmetically, algebraically, and graphically.</p> <p><b>8.A.19</b> Interpret multiple representations using equation, table of values, and graph (POST MARCH IN GRADE 8).</p>	

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<b>WEEK 4–5</b>	<p><b>2.4 Conjectures</b></p> <p>Making conjectures and writing convincing arguments that are true, or finding a counter example.</p> <p><i>Suggested per period pacing:</i></p> <p>19. Explore, p. 127; Investigation 1: PS B, p. 129, # 1, 4a, b [Recommended: PS A, p. 128].</p> <p>20. Investigation 2: PS C, p. 131; PS D, p. 131; S&amp;S, p. 133.</p> <p>21. QQ, TE, p. 138.</p>		<p><b>PROBLEM SOLVING STRAND</b></p> <p><i>Students will solve problems that arise in mathematics and in other contexts.</i></p> <p><b>8.PS.4</b> Observe patterns and formulate generalizations.</p> <p><b>8.PS.5</b> Make conjectures from generalizations.</p> <p><b>REASONING AND PROOF STRAND</b></p> <p><i>Students will make and investigate mathematical conjectures.</i></p> <p><b>8.RP.3</b> Investigate conjectures in mathematical terms, using mathematical strategies to reach a conclusion.</p> <p><b>8.RP.4</b> Evaluate conjectures by distinguishing relevant from irrelevant information to reach a conclusion or make appropriate estimates.</p> <p><b>8.RP.5</b> Provide supportive arguments for conjectures.</p> <p><b>ALGEBRA STRAND</b></p> <p><i>Students will perform algebraic procedures accurately</i></p> <p><b>8.A.7</b> Add and subtract polynomials (integers coefficients).</p> <p style="text-align: right;"><i>(continued)</i></p>	

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WEEK 4–5			<b>GEOMETRY STRANDS</b> <i>Students will apply coordinate geometry to analyze problem solving situations.</i> <b>8.G.15</b> Graph a line using a table of values (POST MARCH IN GRADE 8).  <i>Students will apply coordinate geometry to analyze problem solving situations.</i> <b>8.G.19</b> Graph the solution set of an inequality on a number line (POST MARCH IN GRADE 8). <b>8.G.21</b> Recognize the characteristics of quadratics in tables, graphs, equations, and situations (POST MARCH IN GRADE 8).	
	<b>Review and Self-Assessment</b> 22. Review and Self-Assessment, pp. 139–143. 23. Continue Review and Self-Assessment; Chapter 2 Test.			

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
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### CHAPTER 3: EXPONENTIAL VARIATION

Numbers and Number Sense: *Exponents and Roots—Develop*

Algebraic Representations: *Coordinate Graphs—Develop; Tables and Graphs—Develop*

Algebraic Reasoning: *Patterns and Numeric Forms—Develop; Properties and Rules—Develop*

Functions and Relations: *Quadratic Expressions/Equations—Develop; Exponential Expressions/ Equations—Develop*

Coordinate Geometry: *Coordinate Representations—Develop*

WEEK 5–6	<b>3.1 Exponents Revisited</b> Understanding integer exponents. Understanding scientific notation. Understanding laws of exponents.  <i>Suggested per period pacing:</i> 24. Explore, p. 146; Investigation 1: PS A, p. 147; PS B, p. 147–148. 25. PS C, p. 148; S&S, p. 148; Investigation 2: T&D, p. 149; PS D, p. 150, # 1, 2, 3, 4, [Enrichment, # 5–9]. 26. T&D, p. 151; PS E, p. 151; PS F, p. 152; S&S, p. 152. 27. Investigation 3: E, p. 153; PS G, p. 154; PS H, p. 154; PS I, p. 155; S&S, p. 155. 28. IYOW, p. 166; QQ, p. 168.	<b>Course 3 Pretest:</b> Questions 13–18. <i>For additional practice or homework:</i> <b>Hot Words, Hot Topics</b> 3.1: Powers and Exponents, pp.168–174. 3.4: Laws of Exponents, p. 188.	<b>REPRESENTATION STRAND</b> <i>Students will use representations to model and interpret physical, social, and mathematical phenomena.</i>  <b>8.R.9</b> Use mathematics to show and understand physical phenomena (e.g., make and interpret scale drawings of figures or scale models of objects).  <b>NUMBER SENSE AND OPERATIONS STRAND</b> <i>Students will understand meanings of operations and procedures, and how they relate to one another.</i>  <b>8.N.1</b> Develop and apply the laws of exponents for multiplication and division.  <b>8.N.2</b> Evaluate expressions with integral exponents.  <b>ALGEBRA STRAND</b> <i>Students will perform algebraic procedures accurately.</i>  <b>8.A.6</b> Multiply and divide monomials.  <b>8.A.8</b> Multiply a binomial by a monomial or a binomial (integer coefficients).  <i>(continued)</i>	<b>Web resources:</b> <a href="http://www.ex.ac.uk/Mirrors/nineplanets">www.ex.ac.uk/Mirrors/nineplanets</a> <a href="http://www.nineplanets.org">www.nineplanets.org</a> <a href="http://www.ex.ac.uk/Mirrors/nineplanets">www.ex.ac.uk/Mirrors/nineplanets</a> <a href="http://www.nineplanets.org">www.nineplanets.org</a>  <b>LP: Course 2:</b> 3.1: Stretching and Shrinking Machines, pp. 146–159. 3.2: Shrinking and Super Machines, pp. 164–170 9.2: Investigation 4: Doubling Up, T&D, p. 632; PS H, p. 632.  <b>LC: King’s Chessboard</b> by David Birch
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PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
WEEK 5–6 (continued)			<p><b>8.A.9</b> Divide a polynomial by a monomial (integer coefficients).</p> <p><b>Note:</b> The degree of the denominator is less than or equal to the degree of the numerator for all variables.</p> <p><i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i></p> <p><b>8.A.19</b> Interpret multiple representations using equation, table of values, and graph (POST MARCH IN GRADE 8).</p>	

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
<b>WEEK 6-7</b>	<p><b>3.2 Exponential Relationships</b> Recognizing and describing exponential relationships.</p> <p><i>Suggested per period pacing:</i></p> <p>29. Explore, p. 169; Investigation 1: T&amp;D, p. 170; PS A, p. 171.</p> <p>30. PS B, p. 172; S&amp;S, p. 172.</p> <p>31. {Suggested, PS C,p.173}; PS D, p. 174, #1, 2; S&amp;S, p. 174.</p> <p>32. *Investigation 3: PS E, p. 175, #1, 2, [Enrichment, #3-6]; T&amp;D, p. 176; *PS F, p. 177; [Recommended, S&amp;S, p. 178].</p> <p>33. [Recommended, Investigation 4, pp. 178-181]; IYOW, p. 185; QQ, p. 189.</p> <p><i>*Graphing calculator is suggested.</i></p>	<p><i>For additional practice or homework:</i></p> <p><b>Skills Intervention for Algebra</b></p> <p>Skill 16: Percent of a Number, pp. 31-32.</p> <p><i>Standardized test review:</i></p> <p><b>Skills Intervention for Algebra</b></p> <p>Skill 15: Percents as Fractions and Decimals, pp. 29-30.</p>	<p><b>REPRESENTATION STRAND</b></p> <p><i>Students will use representations to model and interpret physical, social, and mathematical phenomena.</i></p> <p><b>8.R.10</b> Use mathematics to show and understand social phenomena (e.g., determine profit from sale of yearbooks).</p> <p><b>8.R.11</b> Use mathematics to show and understand mathematical phenomena (e.g., use tables, graphs, and equations to show a pattern underlying a function).</p> <p><b>NUMBER SENSE AND OPERATIONS STRAND</b></p> <p><i>Students will understand meanings of operations and procedures, and how they relate to one another.</i></p> <p><b>8.N.1</b> Develop and apply the laws of exponents for multiplication and division.</p> <p><b>8.N.4</b> Apply percents to: tax, percent increase/decrease, simple interest, sale price, commission, interest rates, gratuities.</p> <p style="text-align: right;"><i>(continued)</i></p>	

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
WEEK 6–7 (continued)			<b>ALGEBRA STRAND</b> <i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i> <b>8.A.4</b> Create a graph given a description or an expression for a situation involving a linear or nonlinear relationship.  <i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i> <b>8.A.15</b> Understand that numerical information can be represented in multiple ways: arithmetically, algebraically, and graphically. <b>8.A.19</b> Interpret multiple representations using equation, table of values, and graph (POST MARCH IN GRADE 8).	

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <b>N: Notes</b> <b>LP: Links to the Past</b> <b>LC: Literature Connections</b>
<b>WEEK 7-8</b>	<p><b>3.3 Radicals</b></p> <p>Understanding roots.</p> <p>Identifying rational and irrational numbers.</p> <p><i>Suggested per period pacing:</i></p> <p>34. Explore, p. 190; Investigation 1: PS A, p. 191; * PS B, p. 192 (even number problems); [Enrichment, PS C, p. 192]; S&amp;S, p. 193.</p> <p>35. [Recommended, Investigation 2: PS D, p. 193; E, p. 95; PS E, p. 195-196; PS F, p.196; S&amp;S, p.197.]</p> <p>36. Investigation 4: E, p. 200; T&amp;D, p. 200; PS I, p. 201; [Recommended PS J, p. 202]; S&amp;S p. 202.</p> <p>37. IYOW, p. 204; QQ, p. 207.</p> <p><i>*Graphing calculator is suggested.</i></p>	<p><i>For additional practice or homework:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>3.2: Square and Cube Roots, pp. 176–178.</p> <p><i>Standardized test review:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>7.9: Pythagorean theorem, pp. 394–397.</p> <p><b>Grade 8 Mathematics New York Review</b></p> <p>Lesson 4.3: Percents Less than 1% and Greater than 100%.</p> <p>Lesson 4.5: Applying Percents to Real-World Situations, pp. 112-116.</p> <p>Lesson 4.6: Estimating Percents, pp. 117-121.</p>	<p><b>ALGEBRA STRAND</b></p> <p><i>Students will perform algebraic procedures accurately.</i></p> <p><b>8.A.7</b> Add and subtract polynomials (integer coefficients).</p> <p><b>NUMBER SENSE AND OPERATIONS</b></p> <p><i>Students will understand meanings of operations and procedures, and how they relate to one another.</i></p> <p><b>A.N.2</b> Simplify radical terms (no variable in the radicand).</p> <p><b>A.N.3</b> Perform the four arithmetic operations using like and unlike radical terms, and express the result in simplest form.</p> <p><b>Note:</b> The New York State Scope places these concepts in ALGEBRA. These concepts are introduced in Grade 8 to prepare students for later mastery.</p> <p style="text-align: right;"><i>(continued)</i></p>	<p><b>LC:</b> <i>What's Your Angle Pythagoras?</i> by Julie Ellis</p> <p><i>Mathematicians are People, Too</i> by Lyetta Reimer and Wilbert Reimer.</p> <p><b>LP: Course 1:</b></p> <p>4.1: Using Percents, pp. 226-236.</p> <p>4.2: Finding a Percent of a Quantity, pp. 248-252.</p> <p>4.3: Percents and Wholes, pp. 260-268.</p> <p>8.5: Pythagorean Theorem, pp. 536-543.</p> <p><b>LP: Course 2:</b></p> <p>4.4, Finding Distances, pp. 271-275.</p> <p>8.3: Percentages and Proportions, pp. 562-572.</p>

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
<b>WEEK 7–8 (continued)</b>			<b>GEOMETRY STRAND</b> <i>Students will identify and justify geometric relationships, formally and informally.</i>  <b>7.G.6</b> Explore the relationship between the lengths of the three sides of a right triangle to develop the Pythagorean Theorem (POST MARCH IN GRADE 7).  <b>7.G.8</b> Use the Pythagorean Theorem to determine the unknown length of a side of a right triangle (POST MARCH IN GRADE 7).  <b>7.G.9</b> Determine whether a given triangle is a right triangle by applying the Pythagorean Theorem and using a calculator (POST MARCH IN GRADE 7).	
	<b>Review and Self-Assessment</b> 38. Review and Self-Assessment, pp. 208–211. 39. Continue Review, Test.			

<b>PACING</b>	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <b>N: Notes</b> <b>LP: Links to the Past</b> <b>LC: Literature Connections</b>
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### CHAPTER 4: SOLVING EQUATIONS

Algebraic Representations: *Coordinate Graphs—Develop; Tables and Graphs—Develop*

Functions and Relations: *Linear Expressions/Equations—Develop; Quadratic Expressions/Equations—Develop*

Coordinate Geometry: *Coordinate Representations—Develop*

<b>WEEK 8–9</b>	<b>4.1 Revisiting Equations</b> Using algebraic methods to solve equations.  <i>Suggested per period pacing:</i> 40. T&D, p. 214; Investigation 1: E, p. 215; PS A, p. 216; T&D, p. 216; E, 216; PS B, p. 217 (even # only) . 41. PS C, p. 217 (even # only); PS D, p. 218(even # only); S&S, p. 218. 42. IYOW, p. 224; QQ, p. 225, A370 (TE).	<b>Course 3 Pretest:</b> Questions 34–37. <i>For additional practice or homework:</i> <b>Hot Words, Hot Topics</b> 6.4: Solving Linear Equations, pp. 296–307; pp. 336, # 8–13.  <b>Skills Intervention for Algebra</b> Skill 21: Solve Two-Step Equations, pp. 41–42.	<b>PROBLEM SOLVING STRAND</b> <i>Students will solve problems that arise in mathematics and in other contexts.</i> <b>8.PS.6</b> Represent problem situations verbally, numerically, algebraically, and graphically.  <i>Students will apply and adapt a variety of appropriate strategies to solve problems.</i> <b>8.PS. 9</b> Work backwards from a solution.  <b>ALGEBRA STRAND</b> <i>Students will perform algebraic procedures accurately.</i> <b>7.A.4</b> Solve multi-step equations by combining like terms, using the distributive property, or moving variables to one side of the equation (POST MARCH GRADE 7).  <i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i> <b>8.A.2</b> Write verbal expressions that match given mathematical expressions. Grade 8 Mathematics New York Review  <b>7.1:</b> Converting Metric and Customary Measurements, pp. 255–261.	<b>LP: Course 2:</b> 1.1: Variables and Expressions, Investigation 4, pp. 18–21. 6.1: Two Solution Methods Revisited, pp. 384–385. 6.2: A Model for Solving Equations, pp. 395–403.
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PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <b>N: Notes</b> <b>LP: Links to the Past</b> <b>LC: Literature Connections</b>
<b>WEEK 9–10</b>	<p><b>4.2 Inequalities</b></p> <ul style="list-style-type: none"> <li>Understanding and solving inequalities.</li> <li>Graphing inequalities.</li> </ul> <p><i>Suggested per period pacing:</i></p> <p>43. T&amp;D, p. 226; Investigation 1: PS A, p. 227; PS B, p. 228; S&amp;S, p. 229.</p> <p>44. Investigation 2: PS C, p. 230; T&amp;D, p. 230; PS D, p. 231; S&amp;S, p. 231.</p> <p><b>Note:</b> Review methods and strategies to distinguish <math>&gt;</math>, <math>&lt;</math> symbols.</p> <p>45. Investigation 3: E, p. 232; PS E, p. 232–233; PS F, p. 233; E, p. 234; PS G, p. 234; S&amp;S, p. 234, (#1 only).</p> <p><b>Note:</b> Review mathematical use of the words <i>and</i>, <i>or</i> TG, p. T232.</p> <p>46. IYOW, p. 238; QQ, p. 239.</p>	<p><i>For additional practice or homework:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>6.6: Inequalities, pp. 312–315; p. 336, #16, 17.</p> <p><i>Standardized test review:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>7.1: Geometry, p. 348</p> <p><b>Grade 8 Mathematics New York Review Series</b></p> <p>Lesson 5.3: Interpreting Graphs, pp. 141-145.</p>	<p><b>PROBLEM SOLVING STRAND</b></p> <p><i>Students will build new mathematical knowledge through problem solving.</i></p> <p><b>8.PS.3</b> Understand and demonstrate how written symbols represent mathematical ideas.</p> <p><b>ALGEBRA STRAND</b></p> <p><i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i></p> <p><b>8.A.1</b> Translate verbal sentences into algebraic inequalities.</p> <p><b>8.A.3</b> Describe a situation involving relationships that matches a given graph.</p> <p><b>8.A.4</b> Create a graph given a description or an expression for a situation involving a linear or nonlinear relationship.</p> <p><i>Students will perform algebraic procedures accurately.</i></p> <p><b>8.A.13</b> Solve multi-step inequalities and graph the solution set on a number line (POST MARCH GRADE 8).</p> <p><b>8.A.14</b> Solve linear inequalities by combining like terms, using the distributive property, or moving variables to one side of the inequality (include multiplication or division of inequalities by a negative number) (POST MARCH Grade 8).</p> <p style="text-align: right;"><i>(continued)</i></p>	<p><b>LP: Course 2</b></p> <p>4.1: Adding and Subtracting with Negative Numbers, pp. 232-233.</p>

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
<b>WEEK 9–10 (continued)</b>			<p><i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i></p> <p><b>8.A.15</b> Understand that numerical information can be represented in multiple ways: arithmetically, algebraically, and graphically.</p> <p><b>GEOMETRY STRAND</b></p> <p><i>Students will apply coordinate geometry to analyze problem solving situations.</i></p> <p><b>A.G. 6</b> Graph linear inequalities.</p> <p><b>Note:</b> These concepts are introduced in Grade 8 to prepare students for later mastery.</p> <p><i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i></p> <p><b>8.G.19</b> Graph the solution set of an inequality on a number line (POST MARCH GRADE 8).</p>	
	<p><b>Review and Self-Assessment</b></p> <p>47. Review and Self-Assessment, pp. 281–283</p> <p>48. Continue Review and Test</p>			

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
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### CHAPTER 4: SOLVING EQUATIONS

Algebraic Representations: *Coordinate Graphs—Develop; Tables and Graphs—Develop*

Functions and Relations: *Linear Expressions/Equations—Develop; Quadratic Expressions/Equations—Develop*

Coordinate Geometry: *Coordinate Representations—Develop*

<b>WEEK 10–11</b>	<p><b>4.3 Using Graphs and Tables to Solve Equations</b></p> <p>Using graphs to estimate solutions of equations.</p> <p>Using tables to estimate solutions of equations.</p> <p><i>Suggested per period pacing:</i></p> <p>49. *Explore, p. 240; Investigation 1: T&amp;D, p. 242; *PS A, pp. 242–243; *PS B, p. 244; S&amp;S, p. 244.</p> <p>50. Investigation 2: T&amp;D, p. 245; E, p. 246; *PS C, p. 247 (odd #); [Enrichment, *PS D, p. 248]; S&amp;S, p. 248.</p> <p>51. IYOW, p. 254; QQ, p. 254–255.</p> <p>*Graphing Calculator is suggested</p>	<p><i>For additional practice or homework:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>6.7: Graphing on a Coordinate Plane, p. 319.</p> <p><b>Skills Intervention for Algebra</b></p> <p>Skill 31: Graphing Equations.</p> <p><i>Standardized test review</i></p> <p><b>New York State Review Series</b></p> <p>Lesson 5.3: Interpreting Graphs, pp. 141–145.</p>	<p><b>ALGEBRA STRAND</b></p> <p><i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i></p> <p><b>8.A.3</b> Describe a situation involving relationships that matches a given graph.</p> <p><b>8.A.4</b> Create a graph given a description or an expression for a situation involving a linear or nonlinear relationship.</p> <p><b>8.A.15</b> Understand that numerical information can be represented in multiple ways: arithmetically, algebraically, and graphically.</p> <p><b>GEOMETRY STRAND</b></p> <p><i>Students will apply coordinate geometry to analyze problem solving situations.</i></p> <p><b>8.G.21</b> Recognize the characteristics of quadratics in tables, graphs, equations, and situations (POST MARCH GRADE 8).</p>	
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PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <b>N: Notes</b> <b>LP: Links to the Past</b> <b>LC: Literature Connections</b>
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### CHAPTER 5: TRANSFORMATIONAL GEOMETRY

Algebraic Representations: *Coordinate Graphs—Develop*

Two Dimensional Shapes: *Polygons—Develop*

Geometric Relationships: *Congruence—Develop; Similarity—Develop*

Coordinate Geometry: *Transformations—Develop*

WEEK 11	<b>5.1 Reflection</b>  Recognizing reflection and rotational symmetry.  Performing reflections.  <i>Suggested per period pacing:</i> 52. Explore, p. 289; Investigation 1: PSA, p. 290–291; S&S, p. 291. 53. Investigation 2: PS B, pp. 293–294; PS C, p. 295; S&S, p. 295. 54. [Recommended-Investigation 3: T&D, p. 296; PS D, p. 296; S&S, p. 296]; IYOW, P. 300; QQ, p. 301.  MATERIALS NEEDED: GeoMirrors	<b>Course 3 Pretest:</b> Questions 40-44  <i>For additional practice:</i> <b>Hot Words, Hot Topics</b> 7.3: Reflection Symmetry, pp. 360–362.  <i>Standardized test review:</i> <ul style="list-style-type: none"> <li>Review classification of triangles, quadrilaterals.</li> <li>Review perpendicular bisector.</li> <li>Review the capital letters of the alphabet for lines of symmetry.</li> </ul> <b>Skills Intervention for Algebra</b> Skill 39: Reflections, pp. 77–78.	<b>PROBLEM SOLVING STRAND</b>  <i>Students will solve problems that arise in mathematics and in other contexts.</i>  <b>8.PS.6</b> Represent problem situations verbally, numerically, algebraically, and graphically.  <b>GEOMETRY STRANDS</b>  <i>Students will use visualization and spatial reasoning to analyze characteristics and properties of geometric shapes.</i>  <b>8.G.0</b> Construct the following using a straight edge and compass: Segment congruent to a segment, angle congruent to an angle, perpendicular bisector angle bisector (POST MARCH IN GRADE 8).  <i>Students will apply transformations and symmetry to analyze problem solving situations.</i>  <b>8.G.7</b> Describe and identify transformations in the plane, using proper function notation (rotations, reflections, translations, and dilations).  <b>8.G.9</b> Draw the image of a figure under a reflection over a given line.  <b>8.G.12</b> Identify the properties preserved and not preserved under a reflection, rotation, translation, and dilation.	<b>N:</b> All transformational Geometry should include work done on the coordinate plane. (8.G.7).  <b>LP: Course 1</b> 1.4: Patterns in Geometry, pp. 42-58. 2.2: Patterns in Fractions, pp. 96-106.  <b>LP: Course 2</b> 7.1: Are They the Same?, pp. 450-463. 7.2: Polygon Similarity and Congruence, pp. 471-478. 8.1: Comparing with Ratios and Rates, pp. 520-531. 8.2: Using Proportions, pp. 540-551.
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PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <b>N: Notes</b> <b>LP: Links to the Past</b> <b>LC: Literature Connections</b>
<b>WEEK 11–12</b>	<p><b>5.2 Rotation</b></p> <p>Recognizing reflection and rotational symmetry.</p> <p>Performing rotations.</p> <p><i>Suggested per period pacing:</i></p> <p>55. T&amp;D, p. 302; Investigation 1, pp. 302–303; PS B, p. 304; S&amp;S, pp. 304.</p> <p>56. Investigation 2, PS C, pp. 305–306; PS D, p. 306; S&amp;S, p. 306.</p> <p>57. Investigation 3, PS E, p. 307; PS F, p. 308; S&amp;S, p. 308; IYOW, p. 311; QQ, p. A372.</p> <p><b>Note:</b> Review TG, pp. A371–372.</p>	<p><i>For additional practice:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>7.3: Rotations, p. 363.</p> <p><i>Standardized Test Review</i></p> <p><b>New York State Review Series</b></p> <p>Lesson 5.4: Drawing Linear and Non-Linear Graphs, pp. 146-150.</p>	<p><b>GEOMETRY STRAND</b></p> <p><i>Students will apply transformations and symmetry to analyze problem solving situations.</i></p> <p><b>8.G.7</b> Describe and identify transformations in the plane, using proper function notation (rotations, reflections, translations, and dilations).</p> <p><b>8.G.8</b> Draw the image of a figure under rotations of 90 and 180 degrees.</p> <p><b>8.G.12</b> Identify the properties preserved and not preserved under a reflection, rotation, translation, and dilation.</p>	<p><b>N:</b> All transformational geometry should include work done on the coordinate plane (<b>8.G.7</b>).</p>

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <b>N: Notes</b> <b>LP: Links to the Past</b> <b>LC: Literature Connections</b>
<b>WEEK 12</b>	<p><b>5.3 Translation and Combining Transformations</b></p> <p>Performing translations. Combining transformations.</p> <p><i>Suggested per period pacing:</i></p> <p>58. T&amp;D, p. 313; Investigation 1: E, p. 314; PS A, p. 315; PS B, p. 315; S&amp;S, p. 315.</p> <p>59. {Suggested: Investigation 2, PS C, p. 316; PS D, p.317; S&amp;S, p. 318; Lab Investigation, pp. 318-321}; Investigation 2, PS C, p. 316; PS D, p. 317; S&amp;S, p. 318; {Suggested: Lab Investigation, pp. 318–321}; IYOW, p. 326; QQ, TG p. A373.</p> <p><b>Note:</b> Review TG, pp. 371–372.</p>	<p><i>For additional practice:</i></p> <p><b>Hot Words, Hot Topics</b> 7.3: Translations, p. 364.</p> <p><i>Standardized Test Review:</i></p> <p><b>Skills Intervention for Algebra</b> Skill 41: Translations, pp. 81–82.</p>	<p><b>GEOMETRY STRAND</b></p> <p><i>Students will apply transformations and symmetry to analyze problem solving situations.</i></p> <p><b>8.G.7</b> Describe and identify transformations in the plane, using proper function notation (rotations, reflections, translations, and dilations).</p> <p><b>8.G.10</b> Draw the image of a figure under a translation.</p> <p><b>8.G.12</b> Identify the properties preserved and not preserved under a reflection, rotation, translation, and dilation.</p>	<p><b>N:</b> All transformational geometry should include work done on the coordinate plane (<b>8.G.7</b>).</p>

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <b>N: Notes</b> <b>LP: Links to the Past</b> <b>LC: Literature Connections</b>
<b>WEEK 12–13</b>	<p><b>5.4 Scaling (Dilation)</b> Performing scalings.</p> <p><i>Suggested per period pacing:</i></p> <p>60. Explore, p. 329; Investigation 1: PS A, p. 331; E, p. 332; PS B, p. 333; S&amp;S, p. 333.</p> <p>61. IYOW, p. 337; QQ, TG, p. A374.</p> <p><b>Note:</b> Review TG, p. A372.</p>	<p><i>For additional practice:</i></p> <p><b>Hot Words, Hot Topics</b> 8.6: Size and Scale, pp. 424–426.</p> <p><i>Standardized test review:</i></p> <p><b>Hot Words, Hot Topics</b> 8.2: Length and Distance, pp. 412–413.</p> <p><b>Skills Intervention for Algebra</b> Skill 40: Dilations and Rotations, pp. 79–80. Skill 25: Scale Drawings, pp. 49–50.</p>	<p><b>PROBLEM SOLVING STRAND</b> <i>Students will build new mathematical knowledge through problem solving.</i></p> <p><b>8.PS.10</b> Use proportionality to model problems.</p> <p><b>REPRESENTATION STRAND</b> <i>Students will use representations to model and interpret physical, social, and mathematical phenomena.</i></p> <p><b>8.R.9</b> Use math to show and understand physical phenomena (e.g., make and interpret scale drawings of figures or scale models of objects).</p> <p><b>GEOMETRY STRAND</b> <i>Students will apply transformations and symmetry to analyze problem solving situations.</i></p> <p><b>8.G.7</b> Describe and identify transformations in the plane, using proper function notation (rotations, reflections, translations, and dilations).</p> <p><b>8.G.11.</b> Draw the image of a figure under a dilation.</p> <p><b>8.G.12</b> Identify the properties preserved and not preserved under a reflection, rotation, translation, and dilation.</p>	<p><b>N:</b> All transformational geometry should include work done on the coordinate plane (<b>8.G.7</b>).</p>

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b>
<b>WEEK 13</b>	<p><b>5.5 Coordinates and Transformations</b></p> <p>Performing reflections.</p> <p>Performing rotations.</p> <p>Performing translations.</p> <p><i>Suggested per period pacing:</i></p> <p>62. Explore, p. 339; Investigation 1: PS A, pp. 340–341; Ps B, p. 342; S&amp;S, p. 342.</p> <p>63. Investigation 2: PS C, p. 343; T&amp;D, p. 344; PS D, pp. 344–345; S&amp;S, p. 345.</p> <p>64. IYOW, p. 350; QQ, p. 352.</p>	<p><i>Standardized Test Review:</i></p> <p><b>Math Skills Maintenance, Course 3</b></p> <p>Skill 31: Measurement: The Customary System, pp. 64–66.</p> <p>Skill 32: Measurement: The Metric System, pp. 67–69.</p> <p><b>New York State Review Series</b></p> <p>6.1 Identifying Vertical Angles, pp. 193-215.</p> <p>7.1 Converting Metric and Customary Measurement, pp. 255-259.</p>	<p><b>REPRESENTATION STRAND</b></p> <p><i>Students will create and use representations to organize, record, and communicate mathematical ideas.</i></p> <p><b>8.R.1</b> Use physical objects, drawings, charts, tables, graphs, symbols, equations, and technology as representations.</p> <p><b>8.R.2</b> Explain, describe, and defend mathematical ideas using representations.</p> <p><b>GEOMETRY STRAND</b></p> <p><i>Students will apply transformations and symmetry to analyze problem solving situations.</i></p> <p><b>8.G.1</b> Identify pairs of vertical angles as congruent</p> <p><b>8.G.2</b> Identify pairs of supplementary and complementary angles</p> <p><b>8.G.3</b> Calculate the missing angle in a supplementary or complementary pair</p> <p><b>8.G.4</b> Determine angle pair relationships when given two parallel lines cut by a transversal</p> <p><b>8.G.5</b> Calculate the missing angle measurements when given two parallel lines cut by a transversal.</p> <p><b>8.G.6</b> Calculate the missing angle measurements when given two intersecting lines and an angle.</p> <p style="text-align: right;"><i>(continued)</i></p>	<p><b>N:</b> reference web site <a href="http://www.explorellearning.com">www.explorellearning.com</a></p> <p><b>LP: Course 1</b></p> <p>8.1:Angles, pp. 466-477.</p> <p>7.1: Are They the Same? pp. 450-464.</p> <p>7.2: Polygon Similarity and Congruence, pp. 471-477.</p>

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
<b>WEEK 13 (continued)</b>			<p><b>8.G.7</b> Describe and identify transformations in the plane, using proper function notation (rotations, reflections, translations, and dilations).</p> <p><b>8.G.8</b> Draw the image of a figure under rotations of 90 and 180 degrees.</p> <p><b>8.G.9</b> Draw the image of a figure under a reflection over a given line.</p> <p><b>8.G.10</b> Draw the image of a figure under a translation.</p> <p><b>8.G.12</b> Identify the properties preserved and not preserved under a reflection, rotation, translation, and dilation.</p> <p><b>8.A.12</b> Apply algebra to determine the measure of angles formed by or contained in parallel lines cut by a transversal and by intersecting lines.</p>	
	<p><b>Review and Self-Assessment</b></p> <p>65. Review &amp; Self-Assessment, pp. 353–355</p> <p>66. Continue Review, Test</p>			

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### CHAPTER 6: WORKING WITH EXPRESSIONS

Algebraic Reasoning: *Patterns and Numeric Forms—Develop; Properties and Rules—Develop*  
 Functions and Relations: *Rational Expressions/ Equations—Develop*

WEEK 14	<b>6.1 Rearranging Algebraic Expressions</b>  Using geometric models to illustrate the distributive property to expand expressions of the form $a(b + c)$ to simplify algebraic expressions.  <i>Suggested per period pacing:</i> 67. #T&D, p.358; Investigation 1: PS A, pp. 359–360. 68. PS B, pp. 360–361; S&S, p. 361; *Investigation 2, T&D, pp. 362–363. 69. PS. C, pp. 363–364; PS D, pp. 364–365; S&S, p. 365. 70. Lab Investigation, pp. 366–367.  #Algebra tiles are recommended  *Graphing calculator is suggested	<b>Course 3 Pretest:</b> Questions 26-29; 30-33. <i>For additional practice or homework:</i> <b>Hot Words,Hot Topics</b> 6.2: Simplifying Expressions, pp. 289–293. 6.3: Evaluating Expressions and Formulas, pp. 292–295.  <b>Math Skills Maintenance</b> 30: Using Properties, pp. 62–63.	<b>ALGEBRA STRAND</b> <i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i>  <b>8.A.5</b> Use physical models to perform operations with polynomials.  <i>Students will perform algebraic procedures accurately.</i>  <b>8.A.6</b> Multiply and divide monomials. <b>8.A.7</b> Add and subtract polynomials (integer coefficients). <b>8.A.8</b> Multiply a binomial by a monomial or a binomial (integer coefficients).  <i>Students will apply coordinate geometry to analyze problem solving situations.</i>  <b>8.A.19</b> Interpret multiple representations using equation, table of values and graph (POST MARCH IN GRADE 8).  <b>8.G.20</b> Distinguish between linear and nonlinear equations $ax^2 + bx + c$ ; $a = 1$ (only graphically) (POST MARCH IN GRADE 8).  <b>8.G.21</b> Recognize the characteristics of quadratic in tables, graphs, equations, and situations (POST MARCH IN GRADE 8).	<b>LP:Course 1</b> 2.2: Patterns in Fractions, pp. 96-105.  <b>Course 2</b> 1.3: The Distributive Property, pp. 52-68. 4.1: Adding and Subtracting with Negative Numbers, pp. 218-235. 5.2: Speed and the Slope Connection, pp. 321-333. 5.3: Recognizing Linear Relationships, pp. 344-353. 6.1: Two Solution Methods Revisited, pp. 384-391. 6.2: A Model for Solving Equations, pp. 395-403. 6.3: Thinking With Symbols, pp.409-414. 8.1: Comparing With Ratios and Rates, pp. 520-531. 9.2: Graphs and Equations, pp. 602-615.
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<b>WEEK 14–15</b>	<p><b>6.2 Expanding Products of Binomials</b></p> <p>Using geometric models to expand expressions.</p> <p>Using the distributive property to expand expressions.</p> <p><i>Suggested per period pacing:</i></p> <p>71. T&amp;D, p.373; #Investigation 1: PS A, pp. 374–375; S&amp;S, p. 375.</p> <p>72. Investigation 2: PS B, p. 377; PS C, p. 378; S&amp;S, p. 378.</p> <p>73. Investigation 3, E, p. 378; T&amp;D, p. 379; PS D, p. 379; PS E, p. 379.</p> <p>74. PS F, p. 380; S&amp;S, p. 380; Investigation 4: PS G, p. 381, #1, 2.</p> <p>75. PS G, #3–5; T&amp;D, p. 381; PS H, p. 382; T&amp;D, p. 382.</p> <p>76. PS I, p. 383; S&amp;S, p. 383; IYOW, p. 387; QQ, pp. 388–389.</p> <p>#Algebra tiles are recommended</p>	<p><i>For additional practice or homework:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>6.2: Simplifying Expressions, pp. 286–288.</p>	<p><b>ALGEBRA STRAND</b></p> <p><i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i></p> <p><b>8.A.5</b> Use physical models to perform operations with polynomials.</p> <p><i>Students will perform algebraic procedures accurately.</i></p> <p><b>8.A.6</b> Multiply and divide monomials.</p> <p><b>8.A.7</b> Add and subtract polynomials (integer coefficients).</p> <p><b>8.A.8</b> Multiply a binomial by a monomial or a binomial (integer coefficients). (Additional Notes &amp; Answers pp. 358–359.)</p> <p><i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i></p> <p><b>8.A.19</b> Interpret multiple representations using equations, table values, and graph (POST MARCH IN GRADE 8).</p> <p><i>Students will apply coordinate geometry to analyze problem solving situations.</i></p> <p><b>8.G.21</b> Recognize the characteristics of quadratic in tables, graphs, equations, and situations (POST MARCH IN GRADE 8).</p>	<p>N: Refer to TG, p. A681.</p>

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<b>WEEK 16</b>	<p><b>6.3 Patterns in Products of Binomials</b></p> <p>Using the distributive property to expand expressions.</p> <p>Expanding expressions of the forms <math>(ax + b)</math>, <math>(ax - b)</math>, and <math>(ax + b)(ax - b)</math>.</p> <p><i>Suggested per period pacing:</i></p> <p>77. #Explore, p. 390; Investigation 1: #PS A, pp. 391–392; PS B, p. 391.</p> <p>78. #PS C, pp. 391, 392; S&amp;S, p. 392.</p> <p>79. Investigation 2, #PS D, p. 393; E, p. 394; PS E, pp. 394–395; S&amp;S, p. 395.</p> <p>80. IYOW, p. 398; QQ, p. 399.</p> <p>#Algebra tiles suggested</p>	<p><i>Standardized Test Review:</i></p> <p><b>New York Review Series</b></p> <p>5.7: Adding and Subtracting Polynomials, pp. 158-162.</p>	<p><b>ALGEBRA STRAND</b></p> <p><i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i></p> <p><b>8.A.5</b> Use physical models to perform operations with polynomials.</p> <p><i>Students will perform algebraic procedures accurately.</i></p> <p><b>8.A.6</b> Multiply and divide monomials.</p> <p><b>8.A.7</b> Add and subtract polynomials (integer coefficients).</p> <p><b>8.A.8</b> Multiply a binomial by a monomial or a binomial (integer coefficients).</p> <p><i>Students will apply coordinate geometry to analyze problem solving situations.</i></p> <p><b>8.G.20</b> Distinguish between linear and nonlinear equations <math>ax^2 + bx + c</math>; <math>a = 1</math> (only graphically) (POST MARCH IN GRADE 8).</p> <p><b>8.G.21</b> Recognize the characteristics of quadratic in tables, graphs, equations, and situations (POST MARCH IN GRADE 8).</p>	

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
<b>WEEK 16</b>	<p><b>6.4 Working with Algebraic Fractions</b></p> <p>Simplifying expressions involving algebraic fractions.</p> <p><i>Suggested per period pacing:</i></p> <p>81. T&amp;D, p. 400; *Investigation 1, PS A, p. 401; [Recommended, PS B, pp. 402–403].</p> <p>82. Investigation 2, T&amp;D, p. 403; E, p. 404; PS C, p. 405; [Recommended, PS D, pp. 405]; S&amp;S, p. 406.</p> <p>83. QQ, TG, p. A682.</p> <p>*Graphing Calculators are suggested</p>		<p><b>REPRESENTATION STRAND</b></p> <p><i>Students will select, apply, and translate among mathematical representations to solve problems.</i></p> <p><b>8.R.6</b> Use models to explore problem situations.</p> <p><b>8.R.7</b> Investigate relationships between different representations and their impact on a given problem.</p> <p><b>8.R.8</b> Use representation as a tool for exploring and understanding mathematical ideas.</p> <p><b>ALGEBRA STRAND</b></p> <p><i>Students will perform algebraic procedures accurately.</i></p> <p><b>8.A.8</b> Multiply a binomial by a monomial or a binomial (integer coefficients).</p> <p><b>8.A.9</b> Divide a polynomial by a monomial (integer coefficients).</p> <p><b>Note:</b> The degree of the denominator is less than or equal to the degree of the numerator for all variables.</p> <p><b>GEOMETRY STRAND</b></p> <p><i>Students will apply coordinate geometry to analyze problem solving situations.</i></p> <p><b>8.G.15</b> Graph a line using a table of values (POST MARCH IN Grade 8).</p>	
	<p><b>Review and Self-Assessment</b></p> <p>84. Begin Review and Self Assessment, pp. 426–429.</p> <p>85. Continue Review and Self Assessment.</p> <p>86. Test, Chapter 6.</p>			

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### CHAPTER 7: SOLVING QUADRATIC EQUATIONS

Number and Number Sense: *Exponents and Roots*

Algebraic Reasoning: *Patterns and Numeric Forms; Properties and Rules*

Functions and Relations: *Quadratic Expressions/Equations*

WEEK 18	<b>7.1 Solving by Backtracking</b> Using backtracking to undo square roots, squares, reciprocals, and changes of sign.  <i>Suggested per period pacing:</i> 87. T&D, p. 432; *Investigation 1: PS A, pp. 433–434. 88. PS B, p. 435; S&S, p.435. 89. Investigation 2: T&D, p. 436. PS C, pp. 436–437 #1–7. 90. PS D, pp. 437–438 #1, 2; S&S, p. 438; IYOW, p. 440; QQ, TG, p. A684.  *Scientific Calculator is recommended	<i>For additional practice and homework:</i> <b>Math Skills Maintenance Workbook, Course 3</b> Skill 25: Adding and Subtracting Integers, pp. 52–53. Skill 28: Multiplying and Dividing Integers, pp. 58–59.  <i>Standardized test review:</i> <b>Hot Words, Hot Topics</b> 6.1: Writing Expressions and Equations, pp. 276–283.  <b>Grade 8 Mathematics New York State Review Series</b> Lesson 5.7: Adding and Subtracting Polynomials, pp. 158-162.	<b>PROBLEM SOLVING STRAND</b> <i>Students will apply and adapt a variety of appropriate strategies to solve problems.</i> <b>8.PS.8</b> Understand how to break a complex problem into simpler parts or use a similar problem type to solve a problem. <b>8.PS.9</b> Work backwards from a solution.  <b>ALGEBRA STRAND</b> <i>Students will perform algebraic procedures accurately.</i> <b>8.A.8</b> Multiply a binomial by a monomial or a binomial (integer coefficients).	<b>LP: Course 1</b> 9.2: Backtracking, pp. 570-579.  <b>Course 2</b> 6.1: Two Solution Methods Revisited, pp. 384-391. 9.2: Graphs and Equations, pp. 624-635.  <b>Course 3</b> 2.1: Quadratic Relationships, pp. 70-77. 2.2: Families of Quadratics, pp. 83-95. 4.1: Revisiting Equations, pp. 288-297. 6.2: Expanding Products of Binomials, pp. 373-384. 6.3: Patterns in Products of Binomials, pp. 390-395.
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PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
<b>WEEK 19</b>	<p><b>7.2 Solving by Factoring</b> Solving quadratic equations by factoring.</p> <p><i>Suggested per period pacing:</i></p> <p>91. T&amp;D, p.442; Investigation 1: PS A, p. 442; T&amp;D, p. 443 ; PS B, p. 444; S&amp;S, p. 444.</p> <p>92. *Investigation 2: E., p. 445; PS C, p. 446.</p> <p>93. T&amp;D, p. 447; PS D, p. 447 #1–11; S&amp;S, p. 448.</p> <p>94. [Recommended, Investigation 3: T&amp;D, p. 448; PS E, p. 449 #1–4,7; S&amp;S, p. 450]; IYOW, p.453; QQ, p.455.</p> <p>*Algebra tiles recommended</p>	<p><i>Standardized test review:</i></p> <p><b>New York State Review Series</b></p> <p>Lesson 5.8: Multiplying and Dividing Monomials and Binomials, p. 164.</p> <p>Lesson 5.10: Factoring Algebraic Expressions, pp. 174–179</p> <p>Lesson 5.12: Factoring Trinomials, pp. 181–185.</p>	<p><b>ALGEBRA STRAND</b> <i>Students will perform algebraic procedures accurately.</i></p> <p><b>8.A.8</b> Multiply a binomial by a monomial or a binomial (integer coefficients).</p> <p><b>8.A.10</b> Factor algebraic expressions using the GCF.</p> <p><b>8.A.11</b> Factor a trinomial in the form <math>ax^2 + bx + c</math>; <math>a = 1</math> and <math>c</math> having no more than three sets of factors.</p> <p><b>GEOMETRY STRAND</b> <i>Students will apply coordinate geometry to analyze problem solving situations</i></p> <p><b>8.G.21</b> Recognize the characteristics of quadratic in tables, graphs, equations, and situations (POST MARCH IN GRADE 8).</p>	

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
<b>WEEK 20</b>	<p><b>2.3 Inverse Variation</b></p> <ul style="list-style-type: none"> <li>Recognizing inverse relationships from written descriptions, graphs, tables, and equations.</li> <li>Solving real world problems involving quadratic and inverse relationships.</li> </ul> <p>95. Explore, pp. 108–109; Investigation 1: p. 110; PS A, p. 110; PS B, p. 111; PS C, pp. 111–112; S&amp;S, p. 112.</p> <p>96. Investigation 2: T&amp;D, p. 113; PS D, pp. 113–114; PS E, p. 114; PS F, pp. 114–115; S&amp;S, p. 115.</p> <p>97. Investigation 3: T&amp;D, p. 117; [Recommended: *PS G, pp. 118–119]; [Recommended: S&amp;S, p. 119].</p> <p>98. IYOW, p. 125; QQ, p. 126.</p> <p>*Graphing calculator is suggested.</p>	<p><i>Standardized test review:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>1.4: Factors and multiples, pp. 84–85.</p>	<p><b>REPRESENTATION STRAND</b></p> <p><i>Students will select, apply, and translate among</i></p> <p><b>8.R.7</b> Investigate relationships between different representations and their impact on a given problem.</p> <p><b>ALGEBRA STRAND</b></p> <p><i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i></p> <p><b>8.A.4</b> Create a graph given a description or an expression for a situation involving a linear or nonlinear relationship.</p> <p><i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i></p> <p><b>8.A.15</b> Understand that numerical information can be represented in multiple ways: arithmetically, algebraically, and graphically.</p> <p><b>8.A.19</b> Interpret multiple representations using equation, table of values, and graph. (POST MARCH IN GRADE 8)</p>	

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b>
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### CHAPTER 8: FUNCTIONS AND THEIR GRAPHS

Algebraic Representations: *Coordinate Graphs; Tables and Graphs*

Algebraic Reasoning: *Patterns and Numeric Forms*

Functions and Relations: *Linear Expressions/Equations; Quadratic Expressions/Equations; Exponential Expressions/Equations*

Coordinate Geometry: *Coordinate Representations*

<b>WEEK 20–21</b>	<p><b>8.1 Functions</b></p> <ul style="list-style-type: none"> <li>Understanding functions and describing the domain and range of a function.</li> <li>Finding the maximum and minimum values of quadratic functions.</li> </ul> <p><i>Suggested per period pacing:</i></p> <p>99. p. 488; T&amp;D, p. 489; Investigation 1: PS A, p.490; PS B, p. 491.</p> <p>100. PS C, p.; S&amp;S, p. 492; *Investigation 2: p. 492; PS D, p. 493.</p> <p>101. PS E, pp. 493–494; E, p. 494; PS F, p. 495; T&amp;D, p. 496;</p> <p>102. PS G, p. 496; S&amp;S, p. 496.</p> <p>103. *Investigation 3: PS H, p. 497; PS I, p. 498; S&amp;S, p. 499</p> <p>104. *Investigation 4: p. 499; PS J, p. 500; PS K, p. 501 #1, 2; S&amp;S, p. 502; IYOW, p. 571; QQ, p. 512</p> <p style="text-align: right;"><i>(continued)</i></p>	<p><i>For additional practice and homework:</i></p> <p><b>Skills Intervention for Algebra</b></p> <p>Skill 29: Graphing Functions pp. 61–62</p> <p><i>Standardized test review:</i></p> <p><b>New York State Review Series</b></p> <p>Lesson 5.13: Representing Numerical Information in Multiple Ways, pp. 186–190.</p>	<p><b>REPRESENTATION STRAND</b></p> <p><i>Students will create and use representations to organize, record, and communicate mathematical ideas.</i></p> <p><b>8.R.1</b> Use physical objects, drawings, charts, tables, graphs, symbols, equations, and technology as representations.</p> <p><b>8.R.2</b> Explain, describe, and defend mathematical ideas using representations.</p> <p><i>Students will select, apply, and translate among mathematical representations to solve problems.</i></p> <p><b>8.R.6</b> Use representations to explore problem situations.</p> <p><b>ALGEBRA STRAND</b></p> <p><i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i></p> <p><b>8.A.15</b> Understand that a data set can be represented in multiple ways: arithmetically, algebraically, and graphically.</p> <p style="text-align: right;"><i>(continued)</i></p>	<p><b>LP: Course 1</b></p> <p>7.2: Rules in Real Life, pp. 430-442.</p> <p>8.5: The Pythagorean Theorem, pp. 536-543.</p> <p><b>LP: Course 2</b></p> <p>1.2: Expressions and Formulas, pp. 32-45.</p> <p>5.1: Understanding and Describing Rates, pp. 300-311.</p> <p>9.2: Graphs and Equations, pp. 624-635.</p> <p><b>LP: Course 3</b></p> <p>2.1: Quadratic Relationships, pp. 70-73.</p> <p>2.2: Families of Quadratics, pp. 83-95.</p> <p>4.4: Solving Systems of Equations, pp. 256-274.</p> <p>5.3: Translations and Combining, pp. 313-321.</p> <p>7.1: Solving by Backtracking, pp. 432-438.</p> <p>7.2: Solving by Factoring, pp. 442-450.</p>
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PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
<b>WEEK 21 (continued)</b>	105. [Suggested: Lab Investigation, pp. 502–503.]  *Graphing calculator is suggested.		<p><b>8.A.17</b> Define and use correct terminology when referring to function (domain and range) (POST MARCH IN GRADE 8).</p> <p><b>8.A.18</b> Determine if a relation is a function (POST MARCH IN GRADE 8).</p> <p><b>GEOMETRY STRAND</b>  <i>Students will apply coordinate geometry to analyze problem solving situations.</i></p> <p><b>8.G.20</b> Distinguish between linear and nonlinear equations <math>ax^2 + bx + c; a = 1</math> (only graphically) (POST MARCH IN GRADE 8).</p> <p><b>8.G.21</b> Recognize the characteristics of quadratic in tables, graphs, equations, and situations (POST MARCH IN GRADE 8).</p>	

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
<b>WEEK 22</b>	<p><b>8.2 Graphs of Functions</b></p> <p>Finding the maximum and minimum values of quadratic functions.</p> <p>Understanding and using graphs of quadratic equations.</p> <p>Solving equations using two functions.</p> <p><i>Suggested per period pacing:</i></p> <p>106. T&amp;D, p. 515; Investigation 1: PS A, p. 515; PS B, p. 516 #1; PS C, p. 516, #1; S&amp;S, p. 517 #1.</p> <p>107. *Investigation 2, p. 518, T&amp;D, p. 518; PS D, p. 519; E, p. 519; PS E, p. 520, #1 [Suggested, #2–5] 118. PS F, p. 522; S&amp;S, p. 522; **Investigation 3: T&amp;D, p. 522; PS G, p. 523 #1–5.</p> <p>*Graphing calculator is suggested</p> <p>**GeoMirrors are suggested</p> <p>108. E, p. 523; PS H, p. 524; S&amp;S, p. 524; {Recommended, Investigation 4, pp. 525–527.}; IYOW, p. 535; QQ, pp. 537, A688 (TE).</p>	<p><i>Standardized test review:</i></p> <p><b>New York State Review Series</b></p> <p>Lesson 5.1: Writing and Solving Inequalities, pp. 131–135.</p> <p>Lesson 5.2: Communicating Mathematical Expressions in Words, pp. 136–140.</p> <p>Lesson 6.11: Drawing an Image Under Dilation, pp. 241–245.</p>	<p><b>NUMBER SENSE AND OPERATION STRAND</b></p> <p><i>Students will understand meanings of operations and procedures, and how they relate to one another.</i></p> <p><b>8.N.2</b> Evaluate expressions with integral exponents.</p> <p><b>ALGEBRA STRAND</b></p> <p><i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i></p> <p><b>8.A.1</b> Translate verbal sentences into algebraic inequalities.</p> <p><b>8.A.2</b> Write verbal expressions that match given mathematical expressions.</p> <p><i>Students will perform algebraic procedures accurately.</i></p> <p><b>8.A.8</b> Multiply a binomial by a monomial or binomial (integer coefficients).</p> <p><b>8.A.11</b> Factor a trinomial in the form <math>ax^2 + bx + c</math>; <math>a = 1</math> and <math>c</math> having no more than three sets of factors.</p> <p><i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i></p> <p><b>8.A.15</b> Understand that a data set can be represented in multiple ways: arithmetically, algebraically, and graphically.</p> <p><b>8.A.17</b> Define and use correct terminology when referring to function (domain and range) (POST MARCH IN GRADE 8).</p> <p style="text-align: right;"><i>(continued)</i></p>	

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
<b>WEEK 22 (continued)</b>			<p><b>8.A.18</b> Determine if a relation is a function (POST MARCH IN GRADE 8).</p> <p><b>GEOMETRY STRAND</b>  <i>Students will apply transformations and symmetry to analyze problem solving situations.</i></p> <p><b>8.G.10</b> Draw the image of a figure under a translation.</p> <p><i>Students will apply coordinate geometry to analyze problem solving situations.</i></p> <p><b>8.G.14</b> Determine the y-intercept of a line from a graph and be able to explain the y-intercept (POST MARCH IN GRADE 8).</p> <p><i>Students will apply coordinate geometry to analyze problem solving situations.</i></p> <p><b>8.G.20</b> Distinguish between linear and nonlinear equations <math>ax^2 + bx + c; a = 1</math> (only graphically) (POST MARCH IN GRADE 8).</p> <p><b>8.G.21</b> Recognize the characteristics of quadratic in tables, graphs, equations, and situations (POST MARCH IN GRADE 8).</p>	
<p><b>Review and Self-Assessment</b>  <i>Suggested per period pacing:</i></p> <p>109. Review and Self-Assessment, pp. 538–539</p> <p>110. Continued Review, pp. 540–541; Test</p>				

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
<b>WEEK 22</b>	<p><b>4.4 Solving Systems of Equations</b> Solving systems of equations graphically and algebraically.</p> <p><i>Suggested per period pacing:</i></p> <p>111. Explore, p. 256; Investigation 1: *PS A, p. 257–258; [Enrichment, PS B, p. 259; S&amp;S, p. 259].</p> <p>112. Investigation 2: Explore, p. 260; PS C, p. 260–261; PS D, pp. 261–262; S&amp;S, p. 262.</p> <p>113. *Investigation 3: T&amp;D, p. 264; PS E, p. 264; PS F, p. 265, #1, 3, 4; S&amp;S, p. 265].</p> <p>114. Investigation 4: T&amp;D, p. 266; E, p. 267; T&amp;D, p. 267; PS G, p. 268, #1–4, [Enrichment—#5, 6] [Enrichment—PS H, p. 269] S&amp;S, p. 269.</p> <p>115. {Suggested—Lab Investigation, p. 270–274} Computer with Spreadsheet Software is suggested for the activity; IYOW, p. 279; QQ, p. 280.</p> <p>*Graphing Calculator Suggested</p>		<p><b>REPRESENTATION STRAND</b> <i>Students will create and use representations to organize, record, and communicate mathematical ideas.</i></p> <p><b>8.R.1</b> Use physical objects, drawings, charts, tables, graphs, symbols, equations, and technology as representations.</p> <p><b>8.R.2</b> Explain, describe, and defend mathematical ideas using representations.</p> <p><b>8.R.4</b> Explain how different representations express the same relationship.</p> <p><b>ALGEBRA STRAND</b> <i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i></p> <p><b>8.A.3</b> Describe a situation involving relationships that matches a given graph.</p> <p><b>8.A.4</b> Create a graph given a description or an expression for a situation involving a linear or nonlinear relationship.</p> <p><b>GEOMETRY STRAND</b> <i>Students will apply coordinate geometry to analyze problem solving situations.</i></p> <p><b>8.G.18</b> Solve systems of equations graphically (only linear, integral solutions, <math>y = mx + b</math> format, no vertical/horizontal lines (POST MARCH GRADE 8)).</p>	
<p><b>Review and Self-Assessment</b></p> <p>116. Review and Self-Assessment, pp. 281–285; Test.</p>				

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### CHAPTER 6: WORKING WITH EXPRESSIONS

Algebraic Reasoning: *Patterns and Numeric Forms—Develop; Properties and Rules—Develop*  
 Functions and Relations: *Rational Expressions/Equations—Develop*

WEEK 24–25	<b>6.5 Adding and Subtracting Algebraic Fractions</b>  To add and subtract algebraic fractions using common denominators.  To solve equations using algebraic fractions.  <i>Suggested per period pacing:</i>  117. T&D, p. 411; Investigation 1, PS A, pp. 411–412; E, p. 412; PS B, p. 413; S&S, p. 413.  118. Investigation 2: PS C, p. 414; E, p. 415; PS D, p. 415.  119. E, p. 416; PS E, pp. 416–417; S&S, p. 417.  120. Investigation 3: T&D, p. 417; PS F, p. 418.  121. E, p. 419; PS G, p. 420; S&S, p. 420; IYOW, p. 424; QQ, p. 425.		<b>ALGEBRA STRAND</b>  <i>Students will perform algebraic procedures accurately.</i>  <b>A.A.16</b> Simplify fractions with polynomials in the numerator and denominator by factoring both and renaming them to lowest terms.  <b>A.A.17</b> Add or subtract fractional expressions with monomial or like binomial denominators.  <b>A.A.18</b> Multiply and divide algebraic fractions and express the product or quotient in simplest form.  <b>Note:</b> The New York State Standards places these concepts in algebra. (These concepts are introduced in Grade 8 to prepare students for later mastery.)	
<b>Review and Assessment</b> 122. Review and self-assessment, pp. 426–429, Test.				

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
WEEK 25–26	<b>7.3 Completing the Square</b> Solving quadratic equations by completing the square.  <i>Suggested per period pacing:</i> 123.E, p. 456; T&D, p. 456; Investigation 1: E, p. 457; PS A, p. 457, #1–8.  124.PS B, p. 458 #1–3; E, p. 458; PS C, p. 459; S&S p. 459.  125. Investigation 2: E, p. 459; [Recommended, PS D, p. 460; PS E, p. 460; S&S, p. 461].  126.IYOW, p. 464; QQ, p. 465, #1, 2.		<b>ALGEBRA STRAND</b> <i>Students will perform algebraic procedures accurately.</i>  <b>8.A.7</b> Add and subtract polynomials (integer coefficients).  <b>8.A.8</b> Multiply a binomial by a monomial or a binomial (integer coefficients).  <b>8.A.10</b> Factor algebraic expressions using the GCF.  <b>8.A.11</b> Factor a trinomial in the form $ax + bx + c$ ; $a = 1$ and $c$ having no more than three sets of factors.	
	<b>Review and Self Assessment</b> 127. Review and Self-Assessment, p. 483–485 128. Continue Review; Test, Chapter 7			

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
WEEK 27	<p><b>7.4 The Quadratic Formula</b> Understanding and Applying the quadratic formula.</p> <p><i>Suggested per period pacing:</i></p> <p>129.p. 466–467; T&amp;D, p. 467; Investigation 1: PS A, pp. 467–468.</p> <p>130.PS B, p. 468; S&amp;S, p. 468.</p> <p>131.Investigation 2: PS C, pp. 469–470, PS D, pp. 470–471; S&amp;S, p. 471.</p> <p>132.Investigation 3: T&amp;D, p. 472; PS E, pp. 472–473; PS F, p. 474; S&amp;S, p. 475.</p> <p>133.Lab Investigation, pp. 475–478; IYOW, p. 481; QQ, p. 482, A684 (TE).</p>		<p><b>PROBLEM SOLVING STRAND</b> <i>Students will build new mathematical knowledge through problem solving.</i></p> <p><b>8.PS.3</b> Understand and demonstrate how written symbols represent mathematical ideas.</p> <p><b>ALGEBRA STRAND</b> <i>Students will perform algebraic procedures accurately</i></p> <p><b>A2.A21</b> Determine the quadratic equation, given the sum and product of its roots.</p> <p><b>Note:</b> These concepts are introduced in Grade 8 to prepare students for later mastery.</p> <p><b>GEOMETRY STRAND</b> <i>Students will apply coordinate geometry to analyze problem solving</i></p> <p><b>8.G.21</b> Recognize the characteristics of quadratic in tables, graphs, equations, and situations (POST MARCH OF GRADE 8).</p>	
	<p><b>Review and Assessment</b></p> <p>134. Review and Self-Assessment, pp. 483–485; Test.</p>			

<b>PACING</b>	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <b>N: Notes</b> <b>LP: Links to the Past</b> <b>LC: Literature Connections</b>
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### CHAPTER 9: PROBABILITY

Probability: *Basic Concepts and Rules—Develop; Counting Methods—Develop; Experiments and Simulations—Develop*

<b>WEEK 27–28</b>	<p><b>9.1 Counting Strategies</b></p> <p>Making a systematic list of every possible outcome.</p> <p>Using a pattern or a shortcut to find the size of a sample space without listing every outcome.</p> <p>Determining the probability of an event.</p> <p><i>Suggested per period pacing:</i></p> <p>135. T&amp;D, p. 544; [Recommended, Lab Investigation, pp. 545–546]; Investigation 1, p. 547; PS A, p. 547.</p> <p>136. PS B, p. 548; PS C, p. 549; E, p. 549.</p> <p>137. PS D p. 550; S&amp;S, p. 550.</p> <p>138. Investigation 2, p. 550; T&amp;D, p. 551; PS E, p. 552.</p> <p>139. E, p. 553; PS F, p. 553; S&amp;S, p. 554.</p> <p>140. Investigation 3: T&amp;D, p. 555; PS G, p. 555 #1–6.</p> <p style="text-align: right;"><i>(continued)</i></p>	<p><b>Course 3 Pretest:</b></p> <p>Questions 22–23.</p> <p><i>For additional practice or homework:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>4.5: Combinations and Permutations, pp. 232–238.</p> <p><b>Skills Intervention for Algebra:</b></p> <p>Skill 51: Make a List, pp. 101–102.</p> <p>Skill 52: Probability of Independent Events, pp. 103–104.</p>	<p><b>PROBLEM SOLVING STRAND</b></p> <p><i>Students will solve problems that arise in mathematics and in other content areas.</i></p> <p><b>8.PS.6</b> Represent problem situations verbally, numerically, algebraically, and graphically.</p> <p><b>REPRESENTATION STRAND</b></p> <p><i>Students will create and use representations to organize, record, and communicate mathematical ideas.</i></p> <p><b>8.R.1</b> Use physical objects, drawings, charts, tables, graphs, symbols, equations, and technology as representations.</p> <p><i>Students will select, apply, and translate among mathematical representations to solve problems.</i></p> <p><b>8.R.6</b> Use models to explore problem situations.</p> <p><b>8.R.7</b> Investigate relationships between different representations and their impact on a given problem.</p> <p><b>8.R.8</b> Use representation as a tool for exploring and understanding mathematical ideas.</p> <p style="text-align: right;"><i>(continued)</i></p>	<p><b>LP: Course 1</b></p> <p>10.1: The Language of Chance, pp. 604–614</p> <p>10.2: Analyzing Games, pp. 620–630.</p> <p>10.3: Making Matches, pp. 638–645.</p> <p><b>Course 2</b></p> <p>10.1: Dependence, pp. 666–671.</p> <p>10.2: Applying Probability, pp. 676–685.</p> <p>10.3: Sampling and Making Predictions, pp. 692–699.</p>
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WEEK 27–28 (continued)	141.PS H, p. 556 #1–3; PS I p. 557 #1–4, [Recommended, #5–9]; S&S, p. 557.  142.IYOW, p. 563; QQ, p. 564, TG, p. A690.		<b>STATISTICS AND PROBABILITY STRAND</b> <i>Students will understand and apply concepts of probability.</i>  <b>A.S.19</b> Determine the number of elements in a sample space and the number of favorable events.  <b>A.S.22</b> Determine, based on calculated probability of a set of events, if: <ul style="list-style-type: none"> <li>• some or all are equally likely to occur.</li> <li>• one is more likely to occur than another.</li> <li>• whether or not an event is certain to happen or not to happen.</li> </ul> <b>Note:</b> These concepts are introduced in Grade 8 to prepare students for later mastery.	

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<b>WEEK 29</b>	<p><b>9.2 Probability Distributions</b></p> <p>Determining the probability of an event.</p> <p>Using probability to determine whether a game is fair.</p> <p>Using probability to make decisions.</p> <p><i>Suggested per period pacing:</i></p> <p>143. T&amp;D, p. 565; Investigation 1: PS A, pp. 566–567.</p> <p>144. PS B, p. 568; S&amp;S, p. 568.</p> <p>145. Investigation 2: PS C, p. 569 #1–5, [Recommended, #6–9]; S&amp;S, p. 570.</p> <p>146. Investigation 3, PS D, p. 571 #1–5; IYOW, p. 579; QQ, p. 581.</p>	<p><i>For additional practice or homework</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>4.6: Probability, pp. 240–249.</p> <p><b>Skills Intervention for Algebra</b></p> <p>Skill 53: Expected Value of an Outcome, pp. 105–106.</p> <p><b>Math Skills Maintenance Workbook</b></p> <p>Skill 2: Divisibility Patterns, pp. 3–4.</p> <p>Skill 3: Prime Factorization, pp. 5–6.</p>	<p><b>REPRESENTATION STRAND</b></p> <p><i>Students will create and use representations to organize, record, and communicate mathematical ideas.</i></p> <p><b>8.R.1</b> Use physical objects, drawings, charts, tables, graphs, symbols, equations, and technology as representations.</p> <p><b>8.R.2</b> Explain, describe, and defend mathematical ideas using representations.</p> <p><i>Students will select, apply, and translate among mathematical representations to solve problems.</i></p> <p><b>8.R.6</b> Use models to explore problem situations.</p> <p><b>8.R.7</b> Investigate relationships between different representations and their impact on a given problem.</p> <p><b>8.R.8</b> Use representation as a tool for exploring and understanding mathematical ideas.</p> <p><b>STATISTICS AND PROBABILITY STRAND</b></p> <p><i>Students will understand and apply concepts of probability.</i></p> <p><b>A.S.19</b> Determine the number of elements in a sample space and the number of favorable events.</p> <p><b>A.S.20</b> Calculate the probability of an event and its complement.</p> <p style="text-align: right;"><i>(continued)</i></p>	

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<b>WEEK 29 (continued)</b>			<p><b>A.S.22</b> Determine, based on calculated probability of a set of events, if:</p> <ul style="list-style-type: none"> <li>• some or all are equally likely to occur.</li> <li>• one is more likely to occur than another.</li> <li>• whether or not an event is certain to happen or not to happen.</li> </ul> <p><b>Note:</b> These concepts are introduced in Grade 8 to prepare students for later mastery.</p>	

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<b>WEEK 30–31</b>	<p><b>9.3 Probability Investigations</b></p> <p>Determining the probability of an event.</p> <p>Using probability to make decisions.</p> <p><i>Suggested per period pacing:</i></p> <p>147. T&amp;D, p. 582; Investigation 1, p. 582; PS A, pp. 583–584; T&amp;D, p. 584.</p> <p>148. PS B, p. 585; E, p. 586; S&amp;S p. 586.</p> <p>149. Investigation 2, PS C, pp. 587–588 #1–5;</p> <p>150. PS D, pp. 588–589 #1–5; S&amp;S, p. 589.</p> <p>151. IYOW, p. 592; QQ, p. 595, TG, p. A692.</p>	<p><i>For additional practice or homework</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>4.6: Exercises, pp. 251–253.</p> <p><b>Skills Intervention for Algebra</b></p> <p>Skill 54: Theoretical and Experimental Probability, pp. 107–108.</p> <p><b>Teacher Edition Math Skills Maintenance Workbook</b></p> <p>Skill 6: Simplifying Fractions, pp. 11–12.</p> <p>Skill 20: Multiplying Fractions and Mixed Numbers, pp. 42–43.</p> <p>Skill 22: Dividing Fractions and Mixed Numbers, pp. 44–45.</p>	<p><b>REPRESENTATION STRAND</b></p> <p><i>Students will create and use representations to organize, record, and communicate mathematical ideas.</i></p> <p><b>8.R.1</b> Use physical objects, drawings, charts, tables, graphs, symbols, equations, and technology as representations.</p> <p><b>8.R.2</b> Explain, describe, and defend mathematical ideas using representations.</p> <p><i>Students will select, apply, and translate among mathematical representations to solve problems.</i></p> <p><b>8.R.6</b> Use models to explore problem situations.</p> <p><b>8.R.7</b> Investigate relationships between different representations and their impact on a given problem.</p> <p><b>8.R.8</b> Use representation as a tool for exploring and understanding mathematical ideas.</p> <p><i>Students will use representations to model and interpret physical, social, and mathematical phenomena.</i></p> <p><b>8.R.10</b> Use math to show and understand social phenomena (i.e., determine profit from sale of yearbooks).</p> <p style="text-align: right;"><i>(continued)</i></p>	

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<b>WEEK 30–31 (continued)</b>			<b>STATISTICS AND PROBABILITY STRAND</b> <i>Students will understand and apply concepts of probability.</i>  <b>A.S.19</b> Determine the number of elements in a sample space and the number of favorable events.  <b>A.S.20</b> Calculate the probability of an event and its complement.  <b>A.S.23</b> Calculate the probability of: <ul style="list-style-type: none"> <li>• a series of independent events.</li> <li>• a series of dependent events.</li> <li>• two mutually exclusive events.</li> <li>• two events that are not mutually exclusive.</li> </ul> <b>Note:</b> These concepts are introduced in Grade 8 to prepare students for later mastery.	
	<b>Review and Self-Assessment</b> 152. Review and Self-Assessment, pp. 596–599. 153. Continue Review and Test.			

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### CHAPTER 10: MODELING WITH DATA

Algebraic Representations: *Coordinate Graphs—Develop; Tables and Graphs—Develop*

Algebraic Reasoning: *Patterns and Numeric Forms—Develop*

Functions and Relations: *Linear Expressions/Equations—Develop*

Coordinate Geometry: *Coordinate Representations—Apply*

Data Analysis: *Modeling and Analysis—Develop*

<b>WEEK 32</b>	<p><b>10.1 Data Patterns in Tables and Graphs</b></p> <p>Analyzing data presented in tables.</p> <p>Using visual displays to identify trends.</p> <p><i>Suggested per period pacing:</i></p> <p>154.T&amp;D, p. 602; Investigation 1: PS A, pp. 603–604.</p> <p>155.PS B, p. 604; S&amp;S, p. 604.</p> <p>156.*Investigation 2: T&amp;D, p. 605; PS C, pp. 605–606.</p> <p>157.PS D, p. 606, PS E, p. 607.</p> <p>158.PS F, p. 607; S&amp;S, p. 608.</p> <p>159.Investigation 3: PS G, p. 610 #1–4; [Recommended, p. 612, #5–8]; S&amp;S, p. 612.</p> <p>160.**Investigation 4: T&amp;D, p. 612; PS H, pp. 613–614 #1–7; [Recommended, pp. 614–615, #8–10]; S&amp;S, p. 615.</p> <p style="text-align: right;"><i>(continued)</i></p>	<p><b>Course 3 Pretest:</b> Questions 58–59.</p> <p><i>For additional practice or homework</i></p> <p><b>Hot Words, Hot Topics</b> 4.4: Statistics, pp. 222–230.</p> <p><b>Skills Intervention for Algebra</b> Skill 75: Make Tables, pp. 149–150.</p> <p><b>Math Skills Maintenance Workbook</b> Skill 35: Displaying Data on Graphs, pp. 77–80.</p>	<p><b>REPRESENTATION STRAND</b></p> <p><i>Students will create and use representations to organize, record, and communicate mathematical ideas.</i></p> <p><b>8.R.1</b> Use physical objects, drawings, charts, tables, graphs, symbols, equations, and technology as representations.</p> <p><b>8.R.2</b> Explain, describe, and defend mathematical ideas using representations.</p> <p><i>Students will use representations to model and interpret physical, social, and mathematical phenomena.</i></p> <p><b>8.R.10</b> Use math to show and understand social phenomena (i.e., use tables graphs, and equations to show a pattern underlying a function).</p> <p><b>8.R.11</b> Use math to show and understand mathematical phenomena (i.e., use tables, graphs, and equations to show a pattern underlying a function).</p> <p><b>ALGEBRA STRAND</b></p> <p><i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i></p> <p style="text-align: right;"><i>(continued)</i></p>	<p><b>LP: Course 1</b> Chapter 6: Analyzing Data, pp. 340–398.</p> <p><b>LP: Course 2</b> 10.4: Statistical Tools and Graphs, pp. 709–717.</p>
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<b>WEEK 32 (continued)</b>	<p>*Graphing Calculator is suggested</p> <p>**Compass is suggested</p> <p>161.IYOW, p. 625, QQ, TG, p. A697            {Suggested, Lab Investigation,            pp. 58a–e Teaching Resources}</p> <p><b>Note:</b> Arc Voyager Special Edition software must be downloaded from the web site <a href="http://www.esri.com">www.esri.com</a> in order to complete the lab)</p>		<p><b>8.A.15</b> Understand that numerical information can be represented in multiple ways: arithmetically, algebraically, and graphically.</p> <p><b>GEOMETRY STRAND</b>  <i>Students will apply coordinate geometry to analyze problem solving situations.</i></p> <p><b>8.G.15</b> Graph a line using a table of values (POST MARCH IN GRADE 8).</p> <p><b>STATISTICS AND PROBABILITY STRAND</b>  <i>Students will collect, organize, display, and analyze data.</i></p> <p><b>A.S.4</b> Compare and contrast the appropriateness of different measures of central tendency for a given data set.</p> <p><b>A.S.7</b> Create a scatter plot of bivariate data.</p> <p><b>A.S.8</b> Construct manually a reasonable line of best fit for a scatter plot and determine the equation of that line.</p> <p><b>A.S.10</b> Evaluate published reports and graphs that are based on data by considering: experimental design, appropriateness of the data analysis, and the soundness of the conclusions.</p> <p><i>Students will make predictions that are based upon data analysis.</i></p> <p><b>A.S.16</b> Recognize how linear transformations of one-variable data affect the data’s mean, median, mode and range.</p> <p><b>Note:</b> These concepts are introduced in Grade 8 to prepare students for later mastery.</p>	

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<b>WEEK 33–34</b>	<p><b>10.2 Models, Data, and Decisions</b> Using visual displays to identify trends. Creating and using models.</p> <p><i>Suggested per period pacing:</i></p> <p>162. T&amp;D, p. 631; *Investigation 1, PS A, p. 632 #1–3, {Suggested, #4–5}.</p> <p>163. PS B, p. 633; S&amp;S, p. 634 #1.</p> <p>164. *Investigation 2: PS C, pp. 634–635 #1–7, {Suggested, #8–10}; S&amp;S, p. 636.</p> <p>165. Investigation 3, PS D, p. 636–637; S&amp;S, p. 637.</p> <p>166. Investigation 4, T&amp;D, p. 638; PS E, pp. 638–639, #1–5; {Suggested, PS F, pp. 640–641}; S&amp;S, p. 641.</p> <p>167. IYOW, p. 648; QQ, p. 651.</p> <p>Materials Needed: *Graphing Calculators</p>	<p><i>For additional practice or homework:</i></p> <p><b>Hot Words, Hot Topics</b></p> <p>4.3: Analyzing Data, pp. 214–220.</p> <p><b>Teacher Edition Math Skills Maintenance Workbook</b></p> <p>Skill 35: Displaying Data on Graphs, pp. 77–80</p>	<p><b>REPRESENTATION STRAND</b></p> <p><i>Students will create and use representations to organize, record, and communicate mathematical ideas.</i></p> <p><b>8.R.1</b> Use physical objects, drawings, charts, tables, graphs, symbols, equations, and technology as representations.</p> <p><b>8.R.2</b> Explain, describe, and defend mathematical ideas using representations.</p> <p><i>Students will use representations to model and interpret physical, social, and mathematical phenomena.</i></p> <p><b>8.R.10</b> Use math to show and understand social phenomena (i.e., use tables graphs, and equations to show a pattern underlying a function).</p> <p><b>8.R.11</b> Use math to show and understand mathematical phenomena (i.e., use tables, graphs, and equations to show a pattern underlying a function).</p> <p><b>ALGEBRA STRAND</b></p> <p><i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i></p> <p><b>8.A.15</b> Understand that numerical information can be represented in multiple ways: arithmetically, algebraically, and graphically .</p> <p><b>8.A.19</b> Interpret multiple representations using equation, table of values, and graph.</p> <p style="text-align: right;"><i>(continued)</i></p>	

PACING	<b>IMPACT TEXTBOOK</b> <i>PS: Problem Set</i> <i>QQ: Quick Quiz</i> <i>IYOW: In Your Own Words</i> <i>T&amp;D: Think and Discuss</i> <i>S&amp;S: Share and Summarize</i> <i>E: Example</i>	<b>HOT WORDS, HOT TOPICS</b>  <b>SKILLS INTERVENTION</b>	<b>NEW YORK STATE MATHEMATICS STANDARDS</b>	<b>NOTES</b> <i>N: Notes</i> <i>LP: Links to the Past</i> <i>LC: Literature Connections</i>
<b>WEEK 33–34 (continued)</b>			<p><b>GEOMETRY STRANDS</b></p> <p><i>Students will apply coordinate geometry to analyze problem solving situations.</i></p> <p><b>8.G.15</b> Graph a line using a table of values (POST MARCH IN GRADE 8).</p> <p><b>8.G.20</b> Distinguish between linear and nonlinear equations <math>ax^2 + bx + c; a = 1</math> (only graphically) (POST MARCH IN GRADE 8).</p> <p><b>8.G.21</b> Recognize the characteristics of quadratic in tables, graphs, equations, and situations (POST MARCH IN GRADE 8).</p> <p><b>STATISTICS AND PROBABILITY STRAND</b></p> <p><i>Students will collect, organize, display, and analyze data.</i></p> <p><b>A.S.10</b> Evaluate published reports and graphs that are based on data by considering: experimental design, appropriateness of the data analysis, and the soundness of the conclusions.</p> <p><i>Students will make predictions that are based upon data analysis.</i></p> <p><b>A.S.16</b> Recognize how linear transformations of one-variable data affect the data’s mean, median, mode and range.</p> <p><b>Note:</b> These concepts are introduced in Grade 8 to prepare students for later mastery.</p>	
	<p><b>Review and Self-Assessment</b></p> <p>168. Review and self-assessment, pp. 652–658.</p> <p>169. Continue review and self-assessment, test, chapter 10.</p>			

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