



MathMatters 2

An Integrated Program

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STANDARDS	PAGE REFERENCES
Algebra I	
Number and Operations	
1. Understand numbers, ways of representing numbers, relationships among numbers and number systems	
A Read, write and compare numbers	
compare and order rational and irrational numbers, including finding their approximate locations on a number line	Student Edition: 16-19, 52-55, 60-61, 102-103, 126-129, 130-131, 132-135, 520-523, 524-527, 528 Annotated Teacher's Edition: 5MW 16, 52; CE 17, 53, 60, 102, 127, 133, 521; QA 54, 522; TT 52, 53, 60
B Represent and use rational numbers	
use real numbers and various models, drawing, etc. to solve problems.	Student Edition: 16-19, 52-53, 60-61, 102-103, 126-129, 132-135, 520-523, 524-527, 528 <i>Reading Math 53</i> Annotated Teacher's Edition: 5MW 52; CE 17, 53, 60, 102, 133, 521; QA 54, 522; TT 16, 52, 53, 60

STANDARDS	PAGE REFERENCES
C Compose and decompose numbers	
*use a variety of representations to demonstrate an understanding of very large and very small numbers	Student Edition: 4-5, 82-85, 86-89 <i>Mental Math Tip</i> 87 <i>Technology Note</i> 88 Annotated Teacher's Edition: 5MW 92; AA 84, 88; CE 83, 87; E 4; ITL 82; QA 5, 88, 138; R 4; TT 4, 82, 86
D Classify and describe numeric relationships	
2. Understand meanings of operations and how they relate to one another	
A Represent operations	
B Describe effects of operations	
*describe the effects of operations, such as multiplication, division, and computing powers and roots on the magnitude of quantities	Student Edition: 4-5, 82-85, 86-89, 136-139 <i>Mental Math Tip</i> 87 <i>Technology Note</i> 88 Annotated Teacher's Edition: 5MW 86, 92; AA 84, 88; CE 83, 87, 137; E 4; ITL 82; QA 88, 138; R 4; TT 82, 86
C Apply properties of operations	
D Apply operations on real and complex numbers	
*apply operations to real numbers, using mental computation or paper-and-pencil calculations for simple cases and technology for more complicated cases	Student Edition: 4-5, 52-55, 56-59, 60-61, 66-69, 70-71, 72-75, 83-85, 86-89, 136-139 <i>Technology Note</i> 88 Annotated Teacher's Edition: AA 59, 84; CE 53, 57, 60, 67, 73, 83, 87; ETL 57; ITL 56, 82
3. Compute fluently and make reasonable estimates	
A Describe or represent mental strategies	
B Develop and demonstrate fluency	
C Compute problems	

STANDARDS	PAGE REFERENCES
D Estimate and justify solutions	
*judge the reasonableness of numerical computations and their results	Student Edition: 5, 103, 123, 137-139, 485-487, 508-509, 512, 513 <i>Problem Solving Tip</i> 123 Annotated Teacher's Edition: 5MW 484, 508; AA 509; CE 4, 137, 472, 485, 509; ETL 5, 508; QA 5, 509; TT 4
E Use proportional reasoning	
*solve problems involving proportions	Student Edition: 103, 122-125, 130-131, 141, 143, 277-279, 280-281, 282-285 <i>Check Understanding</i> 122 <i>Problem Solving Tip</i> 123 Annotated Teacher's Edition: CE 123, 130, 277, 280-281, 283; ETL 284, 285; ITL 122; PE 123; QA 124; TT 103, 122, 124, 282
Algebraic Relationships	
1. Understand patterns, relations and functions	
A Recognize and extend patterns	
B Create and analyze patterns	
generalize patterns using <u>explicitly</u> or <u>recursively</u> defined functions	Student Edition: 92-93, 96, 97, 99 #17, 215, 243, 538-541, 542-545, 546, 625 Annotated Teacher's Edition: 5MW 520; CE 93, 243, 539, 546; ETL 541, 546; ITL 82; QA 93
C Classify objects and representations	
compare and contrast various forms of <u>representations</u> of patterns	Student Edition: 92-93, 96, 97, 99, #17, 215, 243, 538-541, 542-545, 546, 625 Annotated Teacher's Edition: CE 93, 243, 539, 543, 546; ETL 541, 546; QA 93; TT 542, 543

STANDARDS	PAGE REFERENCES
D Identify and compare functions	
understand and compare the properties of <u>linear</u> and <u>nonlinear functions</u>	<p>Student Edition: 254-257, 262-263, 264-267, 268-271, 272-273, 274-275, 297, 334-337, 347</p> <p>Annotated Teacher's Edition: AA 264; CE 255, 265, 269, 335; ETL 255, 297, 336; ITL 264, 268, 334; TT 254, 265, 334, 335</p>
E Describe the effects of parameter changes	
describe the effects of <u>parameter changes</u> on <u>linear</u> , <u>exponential growth/decay</u> and <u>quadratic functions</u> including intercepts	<p>Student Edition: 248-251, 253, 264-267, 268-271, 274-275, 276-279, 280, 282-285, 297, 334-337</p> <p><i>Mathworks</i> 253</p> <p><i>Technology Note</i> 335</p> <p>Annotated Teacher's Edition: CE 249, 265, 269, 275, 277, 280-281, 335; ETL 297, 336; ITL 268; QA 270, 275</p>
2. Represent and analyze mathematical situations and structures using algebraic symbols	
A Represent mathematical situations	
use <u>symbolic algebra</u> to represent and solve problems that involve linear and quadratic relationships including equations and inequalities	<p>Student Edition: 62-65, 114-115, 120-121, 254-257, 258-261, 262-263, 264-267, 274-275, 276-279, 297, 370 #6</p> <p>Annotated Teacher's Edition: 5MW 254; CE 63, 115, 120, 255, 259, 262, 265, 275, 277; ETL 255, 297</p>
B Describe and use mathematical manipulation	
describe and use algebraic manipulations, including factoring and rules of integer exponents and apply <u>properties of exponents</u> (including order of operations) to simplify expressions	<p>Student Edition: 56-59, 60-61, 66-69, 70-71, 72-75, 76-79, 80-81, 82-85, 86-89, 90-91, 94-96, 374, 376-379, 381-383, 386-389, 390-393, 402-403, 404-407, 408-411, 412-414, 415</p>
C Utilize equivalent forms	
use and solve equivalent forms of equations (linear, absolute value, and quadratic)	<p>Student Edition: 104-107, 108-111, 112-113, 114-115, 116-119, 254-257, 264-267, 268-271, 274-275, 276-279, 282-285, 297</p> <p>Annotated Teacher's Edition: CE 105, 109, 117, 255, 265, 269, 277, 281, 283; ETL 297; QA 256; TT 254</p>

STANDARDS	PAGE REFERENCES
D Utilize systems	
use and solve systems of linear equations or inequalities with 2 variables	<p>Student Edition: 338-341, 342-343, 344-347, 348-351, 352-353, 354-357, 360-361, 362-365, 366-368, 369 <i>Check Understanding</i> 348, 349</p> <p>Annotated Teacher's Edition: CE 339, 342, 345, 349, 352-353, 355, 363; ETL 346, 350, 363</p>
3. Use mathematical models to represent and understand quantitative relationships	
A Use mathematical models	
identify quantitative relationships and determine the type(s) of functions that might model the situation to solve the problem	<p>Student Edition: 59, 114-115, 254-257, 268-271, 272-273, 274-275, 276-279, 280-281, 282-285, 287-288, 289</p> <p>Annotated Teacher's Edition: AA 59; CE 255, 269, 275, 277, 283; QA 256, 270, 275, 278, 284</p>
4. Analyze change in various contexts	
A Analyze change	
analyze linear and quadratic functions by investigating rates of change, intercepts and zeros	<p>Student Edition: 248-251, 252-253, 254-257, 268-271, 274-275, 276-279, 280-281, 282-285, 287-288, 289</p> <p>Annotated Teacher's Edition: CE 249, 255, 269, 275, 277, 283; ETL 276; QA 256, 270, 275, 278, 284</p>
Geometric and Spatial Relationships	
1. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships	
A Describe and use geometric relationships	
B Apply geometric relationships	
*apply geometric properties such as similarity and angle relationship to solve multi-step problems in 2 dimensions	<p>Student Edition: 192-195, 196-199, 200-201, 202-205, 210-211, 420-421, 474-477, 478-481, 482-483, 488-491, 510-513 <i>Check Understanding</i> 475 <i>Problem Solving Tip</i> 479</p> <p>Annotated Teacher's Edition: AA 197, 474; CE 200, 203, 475, 479, 482, 489; DI 203, 204; ETL 202</p>

STANDARDS	PAGE REFERENCES
C Compose and decompose shapes	
2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems	
A Use coordinate systems	
3. Apply transformations and use symmetry to analyze mathematical situations	
A Use transformations on objects	
B Use transformations on functions	
C Use symmetry	
4. Use visualization, spatial reasoning and geometric modeling to solve problems	
A Recognize and draw three-dimensional representations	
B Draw and use visual models	
*draw or use <u>visual models</u> to represent and solve problems	<p>Student Edition: 149, 158-160, 162, 166, 168, 192-195, 294-295, 296-299, 452-455, 456-459, 478-481, 482-483, 484-487 <i>Mathworks</i> 483</p> <p>Annotated Teacher’s Edition: CE 159, 294, 297, 453, 479, 485; DI 212; QA 454</p>
Measurement	
1. Understand measurable attributes of objects and the units, systems and processes of measurement	
A Determine unit of measurement	
B Identify equivalent measures	
C Tell and use units of time	
D Count and compute money	
2. Apply appropriate techniques, tools and formulas to determine measurements	
A Use standard or non-standard measurement	
B Use angle measurement	
C Apply geometric measurements	
D Analyze precision	
*describe the effects of operations, such as multiplication, division and computing powers and roots on magnitudes of quantities and effects of computation on <u>precision</u> which include the judging of reasonable of numerical computations <u>and their results</u>	<p>Student Edition: 5, 103, 473, 485-487, 508-509, 512, 513</p> <p>Annotated Teacher’s Edition: 5MW 484, 508; AA 509; CE 4, 137, 472, 485, 509; ETL 5, 508; ITL 136; QA 5, 509; TT 4</p>

STANDARDS	PAGE REFERENCES
E Use relationships within a measurement system	
*use <u>unit analysis</u> to solve problems	Student Edition: 23, 105-107, 110 #44, 113, 131, 136, 138, 140, 142, 145, 595 <i>Mathworks</i> 113, 131 Annotated Teacher's Edition: CE 137; ETL 107, 138; ITL 136; MW 113, 131
Data and Probability	
1. Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them	
A Formulate questions	
formulate questions and collect data about a characteristic which include <u>sample spaces</u> and distributions	Student Edition: 2-3, 6-9, 14-15, 25, 42, 46, 55, 59, 158-161, 162-165, 166-167, 168-171, 585 <i>Mathworks</i> 15 <i>Problem Solving Tip</i> 163 Annotated Teacher's Edition: CE 7, 14, 159, 163, 169; ETL 7, 169; ITL 158; Q 8, 160
B Classify and organize data	
C Represent and interpret data	
select and use appropriate graphical representation of data and given <u>one-variable quantitative data</u> , display the distribution and describe its shape	Student Edition: 2-3, 4-5, 16-19, 20-23, 24-25, 28-31, 32-33, 34-37, 43, 45, 46-47 <i>Technology Note</i> 29 Annotated Teacher's Edition: CE 21, 27, 29; ETL 5; QA 5, 18, 22, 30; TT 16
2. Select and use appropriate statistical methods to analyze data	
A Describe and analyze data	
apply statistical measures of center to solve problems	Student Edition: 10-13, 14-15, 19, 20, 22, 25, 28-31, 42, 45, 46-47, 585, 586 <i>Technology Note</i> 10 Annotated Teacher's Edition: 5MW 10, 28, 34; AA 10; CE 11, 15, 29; ETL 11; ITL 10, 20, 28; QA 12
B Compare data representations	

STANDARDS	PAGE REFERENCES
C Represent data algebraically	
given a scatterplot, determine an equation for a <u>line of best fit</u>	Student Edition: 20-23, 24-25, 43, 45, 46-47, 586 <i>Mathworks</i> 33 Annotated Teacher's Edition: CE 21, 24; DI 20; ETL 21; MW 33; QA 22
3. Develop and evaluate inferences and predictions that are based on data	
A Develop and evaluate inferences	
make <u>conjectures</u> about possible relationships between 2 characteristics of a sample on the basis of scatter plots of the data	Student Edition: 5, 20-23, 24-25, 26-27, 33, 34-37, 43, 45, 46-47, 79, 145, 282, 586 <i>Mathworks</i> 33 Annotated Teacher's Edition: 5MW 20; CE 21, 27; ETL 27; QA 22, 27
B Analyze basic statistical techniques	
4. Understand and apply basic concepts of probability	
A Apply basic concepts of probability	
B Use and describe compound events	
Geometry	
Number and Operations	
1. Understand numbers, ways of representing numbers, relationships among numbers and number systems	
A Read, write and compare numbers	
compare and order rational and irrational numbers, including finding their approximate locations on a number line	Student Edition: 16-19, 52-55, 60-61, 102-103, 126-129, 130-131, 132-135, 520-523, 524-527, 528 Annotated Teacher's Edition: 5MW 16, 52; CE 17, 53, 60, 102, 127, 133, 521; QA 54, 522; TT 52, 53, 60
B Represent and use rational numbers	
use real numbers and various models, drawing, etc. to solve problems.	Student Edition: 16-19, 52-53, 60-61, 102-103, 126-129, 132-135, 520-523, 524-527, 528 <i>Reading Math</i> 53 Annotated Teacher's Edition: 5MW 52; CE 17, 53, 60, 102, 133, 521; QA 54, 522; TT 16, 52, 53, 60

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D Classify and describe numeric relationships	
2. Understand meanings of operations and how they relate to one another	
A Represent operations	
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D Apply operations on real and complex numbers	
<p>*apply operations to real numbers, using mental computation or paper-and-pencil calculations for simple cases and technology for more complicated cases</p>	<p>Student Edition: 4-5, 52-55, 56-59, 60-61, 66-69, 70-71, 72-75, 83-85, 86-89, 136-139 <i>Technology Note</i> 88</p> <p>Annotated Teacher’s Edition: AA 59, 84; CE 53, 57, 60, 67, 73, 83, 87; ETL 57; ITL 56, 82</p>
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<p>*judge the reasonableness of numerical computations and their results</p>	<p>Student Edition: 5, 103, 123, 137-139, 485-487, 508-509, 512, 513 <i>Problem Solving Tip</i> 123</p> <p>Annotated Teacher’s Edition: 5MW 484, 508; AA 509; CE 4, 137, 472, 485, 509; ETL 5, 508; QA 5, 509; TT 4</p>
E Use proportional reasoning	
<p>*solve problems involving proportions</p>	<p>Student Edition: 103, 122-125, 130-131, 141, 143, 277-279, 280-281, 282-285 <i>Check Understanding</i> 122 <i>Problem Solving Tip</i> 123</p> <p>Annotated Teacher’s Edition: CE 123, 130, 277, 280-281, 283; ETL 284, 285; ITL 122; PE 123; QA 124; TT 103, 122, 124, 282</p>

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C Classify objects and representations	
compare and contrast various forms of <u>representations</u> of patterns	Student Edition: 92-93, 96, 97, 99, #17, 215, 243, 538-541, 542-545, 546, 625 Annotated Teacher's Edition: CE 93, 243, 539, 543, 546; ETL 541, 546; QA 93; TT 542, 543
D Identify and compare functions	
apply appropriate <u>properties of exponents</u> to simplify expressions and solve equations	Student Edition: 82-85, 86-89, 90-91, 96, 97 <i>Check Understanding</i> 86 <i>Mental Math Tip</i> 87 <i>Reading Math</i> 82 <i>Technology Note</i> 88 Annotated Teacher's Edition: 5MW 82, 86; AA 84, 88; CE 83, 87; ITL 82, 86; QA 84, 88; TT 82, 86
E Describe the effects of parameter changes	
2. Represent and analyze mathematical situations and structures using algebraic symbols	
A Represent mathematical situations	
B Describe and use mathematical manipulation	
C Utilize equivalent forms	
D Utilize systems	

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3. Use mathematical models to represent and understand quantitative relationships	
A Use mathematical models	
<p>identify quantitative relationships and determine the type(s) of functions that might model the situation to solve the problem</p>	<p>Student Edition: 59, 114-115, 254-257, 268-271, 272-273, 274-275, 276-279, 280-281, 282-285, 287-288, 289</p> <p>Annotated Teacher's Edition: AA 59; CE 255, 269, 275, 277, 283; QA 256, 270, 275, 278, 284</p>
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A Analyze change	
<p>analyze linear and quadratic functions by investigating rates of change and intercepts</p>	<p>Student Edition: 248-251, 252-253, 254-257, 268-271, 274-275, 276-279, 280-281, 282-285, 287-288, 289</p> <p>Annotated Teacher's Edition: CE 249, 255, 269, 275, 277, 283; ETL 276; QA 256, 270, 275, 278, 284</p>
Geometric and Spatial Relationships	
1. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships	
A Describe and use geometric relationships	
<p>use inductive and deductive reasoning to establish the validity of geometric <u>conjectures</u>, prove theorems and critique arguments made by others</p>	<p>Student Edition: 206-209, 211, 212-215, 216-219, 222-225, 538-541, 542-545, 546, 547, 548-551, 553-554, 555</p> <p><i>Check Understanding</i> 539, 549 <i>Problem Solving Tip</i> 532</p> <p>Annotated Teacher's Edition: 5MW 538, 542; CE 539; DI 548; ETL 541; ITL 548; QA 544, 550; TT 538, 539</p>
B Apply geometric relationships	
C Compose and decompose shapes	

STANDARDS	PAGE REFERENCES
2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems	
A Use coordinate systems	
make conjectures and solve problems involving 2-dimensional objects represented with Cartesian coordinates	Student Edition: 294-295, 296-299, 300-303, 304-305, 306-309, 310-313, 314-315, 316-319, 322-323, 324-326, 327 <i>Check Understanding</i> 300 Annotated Teacher's Edition: 5MW 296, 300; CE 294, 297, 301, 304, 307; QA 295, 298, 302, 308; TT 213, 294
3. Apply transformations and use symmetry to analyze mathematical situations	
A Use transformations on objects	
use and apply constructions and the coordinate plane to represent translations, reflections, rotations and dilations of objects	Student Edition: 202, 212, 216, 219, 222, 226, 296-299, 300-303, 304-305, 306-309, 310-313, 314-315, 316-319, 324-326, 327 <i>Check Understanding</i> 301 Annotated Teacher's Edition: CE 297, 301, 304, 307; ETL 202, 212, 216, 219, 300, 301, 307
B Use transformations on functions	
C Use symmetry	
identify types of symmetries of 2- and 3-dimensional figures	Student Edition: 296-299, 300-303, 304-305, 306-309, 310-313, 314-315, 323, 324-325, 326 <i>Check Understanding</i> 300, 301, 310 Annotated Teacher's Edition: 5MW 310; CE 297, 301, 304, 307, 311, 314; ETL 310, 311, 312; QA 312
4. Use visualization, spatial reasoning and geometric modeling to solve problems	
A Recognize and draw three-dimensional representations	
draw and use vertex-edge graphs or networks to find optimal solutions and draw representations of 3-dimensional geometric objects from different perspectives	Student Edition: 358-359, 360, 368, 369, 422-425, 426-429, 430-431, 436-439, 440-441, 442-445, 446-449, 450-451 <i>Mathworks</i> 431 Annotated Teacher's Edition: AA 426; CE 359, 423, 427, 430, 437, 440-441, 443, 447; ITL 426, 446

STANDARDS	PAGE REFERENCES
B Draw and use visual models	
*draw or use <u>visual models</u> to represent and solve problems	Student Edition: 149, 158-160, 162, 166, 168, 192-195, 294-295, 296-299, 452-455, 456-459, 478-481, 482-483, 484-487 <i>Mathworks</i> 483 Annotated Teacher's Edition: CE 159, 294, 297, 453, 479, 485; DI 212; QA 454
Measurement	
1. Understand measurable attributes of objects and the units, systems and processes of measurement	
A Determine unit of measurement	
B Identify equivalent measures	
C Tell and use units of time	
D Count and compute money	
2. Apply appropriate techniques, tools and formulas to determine measurements	
A Use standard or non-standard measurement	
B Use angle measurement	
solve problems of angle measure, including those involving triangles or other polygons and of parallel lines cut by a transversal	Student Edition: 190-191, 196-199, 200-201, 202-205, 206-209, 210-211, 212-215, 222-225, 230, 234-236, 237, 425, 474-477, 482, 498-501, 502-503, 512, 513 <i>Mathworks</i> 503 Annotated Teacher's Edition: CE 197, 203, 207, 475, 499
C Apply geometric measurements	
determine the surface area, and volume of geometric figures, including cones, spheres, and cylinders	Student Edition: 421, 426-429, 430-431, 432-435, 440-441, 442-445, 451, 452-455, 456-457, 460-461, 462-463, 464-466, 467 <i>Mathworks</i> 431 Annotated Teacher's Edition: AA 426; CE 427, 433, 440, 453, 457, 460-461, 463
D Analyze precision	

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E Use relationships within a measurement system	
*use <u>unit analysis</u> to solve problems	Student Edition: 23, 105-107, 110 #44, 113, 131, 136, 138, 140, 142, 145, 595 <i>Mathworks</i> 113, 131 Annotated Teacher's Edition: CE 137; ETL 107, 138; ITL 136; MW 113, 131
Data and Probability	
1. Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them	
A Formulate questions	
formulate and collect data about a characteristic	Student Edition: 2-3, 6-9, 14-15, 25, 42, 46, 55, 59, 158-161, 162-165, 166-167, 168-171, 585 <i>Mathworks</i> 15 <i>Problem Solving Tip</i> 163 Annotated Teacher's Edition: CE 7, 14, 159, 163, 169; ETL 7, 169; ITL 158; Q 8, 160
B Classify and organize data	
C Represent and interpret data	
select and use appropriate graphical representation of data and given <u>one-variable quantitative data</u> , display the distribution and describe its shape	Student Edition: 2-3, 4-5, 16-19, 20-23, 24-25, 28-31, 32-33, 34-37, 43, 45, 46-47 <i>Technology Note</i> 29 Annotated Teacher's Edition: CE 27, 21, 29; ETL 5; QA 5, 18, 22, 30; TT 16
2. Select and use appropriate statistical methods to analyze data	
A Describe and analyze data	
B Compare data representations	
C Represent data algebraically	
3. Develop and evaluate inferences and predictions that are based on data	
A Develop and evaluate inferences	
B Analyze basic statistical techniques	
4. Understand and apply basic concepts of probability	
A Apply basic concepts of probability	
B Use and describe compound events	

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B Represent and use rational numbers	
use real numbers and various models, drawing, etc. to solve problems.	Student Edition: 16-19, 52-53, 60-61, 102-103, 126-129, 132-135, 520-523, 524-527, 528 <i>Reading Math</i> 53 Annotated Teacher's Edition: 5MW 52; CE 17, 53, 60, 102, 133, 521; QA 54, 522; TT 16, 52, 53, 60
C Compose and decompose numbers	
*use a variety of representations to demonstrate an understanding of very large and very small numbers	Student Edition: 4-5, 82-85, 86-89 <i>Mental Math Tip</i> 87 <i>Technology Note</i> 88 Annotated Teacher's Edition: 5MW 92; AA 84, 88; CE 83, 87; E 4; ITL 82; QA 5, 88, 138; R 4; TT 4, 82, 86
D Classify and describe numeric relationships	
2. Understand meanings of operations and how they relate to one another	
A Represent operations	
B Describe effects of operations	
C Apply properties of operations	

STANDARDS	PAGE REFERENCES
D Apply operations on real and complex numbers	
*apply operations to matrices and complex numbers, using mental computation or paper-and-pencil calculations for simple cases and technology for more complicated cases	Student Edition: 38-41, 44, 45, 47, 99, 239 #11, 354-357, 358-359, 360-361, 368, 369 Annotated Teacher's Edition: CE 39, 355, 360; ETL 39, 355; QA 40, 356, 359, 360; TT 38
3. Compute fluently and make reasonable estimates	
A Describe or represent mental strategies	
B Develop and demonstrate fluency	
C Compute problems	
D Estimate and justify solutions	
*judge the reasonableness of numerical computations and their results	Student Edition: 5, 103, 123, 137-139, 485-487, 508-509, 512, 513 <i>Problem Solving Tip</i> 123 Annotated Teacher's Edition: 5MW 484, 508; AA 509; CE 4, 137, 472, 485, 509; ETL 5, 508; QA 5, 509; TT 4
E Use proportional reasoning	
*solve problems involving proportions	Student Edition: 103, 122-125, 130-131, 141, 143, 277-279, 280-281, 282-285 <i>Check Understanding</i> 122 <i>Problem Solving Tip</i> 123 Annotated Teacher's Edition: CE 123, 130, 277, 280-281, 283; ETL 284, 285; ITL 122; PE 123; QA 124; TT 103, 122, 124, 282
Algebraic Relationships	
1. Understand patterns, relations and functions	
A Recognize and extend patterns	
B Create and analyze patterns	
generalize patterns using <u>explicitly</u> or <u>recursively</u> defined functions	Student Edition: 92-93, 96, 97, 99 #17, 215, 243, 538-541, 542-545, 546, 625 Annotated Teacher's Edition: 5MW 520; CE 93, 243, 539, 546; ETL 541, 546; ITL 82; QA 93

STANDARDS	PAGE REFERENCES
C Classify objects and representations	
compare and contrast various forms of <u>representations</u> of patterns	Student Edition: 92-93, 96, 97, 99 #17, 215, 243, 538-541, 542-545, 546, 625 Annotated Teacher's Edition: CE 93, 243, 539, 543, 546; ETL 541, 546; QA 93; TT 542, 543
D Identify and compare functions	
Compare the properties of linear, exponential, logarithmic and ration functions	Student Edition: 264-267, 274-275, 276-279, 280-281, 282-285, 287-288, 289, 605-606 Annotated Teacher's Edition: CE 265, 275, 277, 280-281, 283; QA 266, 275, 284; TT 265, 280, 282
E Describe the effects of parameter changes	
describe the effects of <u>parameter changes</u> on functions	Student Edition: 248-251, 253, 264-267, 268-271, 274-275, 276-279, 280, 282-285, 297, 334-337 <i>Mathworks</i> 253 <i>Technology Note</i> 335 Annotated Teacher's Edition: CE 249, 265, 269, 275, 277, 280-281, 335; ETL 297, 336; ITL 268; QA 270, 275
2. Represent and analyze mathematical situations and structures using algebraic symbols	
A Represent mathematical situations	
use <u>symbolic algebra</u> to represent and solve problems that involve exponential, quadratic and logarithmic relationships	Student Edition: 62-65, 266-267, 268-271, 272, 275-279, 280, 288 Annotated Teacher's Edition: CE 269, 277, 280; ITL 268; QA 64, 270, 278
B Describe and use mathematical manipulation	
describe and use algebraic manipulations, <u>inverse</u> or <u>composition</u> of functions	See Glencoe's <i>Algebra 2</i> © 2008 Student Edition: 385-390, 392-397

STANDARDS	PAGE REFERENCES
C Utilize equivalent forms	
use and solve equivalent forms of equations and inequalities	<p>Student Edition: 104-107, 108-111, 112-113, 114-115, 116-119, 132-135, 142, 143, 254-257, 258-261, 264-267, 268-271, 274-275, 276-279, 282-285, 297 <i>Check Understanding</i> 133</p> <p>Annotated Teacher's Edition: CE 133, 259; ITL 258; QA 134, 260; TT 258, 259</p>
D Utilize systems	
use and solve systems of linear and quadratic equations or inequalities with 2 variables	<p>Student Edition: 338-341, 342-343, 344-347, 348-351, 352-353, 354-357, 360-361, 362-365, 366-368, 369 <i>Check Understanding</i> 348, 349</p> <p>Annotated Teacher's Edition: CE 339, 342, 345, 349, 352-353, 355, 363; ETL 346, 350, 363</p>
3. Use mathematical models to represent and understand quantitative relationships	
A Use mathematical models	
identify quantitative relationships and determine the type(s) of functions that might model the situation to solve the problem	<p>Student Edition: 59, 114-115, 254-257, 268-271, 272-273, 274-275, 276-279, 280-281, 282-285, 287-288, 289</p> <p>Annotated Teacher's Edition: AA 59; CE 255, 269, 275, 277, 283; QA 256, 270, 275, 278, 284</p>
4. Analyze change in various contexts	
A Analyze change	
analyze exponential and logarithmic functions by investigating rates of change, intercepts and asymptotes	<p>See Glencoe's <i>MathMatters 3: An Integrated Program</i> © 2009.</p> <p>Student Edition: 576, 600 <i>Example</i> 595 <i>Extended Practice Exercises</i> 603</p>

STANDARDS	PAGE REFERENCES
Geometric and Spatial Relationships	
1. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships	
A Describe and use geometric relationships	
use trigonometric relationships with right triangles to determine lengths and angle measures	Student Edition: 488-491, 492-493, 494-497, 498-501, 502-503, 508-509, 511-512, 513 <i>Check Understanding</i> 494 Annotated Teacher's Edition: CE 489, 492-493, 495, 499, 509; ETL 488, 496, 501; ITL 488, 494, 498; QA 490, 496, 500
B Apply geometric relationships	
C Compose and decompose shapes	
2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems	
A Use coordinate systems	
3. Apply transformations and use symmetry to analyze mathematical situations	
A Use transformations on objects	
B Use transformations on functions	
translate, dilate and reflect <u>functions</u>	Student Edition: 254-257, 268-271, 272-273, 297, 334-337 Annotated Teacher's Edition: CE 269; ETL 255, 297, 336; ITL 268; QA 270; TT 254
C Use symmetry	
4. Use visualization, spatial reasoning and geometric modeling to solve problems	
A Recognize and draw three-dimensional representations	
B Draw and use visual models	
*draw or use <u>visual models</u> to represent and solve problems	Student Edition: 149, 158-160, 162, 166, 168, 192-195, 294-295, 296-299, 452-455, 456-459, 478-481, 482-483, 484-487 <i>Mathworks</i> 483 Annotated Teacher's Edition: CE 159, 294, 297, 453, 479, 485; DI 212; QA 454

STANDARDS	PAGE REFERENCES
Measurement	
1. Understand measurable attributes of objects and the units, systems and processes of measurement	
A Determine unit of measurement	
B Identify equivalent measures	
C Tell and use units of time	
D Count and compute money	
2. Apply appropriate techniques, tools and formulas to determine measurements	
A Use standard or non-standard measurement	
B Use angle measurement	
C Apply geometric measurements	
D Analyze precision	
apply concepts of successive approximation	Student Edition: 57, 82-84, 86-89, 92-93, 96, 97, 538-541 Annotated Teacher’s Edition: AA 59; CE 93; ETL 57, 541; ITL 82, 86; QA 93; TT 86
E Use relationships within a measurement system	
*use <u>unit analysis</u> to solve problems involving rates, such as speed, density or population density	Student Edition: 23, 105-107, 110 #44, 113, 131, 136, 138, 140, 142, 145, 595 <i>Mathworks</i> 113, 131 Annotated Teacher’s Edition: CE 137; ETL 107, 138; ITL 136; MW 113, 131
Data and Probability	
1. Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them	
A Formulate questions	
B Classify and organize data	
C Represent and interpret data	
select and use appropriate graphical representation of data and given <u>one-variable quantitative data</u> , describe its shape and calculate <u>summary statistics</u>	Student Edition: 2-3, 4-5, 16-19, 20-23, 24-25, 28-31, 32-33, 34-37, 43, 45, 46-47, 65 <i>Technology Note</i> 29 Annotated Teacher’s Edition: CE 27, 21, 29; ETL 5; QA 5, 18, 22, 30; TT 16

STANDARDS	PAGE REFERENCES
2. Select and use appropriate statistical methods to analyze data	
A Describe and analyze data	
apply statistical measures of center to solve problems	Student Edition: 10-13, 14-15, 19, 20, 22, 25, 28-31, 42, 45, 46-47, 585, 586 <i>Technology Note 10</i> Annotated Teacher's Edition: 5MW 10, 28, 34; AA 10; CE 11, 15, 29; ETL 11; ITL 10, 20, 28; QA 12
B Compare data representations	
C Represent data algebraically	
given a scatterplot, determine a type of function which models the data	Student Edition: 20-23, 24-25, 32-33, 43, 45, 46-47, 586 <i>Mathworks 33</i> Annotated Teacher's Edition: CE 21, 24; DI 20; ETL 21; MW 33; QA 22
3. Develop and evaluate inferences and predictions that are based on data	
A Develop and evaluate inferences	
B Analyze basic statistical techniques	
4. Understand and apply basic concepts of probability	
A Apply basic concepts of probability	
describe the concepts of <u>sample space</u> and <u>probability distribution</u>	Student Edition: 2-3, 6-9, 14-15, 25, 42, 46, 55, 59, 158-161, 162-165, 166-167, 168-171, 585 <i>Mathworks 15</i> <i>Problem Solving Tip 163</i> Annotated Teacher's Edition: CE 7, 14, 159, 163, 169; ETL 7, 169; ITL 158; Q 8, 160
B Use and describe compound events	
use and describe the concepts of conditional probability and independent events and how to compute the probability of a <u>compound event</u>	Student Edition: 158-161, 162-165, 166-167, 168-171, 176, 182-184, 185, 186 <i>Check Understanding 163, 169</i> Annotated Teacher's Edition: CE 163, 166, 169; ETL 163, 167, 169; ITL 168; Q 164, 170; TT 170