Grade 9

Prentice Hall

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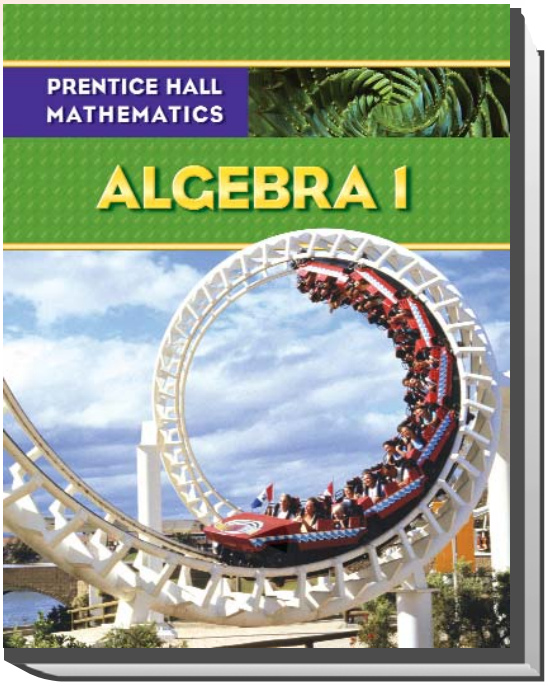

CORRELATED TO

Wisconsin Assessment Frameworks for Mathematics

Beginning of Grade 10

PEARSON

TEACH & LEARN • ASSESS & INFORM • DEVELOP & LEAD

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Prentice Hall Mathematics, Algebra 1 Program Organization

Prentice Hall Mathematics supports student comprehension of the mathematics by providing well organized sequence of the content, structure of the daily lesson, systematic direct instruction, and teacher support provided for each lesson.

Content Sequence - Prentice Hall is organized with the goal of addressing all of the mathematics standards through direct and effective instruction, building concept upon concept, skill upon skill in an order that is pedagogically sound. The Table of Contents shows the smooth flow of the book, with prerequisite skills and concepts presented before the more complex topics that depend on them.

Starting the Chapter - Every chapter begins by reviewing the previous standards that have been learned and overviewing the standards that will be covered in the chapter. New Vocabulary is identified to prepare students for the chapter. Finally, *Check Your Readiness* questions assess student understanding of necessary prerequisite skills and identifies which lesson they can go to for any necessary remediation.

Lesson Organization - The daily lesson is structured and presented in a consistent format that enables teachers to effectively present the content and monitor student understanding.

- The **Instant Check System** is a system of assessments that helps ensure standards mastery. It is comprised of assessments to use before, during, and after instruction so teachers can easily and effectively monitor student understanding.
    - Each lesson begins with *Check Skills You'll Need* to ensure students have the necessary prerequisite skills for success in the lesson. A Go for Help reference directs them to a previous lesson if remediation is necessary.
    - *Check Skills* questions after every single example provide a way to check student understanding during instruction.
    - Finally, *Checkpoint Quizzes* occur after instruction to continually monitor student progress.
- **Daily Standards Practice** is provided with a comprehensive exercise set following every lesson. Each exercise set is leveled to ensure a variety of practice. **Test Prep and Mixed Review** ensures students also have a daily opportunity to practice concepts and skills previously mastered.

Concluding the Chapter - The following features conclude each chapter, providing opportunities for students to review all standards and demonstrate mastery. This part of the systematic instruction provides regular opportunities for review and practice and ensures focus on and mastery of the Standards.

- **Chapter Review** – The Chapter Review serves as a chapter study guide for students by reviewing the key concepts covered in each lesson and providing an opportunity to practice. In addition, key vocabulary is reviewed.
- **Chapter Test** – Students demonstrate their understanding of the entire chapter by completing this practice chapter test.
- **Standardized Test Prep Cumulative Practice –** This provides a regular opportunity for students to practice and demonstrate mastery of all the standards that have been covered. If remediation is necessary, students are directed to a previous lesson where each concept was taught.

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Assessment

Prentice Hall Mathematics provides teachers with the assessment tools needed to inform instruction and document student progress.

The **Progress Monitoring Assessments** contains all the program assessments needed to evaluate student understanding, monitor student progress, and inform future instruction. The following assessments are included:

- **Formative Assessments**
  - Screening Test – check student readiness at the beginning of the school year
  - Benchmark Tests – monitor student progress
  - Test-Taking Strategy Practice Masters – provide opportunities to improve problem-solving skills
- **Summative Assessments –** *All the summative assessments are provided in two forms – on-level and basic versions. Both forms fully assess student progress on the course content, but the basic versions have been modified for special needs students.*
  - Quarter Tests – on-level and basic versions
  - Mid-Course Tests – on-level and basic versions
  - Final Tests – on-level and basic versions

The **Test Preparation Workbook** contains review lessons and multiple-choice practice tests.

Technology, such as the **ExamView® CD-ROM,** allows teachers to create customized assessment, with all test items correlated to state standards.

Universal Access

Prentice Hall Mathematics provides better solutions for meeting the needs of every student in the classroom. Universal Access can be fostered by modifying instruction to address individual needs, and provided adapted resources when appropriate. Prentice Hall uses a systematic method for labeling and identifying resources and instructional support. This consistency helps teachers easily identify and choose the appropriate support for specific populations of students. The Teacher's Edition provides universal access strategies in detailed daily lesson plans, and daily teaching notes to help differentiate the lesson for all learners, including special needs, below level, advanced and English Language Learners. Chapter-level support pages provide teachers with an easy-to-read overview of the chapter resources available and suggest ways in the instructional lesson to use the resources. Key ancillaries to support universal access include the All-in-One Teaching Resources and the All-in-One Student Workbooks. The Teaching Resources include leveled practice for every lesson and daily activity labs. The All-in-One Student Workbook, available as both on-level and adapted for special needs, includes daily notetaking, daily practice, daily guided problem solving, and vocabulary support.

Instructional Planning and Support

Prentice Hall Mathematics is designed to provide teachers the tools needed to effectively and easily implement the program in the classroom.

A Road Map for Planning the Year - A Leveled Pacing Chart is provided in the Teacher's Edition that lays out a plan for teaching all the mathematics content standards. It suggests time to spend on each Chapter, and offers support for adjusting the instruction to meeting the pacing needs of all students.

Planning a Chapter - The Teacher's Edition begins each chapter with a series of planning pages. These pages provide an overview of the chapter and make it easy to determine how to individualize lessons for specific students.

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Planning Daily Instruction - Teachers can use a variety of program materials to organize their teaching. The primary planning tools are the Teacher's Edition and the Teacher Center Planning CD-ROM. The Teacher's Edition includes step-by-step, daily support for directing instruction. Support is organized systematically around a 4-step teaching plan of Plan, Teach, Practice, and Assess/Reteach.

Instructional Tools to Plan, Teach, and Assess:

- **Core Components**
  - **Student Edition** – Thorough coverage of the standards, with built-in assessments and ongoing student support
  - **Teacher's Edition** – Provides comprehensive support for planning, teaching, and providing Universal Access
- **Teacher Support**
  - **All-in-One Teaching Resources -** All teaching resources are in one convenient place. Includes leveled practice, chapter projects, alternative assessments, cumulative reviews, guided problem solving masters, and vocabulary support.
  - **Progress Monitoring Assessments** – Provides support for formative and summative assessment, with comprehensive resources for monitoring progress on the standards.
  - **Test Preparation Workbook –** Provides instruction and practice on specific test taking strategies.
  - **Teacher Center CD-ROM** – The one-stop solution for planning, teaching, and assessing. The following resources are part of the Teacher Center:
    - **Planning CD-ROM –** Powerful lesson planning software, Teacher's Edition, and Teaching Resources.
    - **Presentation CD-ROM –** Complete support for digital presentations of lessons including videos, activities, stepped-out examples, quick check assessments, and online active math
    - **MindPoint Quiz Show** – Animated game show review for chapter level mathematics
  - **ExamView Test Generator CD-ROM –** Allows teachers to quickly and easily generate tests correlated to the standards.
- **Student Support**
  - **All-in-One Student Workbook –**
    - Structured daily notetaking pages for every lesson
    - Practice for every lesson
    - Guided problem solving pages for every lesson with scaffolded questions
    - Vocabulary and study skills focusing on key mathematical vocabulary
  - **All-in-One Student Workbook, Adapted Version –** Adapted for special needs students. Includes all the resources in the regular All-in-One Student Workbooks, in an adapted form.
  - **Student Center Online –** Complete interactive textbook with videos built-in at point-of-use, digital activities, stepped-out examples, vocabulary support – and more. Also includes the All-in-One Student Workbooks.
  - **Companion Websites -** Grants instant access to a wealth of resources to support learning including vocabulary quizzes, lesson quizzes, data updates, tutorials, chapter tests, and homework video tutors.
- **Transparency Package**
  - **Classroom Aid Transparencies -** Full-color multi-use transparencies such as graphs, fraction strips, and manipulatives
  - **Additional Examples on Transparencies**
  - **Daily Skills Check and Lesson Quiz Transparencies**
  - **Standards Review Transparencies**
  - **Student Edition Answers on Transparencies**

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WISCONSIN MATHEMATICS ASSESSMENT FRAMEWORK, BEGINNING OF GRADE 10	PRENTICE HALL MATHEMATICS, ALGEBRA 1 © 2009
Objectives, Subskills, and Descriptors	
Objective A: Mathematical Processes	
Students will effectively use mathematical knowledge, skills and strategies related to reasoning, communication, connections, representation and problem solving.	
Descriptors, such as but not limited to	
· Use reasoning and logic to: Perceive patterns Identify relationships Formulate questions Pose problems Make conjectures Justify strategies Test reasonableness of results	Lessons 1-2, 2-5, 3-1, 3-9, 5-1, 5-7, 8-6, 12-2, 12-3, 12-4, 12-5
· Communicate mathematical ideas and logical reasoning using the vocabulary of mathematics in a variety of ways e.g., using words, numbers, notation, symbols, pictures, charts, tables, diagrams, graphs, and models.	Lessons 1-1, 1-4, 1-5, 2-7, 5-1, 5-2, 9-1, 9-2, 9-3, 9-4, 9-5, 9-6, 9-7, 9-8, 10-1, 10-5, 11-1, 12-1
· Connect mathematics to the real world, as well as within mathematics.	Lessons 1-6, 2-1, 2-2, 2-3, 3-7, 3-8, 8-1, 8-2, 10-3, 12-7, 12-8
· Create and use representations to organize, record, and communicate mathematical ideas.	Lessons 1-5, 2-1, 2-2, 2-3, 2-5, 2-6, 2-7, 4-1, 4-3, 5-2, 5-4
· Solve and analyze routine and non-routine problems.	Lessons 1-1, 3-6, 5-7, 11-5, 11-6
Objective B: Number Operations and Relationships	
Subskill B.a.: Concepts	
Descriptors, such as but not limited to	
· Compare and order real numbers.	Lesson 1-3
· Analyze and solve problems using percents.	Lesson 3-7
· Apply proportional reasoning and ratios in mathematical and real-world contexts.	Lessons 3-4, 3-5, 5-5, 5-6
Subskill B.b.: Computation	
Descriptors, such as but not limited to	
· Compare, perform and explain operations on real numbers with and without context e.g., transitivity, rate of change, exponential functions, scientific notation, roots, powers, reciprocals, absolute value, ratios, proportions, percents.	Lessons 1-3, 3-4, 3-5, 3-7, 3-8, 4-6, 6-1, 8-1, 8-2, 8-3, 8-4, 8-5, 11-1, 11-2, 11-3

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· Select and use appropriate properties, computational procedures, and modes of representation with and without context e.g., simple and compound interest, commission, percents, proportions.	Lessons 8-1, 8-2, 8-8
· Determine reasonableness of answers.	
Objective C: Geometry	
Subskill C.a.: Describing figures	
Descriptors, such as but not limited to	
· Identify, describe and analyze properties of 2 and 3 dimensional figures, relationships among figures and relationships among their parts (e.g., parallel, perpendicular and congruent sides, diagonals, various types of angles and triangles, complementary and supplementary angles, sum of angles in a triangle).	
· Present convincing geometric arguments by means of informal proof, counter-examples or other logical means.	Lesson 12-1
· Model problems using the Pythagorean Theorem and right triangle trigonometry.	Lessons 3-9, 11-5, 11-6
Subskill C.b.: Spatial relationships and transformations	
Descriptors, such as but not limited to	
· Use proportional reasoning to solve congruence and similarity problems (e.g., scale drawings and similar geometric figures).	Lesson 3-5
· Use transformations and symmetry to solve problems.	
· Visualize 3-dimensional figures in problem-solving situations.	
Subskill C.c.: Coordinate systems	
Descriptors, such as but not limited to	
· Use the two-dimensional rectangular coordinate system to describe and characterize properties of geometric figures. Identify and apply symmetry about an axis.	Lessons 10-1, 10-2
· Use the two-dimensional rectangular coordinate system and algebraic procedures to describe and characterize geometric properties and relationships (e.g., slope, intercepts, parallelism, and perpendicularity, Pythagorean Theorem, distance formula).	Lessons 6-1, 6-2, 6-5

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Objective D: Measurement	
Subskill D.a.: Measurable attributes	
Descriptors, such as but not limited to	
· Identify, describe and use derived attributes to represent and solve problems (e.g., speed, acceleration, density, money conversion.)	Lesson 3-4
Subskill D.b.: Direct measurement	
Descriptors, such as but not limited to	
· Select and use tools with appropriate degree of precision to determine measurements directly.	
Subskill D.c.: Indirect measurement	
Descriptors, such as but not limited to	
· Determine the perimeter/area of two-dimensional figures.	
· Determine the surface area/volume of three-dimensional figures.	
· Solve for angles, and segments in similar polygons and arcs in circles.	
· Use right-triangle trig functions and the Pythagorean Theorem to solve right-triangle problems.	Lessons 3-9, 11-5, 11-6
· Use formulas in applications (e.g., Distance Formula, simple and compound interest).	Lesson 8-8
Objective E: Statistics and Probability	
Subskill E.a: Data analysis and statistics	
Descriptors, such as but not limited to	
· Organize, display, compare and interpret data in a variety of ways in mathematical and real-world contexts e.g., histograms, line graphs, stem-and-leaf plots, scatter plots, box- and whiskers, bar charts, Venn diagrams, tables, circle graphs.	Lessons 1-5, 1-6, 6-7
· Interpret, analyze and make predictions from organized and displayed data. e.g., measures of central tendency such as mean, median, mode, and, measures of variation such as standard deviation, mean, median, mode, range, dispersion, outliers, line of best fit, percentiles.	Lessons 1-6, 6-7
· Analyze, evaluate and critique methods and conclusions of statistical experiments, e.g., randomness, sampling, techniques, surveys.	

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Subskill E.b.: Probability	
Descriptors, such as but not limited to	
· Determine the likelihood of occurrence of simple and complex events Ex: Combinations and permutations, fundamental counting principle, experimental versus theoretical probability and independent, dependent and conditional probability.	Lessons 2-6, 2-7, 12-7, 12-8
Objective F: Algebraic Relationships	
Subskill F.a.: Patterns, relations and functions	
Descriptors, such as but not limited to	
· Describe, recognize, interpret and translate graphical representations of mathematical and real-world phenomena on coordinate grids, e.g., slope, intercepts, rate of change, linear and non-linear functions, and quadratic, exponential and constant functions.	Lessons 5-1, 5-3, 6-1, 6-2, 6-3, 6-4, 6-8, 7-1, 7-4, 7-5, 7-6, 8-7, 8-8, 10-1, 10-2, 10-8, 11-4, 12-1
· Analyze, generalize and represent patterns of change, e.g., direct and inverse variations, including numerical sequences, patterns to a given term, algebraic expressions and equations.	Lessons 1-4, 3-8, 5-3, 5-5, 5-6, 5-7, 6-3, 8-3, 8-4, 8-5, 8-6, 10-8
Subskill F.b: Expressions, equations and inequalities	
Descriptors, such as but not limited to	
· Solve linear and quadratic equations, linear inequalities and systems of linear equations and inequalities.	Lessons 3-1, 3-2, 3-3, 3-6, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 7-2, 7-3, 7-4, 7-5, 7-6, 8-7, 10-3, 10-4, 10-5, 10-6, 10-7, 12-6
· Model and solve a variety of mathematical and real-world problems by using algebraic expressions, equations and inequalities, e.g., linear, exponential, quadratic.	Lessons 3-1, 3-2, 3-3, 5-4, 6-3, 6-4, 6-5, 6-6, 7-1, 7-2, 7-3, 7-4, 8-7, 8-8, 9-4, 10-4, 10-6, 11-3, 11-4, 12-6
· Translate between different representations and describe the relationship among variable quantities in a problem, e.g., tables, graphs, functional notations, formulas.	Lessons 1-4, 4-1, 4-2, 5-2, 5-3, 5-4, 5-5, 5-6, 6-5, 6-6, 6-8, 7-5, 7-6, 10-8
Subskill F.c.: Properties	
Descriptors, such as but not limited to	
· Demonstrate understanding of properties by evaluating and simplifying expressions.	Lessons 2-1, 2-2, 2-3, 2-4, 2-5, 6-7, 8-3, 8-4, 8-5, 9-1, 9-2, 9-3, 9-4, 9-5, 9-6, 9-7, 9-8, 11-1, 11-2
· Demonstrate understanding of properties by solving linear and quadratic equations, linear inequalities, and systems of linear equations and inequalities with one or two variables.	Lessons 1-2, 3-2, 3-3, 3-6, 4-2, 4-3, 4-4, 4-5, 4-6, 6-4, 7-1, 7-2, 7-3, 10-3, 10-4, 10-5, 10-6, 10-7, 11-3, 12-2, 12-3, 12-4, 12-5, 12-6