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Dynamic Instructional Design

**Designed to be in more**

The consistent instructional design of each lesson strengthens student learning—from the very beginning to the very end.

**What You’ll Learn** previews the topics to come, and engaging **Why or How** questions incorporate problem-based learning in your classroom.

**Two-part lesson structure** gives you the flexibility to teach the two related lesson objectives together or separately.

**Vocabulary** terms are listed at the beginning of each lesson for easy reference, and they’re also highlighted in yellow within the lesson.

**Completely worked-out examples** with clear explanations are paralleled by the **Guided Practice** and **Practice and Apply** exercises that follow.

**Check for Understanding**

You can use this portion of exercises in class to ensure that all students understand the concepts.

**Concept Check** exercises give students opportunities to define, describe, and explain the mathematical concepts they’ve just learned.

**Guided Practice** presents a representative sample of the exercises in the Practice and Apply section. A key in the **Teacher Wraparound Edition** correlates the exercises with examples.

**Application** problems provide problem-based learning opportunities.
effective, ways than one.

Practice and Apply

• Skill Exercises correspond to the Guided Practice exercises and are structured so that students practice the same concepts whether they are assigned odd- or even-numbered problems. Homework Help is provided so students can refer to examples in the lesson as they complete the exercises.

• Applications give students frequent opportunities to apply concepts to both real-life and mathematical situations.

• CRITICAL THINKING exercises in each lesson require students to explain, make conjectures, and prove mathematical relationships.

questions provide students with ongoing opportunities to sharpen their test-taking skills.

Maintain Your Skills

• Mixed Review includes spiraled, cumulative exercises from the two previous lessons as well as earlier lessons.

• Getting Ready for the Next Lesson exercises give students the chance to preview prerequisite skills for the coming lesson. A reference is provided should students need additional help.
Glencoe Geometry provides so many resources for lesson planning and teaching that you can create a complete, customized course in geometry quickly…and easily.

This is where you start.
The Teacher Wraparound Edition is your key to all of the teaching resources in Glencoe Geometry. In addition to teaching suggestions, additional examples, and answers, the Teacher Wraparound Edition provides a guide for all of the print and software materials available for each lesson.

FAST FILE Chapter Resource Masters contain all of the core supplements you’ll need to begin teaching a chapter of Glencoe Geometry. Each chapter booklet features convenient tabs for easy filing.

- **Vocabulary Builder** helps students locate and define key vocabulary words from the chapter.
- **Proof Builder** helps students learn and understand theorems and postulates from the chapter.
- **Study Guide and Intervention** for each objective summarizes key concepts and provides practice.
- **Skills Practice** provides ample exercises to help students develop basic computational skills, lesson by lesson.
- **Practice** mimics the computational and verbal problems in each lesson at an average level.
- **Reading to Learn Mathematics** provides students with various reading strategies to master the mathematics presented in each lesson.
- **Enrichment** activities extend students’ knowledge and widen their appreciation of how mathematics relates to the world around them.
- **Assessment** options for each chapter include six forms of chapter tests, assessment tasks, quizzes, mid-chapter test, cumulative review, and standardized test practice.

Reading and Writing

**WebQuest and Project Resources** include teacher notes and answers for the Internet WebQuest projects as well as other long-term projects that can be used with Glencoe Geometry.

**Reading and Writing in the Mathematics Classroom** features suggestions and activities for including reading as an integral part of the mathematics curriculum as well as differentiated approaches to teaching mathematics that promote English learning and inclusion.

**Teaching Mathematics with Foldables™** offers guidelines for using Foldables interactive study organizers in your class. The booklet was written by Foldables creator Dinah Zike.

More information on options for reading and writing in Glencoe Geometry is available on pages T6–T7.

Applications

**School-to-Career Masters** feature activities that show how mathematics relates to various careers.

**Graphing Calculator and Computer Masters** include activities to incorporate the TI-83 Plus calculator and computer applications such as spreadsheets and The Geometer’s Sketchpad into your geometry course.

**Real-World Transparencies and Masters** feature colorful transparencies with accompanying student worksheets to show how mathematics relates to real-world topics.
Assessment and Intervention

**5-Minute Check Transparencies** with **Standardized Test Practice** include a transparency for each lesson that evaluates what students have learned in the previous lesson. Each transparency also includes a standardized test practice question.

**Closing the Gap for Absent Students** provides an easy-to-use summary of all the materials you have covered in the chapter in a format that can be posted or distributed to students who have missed class.

**Guide to Daily Intervention** offers suggestions for daily assessment and tips on how to help students succeed.

**Prerequisite Skills Workbook: Remediation and Intervention** includes worksheets to review the arithmetic skills needed in geometry.

**Staff Development**

**Answer Key Transparencies** provide answers to Student Edition exercises.

**Lesson Planning Guide** features a daily resource guide for planning your curriculum, as well as pacing for block scheduling.

**Solutions Manual** includes completely worked-out solutions for all exercises in the Student Edition.

**Using the Internet in the Mathematics Classroom** provides guidelines for using the Internet, as well as a guide to additional mathematics resources available on the Internet.

**Teaching Geometry with Manipulatives** features activities and teaching suggestions to help you present geometric concepts with manipulatives and hands-on materials.

Technology Support for Teachers

Glencoe offers many timesaving software products to help you develop creative classroom presentations...fast.

**All-in-One Lesson Planner and Resource Center** CD-ROM includes a lesson planner and interactive Teacher Edition, so you can customize lesson plans and reproduce classroom resources quickly and easily, from just about anywhere.

**Answer Key Maker** software allows you to customize answer keys for your assignments from the Student Edition exercises.

**Interactive Chalkboard CD-ROM** includes fully worked-out examples, the 5-Minute Check Transparencies, and Your Turn problems in a customizable Microsoft® PowerPoint® format.

And more... Additional technology products and Internet resources for students, teachers, and parents are discussed on pages T6–T13 and T17.
Glencoe Geometry makes it easy for you to incorporate constructive reading and writing strategies into every class you teach.

### Reading Mathematics

Many of the words used in mathematics use the same prefixes as other everyday words. Understanding the meaning of the prefixes can help you understand the terminology better.

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Meaning</th>
<th>Everyday Words</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>bi-</td>
<td>2</td>
<td>bicycle</td>
<td>2-wheeled vehicle</td>
</tr>
<tr>
<td>tri-</td>
<td>3</td>
<td>triangle</td>
<td>closed figure with 3 sides</td>
</tr>
<tr>
<td>quad-</td>
<td>4</td>
<td>quadrilateral</td>
<td>closed figure with 4 sides</td>
</tr>
<tr>
<td>penta-</td>
<td>5</td>
<td>pentagon</td>
<td>closed figure with 5 sides</td>
</tr>
<tr>
<td>hexa-</td>
<td>6</td>
<td>hexagon</td>
<td>closed figure with 6 sides</td>
</tr>
<tr>
<td>hept-</td>
<td>7</td>
<td>heptagon</td>
<td>closed figure with 7 sides</td>
</tr>
<tr>
<td>octa-</td>
<td>8</td>
<td>octagon</td>
<td>closed figure with 8 sides</td>
</tr>
<tr>
<td>dec-</td>
<td>10</td>
<td>decagon</td>
<td>closed figure with 10 sides</td>
</tr>
</tbody>
</table>

Several pairs of words in the chart have different prefixes, but the same root word. Pentathlon and decathlon are both athletic contests. Heptagon and octagon are both closed figures. Knowing the meaning of the root of the term as well as the prefix can help you learn vocabulary.

#### Prefixes

- **bi-** 2: bicycle, 2-wheeled vehicle
- **tri-** 3: triangle, closed figure with 3 sides
- **quad-** 4: quadrilateral, closed figure with 4 sides
- **penta-** 5: pentagon, closed figure with 5 sides
- **hexa-** 6: hexagon, closed figure with 6 sides
- **hept-** 7: heptagon, closed figure with 7 sides
- **octa-** 8: octagon, closed figure with 8 sides
- **dec-** 10: decagon, closed figure with 10 sides

### Reading Mathematics activities help students master new mathematics vocabulary words and develop technical reading skills so they can understand and apply the language of math in their daily lives.

### Student Edition

**Foldables™ Study Organizers** at the beginning of each chapter provide students with tools for organizing what they are reading and studying.

**Reading Math Study Tips** appear throughout each chapter to help students learn and use the language of geometry.

**Writing in Math** questions in every lesson require students to use critical thinking skills to develop their answers.

**Vocabulary terms** are listed at the beginning of each lesson and highlighted when defined.

The **Vocabulary and Concept Check** in each Study Guide and Review checks students’ understanding of the key concepts of the chapter.

**Key Concepts** are illustrated using Words, Symbols, Models, and Examples, as appropriate. This approach improves reading comprehension by using multiple representations.

**WebQuest Internet Projects** are long-term projects that use problem-based learning to give students the opportunity to develop their research and creative writing skills.
**Teacher Wraparound Edition**

**Study Notebook** suggestions provide motivational ideas to help students create study notebooks that are thorough and effective.

**Concept Check** questions require students to describe, write, and explain the mathematical concepts they have learned in each lesson.

**Modeling, Speaking,** and **Writing** in every lesson require students to summarize what they have learned by responding to open-ended prompts.

**ELL Resources** highlight features and activities that help English-Language Learners grasp content.

**Differentiated Instruction** features help students at all points on the learning spectrum develop their reading, writing, and comprehension skills.

**Technology Support**

**StudentWorks™**, Glencoe’s backpack solution, includes the entire Student Edition, formatted like the hardbound book, so students can study from just about anywhere—no book required. Students can also print their own lesson worksheet pages and get instant access to interactive web resources.

[www.geometryonline.com/vocabulary_review](http://www.geometryonline.com/vocabulary_review) is a Glencoe site that provides online study tools for reviewing the vocabulary of each chapter.

**Vocabulary PuzzleMaker** software creates crossword, jumble, and word search puzzles using vocabulary lists that you can customize.

**Multimedia Applications: Virtual Activities**

CD-ROM provides in-depth interactive activities that help students explore the main concepts of each chapter in a real-world setting.

**Additional Resources**

**Chapter Resource Masters**
- Vocabulary Builder
- Proof Builder
- Reading to Learn Mathematics

**Teaching Mathematics with Foldables™**

**Reading and Writing in the Mathematics Classroom**

**WebQuest and Project Resources**

For more information on these products, see pp. T4–T5.
Whether you need daily intervention resources integrated right into the program, or supplemental materials for after school and summer school programs, *Glencoe Geometry* puts it all right at your fingertips!

**Prerequisite Skills**

Students often struggle in geometry because they have not mastered the prerequisite skills needed to be successful. *Glencoe Geometry* provides several opportunities to check student skills and determine which students need additional review and practice.

- The **Prerequisite Skills** at the beginning of every chapter help students identify and practice the skills they’ll need for each new concept.
- Additional **prerequisite skills practice** is provided at the end of each lesson and includes page references to help students get extra review whenever they need it. More prerequisite skill practice appears in the Student Handbook section at the back of the Student Edition.
- The **Prerequisite Skills Workbook** provides extra practice on the basic skills needed for success in geometry.

**Daily Intervention Opportunities**

**Guide to Daily Intervention** offers suggestions for using Glencoe materials to intercept students who are having difficulties and prescribe a system of reinforcement to promote student success.

The **Chapter Resource Masters** include several types of worksheets that can be used for daily intervention in each lesson. For a description of each worksheet, see page T4.

- **Study Guide and Intervention***
- **Skills Practice***
- **Practice***
- **Reading to Learn Mathematics***

* Each of these types of worksheets is also available as a consumable workbook.

The **Student Edition** contains additional problems to help students master each lesson before completing the chapter assessment.

- **Extra Practice**, located in the back of the Student Edition, provides additional, immediate practice with the concepts from each lesson.
- **Mixed Problem Solving and Proof**, also in the back of the Student Edition, includes numerous proofs and verbal problems to help students reinforce their skills in problem solving and proof.
Additional Teacher Resources

The following materials are available to help you determine which students need intervention and allow you to develop strategies for giving students the help they need. For a description of each feature, see page T5.

- **5-Minute Check Transparencies with Standardized Test Practice**
- **Daily Intervention** features in the Teacher Wraparound Edition
- **Closing the Gap for Absent Students**

Technology Resources for Intervention

In addition to print resources, Glencoe offers a variety of timesaving technology tools to help students build their math skills more effectively.

**GeomPASS: Tutorial Plus** CD-ROM provides an interactive, self-paced tutorial for a complete geometry curriculum. The 25 lessons are correlated directly to *Glencoe Geometry*. Each lesson, or concept, includes a pretest, tutorial, guided practice, and posttest. Students’ answers to the pretests automatically determine whether they need the tutorial for each concept, so students can take responsibility for their own learning—without taking teacher time for grading.

**Online Study Tools** include comprehensive review and intervention tools that are available anytime, anyplace simply by logging on to [www.geometryonline.com](http://www.geometryonline.com).

Self-check quizzes are available for every lesson, and immediate feedback helps students check their progress and find specific pages and examples in the Student Edition whenever they need extra review. These Online Study Tools also include extra examples, chapter tests, standardized test practice, and vocabulary review.
Glencoe Geometry gives you all the tools you need to prepare students for success—including Standardized Test Practice in every lesson and the powerful ExamView® Pro CD-ROM.

Student Edition

Every lesson contains two Standardized Test Practice questions, and every chapter contains a completely worked-out standardized test example as well as two full pages of Standardized Test Practice with Test-Taking Tips.

Preparing for Standardized Tests is designed to help your students become better test-takers. Included are examples and practice for the types of questions and concepts commonly seen on standardized tests.

Chapter Study Guide and Review provides Vocabulary and Concept review—a Glencoe exclusive—and Lesson-by-Lesson Review, all at the point of use for students.

Practice Quizzes (2 per chapter) and a Practice Test for each chapter provide the variety of practice questions students need to succeed on tests.

Teacher Wraparound Edition

An Open-Ended Assessment activity is provided in each lesson in the margin of the Teacher Wraparound Edition.
Teacher Classroom Resources

5-Minute Check Transparencies with Standardized Test Practice provide full-size transparencies with questions covering the previous lesson or chapter. Standardized Test Practice Questions are also included.

Assessment Options in the Chapter Resource Masters

These assessment resources are available for each chapter in Glencoe Geometry.

- 6 Chapter Tests
- Open-Ended Assessment with Scoring Rubric
- Vocabulary Test and Review
- MindJogger Videoquizzes present chapter-by-chapter review sessions in a game show format to make review more interesting and active to students...especially great for reluctant readers. Available on VHS or on DVD with Real-Life Geometry Videos.

Online Study Tools

- Self-Check Quizzes
- Vocabulary Review
- Chapter Test Practice
- Standardized Test Practice

Technology Support

Use the networkable ExamView® Pro to:

- Create multiple versions of tests.
- Create modified tests for Inclusion students.
- Edit existing questions and add your own questions.
- Use built-in state curriculum correlations to create tests aligned with state standards.
- Apply art to your tests from a program bank of artwork.
USA TODAY Snapshots®

This is the same up-to-date data you know so well. But now, in an exclusive partnership with Glencoe/McGraw-Hill, USA TODAY® Education has brought its powerful, one-of-a-kind perspective and dynamic content to the pages of Glencoe Geometry. USA TODAY Snapshots® explode off the page to make geometry come alive with current, relevant data.

WebQuest: Online Projects

www.geometryonline.com/webquest gives students the chance to work through a long-term project to enable them to develop their research, creative writing, and presentation skills.

- WebQuests often utilize USA TODAY Snapshots® or USA TODAY® articles.
- Special features in the Student Edition prompt students to complete each stage of their WebQuest.
- Parents can use the guided instruction to help students become familiar with the Internet in a safe, productive manner.

Stay current with additional charts and graphs with USA TODAY®. Log on to www.education.usatoday.com, or call USA TODAY® at (800) 757-TEACH.
Many of your students may already be familiar with the Internet, but may not have discovered the full potential of this powerful research tool. With *Glencoe Geometry*, your students can use the Internet to build their geometry skills. And you can access a wide variety of resources to help you plan classes, extend lessons, even meet professional development requirements.

**For Students**

**Online Study Tools**, referenced on the Student Edition pages, are keyed specifically to *Glencoe Geometry*.

- [www.geometryonline.com/extra_examples](http://www.geometryonline.com/extra_examples) features additional fully worked-out examples.
- [www.geometryonline.com/self_check_quiz](http://www.geometryonline.com/self_check_quiz) allows students to check their progress in each lesson.
- [www.geometryonline.com/vocabulary_review](http://www.geometryonline.com/vocabulary_review) lets students check their vocabulary comprehension.
- [www.geometryonline.com/chapter_test](http://www.geometryonline.com/chapter_test) provides additional practice in test taking.
- [www.geometryonline.com/standardized_test](http://www.geometryonline.com/standardized_test) simulates questions that appear on standardized and proficiency tests.

**Other Online Resources**

- [www.geometryonline.com/webquest](http://www.geometryonline.com/webquest) offers an online research project.
- [www.geometryonline.com/usa_today](http://www.geometryonline.com/usa_today) provides additional activities related to the topics presented in the USA TODAY Snapshots®.
- [www.geometryonline.com/careers](http://www.geometryonline.com/careers) offers information about career opportunities.

**For Teachers**

**Powerful tools to make your job easier**

- Vocabulary Review Games
- Problem of the Week Activities
- USA TODAY® K–12 Education daily lesson plans
- Sharing Ideas with Other Teachers
- Cool Math Links
- State and National Resources

**Staff Development Sites**

- NCTM links
- Teaching Today link
- McGraw-Hill Learning Network link
- Cooperative learning suggestions
- Using the Internet in the Mathematics Classroom

**For Parents**

**Help parents get involved with their child’s learning**

- Involving Parents and Community in the Mathematics Classroom
Students love Foldables™ because they’re fun. Teachers love them because they’re effective.

Foldables are easy-to-make, three-dimensional interactive graphic organizers that students create out of simple sheets of paper. These unique hands-on tools for learning and reviewing were created exclusively for *Glencoe Geometry* by teaching specialist Dinah Zike.

**Building Prereading Skills**

At the beginning of each chapter, students construct one of a variety of Foldables. Each Foldable helps students create an interactive strategy for organizing what they read and observe. As they work through each chapter, students add more detail to their Foldable until they have created a comprehensive, interactive snapshot of the key concepts and vocabulary of the chapter.

**Reading and Writing**

Each Foldable helps students practice basic reading and writing skills, find and report main ideas, organize information, review key vocabulary terms, and more.

**Review and Reinforcement**

The completed Foldable is a comprehensive overview of the chapter concepts—perfect for preparing for chapter, unit, and even end-of-course tests.

**Assessment**

Foldables present an ideal opportunity to probe the depth of your students’ understanding of chapter concepts. You’ll get detailed feedback on what your students know and what misconceptions they may have.

**Staff Development**

*Teaching Mathematics with Foldables™* equips teachers to extend the use of Foldables in their classrooms by exploring the different Foldable formats and providing suggestions for using them throughout the mathematics curriculum.
Project CRISS™ (CReating Independence Through Student-Owned Strategies) is a research-based staff development program created to help students better organize, understand, and retain course information. In short, students receiving the CRISS method of instruction will “LEARN HOW TO LEARN”.

CRISS strategies are designed to develop thoughtful and independent readers and learners.

To enhance student learning, CRISS employs several concepts drawn from cognitive psychology.

- Students must be able to integrate new information with prior knowledge.
- Students need to be actively involved in their own learning by discussing, writing, and organizing information.
- Students must self-monitor to identify which strategies are the most effective for their own learning.

These behaviors need to be taught by content teachers to maximize student learning.

Implementing CRISS Strategies

Project CRISS Study Skills were developed with leaders from Project CRISS to facilitate the teaching of each chapter of Glencoe Geometry. These strategies appear in the interleaf of the Teacher Wraparound Edition.

For more information on project CRISS™, visit www.projectcriss.com.

English Language Learners may need specialized help in overcoming a language barrier to learn mathematics. Hands-on activities, modeling, working in flexible groups, and vocabulary building activities are particularly helpful to ELL students.

As professional development continues to take on greater importance for educators across the country, teachers are constantly looking for easy-to-use tools to help them stay abreast of current trends and issues. At Glencoe, we know how valuable your time is, so we’ve developed a variety of staff development tools to help you meet your district’s requirements.

**Teacher Wraparound Edition**

*Mathematical Connections and Background* found at the beginning of each chapter gives you an overview of the mathematics skills required in each lesson. Information about prior knowledge as well as future connections lets you see the continuity of instruction.

*Building on Prior Knowledge* provides you with information that links what students have previously learned to the content of the lesson.

*Tips for New Teachers* offers helpful suggestions for such things as classroom management, assessment, teaching techniques, and more.

*Teaching Tips* can be found not only in the margins but also on the reduced student pages at point of use.

**Teacher Classroom Resources**

*Glencoe Mathematics Staff Development Series* is a series of publications that allows you to stay current with issues that affect your teaching effectiveness. The series is intended to help you implement new mathematics strategies and enhance your classroom performance.

**Available in print**

- Using the Internet in the Mathematics Classroom
- Reading and Writing in the Mathematics Classroom
- Teaching Mathematics with Foldables™
- Teaching Geometry with Manipulatives

**Available online at**

[www.math.glencoe.com](http://www.math.glencoe.com)

- Graphing Calculators in the Mathematics Classroom
- Cooperative Learning in the Mathematics Classroom
- Alternative Assessment in the Mathematics Classroom
- Involving Parents and the Community in the Mathematics Classroom
Technology Support
At www.math.glencoe.com, you'll find:

• a Staff Development site that addresses current issues in education.

• a Teacher Forum that allows teachers to discuss issues and ideas with colleagues.

• a State and National Resources site that links to math and math education resources, nationally and by state.
Glencoe’s mathematics programs are the product of ongoing classroom and educational research activities involving students, teachers, curriculum supervisors, administrators, parents, and college-level mathematics educators, mathematicians, and researchers.

**SOUND**
Prior to the publication of any Glencoe mathematics program, the following initial research is completed.

- Monitoring of national and state changes and trends such as graduation requirements, standardized test exams, and the latest NCTM and NAEP reports.
- Incorporating the most current and applicable educational research in which reported results show significant improvement on student learning and achievement.
- Analyzing returns from independently contracted mailing and telephone surveys.

- Reviewing all comments and correspondence on appropriate prior editions in terms of specific lessons. This helps Glencoe to build in staff development support, which makes the programs easy to implement from the first day of use.

**PROVEN**
Prior to the publication of *Glencoe Geometry*, extensive research was conducted using manuscript and pre-publication versions of the program.

- Nationwide discussion groups were conducted, which involved mathematics teachers, department chairpersons, supervisors, and educational learning specialists.
• Face-to-face interviews were carried out with mathematics teachers.
• Reviewers and consultants reviewed *Glencoe Geometry* manuscripts for accuracy, content development, and thoroughness.
• Before the design of the Student Edition was completed, an independent research company was contracted to organize and conduct blind focus groups with high school geometry teachers in various cities. The teachers' reactions and comments were recorded and used for improvements.
• Follow-up interviews, observations, and surveys of users of Glencoe mathematics programs are continuously conducted and monitored.

**PREFERRED**

Glencoe's mathematics programs are currently used by millions of students and tens of thousands of teachers. The Glencoe author team—a combination of practicing classroom teachers, curriculum supervisors, college-level educators, and learning specialists—is a key reason why Glencoe mathematics programs continue to ensure success in the mathematics classroom. This proven mix of authors and consultants, along with the incorporation of national trends and research results, leads to a preferred rating among teachers and students.

![Bar chart showing survey results](chart.jpg)

*Source: High School Mathematics Longitudinal Survey, 2003*

For more details of Glencoe's research, please contact us at [www.math.glencoe.com](http://www.math.glencoe.com).
**Planning Your Pacing**

*Glencoe Geometry* and the accompanying support materials allow you to create a geometry course that meets the needs of each class of students. The charts shown on these two pages offer general suggestions for pacing your students through the book for average and advanced levels. Pacing for both standard class periods and block schedule class periods is given. A more detailed pacing chart appears on interleaved page A preceding each chapter in the *Teacher Wraparound Edition*.

The total number of days in each level of pacing is less than the typical 180-day school year and 90-day semester to allow for flexibility in planning due to testing, school cancellation, or shortened class periods.

**Average Pacing** is for those students who have a fairly good mathematical preparation for geometry. You may want to use one of the six chapter tests provided in the Chapter Resource Masters as a pretest to determine how well your students are prepared for each chapter. If you find that they are well prepared, consider using the Study Guide and Review at the end of the chapter as a one-day lesson and proceed to the next chapter.

If your students are better prepared for geometry, you may want to spend less time in the earlier chapters in order to have more time to explore later chapters.

**Modifying Average Pacing for Basic Students**

For those students who are less prepared for geometry, spend less time on Units 2 and 3 (Chapters 4–10) by deemphasizing proof.

### Year-Long Schedule

<table>
<thead>
<tr>
<th>Grading Period</th>
<th>Chapter</th>
<th>Days</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>13</td>
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<tr>
<td></td>
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### Block Schedule

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<td><strong>84</strong></td>
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</table>
**Advanced Pacing** is for those students who have a strong preparation for geometry. In advanced pacing, not as much time is required for the earlier chapters. This allows for more time to be spent on lessons and activities in Chapters 7–13 that are considered optional for average pacing.

To assess students’ knowledge prior to each chapter, you may use one of the six chapter tests in the Chapter Resource Masters as a pretest.

### Year-Long Schedule

<table>
<thead>
<tr>
<th>Grading Period</th>
<th>Chapter</th>
<th>Days</th>
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<tbody>
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<td>10</td>
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<tr>
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<td>3</td>
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<td>9</td>
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### Block Schedule

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<td>5</td>
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<tr>
<td>13</td>
<td>5.5</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
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</tbody>
</table>

### Daily Planning

- A more detailed Suggested Pacing chart appears in the interleaved preceding each chapter in the *Teacher Wraparound Edition*.
- The *Lesson Planning Guide* offers further suggestions for the materials to be covered each day and how to adapt these for Block Scheduling.
- *TeacherWorks: All in One Lesson Planner and Resource Center* CD-ROM enables you to customize an entire course of study to meet your specific needs.
Two-year Pacing is for those students who want to take geometry, but find the abstract concepts difficult to grasp. This pacing allows students to cover the same material, work the same problems, and complete the same proofs as students using the average or advanced pacing. Students will be able to spend more time on each concept and will have more time to complete hands-on labs and activities that help develop and internalize the abstract concepts presented in this course. More time will also give students a better opportunity to learn the fundamentals of mathematical proof, which are crucial to a more rigorous and abstract understanding of mathematics.

This pacing plan allows at least two days for each lesson and allows four days for review and assessment for each chapter. The plan allows one day for each practice quiz. The plan also allows one or two days for each activity or investigation.

In year one, students cover the first eight chapters of the book. Four days are allowed at the end of each semester for review.

In year two, students begin by reviewing the first eight chapters. One week is allowed for the review of each chapter. If less time is needed for review of these chapters, more time will be available for covering the more difficult concepts and activities in the last five chapters of the book. Five days are allowed at the end of each semester for review.
Implementing the NCTM Principles and Standards

In 1989, the National Council of Teachers of Mathematics (NCTM) published their Curriculum and Evaluation Standards for School Mathematics, which gave mathematics teachers their first set of goals toward a national mathematics curriculum. Teachers and supervisors have embraced these Standards and developed state standards based on this framework. In 2000, the National Council of Teachers of Mathematics published a revision of these guidelines entitled NCTM Principles and Standards for School Mathematics.

**Equity** Excellence in mathematics education requires equity—high expectations and strong support for all students.

Glencoe’s product line encourages high achievement at every level. Numerous teacher support materials provide activities for differentiated instruction, promotion of reading and writing, pacing for individual levels of achievement, and daily intervention.

**Curriculum** A curriculum is more than a collection of activities: it must be coherent, focused on important mathematics, and well articulated across the grades.

Glencoe authors developed a philosophy and scope and sequence to ensure a continuum of mathematical learning that builds on prior knowledge and extends concepts toward more advanced mathematical thinking.

**Teaching** Effective mathematics teaching requires understanding what students know and need to learn and then challenging and supporting them to learn it well.

Glencoe offers a plethora of teacher support materials. A comprehensive Teacher Wraparound Edition provides mathematical background, teaching tips, resource management guidelines, and tips for new teachers.

**Learning** Students must learn mathematics with understanding, actively building new knowledge from experience and prior knowledge.

The Teacher Wraparound Edition includes instruction on building from prior knowledge with materials in each interleaf and in Building On Prior Knowledge features. Find the Error and Unlocking Misconception teaching tips help to evaluate how students are thinking and learning.

**Assessment** Assessment should support the learning of important mathematics and furnish useful information to both teachers and students.

The Practice Quizzes and the Chapter Practice Test provide ways for students to check their own progress. Online Study Tools, such as Self-Check Quizzes, offer a unique way for students with Internet access to monitor their progress. The assessment tools in the Chapter Resource Masters contain different levels and formats for tests, as well as intermediate opportunities for assessment.

**Technology** Technology is essential in teaching and learning mathematics; it influences the mathematics that is taught and enhances students’ learning.

The Student Edition includes opportunities to utilize graphing calculators, spreadsheets, and geometry software in the exploration of geometry concepts. The Teacher Wraparound Edition offers teaching tips on using technology. Graphing Calculator and Computer Masters has additional activities. Glencoe’s Web site is constantly updated to meet the needs of students and teachers in excelling in mathematics education.
The Standards portion of the NCTM Principles and Standards for School Mathematics center upon ten areas of mathematics curriculum development. The number assigned to each standard is for easy reference and is not part of each standard's official title.

### Instructional programs from prekindergarten through grade 12 should enable all students to:

<table>
<thead>
<tr>
<th>Number</th>
<th>Area</th>
<th>Description</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Numbers and Operations</td>
<td>• Understand numbers, ways of representing numbers, relationships among numbers, and number systems</td>
<td>20–36, 62–66, 282–323, 325–331, 342–348</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Understand the meaning of operations and how they relate to each other</td>
<td></td>
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<td></td>
<td></td>
<td>• Compute fluently and make reasonable estimates</td>
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<tr>
<td></td>
<td></td>
<td>• Represent and analyze mathematical situations and structures using algebraic symbols</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Use mathematical models to represent and understand quantitative relationships</td>
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<tr>
<td></td>
<td></td>
<td>• Analyze change in various contexts</td>
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<tr>
<td></td>
<td></td>
<td>• Specify locations and describe spatial relationships using coordinate geometry and other representational systems</td>
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<tr>
<td></td>
<td></td>
<td>• Apply transformations and use symmetry to analyze mathematical situations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Use visualization, spatial reasoning, and geometric modeling to solve problems</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Apply appropriate techniques, tools, and formulas to determine measurements</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Data Analysis and Probability</td>
<td>• Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them</td>
<td>20, 622–627</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Select and use appropriate statistical methods to analyze data</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Develop and evaluate inferences and predictions that are based on data</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Understand and apply basic concepts of probability</td>
<td></td>
</tr>
</tbody>
</table>
### Problem Solving
- Build new mathematical knowledge through problem solving
- Solve problems that arise in mathematics and in other contexts
- Apply and adapt a variety of appropriate strategies to solve problems
- Monitor and reflect on the process of mathematical problem solving


### Reasoning and Proof
- Recognize reasoning and proof as fundamental aspects of mathematics
- Make and investigate mathematical conjectures
- Develop and evaluate mathematical arguments and proofs
- Select and use various types of reasoning and methods of proof


### Communication
- Organize and consolidate their mathematical thinking through communication
- Communicate their mathematical thinking coherently and clearly to peers, teachers, and others
- Analyze and evaluate the mathematical thinking and strategies of others
- Use the language of mathematics to express mathematical ideas precisely


### Connections
- Recognize and use connections among mathematical ideas
- Understand how mathematical ideas build on one another to produce a coherent whole
- Recognize and apply mathematics in contexts outside of mathematics


### Representation
- Create and use representations to organize, record, and communicate mathematical ideas
- Select, apply, and translate among mathematical representations to solve problems
- Use representations to model and interpret physical, social, and mathematical phenomena
