



New Books from PuzzleWise™ Supplemental programs for regular, gifted, remedial, and ELL students Grades 1-12

Testimonial:

"I am convinced these books have a positive impact on my students' reasoning, problem-solving abilities and knowledge. I know they are helping me prepare my students for their future." - Jane Robertson, Arizona Teacher of the Year, 2004.

Innovative Ways to Use Our Books:

We have several options to help you incorporate our books into your teaching program, in the best way suited to helping your students. Consider in class, or ... home work, after school programs, subsitute teacher plans, summer activity programs, extra credit, bell time, puzzle time, and puzzle clubs.

For any students needing some level of remediation, or advanced students needing support, we provide word lists (answer banks) on our Web site. You can choose when to offer these word lists, depending on the challenges of your students.

You can also use our books to keep skills fresh in a **summer enrichment program**. If you have sufficient puzzles left at year's end, have students complete them during the summer as part of your transition program.



Visit www.PuzzleWise.com

Download and try free sample lessons from our other books. You can also order online.

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Founders: Dr. Daniel Levine and Matt W. Beck, M. Ed.

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National Content Standards in PuzzleWise[™] Books

Visit our Web site for more information about the national standards.

		1	2	3	4	5	6	7	8	9	10	11	12				
Number & Operations	Understand numbers, ways of representing numbers, relationships among numbers, and number systems	•	•	•	•	•	•	•	•								
	Understand meanings of operations and how they relate to one another	•	•	•	•	•	•	•	•								
	Compute fluently and make reasonable estimates	•	•	•	•	•	•	•	•								
Measurement	Understand measurable attributes of objects and the units, systems, and processes of measurement	•	•	•	•	•	•	•	•								
	Apply appropriate techniques, tools, and formulas to determine measurements	•	•	•	•	•	•	•	•								
Geometry	Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships	•	•	•	•	•	•	•	•		high r state						
	Specify locations and describe spatial relationships using coordinate geometry and other representational systems		•	•	•	•	•	•	•		refresher for all s, in preparing for s and the SAT/AC						
	Apply transformations and use symmetry to analyze mathematical situations	•	•	•	•	•	•	•	•								
	Use visualization, spatial reasoning, and geometric modeling to solve problems	•	•	•	•	•	•	•	•								
bability	Formulate questions addressing data and collect, organize, and display relevant data to answer them	•	•	•	•	•	•	•	•		Excelle chool s	asse					
Data Anaylsis & Pro	Select and use appropriate statistical methods to analyze data		•	•	•	•	•	•	•		о Состания						
	Develop and evaluate inferences and predictions that are based on data	•	•	•	•	•	•	•	•								
	Understand and apply basic concepts of probability		•	•	•	•	•	•	•								
Algebraic Reasoning	Understand patterns, relations and functions	•	•	•	•	•	•	•	•								
	Represent and analyze mathematical situations and structures using algebraic symbols	•	•	•	•	•	•	•	•								
	Use mathematical models to represent and understand quantitative relationships	•	•	•	•	•	•	•	•								
	Analyze change in various contexts		•	•	•	•	•	•	•								

(This product has not been reviewed or endorsed by the NCTM (National Council of Teachers of Mathematics). The NCTM does not endorse any product.)

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✦ Deborah T. Boros

National President of the Society of Elementary Presidential Awardees, 2006 – 2008

Jane Robertson

Arizona State Teacher of the Year, 2004

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DR. MICHAEL NAYLOR is an outstanding math educator, international presenter, and national columnist. Dr. Naylor has taught mathematics to students of all ages for over 12 years, and is the author of the "Teaching Math" column for Teaching K-8 magazine. Dr. Naylor is also an associate professor of Mathematics and Mathematics Education specializing in K-8 math education. Michael's highly acclaimed seminars and workshops generate excitement for mathematics and have captured audiences' imaginations across the U.S., Canada, Europe and Africa.

Michael is also the author of numerous children's books and publications in popular mathematics. "I developed this series of books after analyzing and comparing state and national mathematics expectations for children. The math questions target specific grade level standards and develop problem solving skills students need for success on state standardized tests. The questions are fun and challenging, and build students' vocabulary, computation, and math literacy skills. PuzzleWise[™] is an exciting way to reach children!"





Keys to Successfully Doing the Lessons And Better Understanding the Book's Contents

This book contains 36 weekly lessons, 9 monthly assessments, 6 bonus pages of state assessment practice, and a host of resource pages.

The 36 Lessons

(Each lesson contains a crossword puzzle page, and an application page with 3 sections.)

Part 1: The Crossword Puzzles:

- Each crossword has the following content clues: Number and Operations, Geometry, Data Analysis and Probability, Measurement, and Algebra.
- Clues in the first 10 puzzles blend prior and current year's standards so students get a good start.
- Clues in the last 5 puzzles blend current and next year's standards so students preview new skills.
- Some clues in each crossword have page references to the resource pages in the back of the book so students practice using resources.

Part 2: The Application Pages (3 sections): Section A: Multiple Choice Questions (2 per lesson):

These questions simulate state test-like questions, giving students yearlong assessment practice. After students select their choice, we recommend teachers lead a discussion (academic discourse) on why students chose their solution. Discussion extends student understanding and retention.

Strategies for Solving Multiple Choice Questions:

Model these strategies for your students. The strategies will support your students' mathematical development, and help them achieve higher test scores.

- Estimate the answer. Which answer choices are closest?
- Eliminate obviously wrong choices.
- Work backwards from choices to see which answers make sense.

Section B: Open-Ended Extended Response Questions (1 per lesson):

These questions also simulate state test-like questions, and are excellent for academic discourse. Students develop independence and critical thinking all year as they practice open-ended math problems simulating state assessment questions. (SEE "A Strategy for Solving the Open Extended Response Questions" BOX ON P. 5.)

Section C: Spiraling Math Vocabulary (3 words per lesson):

At the bottom of each application page are listed several critical math vocabulary words.

- Students use words, numbers and/or pictures to describe the selected math vocabulary words.
- These 20 30 key math vocabulary words spiral throughout the 45 application pages.
- At the beginning of the week, have students research and define what the three words mean to them.
- Students can use many resources to define these key vocabulary words by using words, numbers, or pictures.
- At week's end, discuss the variety of answers and guide your students' understanding. As the year matures, student definitions should grow more comprehensive.

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A Strategy for Solving the Open-Ended Extended Response Questions

To be successful on assessments, students must be proficient in all five national content strands, and students must also be able to:

Reason
Represent situations
Communicate
Solve problems
Make connections

Make a poster of the following information, and use this model with your class. Have your students get in the habit of using this strategy when working on problems.

- 1. Understand the Problem. Put the problem in your own words.
- 2. Plan a Solution. Is this a good problem to... Draw a picture? Guess and check? Try numbers?
 - Work backwards? Make a table? Draw a graph?
 - Try many different strategies. Which ones worked and which ones didn't?
- 3. Answer and Look Back. Answer the question clearly. Reread the question to be sure you've answered it completely.
 - Ask yourself, "Does the answer make sense?" Reread the question. Have you answered it completely?
 - Is your answer clear? Is it easy for someone else to understand?

Review with your students. Structure the discussion around this strategy. Ask one or two students to restate the problem, and then ask students for different answers and methods. Every problem can be solved several different ways and the more ways students hear from their peers, the more flexibility they'll have in solving problems. It's also important to hear about the strategies that didn't work! During discussion, keep the focus on successful strategies. Give the strategies names like "Guess and Check" for general strategies, or invented names such as "Maggie's Rectangle Strategy" or "Peter's Regrouping Method". Make a poster of strategy names and add to it during the year. This will create a feeling of classroom ownership of the mathematics, and make the strategies easy to reference, easy to recall for use on other problems, and ultimately make your students flexible thinkers and successful test-takers.

The 9 Assessment Lessons

There are 9 assessment lessons. Each contains a crossword and an application page. It is recommended that teachers give an in-class assessment once a month to determine each student's progress.

The 6 Extra Multiple Choice Extended Response Pages

- Each book has three 2-page multiple choice extended response pages. (Six pages total.)
- Found on pages 40-41, 72-73, and 104-105, these additional activity pages provide extra practice on state testlike questions. Their answer keys are on P. 113.
- Students respond to the questions and explain the thinking behind their answers. This type of inquiry/ response is insightful for the teacher, and increases student communication.
- These activity pages are excellent for academic discourse.

Additional Resource Pages in the Back

Chart Your Progress:

Students can chart the progress of their growth during the school year.

Math Spelling Word List:

This list is alphabetized by the length of words so students are aided with finding an answer based on the number of letters.

Resource Pages:

A set of resource pages is available to help students find answers to crossword clues. Also, some clues in each crossword puzzle references these pages so students become familiar with using resources.

Answer Keys:

Answer keys are in the back of the book. We recommend removing the assessment answer keys on pages 119 – 120 so assessment lessons can be used to determine student growth.

The 4-Step Guide for Teachers and Parents

Our Vision: Every child is a knowledgeable, independent, self-motivated life-long learner.

STEP 1: PRE-TEACHING ACTIVITIES:

- Read this "Guide For Teachers and Parents", and the "Keys to Successfully Doing the Lessons" on pages 4 – 5.
- Make a copy of Lesson 1 (pages 10 11) and do it yourself to get a feel for the activities.
- Review the book in its entirety so you know how it's laid out.
- Consider cutting out the last page in the back so the assessment keys are restricted.
- Remember that word banks are on-line (puzzlewise.com) to help students needing support.

STEP 2: CLASS SESSIONS 1 – 3:

WHOLE CLASS. Teacher models (thinks aloud) and checks for understanding. Hand out books, students write-in names, collect all books at the end of class. (At this step, students use the books only as a resource to read the clues and questions, and find solutions using the book's resources in the back. Students do not write in the books at this time.)

Whole Class Activities:

- Introduce books so students know how their book is organized.
- Put Lesson 1's crossword puzzle (P. 10) on an overhead display and discuss how to work a crossword puzzle. Pencils stay down!
- Show students how to find answers using the resources in the classroom and in the back of the book.

GOALS: 1. Students become familiar with the

application page (P. 11) and discuss how to answer multiple choice and open-ended testlike questions. Refer to pages 4 - 5 as a reminder.

• Review Lesson 1's

You may need to repeat Step 2 for the first two

program. 2. Students are

introduced to grade level math concepts and state assessment-type problems.

3. Students begin to develop critical-thinking skills and problemsolving strategies.

4. Students begin to learn resource skills. or three lessons until you're certain students are ready with the various types of clues and how to solve them. Once you know they're ready, students can advance to Step 3.

Puzzle Solving Strategies for Students:

- 1. Read clues and answer the easiest. (You don't have to solve clues in order!)
- 2. Cross out clues you've solved to keep track of which are left.
- 3. Partial words provide hints. (Ex. "100% of 30". "t _ r _ ".)

STEP 3: CLASS SESSIONS 4 – 6:

SMALL GROUPS. Guided practice: students think

program.

aloud. Hand out books for classroom use. Students may keep their books, but the books stay at school during Step 3.

Small Group Activities:

- Students work collaboratively in groups of 2 or 3 to complete their lesson.
- communicate their understanding of mathematical concepts. • Students revisit the

Lesson 1 crossword puzzle (P. 10) and application page (P. 11) in their own book.

- The teacher monitors the group, and looks for minilessons and teachable moment opportunities for more modeling.
- Students are to "think aloud" and share their strategies and solutions.
- The teacher encourages discussion (academic discourse)!
- You may need to repeat Step 3 for the first two or three lessons until you're certain students are ready with the various types of clues and how to solve them. Once you know they're ready, students can advance to Step 4.

2. Students work toward independence by reasoning logically and making connections.

GOALS:

their confidence with the

1. Students increase

3. Students share strategies with their peers.

4. Students effectively



STEP 4: REMAINDER OF THE YEAR.

Independant practice.

This step can be done in one of two ways:

OPTION 1: CLASSWORK.

Assign a lesson every week.

Classwork Activities:

- Students now keep their own book.
- Students work independently or collaboratively on assigned lessons.

Option 1 GOALS: 1. Students practice and develop their scholastic independence.

2. Students build their knowledge base by steadily visiting/revisiting concepts.

3. Instruction is enhanced through the spiraling of the state and national standards.

4. Students practice math content and process strands, and develop testtaking skills.

• The teacher

monitors group work and continually assesses the need for more modeling.

- Students are to "think aloud" and share their strategies and solutions.
- The teacher encourages academic discourse!
- Find "Great Teaching Moments" so the whole class benefits.
- Students complete at least one lesson per week, and the teacher uses this lesson for classroom review.
- The teacher uses this weekly review as an opportunity for mini-lessons and teachable moments, because academic discourse (discussion) helps students learn and retain critical skills and information.
- Students do an assessment lesson in class every month, and the teacher collects the books to record progress.
- Some teachers may encourage their students to work ahead, so remind these students not to do every fifth lesson, as these are assessment lessons completed monthly in class.

Important Note: Working the Lessons into Your Class Schedule.

- This is a supplemental program, intended to accelerate student achievement, build math concepts and math vocabulary (literacy) essential for success on the state tests, and provide yearlong weekly practice with state test-like questions.
- Work the lessons into your daily math period.
- Have daily puzzle time, just as many classrooms have daily silent reading time.
- Have students work on their lessons at the beginning of class, as a transition to academics.
- Place students into puzzle teams so they can collaborate and communicate.
- As students complete other work, make puzzles a "choice" activity.
- These academic puzzle lessons are excellent for substitute teacher lesson plans.

OPTION 2: STUDENTS WORK AT HOME.

Assign a lesson every week.

Work-At-Home Activities:

• Students work on their weekly lesson at home, and may use a Puzzle Partner's help.

Option 2 GOALS: The goals are the same as in OPTION 1.

- A Puzzle Partner is an older person (Mom, Dad, grandparent, neighbor, older sibling...) that is available to answer questions and help with the clues if needed.
- Students bring their books back to class for "Puzzle Time", a weekly class check-in.
- The teacher selects certain problems for class review and academic discussion.
- Students share their strategies and solutions.
- Students take the monthly assessment in class.
- Some teachers may encourage their students to work ahead, so remind these students not to do every fifth lesson, as these are assessment lessons completed monthly in class.

P U Z Z L E W I S E [™]									
A simple step-by-step year-round program to augment your current lessons so public, private, and home school students develop into knowledgeable, independent self-motivated life-long learners.									
• Greatly increase students' state mandated math test scores • Increase parental involvement • Double school-home communication • Increase enjoyable grade-level math activities outside of school									
PUZZLE BUDDY CONTACT Please write the name of your Puzzle Buddies and their relationships to you here: Name: 1. Relationship: 1. 2. 2.									
PARENT CONTRACT									
Dear Parents and Guardians,									
This school year we request that you support your child's learning by ensuring your child completes one lesson in this book each week. Every your child should bring his/her puzzle book to school so the teacher can review the completed work and check progress. Please check the statements below that work for your family and sign this contract showing your support for this program.									
\Box I have read the Helpful Hints for parents on page 9 and will follow those that make sense for our family.									
\Box I will make sure my child takes his/her puzzle book to school on the scheduled days.									
□ I will monitor my child's progress on a regular basis, encouraging him/her to keep up with the weekly schedule.									
□ I understand that my child does not have to finish the puzzle homework assignments. It's more important that my child tries hard, because success is often achieved with steady steps over time.									
\Box I will notify my child's teacher if my child experiences repetitive frustration.									
\Box I will help my child see that working on these crossword puzzles and lessons is fun and purposeful.									
I will help my child find a safe place in our home where this book can be kept. I will notify the teacher if my child loses or misplaces the PuzzleWise™ book.									
I agree to the statements I have checked above.									
Parent/Guardian									

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Helpful Hints For Parents and Guardians

Recommendations:

If you are home schooling, or want your child to have additional math literacy, read the Guide on pages 6 - 7. Follow the guidelines where it makes sense to do so.

- 1. Communicate with your child about the strategies and problem solving involved in completing the crosswords.
- 2. Partner with other parents, their children, or a senior who enjoys crosswords so they can work the crosswords together.
- **3.** Carry the puzzle book in the car so it's available during car rides, waiting room visits, and other "I'm bored" times.
- 4. Alternate completing answers. Your child may answer the 'across' clues as you answer the 'down' clues. Take turns completing answers.
- 5. Use the crossword puzzles as a form of assessment to help you plan the math instruction for the day. For example, if your child struggles with the clue, '...How many more grapes does Julie have than Joe?', then focus your daily lesson on that type of problem.
- 6. It's very important that you understand your child is being exposed to unfamiliar material, and it's all right if your child doesn't finish all the clues in the puzzle.
- 7. As long as your child makes a good attempt to finish the assignment every week, that's sufficient. As the year advances, and more skills are learned and matured, more of each puzzle will be completed. It's more important that your child tries hard, because success is achieved with steady steps over time.
- 8. Remember, if you want your child to embrace learning as a leisure time activity, you need to model doing crossword puzzles during your 'off time', too! When you show yourself as a life long learner who enjoys puzzles, your child is likely to do the same.
- **9.** Make sure there's laughter in your puzzle time, so crosswords are not "a chore". Do all you can to make the puzzles enjoyable and worthwhile for your child.