

East Providence Algebra I Grades 8-10

Curriculum Writers: Jonathan Chapman, Ozlem Lamontagne, Angelo Pizzi, Stacy Simmons, and Patricia Usenia

STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
<p style="text-align: center;"><u>CONTENT STRANDS</u></p> <ul style="list-style-type: none"> • Number and Operations • Functions and Algebra • Data, Statistics, and Probability • Geometry and Measurement 		<p style="text-align: center;"><u>NECAP GRADE SPAN EXPECTATIONS</u></p> <p>All of the concepts and skills identified at a given grade level are "fair game" for large scale assessment purposes if indicated by (state assessment, grade...).</p> <p>Each GSE includes three parts:</p> <ul style="list-style-type: none"> • A statement in bold, called the "stem" is at the beginning of each GSE. Each "stem" is the same or similar across the grades for a given GSE, and is meant to communicate the main curriculum and instructional focus of the GSE across the grades. • The unbolded text within a GSE indicates how the GSE is specified at a given grade level. There are often several indicators for each GSE stem. Each indicator is coded and indicated fair game for "state" or "local" assessment • Differences between adjacent grades are underlined. Sometimes nothing is underlined within a GSE. In these situations, differences in adjacent grades "assumes increasing text complexity" and is noted for those GSE. • Each GSE is coded for the content area, the grade level, the GSE "stem" number, and specific indicator for that GSE stem, (e.g. N&O - 5-6.2) means N & O (numbers and operations), 5 (grade 5), 6 (6th GSE stem), 2 (the second specific indicator for the 6th GSE 	<p><u>DISTRICT INITIATIVES & RESEARCH</u></p> <p>The teacher may model and/or facilitate the following strategies</p> <p>Employs strategies of "best practice" (student-centered, experiential, holistic, authentic, expressive, reflective, social, collaborative, democratic, cognitive, developmental, constructivist/heuristic, and challenging)</p> <p>Facilitates the integration of Applied Learning Standards (SCANS)</p> <ul style="list-style-type: none"> • problem solving • communication tools • information tools • self-management tools • working with others <p>Applies Principles of Learning (POL) ©</p> <ul style="list-style-type: none"> • organizing for effort • clear expectations • fair and credible evaluations • recognition of accomplishment • academic rigor • accountable talk • socializing intelligence • self-management of learning • learning as apprenticeship <p>Differentiates instruction by varying the content, process, and product and implementing</p> <ul style="list-style-type: none"> • tiered assignments • jigsawing • pre/post assessments • anchoring • think/pair/share • cubing, etc. <p>Analyzes pre-assessment to direct instruction</p> <p>Provides exemplars and rubrics Addresses multiple intelligences and brain dominance (spatial, bodily kinesthetic, musical,</p>	<p>Textbook Algebra I, Prentice Hall</p> <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead Graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorelarning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • 2 Colored chips • Algebra tiles • Colored pencils • Colored tiles • Dice • Expo markers • Graph paper • Marbles • Overhead algebra tiles • Overhead spinners • Playing cards • Rulers • Student white graph boards 	<p>REQUIRED ASSESMENTS COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS STANDARDIZED TESTS</p> <p><u>SUGGESTED ASSESSMENTS</u> Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>

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<p><u>PROCESS STRANDS</u></p> <ul style="list-style-type: none"> • Problem-solving, Reasoning, and Proof • Communication, Representations, and Connections 		<p>stem).</p> <p>If an outcome does not have a GSE number, it indicates this is an additional expectation for East Providence Public Schools.</p> <p>Outcomes and Benchmarks are indicated for all MATHEMATIC GSEs/GSEs/standards and are secured for this grade level unless indicated with a B for beginning, a D for developing, and embedded.</p> <ul style="list-style-type: none"> • B - exposure only • D - experience but not assessed • Embedded - not instructed, integrated into curriculum throughout <p>The instructional strategies, resources, and assessments to the right are a reference list of possible ways to teach and measure the outcomes/benchmarks. One, some, or all of these may be used for specific outcomes/benchmarks. The lists reflect research-based instructional strategies and assessments, and all of the district initiatives. Required district-wide assessments that includes common local assessments (mid-term/final exams), standardized tests, and portfolios are indicated and it is the expectation they will be used for all outcomes/benchmarks</p> <p>When an instructional strategy, resource, or assessment is specific to an outcome/benchmark, it may be listed next to the benchmark.</p>	<p>linguistic, intrapersonal, interpersonal, mathematical/logical, and naturalist)</p> <p>Organizes exhibition of student work with rubrics</p> <p>Collaborates with specialist to differentiate instruction for ALL students</p> <p>MATHEMATICS STRATEGIES</p> <p>Employs Mathematics best practice strategies e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction <p>Facilitate peer instruction (throughout)</p> <p>Uses Workshop Model (throughout)</p> <p>Uses Scaffolding</p> <p>Demonstrates gradual release technique</p> <p>Uses district wide literacy strategies,</p> <ul style="list-style-type: none"> • Frayer • KIM • Read Around the Text • Two-column notes <p>Models the use of graphic organizers: sequence organizers (chains, cycle), concept development (mind map), compare/contrast organizers (Venn diagrams, comparison charts), organizers (word web, concept map), evaluation organizers (charts, scales), categorize/classify organizers (categories, tree) relational organizers (fish bone, pie chart) and Foldables</p>		

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<p>1. NUMBER and OPERATIONS</p> <p>1.1 Relative magnitude</p>		<p>The student</p> <p>1.1.1 Demonstrates understanding of the relative magnitude of real numbers by solving problems involving:</p> <ul style="list-style-type: none"> • ordering or comparing rational numbers (embedded) • common irrational numbers ($\sqrt{2}$, π) • rational bases with positive (embedded) and negative integer exponents square roots, cube roots absolute values as distance • integers (embedded) • numbers represented in scientific notation using number lines or equality and inequality symbols. (N&O)- 10-2 (state assessment) <p>1.1.2 Applies the conventions of order of operations</p> <p>1.1.3 Demonstrates an ability to utilize appropriate technology to represent:</p> <ul style="list-style-type: none"> • rational numbers • scientific notation • common irrational numbers <p>1.1.4 Understands, uses, applies appropriate technology to solve problems</p> <p>1.1.5 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • NECAP 2008, grade 11, #1 (I) • NECAP 2007, grade 11 #1 (I) • MCAS 2008 grade 10 #2 (F) 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<p>Textbook Algebra I, Prentice Hall</p> <ul style="list-style-type: none"> • 1.3 • 1.2 • 1.3 pp. 176-177 Supplement for cube roots • 3.8 • 1.3 • 1.3 • 8.2 • 1.2 • Supplement <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • Classroom Instruction That Works, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum 	<p>REQUIRED ASSESMENTS</p> <p>COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS</p> <p>STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS</p> <p>Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p>

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		<ul style="list-style-type: none"> • NECAP 2008, grade 11 #13 (F) • MCAS 2008, grade 10 #4 (F) • NECAP 2008, grade 8 #2 (F) • MCAS 2005, grade 10 #41 (S) 		<ul style="list-style-type: none"> • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • 2 colored chips • Algebra tiles • Expo markers • Student white boards 	<p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>
<p>1. NUMBER and OPERATIONS</p> <p>1.2 Solves problems</p>		<p>The student</p> <p>1.2.1 Accurately solves problems that involve but are not limited to:</p> <ul style="list-style-type: none"> • proportional relationships • percents (embedded) • ratios (embedded) • rates (N&O)-10-4 (state assessment) • dimensional analysis <p>1.2.2 Solves problems that might be drawn from contexts outside of and within mathematics including those that cut across content strands or disciplines (embedded) (N&O)-10-4 (state assessment) e.g. map scales , recipes</p> <p>1.2.3 Demonstrates an ability to utilize appropriate technology</p> <p>1.2.4 Understands, uses, applies appropriate technology to solve problems</p>	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers 	<p>Textbook</p> <p>Algebra I, Prentice Hall</p> <ul style="list-style-type: none"> • 3.4, 3.5 • pp.166-167 • 3.4 • 3.4 • p. 143, Quick Check #3 • 3.5, 3.6 • Supplement <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • <i>Problem of the Week</i> • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing 	<p>REQUIRED ASSESSMENTS</p> <p>COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS</p> <p>STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS</p> <p>Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays • (bodily kinesthetic)

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		<p>1.2.5 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • NECAP 2007, grade 11 #2 (I) • NECAP 2008, grade 8 #11 (F) • NECAP 2008 grade 11 #2 (F) • MCAS 2008, grade 10 #20 (S) 	<ul style="list-style-type: none"> • facilitating learning • using assessment to modify instruction 	<p>calculator</p> <ul style="list-style-type: none"> • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorelarning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • 2 colored chips • Algebra tiles • Expo markers • Student white boards 	<ul style="list-style-type: none"> • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>
<p>1. NUMBER and OPERATIONS</p> <p>1.3 Mental computations</p>		<p>The student</p> <p>1.3.1 Uses a variety of mental computation strategies to solve problems</p> <ul style="list-style-type: none"> • calculates benchmark perfect squares and related square roots ($1^2, 2^2, \dots, 16^2, 20^2, 25^2, 100^2, 1000^2$) (embedded) • calculates benchmark perfect cubes and related cube roots $1^3, 2^3, 3^3, 4^3, \text{ and } 5^3$ (embedded) • determines any whole number percentage of a number or any multiples of 100% up to 500%. (embedded) • determines benchmark fractions of a number (embedded) M(N&O)- 10-6 <p>IMPORTANT: <i>The intent of this GSE is to embed</i></p>	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction 	<p>Textbook</p> <p>Algebra I, Prentice Hall</p> <ul style="list-style-type: none"> • Supplement <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing calculator 	<p>REQUIRED ASSESSMENTS</p> <p>COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS</p> <p>STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS</p> <p>Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p>

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		<p><i>mental arithmetic throughout the instructional program, not to teach it as a separate unit.)</i></p> <p>1.3.2 Understands, uses, applies appropriate technology to solve problems</p> <p>1.3.3 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • MCAS 2008, grade 10 #10 (F) • NECAP 2008, grade 8 #1 (F) 	<ul style="list-style-type: none"> • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<ul style="list-style-type: none"> • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorelarning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • 2 colored chips • Algebra tiles • Expo markers • Student white boards 	<p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>
1. NUMBER and OPERATIONS		<p>The student</p> <p>1.4.1 Makes appropriate estimates in a given situation by determining the level of accuracy needed and analyzing the accuracy of results.</p> <ul style="list-style-type: none"> • estimates tips, discounts, and tax • estimates the value of a non-perfect square root or cube root (M(N&O)-10-7, e.g. <ul style="list-style-type: none"> ○ estimating the length of 1 side, given the area or volume of a square or a cube ○ square roots 1-256 ○ cube roots 1-125 <p>1.4.2 Applies the conventions of order of operations</p>	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics 	<p>Textbook</p> <p>Algebra I, Prentice Hall</p> <ul style="list-style-type: none"> • Supplement • 3.8 pp. 177-178 • Supplement <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator 	<p>REQUIRED ASSESSMENTS</p> <p>COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS</p> <p>STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS</p> <p>Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p>

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		<p>1.4.3 Uses estimation to check the appropriateness of answer obtained from technology (embedded)</p> <p>1.4.4 Understands, uses, applies appropriate technology to solve problems</p> <p>IMPORTANT: <i>The intent of this GSE is to embed estimation throughout the instructional program, not to teach it as a separate unit.</i></p> <p>1.4.5 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • MCAS 2006, grade 10 #2 (I) • MCAS 2008 grade 10 #7 (F) • NECAP 2007, grade 8 #3 (F) • MCAS 2006, grade 10 #4 (S) 	<ul style="list-style-type: none"> • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<ul style="list-style-type: none"> • Graphing calculator • Overhead graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • 2 colored chips • Algebra tiles • Expo markers • Student white boards 	<p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>
<p>2 NUMBER and OPERATIONS</p> <p>1.5 Properties of numbers</p>		<p>The student</p> <p>1.5.1 Knows and uses the properties of numbers:</p> <ul style="list-style-type: none"> • properties of equality <ul style="list-style-type: none"> ○ commutative ○ associative ○ distributive ○ reflexive ○ symmetric ○ substitution ○ transitive • identity properties <ul style="list-style-type: none"> ○ additive identity ○ multiplicative identity 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics 	<p>Textbook <i>Algebra I</i>, Prentice Hall</p> <ul style="list-style-type: none"> • 2.5 through p. 87, exclude deductive reasoning <p>Supplementary books</p> <ul style="list-style-type: none"> • <i>Algebra I</i>, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator 	<p>REQUIRED ASSESSMENTS</p> <p>COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS</p> <p>STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS</p> <p>Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p>

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		<ul style="list-style-type: none"> ○ multiplicative property of zero • inverse properties <ul style="list-style-type: none"> ○ additive inverse ○ multiplicative inverse • additional properties of numbers <ul style="list-style-type: none"> ○ divisibility ○ prime factorization <p>1.5.2 Applies properties of numbers to</p> <ul style="list-style-type: none"> • solve problems • simplify computations • compare and contrast the properties of numbers and the real number system M(N&O)-10-8 <p>1.5.3 Applies the conventions of order of operations</p> <p>1.5.4 Understands, uses, applies appropriate technology to solve problems</p> <p>1.5.5 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • <i>NECAP 2008, grade 11 #9 (I)</i> • <i>MCAS 2008, grade 10 #11 (F)</i> • <i>NECAP 2008, grade 11 #18 (F)</i> • <i>Algebra I , Prentice Hall, p. 89 #45</i> 	<ul style="list-style-type: none"> • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<ul style="list-style-type: none"> • Graphing calculator • Overhead graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • 2 colored chips • Algebra tiles • Expo markers • Student white boards 	<p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>
<p>2.GEOMETRY AND MEASUREMENT</p> <p>2.1 Formal proofs</p>		<p>COVERED IN GEOMETRY</p>			

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<p>2. GEOMETRY AND MEASUREMENT</p> <p>2.2 Conjectures geometric arguments, geometric properties, theorems</p>		<p>The student</p> <p>2.2.1 COVERED IN GEOMETRY (G&M)- 10-2</p> <p>2.2.2 Applies the Pythagorean Theorem to find a missing side of a right triangle , GSE, or in problem solving situations. (G&M)- 10-2 (state assessment)</p> <p>2.2.3 Understands, uses, applies appropriate technology to solve problems</p> <p>2.2.4 BENCHMARK PROBLEM</p> <ul style="list-style-type: none"> • NECAP 2007, grade 11 #6 (I) • MCAS 2007, grade 8 #6 (F) • MCAS 2008, grade 8 #19 (F) 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<p>Textbook Algebra I, Prentice Hall</p> <ul style="list-style-type: none"> • 3-9 <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • Expo markers • Graph board • Graph paper • Rulers • Student white/graph boards 	<p>REQUIRED ASSESSMENTS COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>

East Providence Algebra I Grades 8-10

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
2. GEOMETRY AND MEASUREMENT 2.3 Congruency		COVERED IN GEOMETRY			
2. GEOMETRY AND MEASUREMENT 2.4 Similarity		COVERED IN GEOMETRY			
2. GEOMETRY AND MEASUREMENT 2.5 Perimeter, circumference and area		<p>The student</p> <p>2.5.1 Solves problems involving</p> <ul style="list-style-type: none"> • perimeter • circumference or • area of two-dimensional figures (including composite figures) • surface area or volume of three-dimensional figures (including composite figures) within mathematics or across disciplines or contexts. (embedded in examples such as evaluating formulas and combining like terms) (state assessment) (G&M)-10-6 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics 	<p><u>Textbook</u> <u>Algebra I</u>, Prentice Hall</p> <ul style="list-style-type: none"> • Activity Lab, pp. 156-157 • 3.6, p. 158 • Supplement • p.12, p.13 #14, p.15 #73, p. 16, GPS p. 180 #58, • Perimeter, Area and Volume p. 765 , p. 14 #63, p. 16 GPS, p.180 #63, p.436, p. 445 #77, p. 450 #51, p. 451 #69, p.158 #1, Quick Check 1, p. 266 #11 p. 165 #35, p.231 # 42-45, p. 127 example 2, p. 130 #54-55, p. 220 Example 2, Quick Check #3 p.383, Supplement Circumference 	<p>REQUIRED ASSESSMENTS COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS STANDARDIZED TESTS</p> <p><u>SUGGESTED ASSESSMENTS</u> Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p>

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
		<p>2.5.2 Understands, uses, applies appropriate technology to solve problems</p> <p>2.5.3 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • MCAS 2007, grade 10 #30 (I) • MCAS 2008, grade 10 #6 (F) • Algebra I, Prentice Hall, p. 162 #3 	<ul style="list-style-type: none"> • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • Expo markers • Graph board • Graph paper • Rulers • Student white/graph boards 	<p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
<p>2. GEOMETRY AND MEASUREMENT</p> <p>2.6 Units of measure</p>		<p>The student</p> <p>2.6.1 Uses units of measure appropriately and consistently when solving problems across content strands;</p> <ul style="list-style-type: none"> • makes conversions within or across systems <i>NOT TO BE TAUGHT AS A SEPARATE UNIT</i>, below is considered to be prior knowledge) <p>Length</p> <ul style="list-style-type: none"> • Units (accuracy): Inch (to 1/16 inch); Foot; Centimeter (to 1/10 centimeter); Meter (to 1/100 meter); Yard; Mile (use in scale and rate questions); Kilometer (use in scale and rate questions) • Equivalencies: 12 inches in 1 foot; 100 centimeters in 1 meter; 3 feet in 1 yard; 36 inches in 1 yard; 10 millimeters in 1 centimeter <p>Time</p> <ul style="list-style-type: none"> • Unit (accuracy): Hour (to 1 minute); Day; Year • Equivalencies: 24 hours in 1 day; 7 days in 1 week; 365 days in 1 year; 60 seconds in 1 minute; 60 minutes in 1 hour <p>Temperature</p> <ul style="list-style-type: none"> • Unit (accuracy): C° and F° (to 1 degree) <p>Capacity</p> <ul style="list-style-type: none"> • Unit (accuracy): Quarts (to 1 ounce); Gallon; Pint; Liter • Equivalencies: 32 ounces in 1 quart; 4 quarts in 1 gallon; 2 pints in 1 quart; 1000 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<p>Textbook Algebra I, Prentice Hall</p> <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • <i>Problem of the Week</i> • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • Expo markers • Graph board • Graph paper • Rulers • Student white/graph boards 	<p>REQUIRED ASSESSMENTS COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
		<p>milliliters in 1 liter</p> <ul style="list-style-type: none"> Unit (accuracy): Kilogram; Gram (to 1/10 gram) <p>Weight</p> <ul style="list-style-type: none"> Unit (accuracy): Pound (to 1 ounce) Equivalencies: 16 ounces in 1 pound <p>Angle and Rotation</p> <p>Unit (accuracy): Degree (to 2 degrees)</p> <ul style="list-style-type: none"> makes decisions concerning an appropriate degree of accuracy in problem situations involving measurement in other GSEs. (embedded) (state assessment) (G&M)-10-7 <p>2.6.2 Understands, uses, applies appropriate technology to solve problems</p> <p>2.6.3 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> MCAS 2006, grade 8 #5 (F) MCAS 2008, grade 8 #29 (F) <u>Algebra I</u>, Prentice Hall, p. 143 #3 			
<p>2. GEOMETRY AND MEASUREMENT</p> <p>2.7 Coordinate plane</p>		<p>The student</p> <p>2.7.1 Solves problems on and off the coordinate plane involving</p> <ul style="list-style-type: none"> distance (covered in geometry) midpoint (covered in geometry) perpendicular lines <ul style="list-style-type: none"> give the equation of a line perpendicular to a given line parallel lines and passing through a given point 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> using manipulatives facilitating cooperative group work discussing mathematics 	<p><u>Textbook</u></p> <p><u>Algebra I</u>, Prentice Hall</p> <ul style="list-style-type: none"> 6.6 6.1 6.1 <p><u>Supplementary books</u></p> <ul style="list-style-type: none"> <u>Algebra I</u>, Supplemental materials Prentice Hall <i>Classroom Instruction That Works</i>, Marzano Problem of the Week NECAP Released Tasks 	<p>REQUIRED ASSESMENTS</p> <p>COMMON ASSESMENTS</p> <ul style="list-style-type: none"> COMMON TASKS MID-TERM EXAM FINAL EXAM <p>BENCHMARK PROBLEMS</p> <p>STANDARDIZED TESTS</p> <p>SUGGESTED ASSESMENTS</p> <p>Anecdotal records</p> <p>Exhibits</p>

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
		<ul style="list-style-type: none"> ○ give the equation of line parallel to a given line and passing through a given point • slope <ul style="list-style-type: none"> ○ calculate slope ○ recognize slope as change in y/change in x <p>(state assessment) (G&M)-10-9</p> <p>2.7.2 Identifies slope and y- intercept from a graph</p> <p>2.7.3 Understands, uses, applies appropriate technology to solve problems</p> <p>2.7.4 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • <u>Algebra I</u>, Prentice Hall, p. 348, # 58-60 (I) • MCAS 2008, grade 8 #9 (F) • MCAS 2008, grade 10 #17 (S) • NECAP 2007, grade 11 #20 (S) 	<ul style="list-style-type: none"> • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<ul style="list-style-type: none"> • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • Expo markers • Graph board • Graph paper • Rulers • Student white/graph boards 	<p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>
2.GEOMETRY AND MEASUREMENT		COVERED IN GEOMETRY			
2.8 Spatial reasoning and visualization					

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<p>2. FUNCTIONS AND ALGEBRA</p> <p>3.1 Patterns</p>		<p>The student</p> <p>3.1.1 Identifies, extends, and generalizes a variety of patterns (linear and nonlinear) represented by:</p> <ul style="list-style-type: none"> • models • tables • sequences • or graphs to solve problems <p>(state assessment) (F&A)-10-1</p> <p>3.1.2 Use the vocabulary of functions (function, relation, domain, range)</p> <p>3.1.3 Use appropriate function notation</p> <p>3.1.4 Identify a pattern as linear or nonlinear (e.g. first and second differences)</p> <p>3.1.5 Understands, uses, applies appropriate technology to solve problems</p> <p>3.1.6 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • NECAP, 2007, grade 11 #7 (I) • MCAS 2008, grade 10 #31 (I) • NECAP 2008, grade 11 #6 (F) • NECAP 2008, grade 8 #7 (F) • NECAP practice test grade 8 #2 (F) • MCAS 2008, grade 10 #25 (S) 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<p>Textbook</p> <p>Algebra I, Prentice Hall</p> <ul style="list-style-type: none"> • 1.4, 5.3, 5.4 • 1.4, 5.3, 5.4 • 5.1 • 1.4, 5.3, 5.4 • 5.2 • 10.8 <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead Graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorelearning.com (Gizmo) <p>Materials</p>	<p>REQUIRED ASSESSMENTS</p> <p>COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS</p> <p>STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS</p> <p>Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>

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				<ul style="list-style-type: none"> Algebra tiles Colored pencils Expo markers Graph paper Overhead algebra tiles Rulers Student white/graph boards 	
<p>3. FUNCTIONS AND ALGEBRA</p> <p>3.2 Linear and nonlinear functions and relations</p>		<p>The student</p> <p>3.2.1 Demonstrates conceptual understanding of linear and nonlinear functions quadratic, exponential (B), absolute value (B) and relations (including characteristics of classes of functions) through an analysis of</p> <ul style="list-style-type: none"> constant and variable average rates of change intercepts domain and range maximum and minimum values increasing and decreasing rates of change (e.g., the height is increasing at a decreasing rate) (state assessment) (F&A)-10-2 <p>3.2.2 Describes how change in the value of one variable relates to change in the value of a second variable</p> <ul style="list-style-type: none"> direct variation (state assessment) (F&A)-10-2 <p>3.2.3 Works between and among different representations of functions and relations (e.g., graphs, tables, equations, function notation) (state assessment) (F&A)-10-2</p>	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> using manipulatives facilitating cooperative group work discussing mathematics questioning and making conjectures justifying of thinking writing about mathematics facilitating problem solving approach to instruction integrating content using calculators and computers facilitating learning using assessment to modify instruction 	<p>Textbook <i>Algebra I</i>, Prentice Hall</p> <ul style="list-style-type: none"> 8.7 6.8 chapter 5 chapter 10 5.6 5.5 5.3 6.2 6.4 6.5 6.3 <p>Supplementary books</p> <ul style="list-style-type: none"> <i>Algebra I</i>, Supplemental materials Prentice Hall <i>Classroom Instruction That Works</i>, Marzano Problem of the Week NECAP Released Tasks MCAS Released Tasks NAEP Released Tasks NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> Scientific calculator Graphing calculator Overhead graphing calculator Smart board 	<p>REQUIRED ASSESSMENTS COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> COMMON TASKS MID-TERM EXAM FINAL EXAM <p>BENCHMARK PROBLEMS STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> role playing, short plays (bodily kinesthetic) graphic organizing, sketch journals/ cartooning (visual) collaboration/ conferencing interpersonal songs, lyrics (musical)

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		<p>3.2.4 Utilize a variety of forms for linear equations (e.g., the general form, the slope-intercept form, the standard form, the point-slope form) to generate linear models</p> <ul style="list-style-type: none"> • write the equation of a line and graph a line using the equation <ul style="list-style-type: none"> ○ slope-intercept form ○ point-slope form ○ standard form (D) • interpret slope and y-intercept in the context of a situation <p>3.2.5 Understands, uses, applies appropriate technology to solve problems</p> <p>3.2.6 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • NECAP 2007, grade 11 #15 (I) • Maryland 2004 High School Released Algebra Items #26 (I) • NECAP 2007 grade 11 #9 (F) • NECAP 2007, grade 11 #10 (F) • NECAP 2008, grade 11 #7 (F) • <u>Algebra I</u>, Prentice Hall, p. 281 #22 (F) 		<ul style="list-style-type: none"> • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • Algebra tiles • Colored pencils • Expo markers • Graph paper • Overhead algebra tiles • Rulers • Student white/graph boards 	<ul style="list-style-type: none"> • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>
3. FUNCTIONS AND ALGEBRA		<p>The student</p> <p>3.3.1 Demonstrates conceptual understanding of algebraic expressions by</p> <ul style="list-style-type: none"> • solving problems involving algebraic expressions • simplifying expressions involving <ul style="list-style-type: none"> ○ polynomials ○ rational expressions 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work 	<p>Textbook</p> <p><u>Algebra I</u>, Prentice Hall</p> <ul style="list-style-type: none"> • 1.1, 2.4 • 11.1, 11.2 • 1.3 • 8.1 • 11.1, 11.2 • 9.1-9.3, 9.5-9.8, 12.4 • 3.8 • 1.3 • 8.1, 8.3-8.5 	<p>REQUIRED ASSESMENTS</p> <p>COMMON ASSESMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS</p> <p>STANDARDIZED TESTS</p> <p>SUGGESTED ASSESMENTS</p> <p>Anecdotal records</p>

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
		<ul style="list-style-type: none"> ○ square roots ○ simplifying radicals (D) ○ absolute values ○ integer exponents, applying the laws of exponents rationalizing denominators (B) • evaluating expressions involving <ul style="list-style-type: none"> ○ polynomials ○ square roots ○ absolute values ○ integer exponents, applying the laws of exponents • translating problem situations into algebraic expressions. (state assessment) (F&A)-10- 3 <p>3.3.2 Demonstrates conceptual understanding of algebraic expressions by</p> <ul style="list-style-type: none"> • adding, subtracting, and multiplying polynomials • dividing polynomials (B) • factoring quadratic polynomials (D) <p>3.3.3 Understands, uses, applies appropriate technology to solve problems</p> <p>3.3.4 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • Maryland 2004 High School Released Algebra Items #24 (I) • NECAP 2007, grade 11 #13 (F) • NECAP 2007, grade 11 (F) • NECAP 2008, grade 11 #8 (F) • MCAS 2006, grade 10 #20 (S) 	<ul style="list-style-type: none"> • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<ul style="list-style-type: none"> • 1.1, 3.6 and throughout, with word problems • 9.1-9.3, 12.4 • 9.5-9.8 <p><u>Supplementary books</u></p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • Classroom Instruction That Works, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p><u>Technology</u></p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing calculator • Smart board • www.ridoe.net • www.ridoe.net/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorelearning.com (Gizmo) <p><u>Materials</u></p> <ul style="list-style-type: none"> • Algebra tiles • Colored pencils • Expo markers • Graph paper • Overhead algebra tiles 	<p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>

East Providence Algebra I Grades 8-10

Curriculum Writers: Jonathan Chapman, Ozlem Lamontagne, Angelo Pizzi, Stacy Simmons, and Patricia Usenia

STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
				<ul style="list-style-type: none"> Rulers Student white/graph boards 	
3. FUNCTIONS AND ALGEBRA 3.4 Equality		<p>The student</p> <p>3.4.1 Demonstrate conceptual understanding of equality by solving problems involving algebraic reasoning about equality</p> <ul style="list-style-type: none"> translating problem situations into equations solving linear and quadratic equations (symbolically and graphically) and expressing the solution set symbolically or graphically, or provides the meaning of the graphical interpretations of solution(s) in problem-solving situations solving problems involving systems of linear equations in a context (using equations or graphs) or using models or representations (M(F&A)-10-4) (state assessment) <p>3.4.2 Solve multi-step (two step, combining like terms, variables on both sides, and distribution) linear equations and inequalities in one variable by</p> <ul style="list-style-type: none"> justifying each step in a solution process solving for a specific variable in a literal equation solving linear equations involving absolute value <p>3.4.3 Work with linear equations and inequalities in two variables by</p> <ul style="list-style-type: none"> determining if a given point is a solution to a 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> using manipulatives facilitating cooperative group work discussing mathematics questioning and making conjectures justifying of thinking writing about mathematics facilitating problem solving approach to instruction integrating content using calculators and computers facilitating learning using assessment to modify instruction 	<p>Textbook Algebra I, Prentice Hall</p> <ul style="list-style-type: none"> chapter 3 chapter 6 chapter 7 3.1-3.3 4.1-4.4, 4.6 2.5 4.6 6.2, 6.4, 6.5, 7.5 7.1-7.3 7.1 7.6 10.1-10.3 10.6 10.4 <p>Supplementary books</p> <ul style="list-style-type: none"> Algebra I, Supplemental materials Prentice Hall Classroom Instruction That Works, Marzano Problem of the Week NECAP Released Tasks MCAS Released Tasks NAEP Released Tasks NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> Scientific calculator Graphing calculator Overhead graphing calculator 	<p>REQUIRED ASSESSMENTS COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> COMMON TASKS MID-TERM EXAM FINAL EXAM <p>BENCHMARK PROBLEMS STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> role playing, short plays (bodily kinesthetic) graphic organizing, sketch journals/ cartooning (visual) collaboration/ conferencing interpersonal songs, lyrics (musical) tactile <p>Oral presentations</p>

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
		<p style="text-align: center;">linear equation or inequality</p> <ul style="list-style-type: none"> • graphing linear equations and inequalities in two variables <p>3.4.4 Solve linear systems by</p> <ul style="list-style-type: none"> • solving two by two linear systems by graphing, substitution, and elimination • determining if a two by two linear system has exactly one solution, no solution, or an infinite number of solutions • solving systems of linear inequalities in two variables by graphing <p>3.4.5 Solve quadratic equations by</p> <ul style="list-style-type: none"> • graphing • using the quadratic formula • factoring (D) <p>3.4.6 Understands, uses, applies appropriate technology to solve problems</p> <p>3.4.7 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • MCAS 2008, grade 10 #40 (I) • NECAP 2007, grade 11 #21 (F) • NECAP 2008, grade 11 #9 (F) • <u>Algebra I</u>, Prentice Hall, p. 568#22 (S) 		<ul style="list-style-type: none"> • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • Algebra tiles • Colored pencils • Expo markers • Graph paper • Overhead algebra tiles • Rulers • Student white/graph boards 	<p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
<p>3. DATA, STATISTICS AND PROBABILITY</p> <p>4.1 Given representation</p>		<p>The student</p> <p>4.1.1 Interprets a given representation (see 4.3.1 for list of representations) (to</p> <ul style="list-style-type: none"> • make observations • answer questions • analyze the data to formulate or justify conclusions, critique conclusions • make predictions • solve problems within mathematics or across disciplines or contexts (e.g. media, workplace, social and environmental situations). (state assessment) (DSP)-10-1 <p>IMPORTANT: <i>Analyzes data consistent with concepts and skills in M(DSP)-10-2.</i></p> <p>4.1.2 Understands, uses, applies appropriate technology to solve problems</p> <p>4.1.3 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • NECAP 2008 Practice Test, grade 11 #12 (I) • NECAP 2007, grade 11 #12 (I) • NECAP 2008, grade 11 #11 (F) • MCAS 2008, grade 10 #28 (F) • MCAS 2008, grade 10 #35 (F) • NECAP 2008 Practice Test, grade 11 #13 (S) 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<p>Textbook</p> <p>Algebra I, Prentice Hall</p> <ul style="list-style-type: none"> • p. 775, Choosing Appropriate Graph, pp. 38-39, Interpreting Graph' Activity Lab <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • Classroom Instruction That Works, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • Colored tiles • Dice • Expo markers • Graph paper 	<p>REQUIRED ASSESSMENTS</p> <p>COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS</p> <p>STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS</p> <p>Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
				<ul style="list-style-type: none"> • Marbles • Overhead spinners • Playing cards • Student white/graph boards 	
<p>4. DATA, STATISTICS, AND PROBABILITY</p> <p>4.2 Patterns, trends, distributions</p>		<p>The student</p> <p>4.2.1 Analyzes patterns, trends, or distributions in data in a variety of contexts by determining, using, or analyzing measures of</p> <ul style="list-style-type: none"> • central tendency (mean, median, or mode) • dispersion (range or variation) (<i>embedded</i>) • outliers (<i>embedded</i>) • quartile values • estimated line of best fit or regression line • correlation (strong positive, strong negative or no correlation) <p>to solve problems; and solve problems involving conceptual understanding of the sample from which the statistics were developed. (state assessment) (DSP)-10-2</p> <p>4.2.2 Understands, uses, applies appropriate technology to solve problems</p> <p>4.2.3 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • NECAP 2008, grade 11 # 21 (I) • MCAS 2008 grade 10 #18 (I) • MCAS 2008, grade 10 #14 (F) • MCAS 2007, grade 10 #23 (F) • Algebra I, Prentice Hall p. 36 #15 (S) 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<p>Textbook</p> <p>Algebra I, Prentice Hall</p> <ul style="list-style-type: none"> • 1.6 • 1.6 • 1.6 • p. 52 Activity Lab • 1.6, 6.7 • 1.5, 6.7 • P. 426 Activity Lab • P. 546 Activity Lab <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing calculator • Smart board • www.rido.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org 	<p>REQUIRED ASSESSMENTS</p> <p>COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS</p> <p>STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS</p> <p>Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p>

East Providence Algebra I Grades 8-10

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
				<ul style="list-style-type: none"> • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • Colored tiles • Dice • Expo markers • Graph paper • Marbles • Overhead spinners • Playing cards • Student white/graph boards 	<p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>
<p>4. DATA, STATISTICS, AND PROBABILITY</p> <p>4.3 Representations</p>		<p>The student</p> <p>4.3.1 Identifies or describes representations or elements of representations that best display a given set of data or situation, consistent with the representations required in M(DSP)-10-1 using</p> <ul style="list-style-type: none"> • box plots (box-and-whisker plots) scatter plots <ul style="list-style-type: none"> ◦ line of best fit or regression line ◦ correlation (strong positive, strong negative or no correlation) • stem-and-leaf plots (embedded) • bar graphs (embedded) • line graphs (embedded) • circle graphs (embedded) • frequency charts (embedded) 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content 	<p>Textbook</p> <p>Algebra I, Prentice Hall</p> <ul style="list-style-type: none"> • p. 774, p. 52 Activity Lab • 1.6, 6.7 • 1.6 • p. 770 • p.772 • p.773 • p.769 • p. 771 <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet 	<p>REQUIRED ASSESMENTS COMMON ASSESMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS STANDARDIZED TESTS</p> <p>SUGGESTED ASSESMENTS</p> <p>Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments</p>

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
		<ul style="list-style-type: none"> histograms (embedded) (state assessment) (DSP)-10-3 <p>4.3.2 Understands, uses, applies appropriate technology to solve problems</p> <p>4.3.3 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> NECAP 2007, Practice test grade 11 # 9 MCAS 2007, grade 10 #15 (F) <u>Algebra I</u>, Prentice Hall, p. 53 Activity # 2, 5-8 	<ul style="list-style-type: none"> using calculators and computers facilitating learning using assessment to modify instruction 	<p>Technology</p> <ul style="list-style-type: none"> Scientific calculator Graphing calculator Overhead graphing calculator Smart board www.ridoe.net www.ride.ri.gov/instruction/curriculum www.doe.mass.edu/mcas achieve.org mathforum.org phschool.com successnet.com explorellearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> Colored tiles Dice Expo markers Graph paper Graph paper Marbles Overhead spinners Playing cards Student white/graph boards 	<p>e.g.</p> <ul style="list-style-type: none"> role playing, short plays (bodily kinesthetic) graphic organizing, sketch journals/ cartooning (visual) collaboration/ conferencing interpersonal songs, lyrics (musical) tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>
<p>4. DATA, STATISTICS, AND PROBABILITY</p> <p>4.4 Counting techniques</p>		<p>The student</p> <p>4.4.1 Uses counting techniques to solve contextualized problems involving combinations or permutations, e.g.,</p> <ul style="list-style-type: none"> organized lists 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> using manipulatives facilitating cooperative group work 	<p>Textbook</p> <p><u>Algebra I</u>, Prentice Hall</p> <ul style="list-style-type: none"> 12.7, 12.8 P.660 Activity Lab <p>Supplementary books</p> <ul style="list-style-type: none"> <u>Algebra I</u>, Supplemental materials Prentice Hall <i>Classroom Instruction That Works</i>, Marzano 	<p>REQUIRED ASSESMENTS</p> <p>COMMON ASSESMENTS</p> <ul style="list-style-type: none"> COMMON TASKS MID-TERM EXAM FINAL EXAM <p>BENCHMARK PROBLEMS</p> <p>STANDARDIZED TESTS</p> <p>SUGGESTED ASSESMENTS</p>

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
		<ul style="list-style-type: none"> • tables • tree diagrams • models • Fundamental Counting Principle, or^{sc} others (state assessment) (DSP)-10-4 <p>4.4.2 Understands, uses, applies appropriate technology to solve problems</p> <p>4.4.3 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • MCAS 2004, grade 8 #19 (I) • NECAP 2007, grade 11 #17 (F) • MCAS 2008, grade 8 #39 (S) 	<ul style="list-style-type: none"> • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<ul style="list-style-type: none"> • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum/ • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • Colored tiles • Dice • Expo markers • Graph paper • Graph paper • Marbles • Overhead spinners • Playing cards • Student white/graph boards 	<p>Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
<p>4. DATA, STATISTICS, AND PROBABILITY</p> <p>4.5 Experimental or theoretical probability</p>		<p>The student</p> <p>4.5.1 Solves problems involving</p> <ul style="list-style-type: none"> • experimental • theoretical probability (including dependent and independent events) (state assessment) (DSP)-10-5 <p>4.5.2 Understands, uses, applies appropriate technology to solve problems</p> <p>4.5.3 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • NECAP 2007, grade 11 # 18 (I) • NECAP 2005, grade 8#10 (I) • MCAS 2008, grade 8 #3 (I) • NECAP 2007, grade 11 #23 (F) • Algebra I, Prentice Hall p. 105 #43 & 44 (F) • NECAP 2006, grade 8#15 (F) • MCAS 2007, grade 10 #19 (S) 	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<p>Textbook <u>Algebra I</u>, Prentice Hall</p> <ul style="list-style-type: none"> • 2.6 • 2.7 <p>Supplementary books</p> <ul style="list-style-type: none"> • <u>Algebra I</u>, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorelearning.com (Gizmo) <p>Materials</p> <ul style="list-style-type: none"> • Colored tiles • Dice • Expo markers • Graph paper • Marbles 	<p>REQUIRED ASSESSMENTS COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
				<ul style="list-style-type: none"> Overhead spinners Playing cards Student white/graph boards 	
<p>4. DATA, STATISTICS, AND PROBABILITY</p> <p>4.6 Question or hypothesis</p>		<p>The student</p> <p>4.6.1 In response to a teacher or student generated question or hypothesis</p> <ul style="list-style-type: none"> decides the most effective method (e.g., survey, observation, research, experimentation) and sampling techniques (e.g., random sample, stratified random sample) to collect the data necessary to answer the question collects, organizes, and appropriately displays the data analyzes the data to draw conclusions about the questions or hypotheses being tested while considering the limitations of the data that could affect interpretations when appropriate makes predications, asks new questions, or makes connections to real-world situations (DSP)-10-6 <p>(IMPORTANT: Analyzes data consistent with concepts and skills in M(DSP)-10-2.)</p> <p>4.6.2 Understands, uses, applies appropriate technology to solve problems</p>	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> using manipulatives facilitating cooperative group work discussing mathematics questioning and making conjectures justifying of thinking writing about mathematics facilitating problem solving approach to instruction integrating content using calculators and computers facilitating learning using assessment to modify instruction 	<p>Textbook Algebra I, Prentice Hall</p> <ul style="list-style-type: none"> pp. 426, 546-775 4.3.1 list of representations <p>Supplementary books</p> <ul style="list-style-type: none"> Algebra I, Supplemental materials Prentice Hall <i>Classroom Instruction That Works</i>, Marzano Problem of the Week NECAP Released Tasks MCAS Released Tasks NAEP Released Tasks NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> Scientific calculator Graphing calculator Overhead graphing calculator Smart board www.ridoe.net www.ride.ri.gov/instruction/curriculum www.doe.mass.edu/mcas achieve.org mathforum.org phschool.com successnet.com explorellearning.com (Gizmo) 	<p>REQUIRED ASSESSMENTS COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> COMMON TASKS MID-TERM EXAM FINAL EXAM <p>BENCHMARK PROBLEMS STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> role playing, short plays (bodily kinesthetic) graphic organizing, sketch journals/ cartooning (visual) collaboration/ conferencing interpersonal songs, lyrics (musical) tactile <p>Oral presentations</p>

East Providence Algebra I Grades 8-10

Curriculum Writers: Jonathan Chapman, Ozlem Lamontagne, Angelo Pizzi, Stacy Simmons, and Patricia Usenia

STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
		<p>4.6.3 BENCHMARK PROBLEMS</p> <ul style="list-style-type: none"> • Algebra I, Prentice Hall p. 100 Activity Lab (I) • Algebra I, Prentice Hall p. 100 #1 & 2 (F) • MCAS 2008, grade 10 #42 (S) 		<p>Materials</p> <ul style="list-style-type: none"> • Colored tiles • Dice • Expo markers • Graph paper • Graph paper • Marbles • Overhead spinners • Playing cards • Student white/graph boards 	<p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>
<p>5. PROBLEM SOLVING, REASONING, AND PROOF</p> <p>5.1 Problem Solving strategies</p>		<p>Students will use problem-solving strategies to investigate and understand increasingly complex mathematical content and be able to M(PRP)-HS-1 :</p> <p>5.1.1 Identify the relevant question or task</p> <p>5.1.2 Distinguish between useful and extraneous information</p> <p>5.1.3 Expand the repertoire of problem-solving strategies and use those strategies in more</p>	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures 	<p>Textbook Algebra I, Prentice Hall</p> <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p>	<p>REQUIRED ASSESMENTS</p> <p>COMMON ASSESMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS</p> <p>STANDARDIZED TESTS</p> <p>SUGGESTED ASSESMENTS</p> <p>Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p>

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		<p>sophisticated ways</p> <ul style="list-style-type: none"> ○ make an organized list ○ create a diagram/picture/chart ○ organize data with a graph or table ○ determine a pattern ○ identify and use formulas ○ work backwards ○ make a simpler problem ○ create a mathematical model ○ trial and error ○ work backwards ○ use logical reasoning ○ simulate the problem 	<ul style="list-style-type: none"> • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead Graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials – see each content GSE</p>	<p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>
		5.1.4 Paraphrase and summarize ideas			
		5.1.5 Address all components in the task			
		5.1.6 Make judgments that interpret, analyze, and reflect			
		5.1.7 Use technology whenever appropriate to solve real-world problems (e.g., personal finance, wages, banking and credit, home improvement problems, measurement, taxes, business situations, purchasing, and transportation)			
		5.1.8 Formulate and redefine problem situations as needed to arrive at appropriate conclusions.			
		5.1.9 Understands, uses, applies appropriate technology to solve problems			

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<p>4. PROBLEM SOLVING, REASONING, AND PROOF</p> <p>5.2 Mathematical reasoning and proof</p>		<p>Students will use mathematical reasoning and proof and be able to M(PRP)-HS-2</p> <p>5.2.1 Expand the repertoire of proof techniques and use those techniques in more sophisticated ways.</p> <p>5.2.2 Use informal and formal reasoning and proof to explain and justify conclusions.</p> <p>5.2.3 Formalize mathematical arguments through the use of deductive reasoning.</p> <p>5.2.4 Use the principle of mathematical induction.</p> <p>5.2.5 Use reasoning and proof throughout classroom discussions independent of the mathematical topic being studied.</p> <p>5.2.6 Recognize how reasoning and proof influence the structure of mathematics</p> <p>5.2.7 <i>Understands, uses, applies appropriate technology to solve problems</i></p>	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<p>Textbook Algebra I, Prentice Hall</p> <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • <i>Problem of the Week</i> • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials - see each content GSE</p>	<p>REQUIRED ASSESSMENTS COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>

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STANDARDS GSEs	Applied Learning NEASC	OUTCOMES/BENCHMARKS East Providence Public Schools (NECAP GSEs/GSEs)	RESEARCH-BASED INSTRUCTIONAL STRATEGIES	RESOURCES	RESEARCH-BASED ASSESSMENT EVIDENCE
<p>6. COMMUNICATION, CONNECTIONS, AND REPRESENTATION</p> <p>6.1 Communicate understanding</p>		<p>Students will communicate their understanding of mathematics and be able to M(CCR)-HS-1 :</p> <p>6.1.1 Explain and justify their thinking and develop increasingly sophisticated questions and solutions for given problem-situations.</p> <p>6.1.2 Critique and follow the logic of arguments presented within mathematics and across disciplines.</p> <p>6.1.3 Understands, uses, applies appropriate technology to solve problems</p>	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<p>Textbook Algebra I, Prentice Hall</p> <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead Graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorellearning.com (Gizmo) <p>Materials – see each content GSE</p>	<p>REQUIRED ASSESSMENTS COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile <p>Oral presentations</p>

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					Performance/problem-based tasks Rubrics Tests and quizzes
<p>6. COMMUNICATION, CONNECTIONS, AND REPRESENTATION</p> <p>6.2 Create and use representations</p>		<p>Students will create and use representations to communicate mathematical ideas and to solve problems and be able to M(CCR)-HS-2:</p> <p>6.2.1 Choose appropriate representations and mathematical language (e.g., <i>spreadsheets, geometric models, algebraic symbols, tables, graphs, matrices</i>) to present ideas clearly and logically for a given situation.</p> <p>6.2.2 See a common structure in mathematical phenomena that come from very different contexts (e.g., <i>the sum of the first n odd natural numbers, the areas of square gardens, and the distance traveled by a vehicle that starts at rest and accelerates at a constant rate can be represented by functions of the form $f(x) = ax^2$</i>).</p> <p>6.2.3 Find representations that model essential features of a mathematical situation (e.g., <i>cost of postage can be modeled by a step-function</i>).</p> <p>6.2.4 Use representations as a primary means for expressing and understanding more abstract</p>	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> using manipulatives facilitating cooperative group work discussing mathematics questioning and making conjectures justifying of thinking writing about mathematics facilitating problem solving approach to instruction integrating content using calculators and computers facilitating learning using assessment to modify instruction 	<p>Textbook Algebra I, Prentice Hall</p> <p>Supplementary books</p> <ul style="list-style-type: none"> Algebra I, Supplemental materials Prentice Hall <i>Classroom Instruction That Works</i>, Marzano Problem of the Week NECAP Released Tasks MCAS Released Tasks NAEP Released Tasks NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> Scientific calculator Graphing calculator Overhead graphing calculator Smart board www.ride.net www.ride.ri.gov/instruction/curriculum www.doe.mass.edu/mcas achieve.org mathforum.org phschool.com successnet.com explorellearning.com Gizmo 	<p>REQUIRED ASSESSMENTS COMMON ASSESSMENTS</p> <ul style="list-style-type: none"> COMMON TASKS MID-TERM EXAM FINAL EXAM <p>BENCHMARK PROBLEMS STANDARDIZED TESTS</p> <p>SUGGESTED ASSESSMENTS</p> <p>Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> role playing, short plays (bodily kinesthetic) graphic organizing, sketch journals/ cartooning (visual) collaboration/ conferencing interpersonal songs, lyrics (musical) tactile

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		mathematical concepts. 6.2.5 Understands, uses, applies appropriate technology to solve problems		Materials – see each content GSE	Oral presentations Performance/problem-based tasks Rubrics Tests and quizzes
6. COMMUNICATION, CONNECTIONS, AND REPRESENTATION 6.3 Mathematical connections		<p>Students will recognize, explore, and develop mathematical connections and be able to M(CCR)-HS-3 :</p> 6.3.1 Explain in oral or written form how mathematics connects to other disciplines, to daily life, careers, and society (<i>e.g., geometry in art and literature, data analysis in social studies, and exponential growth in finance</i>). 6.3.2 Explain multiple approaches that lead to equivalent results when solving problems. 6.3.3 Explain in oral or written form how mathematics connects to prior knowledge 6.3.4 Identify strengths and weaknesses of the processes utilized and supports with evidence 6.3.5 Address what might have been done differently to improve the process for the next time and applies this to refine/revise work 6.3.6 Understands, uses, applies appropriate technology to solve problems	<p>The teacher may model and/or facilitate the following strategies or strategies listed in the introduction</p> <p>Mathematics best practice e.g.</p> <ul style="list-style-type: none"> • using manipulatives • facilitating cooperative group work • discussing mathematics • questioning and making conjectures • justifying of thinking • writing about mathematics • facilitating problem solving approach to instruction • integrating content • using calculators and computers • facilitating learning • using assessment to modify instruction 	<p>Textbook Algebra I, Prentice Hall</p> <p>Supplementary books</p> <ul style="list-style-type: none"> • Algebra I, Supplemental materials Prentice Hall • <i>Classroom Instruction That Works</i>, Marzano • Problem of the Week • NECAP Released Tasks • MCAS Released Tasks • NAEP Released Tasks • NECAP Reference Sheet <p>Technology</p> <ul style="list-style-type: none"> • Scientific calculator • Graphing calculator • Overhead graphing calculator • Smart board • www.ridoe.net • www.ride.ri.gov/instruction/curriculum • www.doe.mass.edu/mcas • achieve.org • mathforum.org • phschool.com • successnet.com • explorelarning.com (Gizmo) 	<p>REQUIRED ASSESMENTS COMMON ASSESMENTS</p> <ul style="list-style-type: none"> • COMMON TASKS • MID-TERM EXAM • FINAL EXAM <p>BENCHMARK PROBLEMS STANDARDIZED TESTS</p> <p>SUGGESTED ASSESMENTS Anecdotal records</p> <p>Exhibits</p> <p>Interviews</p> <p>Graphic organizers and/or visual imagery</p> <p>Journals</p> <p>Multiple Intelligences assessments e.g.</p> <ul style="list-style-type: none"> • role playing, short plays (bodily kinesthetic) • graphic organizing, sketch journals/ cartooning (visual) • collaboration/ conferencing interpersonal • songs, lyrics (musical) • tactile

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				<p><u>Materials</u> – see each content GSE</p>	<p>Oral presentations</p> <p>Performance/problem-based tasks</p> <p>Rubrics</p> <p>Tests and quizzes</p>