



Meeting Individual Needs

Introduction	This guide discusses how to meet the needs of all students in the classroom with the new Prentice Hall High School Math series. It highlights program features and resources that support struggling learners and advanced students, and it looks at the program features and resources that support visual and English learners.
Struggling Learners	The Prentice Hall High School Math series provides a variety of program features that help teachers support struggling students.
The Foundations Series	The Foundations Series is a great choice for teaching low-level classes. It provides the same comprehensive curriculum in a more accessible format. To learn more about the Foundations Series, watch the Program Overview on this Web site.
Math Background	The Math Background in the Teacher's Edition is a helpful professional development resource. The error-prevention tips help teachers get students back on track.
Vocabulary Support	The first page of each chapter identifies key vocabulary words. The Visual Glossary provides definitions and examples. The Student Companion provides additional vocabulary-building activities.
Student Companion	The Student Companion worktext provides daily, scaffolded support for each lesson, such as the Got It? problems, to help students master skills and problem solving.
Animated Guided Instruction	The online lessons on PowerAlgebra.com and PowerGeometry.com illustrate problem solving one step at a time. Breaking down problems into discrete steps keeps struggling learners from feeling overwhelmed.
Got It?	A Got It? problem follows each example problem. These problems provide an opportunity for students to practice the skills they just learned.

Plan
How do you find the area of the square? The area of a square with side length s is s^2 . Square the side length of the square to find the area.

Problem 3 Simplifying a Product Raised to a Power

Multiple Choice Which expression represents the area of the square?

A $10x^3$ C $25x^5$
 B $5x^6$ D $25x^6$

$(5x^3)^2 = 5^2(x^3)^2$ Raise each factor to the second power.
 $= 5^2x^6$ Multiply the exponents of a power raised to a power.
 $= 25x^6$ Simplify.

The correct answer is D.

Got It? 3. What is the simplified form of each expression?
a. $(7m^3)^3$ b. $(2z)^{-4}$ c. $(3g^4)^{-2}$



If students struggle with a Got It? problem, use the corresponding Additional Problems located in the Teacher’s Edition to model another example.

Lesson Check The Lesson Check appears at the end of the lesson to help teachers determine if students understand the lesson concepts and can successfully apply the skills.

The suggestions provided in the Teacher’s Edition identify what to review if students struggle with specific problems in the Lesson Check.

Leveled Practice When students are ready for independent practice, there are practice assignments for basic, average, and advanced ability levels in the margin of the Teacher’s Edition.

4 Practice

ASSIGNMENT GUIDE

Basic: 11–39 all, 40–44 even, 46, 48–49

Average: 11–39 odd, 40–49

Advanced: 11–39 odd, 40–51

Standardized Test Prep: 52–55

Mixed Review: 56–70

Reasoning exercises have blue headings.

Applications exercises have red headings.

EXERCISE 48: Use the Think About a Plan worksheet in the **Practice and Problem Solving Workbook** (also available in the Teaching Resources in print and online) to further support students’ development in becoming independent learners.

HOMEWORK QUICK CHECK

To check students’ understanding of key skills and concepts, go over Exercises 21, 37, 46, 48, and 49.

Following the Lesson Quiz are prescriptions for additional practice listed in the Lesson Resources. These personalized prescriptions allow students to practice the lesson skills based on their current level of understanding and ability.

MathXL® for School MathXL® for School helps students review and practice skills presented in each chapter. It provides immediate, corrective feedback.

This feature is found online at the midpoint and endpoint of each chapter.

Success Tracker PowerAlgebra.com and PowerGeometry.com also include Success Tracker, which instantly analyzes student performance and automatically assigns appropriate remediation after students complete tests online.

Advanced Students The Prentice Hall High School Math series also has features that support advanced students.

Challenge Problems Within each set of practice problems, teachers will find a series of challenge problems that take the lesson skills to the next level.

 **Challenge** 88. **Reasoning** Use the division property to show why 0^0 is undefined.

Simplify each expression.

89. $n^{x+2} \div n^x$

90. $n^{5x} \div n^x$

91. $\left(\frac{x^n}{x^{n-2}}\right)^3$

92. $\frac{\left(\frac{m^4}{m^3}\right)}{m^2}$

93. **Astronomy** The density of an object is the ratio of its mass to its volume. Neptune has a mass of 1.02×10^{26} kg. The radius of Neptune is 2.48×10^4 km. What is the density of Neptune in grams per cubic meter? (*Hint:* $V = \frac{4}{3}\pi r^3$)

Concept Bytes	The Concept Bytes extend the lesson and provide an additional challenge.
Extension and Enrichment	The leveled Lesson Resources outline activities for advanced students so that they can practice the same skills with more challenging problems. Teachers can also find fun and challenging activities, games, and puzzles online.
Visual Learners	All students benefit from visual instruction, especially those who are visual learners. Following are the program features that support visual learners.
Visual Models	Visual models and color coding support students as they analyze complex math problems. With this support, students can more easily process the information and observe change.

Problem 4 Multiplying Numbers in Scientific Notation

Chemistry At 20°C, one cubic meter of water has a mass of about 9.98×10^2 g. Each gram of water contains about 3.34×10^{23} molecules of water. About how many molecules of water does the droplet of water shown below contain?

$V = 1.13 \times 10^{-7} \text{ m}^3$

Plan
How do you find the number of molecules?
Use unit analysis. Divide out the common units.

molecules of water = $\frac{\text{cubic meters} \cdot \text{grams} \cdot \text{molecules}}{\text{cubic meters} \cdot \text{grams}}$

$= (1.13 \times 10^{-7}) \cdot (9.98 \times 10^2) \cdot (3.34 \times 10^{23})$

$= (1.13 \cdot 9.98 \cdot 3.34) \times (10^{-7} \cdot 10^2 \cdot 10^{23})$

$= 37.7 \times 10^{-7+2+23}$

$= 37.7 \times 10^{18}$

$= 3.77 \times 10^{23}$

The droplet contains about 3.77×10^{23} molecules of water.

Got It? 4. About how many molecules of water are in a swimming pool that holds 200 m³ of water? Write your answer in scientific notation.

Teaching Tips	Teaching suggestions that support visual learners can often be found in the margin of the Teacher’s Edition. In this example, students highlight factors with like bases by coloring coefficients one color and each unique base a different color.
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$$-4c^2 \cdot 7d^2 \cdot 2c^{-2}$$

Animated Solve It!	Find the animated Solve It! on PowerAlgebra.com and PowerGeometry.com. Avatar coaches provide hints along the way and the animations illustrate the math process.
Dynamic Activities	Dynamic Activities provide an interactive way for students to explore complex lesson concepts. Students manipulate variables and observe change.
English Learners	While English learners benefit from the features available for struggling and visual learners, there are also a few additional features designed specifically to support them.

The following sections explain the additional features that support English learners.

Multilingual Handbook	The Visual Glossary in the Student Edition and online provides support in both English and Spanish. The Multilingual Handbook in the online Teacher Resources includes the Visual Glossary for eight additional languages.
Lesson Support	In the Intervention section of the Lesson Resources, notice the English learner support that reinforces important vocabulary and key concepts. On the left, find teaching suggestions that promote language development and graphic organizers that improve comprehension of new information.
Review	This guide discussed the ways to meet a variety of student needs when teaching with the new Prentice Hall High School Math series. It provided an overview of the built-in program features and resources that support struggling learners and advanced students. It also looked at the program features and resources that support visual and English learners. For more information, please watch the other Prentice Hall High School Math series tutorials on this Web site.
