

**GLNCOE
MATHENATICS**

Pre-Algebra

New Jersey Guide to Daily Intervention



**Glencoe
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Glencoe Pre-Algebra
New Jersey Guide to Daily Intervention

1 2 3 4 5 6 7 8 9 10 045 14 13 12 11 10 09 08 07 06 05

Contents

Teacher’s Guide to Using the New Jersey Guide to Daily Intervention	iv
Daily Intervention for New Jersey Students and Teachers	1
Daily Intervention in the Student Edition	2
Daily Intervention in the Teacher Wraparound Edition	3
Daily Intervention in the Teacher Classroom Resources	4
Daily Intervention on the Internet	5
Daily Intervention with Other Resources	6
Student Remediation Plan	7
New Jersey Core Curriculum Content Standards for Mathematics, Grade 8, Correlated to <i>Glencoe Pre-Algebra</i>	9
<i>Glencoe Pre-Algebra</i> Correlated to New Jersey Daily Intervention Resources	14

Teacher's Guide to Using the New Jersey Guide to Daily Intervention

Today it is vital that students understand the mathematics that they are learning. Using computers on the job, making good consumer choices, evaluating information, and other life skills depend upon good mathematics skills. Since no two students are exactly the same, in every classroom there will be students of various abilities and skill levels. This booklet focuses on ways that teachers can intervene to assist the struggling student to improve his or her performance. Helping all students succeed in mathematics and develop their mathematical reasoning skills is an ambitious and worthwhile goal.

In order to ensure students' success, teachers can follow a three-step process of daily intervention.

- 1. Assessment of individual student needs** Teachers need to evaluate the needs of students in order to meet those needs.
- 2. Ongoing evaluation of student progress** Monitoring students' progress and understanding on a daily basis allows a teacher to head off trouble.
- 3. Monitoring instructional activities to strengthen students' weaknesses**
Providing opportunities for students to immediately address any weaknesses ensures students' continued success.

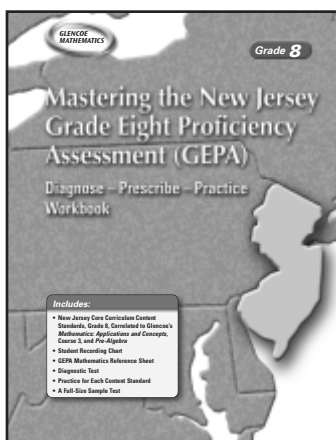
The *Glencoe Pre-Algebra* program includes tools for daily intervention in the Student Edition, the Teacher Wraparound Edition, the Teacher Classroom Resources, the Internet, and other products. Using these tools can help you help your students realize mathematical success. The following pages detail each resource available and the correlation shows how they are used in each lesson of *Glencoe Pre-Algebra*.

Daily Intervention for New Jersey Students and Teachers



This booklet contains correlations to materials available from Glencoe/McGraw-Hill that can assist you in preparing your students for success on the New Jersey Grade Eight Proficiency Assessment (GEPA), including correlations between lessons in *Glencoe Pre-Algebra* and the New Jersey Core Curriculum Content Standards for Mathematics for Grade 8.

In addition, this booklet contains correlations between the Student Edition of *Glencoe Pre-Algebra* and the following workbooks.



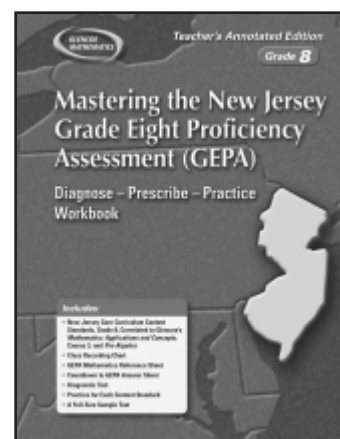
*Mastering the New Jersey Grade Eight Proficiency Assessment (GEPA):
Diagnose–Prescribe–Practice
Workbook, Grade 8, Student Edition*

Mastering the New Jersey Grade Eight Proficiency Assessment (GEPA): Diagnose–Prescribe–Workbook, Grade 8, Student Edition

This workbook includes a diagnostic test, practice for each New Jersey Core Curriculum Content Standards for Mathematics for Grade 8, and a sample test. Each item in the diagnostic test is referenced by New Jersey Content Standard so students can track their proficiency using the Student Recording Chart. This chart allows students to pinpoint standards where they need additional practice. A correlation of the New Jersey Core Curriculum Content Standards for Mathematics, Grade 8, to *Glencoe Pre-Algebra* is also included.

Mastering the New Jersey Grade Eight Proficiency Assessment (GEPA): Diagnose–Prescribe–Practice Workbook, Grade 8, Teacher’s Annotated Edition

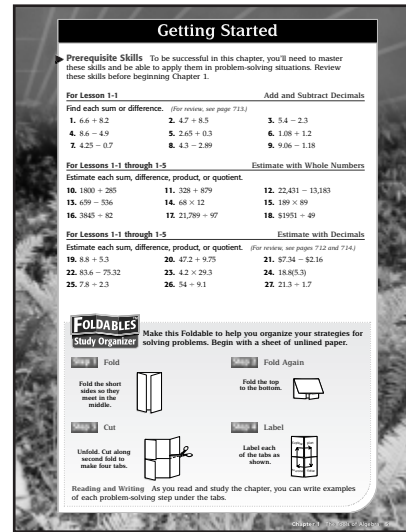
In this Teacher’s Annotated Edition, answers are printed full-size in place on the student pages of the diagnostic test, practice, and sample test pages. A correlation of the New Jersey Core Curriculum Content Standards for Mathematics, Grade 8, to *Glencoe Pre-Algebra* is also included. A Class Recording Chart allows you to record diagnostic test scores to quickly see on which standards your students need additional practice. A Countdown to GEPA answer sheet is also included.



Mastering the New Jersey Grade Eight Proficiency Assessment (GEPA): Diagnose–Prescribe–Practice Workbook, Grade 8, Teacher’s Annotated Edition

Daily Intervention in the Student Edition

- In the Getting Started section at the beginning of each chapter in the Student Edition, the **Prerequisite Skills** check students' preparedness for the chapter. You can check prior knowledge by reviewing prerequisite topics and explaining how these prerequisite topics are related to the current concept.
- Additional practice of **Prerequisite Skills** is provided at the end of each lesson with page references to help students review the concepts. These exercises review concepts and skills that will be applied in the next lesson. The Prerequisite Skills section in the Student Handbook in the back of the Student Edition provides explanation and practice of skills that are needed for success in geometry.



Pre-Algebra Student Edition, p. 5

Check for Understanding

Concept Check

- OPEN ENDED** Write a numerical sentence that illustrates the Commutative Property of Multiplication.
- Tell the difference between the Commutative and Associative Properties.
- FIND THE ERROR** Kimberly and Carlos are using the Associative Properties of Addition and Multiplication to rewrite expressions.

Kimberly $(4 + 5) + 6 = 4 + (5 + 6)$	Carlos $(2 + 7) \cdot 5 = 2 + (7 \cdot 5)$
---	---

Who is correct? Explain your reasoning.

Guided Practice

Name the property shown by each statement.

4. $7 + 5 = 5 + 7$ 5. $8 + 0 = 8$ 6. $8 \cdot 4 \cdot 13 = 4 \cdot 8 \cdot 13$

Find each sum or product mentally.

7. $13 + 8 + 7$ 8. $6 \cdot 9 \cdot 5$ 9. $8 + 11 + 22 + 4$

10. State whether the conjecture division of whole numbers is commutative is true or false. If false, provide a counterexample.

ALGEBRA Simplify each expression.

11. $6 + (8 + 7)$ 12. $(3 \cdot 10) \cdot 9$

Application

13. **SHOPPING** Denroy purchased a pair of jeans for \$26, a T-shirt for \$12, and a pair of socks for \$4. What is the total cost of the items? Explain how the Commutative Property of Addition can be used to find the total.

Practice and Apply

For	See	Name the property shown by each statement.
Exercises	Examples	
14, 15	1, 2	14. $5 \cdot 3 = 3 \cdot 5$ 15. $1 \cdot 4 = 4$
16, 17	3	16. $6 \cdot 2 \cdot 0 = 0$ 17. $12 \cdot 8 = 8 \cdot 12$
18, 19	4	18. $0 + 13 = 13 + 0$ 19. $(4 + 5) + 15 = 4 + (5 + 15)$
20, 21	5	20. $18 = 8$ 21. $7x + 0 = 7x$
22, 23	6	22. $(5 + x) + 6 = 5 + (x + 6)$ 23. $4(mn) = (4m)n$
24, 25	7	24. $9(gh) = (9g)h$ 25. $(3x + 1) + 2c = 2c + (3x + 1)$

Find each sum or product mentally.

26. $11 + 8 + 19$ 27. $17 + 5 + 33$ 28. $15 \cdot 0 \cdot 2$

29. $5 + 18 + 15 + 2$ 30. $2 \cdot 7 \cdot 30$ 31. $11 \cdot 9 \cdot 10$

32. $32 + 3 + 17 + 7$ 33. $125 \cdot 4 \cdot 0$ 34. $16 + 57 + 94 + 33$

State whether each conjecture is true or false. If false, provide a counterexample.

35. Division of whole numbers is associative.

36. The sum of two whole numbers is always greater than either addend.

37. Subtraction of whole numbers is commutative.

28 Chapter 1 The Tools of Algebra

Pre-Algebra Student Edition, p. 26

In the back of the Student Edition,

- **Extra Practice** provides additional, immediate practice with the skills and concepts from each lesson.
- **Mixed Problem Solving** includes numerous verbal problems for students to reinforce their problem-solving skills.
- **Preparing for Standardized Tests** reviews various strategies for resolving questions like those that appear on the New Jersey GEPA.

Extra Practice

Lesson 1-1 (pages 6–10)

Solve.

1. **POSTAL SERVICE** The U.S. Postal Service offers air mail service to other countries. The rates for International Air Mail letters and packages are shown in the table at the right. Determine the air mail rate for a package that weighs 5.5 ounces.

Weight not over (ounces)	Rate
0.5	\$0.50
1.0	\$0.95
1.5	\$1.34
2.0	\$1.73
2.5	\$2.12
3.0	\$2.51
3.5	\$2.90
4.0	\$3.29

a. Write the *Explore* step. What do you know and what do you need to find?

b. Write the *Plan* step. What strategy will you use? What do you estimate the answer to be?

c. Solve the problem using your plan. What is your answer?

d. Examine your solution. Is it reasonable? Does it answer the question?

2. **POSTAL SERVICE** In 1995, the state of Florida celebrated the 150th anniversary of its statehood. The U.S. Postal Service issued a stamp, the first to bear the 32-cent price, to honor the occasion. Ninety million of the commemorative stamps were issued. About how much postage did the stamps represent?

a. Which method of computation do you think is most appropriate for this problem? Justify your choice.

b. Solve the problem using the four-step plan. Be sure to examine your solution.

Find the next term in each list.

3. 3, 8, 15, 23, ... 4. 32, 20, 26, 23, 20, ... 5. 6, 7, 9, 12, 16, ...

Lesson 1-2 (pages 12–16)

Find the value of each expression.

1. $8 + 7 \cdot 12 + 4$ 2. $20 - 4 - 5 + 12$ 3. $(25 - 3) + (10 - 3)$

4. $36 \div 6 + 7 - 6$ 5. $30 - (8 - 4)$ 6. $(40 \cdot 2) - (6 - 11)$

7. $\frac{10 \cdot 11}{14}$ 8. $\frac{11}{13} + \frac{1}{13}$ 9. $\frac{5 \cdot 6}{13} + \frac{5}{13}$

10. $19 - 14$ 11. $55 - 52 \cdot 40$ 12. $81 \div 27 \times 6 - 2$

13. Find the value of thirty-two divided by the product of four and five.

Write a numerical phrase for each verbal phrase.

14. three increased by nine 15. fifteen divided by three 16. six less than ten

Lesson 1-3 (pages 17–23)

ALGEBRA Evaluate each expression if $a = 2$, $b = 4$, and $c = 3$.

1. $10 - ac$ 2. $4b + a + c$ 3. $11 \cdot c \div ab$ 4. $4b - (a + c)$

5. $7(a + b) - c$ 6. $8a + 10$ 7. $\frac{10 + 10}{c}$ 8. $3a - 12c$

9. $\frac{10 + c}{7 - 1}$ 10. $ab \div bc$ 11. $2b - bc + a$ 12. $a(b - c)$

ALGEBRA Translate each phrase into an algebraic expression.

13. nine more than x 14. eleven less than z

15. three times y 16. the product of some number and five

17. twice Shelly's score decreased by 18 18. the quotient of 16 and n

724 Extra Practice

Pre-Algebra Student Edition, p. 724

Daily Intervention in the Teacher Wraparound Edition

The New Jersey Core Curriculum Content Standards for Mathematics for Grade 8 are correlated to lessons in the *Glencoe Pre-Algebra* Student and Teacher Wraparound Editions.

- **Daily Intervention** features provide suggestions for addressing various learning styles and helping students who are having difficulty.
- The **Differentiated Instruction** suggestions are keyed to eight commonly accepted learning styles.
- **Unlocking Misconceptions** suggestions help you analyze where students make common errors so you can point these trouble spots out to them.

3 Practice/Apply

Study Notebook

- Read students...
- all the definitions/examples of the vocabulary items in this... (highlighting Student Activities for Chapter 1)
- copy the four-step problem-solving plan and write a brief explanation of each step.
- include any other notes that they find helpful in mastering the skills in this lesson.

Study Notebook

Sign after assignments for... (highlighting that it helps keep notes and study skills)

About the Exercises

Organization by Objective

- **Focus** Problem-Solving: Pages 9–20
- **Choose the Method of Computation**: Pages 21–31
- **Odd-Even Assignments**: Exercises 9–20 are structured so that students practice the same concepts whether they are assigned odd or even problems.

Assignment Guide

Basic: 9, 10, 11–15 odd, 19–25 odd, 27–30
 Average: 9, 10, 11–25 odd, 27–30
 Advanced: 12–26 even, 27–30 (Optional: 31–30)

CHOOSE THE METHOD OF COMPUTATION Choosing the method of computation is an important step in solving problems. Use the diagram below to help you decide which method is most appropriate.

Example 3 Choose the Method of Computation

TRAVEL The graph shows the seating capacity of various airports in the United States. About how many more seats does Denver International Airport have than Fenwick Park?

USA TODAY Snapshot

Glencoe's exclusive partnership with USA TODAY® provides actual USA TODAY® photographs, plus interactive mathematical concepts.

DAILY INTERVENTION

Differentiated Instruction

- **Visual/Spatial** Use 3-D models to help in solving problems. Ask students to build the models, then write down the number of hotspots used to build each model. Finally, students should determine the number of hotspots needed to build the fourth model.

Pre-Algebra Teacher Wraparound Edition, p. 8

4 Assess

Open-Ended Assessment

Speaking Show students the expressions $3 + 4 + 5 + 2$. Ask them to give two different verbal phrases for this expression. Then evaluate the expression, explaining their reasoning.

Getting Ready for Lesson 1-9

BASIC SKILL In Lesson 1-3, you should will continue to evaluate expressions using addition, subtraction, multiplication, and division. Exercises 62–65 practice the basic skills of finding a sum.

Assessment Options

Quiz (Exercises 1-4 and 1-5) is available on p. 51 of the Chapter 1 Student Master.

Assessment Options

Use the graphic organizer and write your answer to the question below.

Answer

52. Sample answer: We need to agree on an order of operations so that each expression has one unique value. Answers should include the following:

- When evaluating a numerical expression, simplify any expressions inside grouping symbols. Then do all multi-step calculations from left to right.
- When the order of operations is not followed, an incorrect value for the expression may result.

51. Sample answer: 115 - 15 + 4 + 9 = 99 (11 + 1)

52. CRITICAL THINKING Suppose only the 1, 10, 100, 1000, and 10000 bills in circulation are working. How can you get 200¢ if you are only allowed to push these keys fewer than 20 times?

53. CONCEPTS Answer the question that was posed at the beginning of the lesson. See pages 10–11 for the following to your answer:

- an explanation of how the order operations are performed, and
- an explanation of what will happen to the value of an expression if the order of operations are not followed.

Standardized Test Practice

13. Which expression has a value of 10? A B C D

14. Identify the expression that represents the quotient of two times 8.

Answer Key

13. A B C D

14. A B C D

USA TODAY Snapshot

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Getting Ready for the Next Lesson

BASIC SKILL Find each sum.

62. $24 + 52 = 76$ 63. $10 + 41 = 51$
 64. $142 + 10,300 = 10,442$ 65. $100 + 100 = 200$

14 Chapter 1 The Tools of Algebra

Pre-Algebra Teacher Wraparound Edition, p. 16

RELATIONS A set of ordered pairs such as $(1, 2), (2, 4), (3, 6), (4, 8), (5, 10)$ is a relation. The domain of the relation is the set of x-coordinates. The range of the relation is the set of y-coordinates.

Example 1 Express the relation $(1, 2), (2, 4), (3, 6), (4, 8), (5, 10)$ as a table and as a graph. Then determine the domain and range.

Example 2 Express the relation $(1, 2), (2, 4), (3, 6), (4, 8), (5, 10)$ as a table and as a graph. Then determine the domain and range.

Example 3 Apply Relations

PLANTS Some species of bamboo grow 1 foot in one day.

1. Make a table of ordered pairs in which the x-coordinate represents the number of days and the y-coordinate represents the amount of growth for 1, 2, 3, and 4 days.

2. Describe the graph. The points appear to fall in a line.

Teacher to Teacher

Heidi Kaley Mathematics Consultant, Richardson, TX

"We practice graphing points by playing tic-tac-toe on an overhead-projected coordinate plane. Use two different colors of overhead markers. Students take turns calling out ordered pairs (numbers) to be graphed. The first team to get 4 of their clusters in a row wins the game. Play for 5 or 10 minutes."

14 Chapter 1 Ordered Pairs and Relations 35

Pre-Algebra Teacher Wraparound Edition, p. 35

- Each lesson ends with **Open-Ended Assessment** strategies for closing the lesson and ensuring that students understand and can apply the concepts. These strategies for bringing closure to the lesson are addressed through writing, modeling, and speaking.

- **Teacher to Teacher** features contain teaching suggestions from teachers who are successfully teaching Geometry in their classrooms. Suggestions include content tips, techniques, and activities that can be used in intervention.

Daily Intervention in the Teacher Classroom Resources

- The **Study Guide and Intervention** masters found in the Chapter Resource Masters summarize key concepts for each objective and provide practice exercises. These masters are also available as a consumable **Study Guide and Intervention Workbook** in English and Spanish. You may wish to use these masters for additional instruction and practice with individual students, in cooperative groups, or in peer tutoring situations.

NAME _____ DATE _____ PERIOD _____

1-7 Study Guide and Intervention

Scatter Plots

A scatter plot is a graph that shows the relationship between two sets of data. In a scatter plot two sets of data are graphed as ordered pairs on a coordinate system. A scatter plot may show a pattern or relationship of the data. The relation may be positive or negative, or there may be no relationship.

Example **SCHOOL** The table shows Miranda's math quiz scores for the last five weeks. Make a scatter plot of the data.

Since the points are showing an upward trend from left to right, the data suggest a positive relationship.

Week	Score
1	50
2	51
3	65
4	72
5	80

Exercises

FOOD For Exercises 1–3, use the table below which shows the fat grams and calories for several snack foods.

Food	Fat grams per serving	Calories per serving
doughnut	13	306
corn chips	13	200
pudding	3	150
cake	13	230
snack crackers	6	140
ice cream (light)	5	130
yogurt	2	70
cheese pizza	18	410

- Make a scatter plot of the data in the table.
- What do the x-coordinates represent? y-coordinates?
- Is there a relationship between fat and calories? Explain.

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Chapter 1 Resource Masters, p. 31

5-Minute Check

(over Lesson 1-4) Transparency 1-7

Refer to the graph for Questions 1–5.

Name the point which corresponds to the ordered pair.

- (2, 5)
- (4, 3)

Write the ordered pair that names each point.

- Q
- T

5. Determine the domain and range of the relation.

6. Standardized Test Practice

What point lies on both the x-axis and the y-axis?

Ⓐ (1, 1) Ⓑ (0, 1)
 Ⓒ (0, 0) Ⓓ (1, 0)

ANSWERS

- P
- R
- (3, 2)
- (6, 4)
- domain = {1, 2, 3, 4, 6}; range = {0, 2, 3, 4, 5, 6}
- C

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5-Minute Check Transparency 1-7

- 5-Minute Check Transparencies with Standardized Test Practice** For each lesson, there is a full-size transparency with questions covering the previous lesson or chapter. Also included on each transparency is a Standardized Test Practice question. These provide an excellent ongoing opportunity for checking students' understanding of the mathematics they are learning.

Daily Intervention on the Internet

- **Online Study Tools** These comprehensive review and intervention tools are available anytime, anywhere, simply by logging on to:

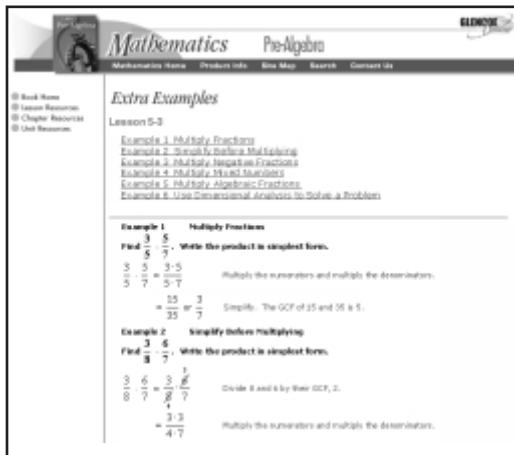


- The **Parent and Student Study Guide** contains a one-page worksheet for each lesson in the Student Edition and a one-page review for each chapter. This online workbook offers an excellent opportunity for students and parents to work together to strengthen weaknesses and develop mathematical understanding.

nj.pre-alg.com/parent_student

- **Self-Check Quizzes** are available for every lesson. Immediate feedback lets the student know whether the answers are correct and references specific pages and examples in the Student Edition for review. Access the Self-Check Quizzes directly at:

nj.pre-alg.com/self_check_quiz



- **Extra Examples** that mimic the ones in the Student Edition are completely worked out and available for students to review at:

nj.pre-alg.com/extra_examples

You may wish to use these examples in reteaching or to have students review areas of weakness.

- **Vocabulary Review** lets you and your students check their understanding of the terms and definitions used in each chapter. Access this game-style review at:

nj.pre-alg.com/vocabulary_review



Daily Intervention with Other Resources

SKILL 8 Name _____ Date _____ Period _____

Decimals and Place Value

You can use a place-value chart like the one below to help you write and read decimals and understand their values.

The decimal 160.289 is shown in the chart at the right. The place-value chart can be extended in either direction. The digit 9, together with its place value, names the number nine thousandths or 0.009.

Notice that the decimal point separates the ones and tenths places. It is read as *and*.

The decimal 160.289 is read as *one hundred sixty and two hundred eighty-nine thousandths*.

Examples

- Write nine and five hundred twenty-six ten-thousandths as a number.
9.0526
- Write 623.75 in words.
six hundred twenty-three and seventy-five hundredths

Write the number named by the underlined digit in words.

1. 0. <u>4</u> 5	2. 2. <u>3</u> 62	3. 110. <u>5</u> 1
4. 43. <u>6</u> 72	5. 98. <u>00</u> 2	6. 5.31 <u>2</u> 6
7. 16. <u>0</u> 2	8. 2.0 <u>6</u> 24	9. 2.0 <u>6</u> 7 <u>1</u>
10. 0.0 <u>8</u> 7	11. 0.0 <u>2</u> 51	12. 7.58 <u>5</u> 2

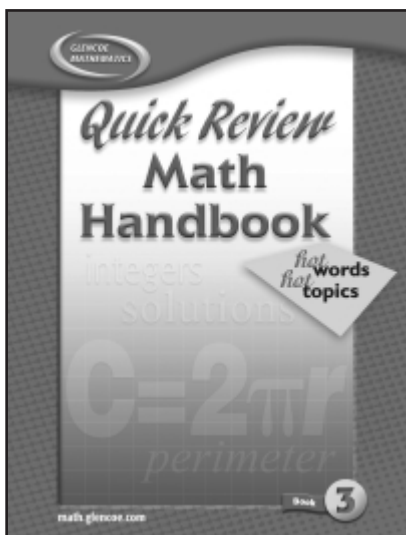
© Glencoe/McGraw-Hill 15 Algebra

Prerequisite Skills Workbook, p. 15

- The **Prerequisite Skills Workbook** provides extra practice on basic skills that are needed for success in pre-algebra. You may use these pages to give students an opportunity to review and refresh their skills. Topics addressed include:

- Operations with Whole Numbers
- Operations with Decimals
- Operations with Fractions
- Measures in the Metric and Customary Systems
- Line Graphs
- Histograms
- Probability

- The **Pre-AlgePASS: Tutorial Plus** CD-ROM provides an interactive, self-paced tutorial for a pre-algebra curriculum. The lessons are correlated directly to *Glencoe Pre-Algebra*. Each lesson, or concept, includes a pretest, tutorial, guided practice, and posttest. Students' answers to the pretests automatically determine whether the tutorial is needed for that concept—without taking teacher time to grade it. This software is designed to identify and address student weaknesses.



- **Quick Review Math Handbook: Hot Words, Hot Topics**, is Glencoe's mathematical handbook for students. The Hot Words section includes a glossary of terms while the Hot Topics section consists of explanations of key mathematical concepts. An exercise set is included to check students' understanding of the concepts. This valuable resource can be used as a reference in the classroom or for home study.

Student Remediation Plan

Teacher Instructions

You can use the Student Remediation Plan template that follows to plan for students who are in need of intervention/remediation. It can be used for high stakes tests, if there is no formal remediation plan required by your school or district. It can also be used for mid-semester reviews or project-based work.

Purpose

- To identify students' specific problem areas and link them to steps that can produce attainable results.
- To provide a template to easily record remediation plans and use them to communicate with students and/or parents.

Suggested Uses

- *Involve students in their Remediation Plans.*
Hold a teacher-student conference to go over the details of the remediation plan. Make certain they understand what they are to do, and have them sign a copy of their plan as a sign of good faith.
- *Involve parents as much as possible.*
You may also wish to involve parents in the remediation plan, if the situation is appropriate. Like your students, make sure the parents understand the steps their child should take to improve his or her performance in your class.
- *Identify common steps and resources that can be used for different levels of remedial study.*
Try to identify several sets of steps and resources for at least two different levels of student need. For example, you might identify a course of action for students who need a small amount of extra work, and one for those that need a great deal of extra study in the identified academic area.

Then, as you identify students in need of intervention, you can choose their level and the appropriate remediation plan. While you will probably want to customize the plan per student, you will at least have a defined set of steps with which to begin. After the semester ends, you can then evaluate each plan's success rate and determine what can be revised to improve each set of actions or resources.

Student Remediation Plan

Student _____ Teacher _____

Course _____ Date _____

Topic/Project/Exam _____

Problem Area	Solution Steps to Be Taken	Resources Needed