



Pre-Algebra

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STANDARDS	PAGE REFERENCES
<p>A. NUMBERS AND NUMBER SENSE Students will understand and demonstrate a sense of what numbers mean and how they are used. Students will be able to:</p>	
<p>1. Use numbers in a variety of equivalent and interchangeable forms (e.g., integer, fraction, decimal, percent, exponential, and scientific notation) in problem-solving.</p>	<p>Student Edition: 33-38, 66 (eg #5), 73 #54, 186-190, 196 #10, 200-204, 205-209, 281-285 <i>Spreadsheet Investigation</i> 303 Teacher Wraparound Edition: DI 282; IE 187, 206, 282, 283; PS 259</p>
<p>2. Demonstrate understanding of the relationships among the basic arithmetic operations on different types of numbers.</p>	<p>Student Edition: 64-68, 70-74, 75, 80, 82 <i>Algebra Activity</i> 62-63 <i>Concept Summary</i> 175-179, 210-214, 215-219, 220-224, 232-236, 713, 715 Teacher Wraparound Edition: A 79; PS 259</p>
<p>3. Apply concepts of ratios, proportions, percents, and number theory (e.g., primes, factors, and multiples) in practical and other mathematical situations.</p>	<p>Student Edition: 159-163, 164-168, 226-230, 264-268, 270-274, 276-279 <i>Algebra Activity</i> 231 <i>Reading Mathematics</i> 225 <i>Spreadsheet Investigation</i> 303 Teacher Wraparound Edition: IE 165; PC 262 F</p>

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4. Represent numerical relationships in graphs, tables, and charts.	Student Edition: 33-38, 53 #18, 61 #74-#76, 708, 754 <i>Algebra Activity</i> 39 <i>Spreadsheet Investigation</i> 303 <i>WebQuest</i> 3, 145
B. COMPUTATION Students will understand and demonstrate computation skills. Students will be able to:	
1. Compute and model all four operations with whole numbers, fractions, decimals, sets of numbers, and percents, applying the proper order of operations.	Student Edition: 7 (eg #1), 12 (HOW), 16 #52, 102 #66-#68, 155 (eg #3), 185 #69-#74, 210-214, 215-219, 220-224, 232-236, 260 #6 Teacher Wraparound Edition: PS 93
2. Create, solve, and justify the solution for multi-step, real-life problems including those with ratio and proportion.	Student Edition: 7 (eg #1), 95 #17, 120-124, 126-130, 143 #21, 197 #22, 267 #47, #48, 279 #3-#6, 304 (eg #1), 323 #10, #18 <i>Algebra Activity</i> 275 Teacher Wraparound Edition: DI 73; IE 265, 271
C. DATA ANALYSIS AND STATISTICS Students will understand and apply concepts of data analysis. Students will be able to:	
1. Organize and analyze data using mean, median, mode, and range.	Student Edition: 82, 238-242, 260 #8, 261 #23, 612-616, 735, 779 #22, 788 #9, #10 <i>Graphing Calculator Investigation</i> 243 <i>WebQuest</i> 242 Teacher Wraparound Edition: IE 239, 613
2. Assemble data and use matrices to formulate and solve problems.	Student Edition: 40-44, 606-611, 617-621, 623-628, 708, 722-723 <i>Algebra Activity</i> 39, 237, 275 <i>Graphing Calculator Investigation</i> 45-46, 622, 629 <i>WebQuest</i> 3, 43, 136, 325 Teacher Wraparound Edition: A 44; IE 41, 607-608, 618; TNT 620

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3. Construct inferences and convincing arguments based on data.	Student Edition: 40-44, 179 #63, 409-413, 427 #45-#46 <i>Algebra Activity</i> 180, 237, 275, 386, 640 <i>Spreadsheet Investigation</i> 303 <i>WebQuest</i> 325, 422 Teacher Wraparound Edition: IE 240
D. PROBABILITY Students will understand and apply concepts of probability. Students will be able to:	
1. Find the probability of simple events and make predictions by applying the theories of probability.	Student Edition: 310-314, 320, 323 #17, 333 #42, 646-649
2. Explain the idea that probability can be represented as a fraction between and including zero and one.	Student Edition: 310-314, 320, 321 #28, 323 #17, 333 #42, 739 (6-9) Teacher Wraparound Edition: A 314
3. Use simulations to estimate probabilities.	Student Edition: <i>Algebra Activity</i> 656-657 <i>Graphing Calculator Investigation</i> 315 Teacher Wraparound Edition: A 657
4. Find all possible combinations and arrangements involving a limited number of variables.	Student Edition: 635-639, 641-645, 665 #21, 754 <i>Algebra Activity</i> 640 Teacher Wraparound Edition: A 639; IE 636
E. GEOMETRY Students will understand and apply concepts from geometry. Students will be able to:	
1. Compare, classify, and draw two dimensional shapes and three dimensional figures.	Student Edition: 453-457, 513-517, 527-531, 533-538, 556-561 <i>Geometry Activity</i> 554-555 Teacher Wraparound Edition: A 457; DI 455, 528, 557
2. Apply geometric properties to represent and solve real-life problems involving regular and irregular shapes.	Student Edition: 471-475, 486, 500-504, 527-531, 584-588 <i>Algebra Activity</i> 505 <i>Geometry Activity</i> 583 <i>WebQuest</i> 433 Teacher Wraparound Edition: A 475; DI 472, 473; PS 549, 599

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3. Use a coordinate system to define and locate position.	Student Edition: 33-38, 79 #71-#76, 85-89, 92, 93 #28-#30, 95 #17, 475 #22, 506-511, 551 #16, 695 #25, #26 <i>Algebra Activity</i> 512 Teacher Wraparound Edition: IE 34, 35, 86, 507
4. Use the appropriate geometric tools and measurements to draw and construct two and three dimensional figures.	Student Edition: 448-451, 453 (HOW), 484, 533 (HOW), 560 #26 <i>Algebra Activity</i> 465, 512 <i>Geometry Activity</i> 554-555 Teacher Wraparound Edition: DI 448
F. MEASUREMENT Students will understand and demonstrate measurement skills. Students will be able to:	
1. Demonstrate the structure and use of systems of measurement.	Student Edition: 118 #48, 168 #76-#81, 187 (eg #3), 189 #40, 207 #11, 214 #49-#52, 272 (eg #4), 566 #23-#25, 718-721
2. Develop and use concepts that can be measured directly, or indirectly (e.g., the concept of rate).	Student Edition: 9, #9-#10, 77 #15, 118 #47, 131-136, 212 #12, 264-268
3. Demonstrate an understanding of length, area, volume, and the corresponding units, square units, and cubic units of measure.	Student Edition: 119 #49, 131-136, 152 #57, 157 #55-#57, 224 #59, 247 #49, 520-525, 563-567, 570 (eg #3), 573-577, 601 #21, 779 #18 <i>Algebra Activity</i> 518-519 <i>Geometry Activity</i> 562 Teacher Wraparound Edition: DI 134, 534
G. PATTERNS, RELATIONS, FUNCTIONS Students will understand that mathematics is the science of patterns, relationships, and functions. Students will be able to:	
1. Describe and represent relationships with tables, graphs, and equations.	Student Edition: 87 (eg #3), 124 #53, 187 (eg #3), 369-373, 387-391, 393-397, 398-401, 409-413 <i>Algebra Activity</i> 386, 392 <i>Graphing Calculator Investigation</i> 374, 402-403 Teacher Wraparound Edition: DI 385; IE 399

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2. Analyze relationships to explain how a change in one quantity can result in a change in another.	Student Edition: 157 #58, 369-373, 396 #13 <i>Algebra Activity</i> 392 <i>Graphing Calculator Investigation</i> 374, 402-403, 697 <i>Spreadsheet Investigation</i> 137, 303 Teacher Wraparound Edition: DI 371
3. Use patterns and multiple representations to solve problems.	Student Edition: 6-7, 9, 53 #18, 87 (eg #3), 114 #46, #47, 127 (eg #3), 249-252, 409-413 <i>Algebra Activity</i> 253 <i>WebQuest</i> 603 Teacher Wraparound Edition: DI A 252; IE 250
H. ALGEBRA CONCEPTS Students will understand and apply algebraic concepts. Students will be able to:	
1. Use the concepts of variables and expressions.	Student Edition: 12-16, 17-21, 28-32, 77 (eg #5), 83 #26-#31, 98-102, 136 #50-#52, 154 (eg #3), 525 #40-#43, 667 #7-#12 Teacher Wraparound Edition: IE 13, 18
2. Solve linear equations using concrete, informal, and formal methods which apply the order of operations.	Student Edition: 375-379, 381-385, 387-391, 687-691 <i>Algebra Activity</i> 386, 392 Teacher Wraparound Edition: PS 429
3. Analyze tables and graphs to identify properties and relationships in a practical context.	Student Edition: 23-27 <i>Algebra Activity</i> 63 <i>WebQuest</i> 4, 325
4. Use graphs to represent two-variable equations.	Student Edition: 87 (eg #3), 381-385, 409-413 Teacher Wraparound Edition: IE 87
5. Demonstrate an understanding of inequalities and non-linear equations.	Student Edition: 340-344, 376-379, 419-422, 687-691 <i>Graphing Calculator Investigation</i> 423 Teacher Wraparound Edition: DI 376; IE 420

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6. Find solutions for unknown quantities in linear equations and in simple equations and inequalities.	<p>Student Edition: 28-32, 100-114, 115-119, 136 #47-#49, 244-248, 345-349, 350-354, 375-379</p> <p>Teacher Wraparound Edition: PS 429</p>
<p>I. DISCRETE MATHEMATICS Students will understand and apply concepts in discrete mathematics. Students will be able to:</p>	
1. Create and use networks to explain practical situations or solve problems.	<p>After defining <i>network</i>, the following pages can be used to meet this standard.</p> <p>Student Edition: 148 (HOW), 489 #24, 503 #16, #17, 531 #34, 556 (HOW), 560 #19, #20</p>
2. Identify patterns in the world and express these patterns with rules.	<p>Student Edition: 37 #40-#45, 163 #47, 175 (HOW), 181 <i>Algebra Activity</i> 137, 253, 368, 640 <i>Teaching Tip</i> 385 #34-#35 <i>WebQuest</i> 145</p> <p>Teacher Wraparound Edition: DI 187</p>
<p>J. MATHEMATICAL REASONING Students will understand and apply concepts of mathematical reasoning. Students will be able to:</p>	
1. Support reasoning by using models, known facts, properties, and relationships.	<p>Student Edition: 7, 27 #49, 38 #21, 53 #18, 107 #57, 151 #50, #51, 197 #22, 344 #45, 464 #37, 616 #21 <i>Algebra Activity</i> 63, 180, 231, 656-657</p>
2. Demonstrate that multiple paths to a conclusion may exist.	<p>Student Edition: 38 #49e, 71, 119 #49, 203 #46, #47, 219 #53, 417 #27, 616 #21 <i>Algebra Activity</i> 180, 275, 309 <i>Graphing Calculator Investigation</i> 402-403 <i>WebQuest</i> 145, 603</p> <p>Teacher Wraparound Edition: DI 25, 217, 405</p>

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K. MATHEMATICAL COMMUNICATION Students will reflect upon and clarify their understanding of mathematical ideas and relationships. Students will be able to:	
1. Translate relationships into algebraic notation.	Student Edition: 12-16, 105 (eg #3), 126-129, 197 #22, 333 #48-#53, 365 #23, 404-408, 758 #5-#8, 760 #12-#13 Teacher Wraparound Edition: A 408; DI 13; IE 13
2. Use statistics, tables, and graphs to communicate ideas and information in convincing presentations and analyze presentations of others for bias or deceptive presentation.	Student Edition: 53 #18, 203 #46, #47, 610, 630-633, 769 #5 <i>Algebra Activity</i> 237, 275, 309 <i>Reading Mathematics</i> 634 <i>WebQuest</i> 4, 145, 603 Teacher Wraparound Edition: A 44; TNT 620