



Course Crafters
COMMITTED TO EXCELLENCE

Perfection Learning®
Perfect for YOUR Classroom

ACADEMIC LANGUAGE NOTEBOOKS™

THE LANGUAGE OF
MATH

A supplementary program to ensure ELLs' academic success

RESPONSE TO INTERVENTION

Tier 1

Tier 2

Tier 3

Perfect fit for
Response to Intervention (RTI)
Tier 2 programs



*"What an incredible and much-needed resource for educators
working with English language learners!"*

Margo Gottlieb, Ph.D. • Director, Assessment & Evaluation, Illinois Resource Center • Lead Developer, WIDA Consortium

phone (800) 831-4190 • fax (800) 543-2745 • perfectionlearning.com



Program Overview

The Academic Language Notebooks: The Language of Math

“The Academic Language Notebooks are explicit and user-friendly and the lessons are visually engaging and clear. This is the supplemental academic English instruction series we’ve been looking for to assist staff in our high intensity, pull-out, and integrated models of Structured English Immersion.”

Graciela Trilla, Ed.D.
Supervisor of English
Learner Education
Haverhill Public Schools
Haverhill, MA

The *Academic Language Notebooks: The Language of Math* were developed especially to help ELLS at intermediate and advanced levels of English language proficiency learn and practice the essential mathematics language and concepts these students need to succeed academically at grade level.

The *Academic Language Notebooks (ALN)*

- teach the essential academic language of the grades 3, 4, and 5 mathematics curriculum—*ALN supports grade-level content standards in English language development and math.*
- can be used in a variety of settings—*pull-out, push-in, and before- and after-school programs.*
- are modularized and non-sequential—*any module can be used with any math textbook or curriculum.*
- are correlated to the most common math textbooks—*easily supplement your existing curriculum.*
- are designed for educators with varying levels of exposure to ELLs, from tutors and classroom aides to experienced ESL teachers—*ALN builds ELL professional development into every lesson.*
- feature a unique Student Learning System that collects each student’s work over time—*ALN becomes a personalized resource for ELLs and a portfolio of student progress for their teachers.*
- establish and measure standards-based objectives of student performance—*ALN helps teachers assess and support ELLs’ academic achievement.*

***The only program that addresses
academic vocabulary
AND
develops the academic language
needed to solve math problems.***



What is Academic Language?

Academic English is the language ELLs need in order to succeed in academic settings. Academic English differs from the social English that students use to carry on conversations about everyday situations.

The academic language of math includes vocabulary, both specialized math vocabulary and everyday words with additional math meanings (such as *volume*, *carry*, or *plane*). It also includes grammar, such as translating word order into mathematical symbols (the sentence “*The number a is 5 less than the number b*” isn’t $a = 5 - b$, but $a = b - 5$), and language use, such as knowing how to explain a mathematical process.

Teaching Academic Vocabulary

- **Make the meanings of words explicit and clear.** Demonstrate meaning through visuals, examples, and contextualized activities before introducing formal definitions.
- **Actively involve students in vocabulary learning.** Link meaningful, hands-on activities with vocabulary learning.
- **Expose students to vocabulary as much as possible, as many times as possible.** ELLs need multiple repetitions in different contexts in order to gain a deep understanding of new terms.

Teaching Academic Grammar

- **Introduce grammar points in context.** Provide multiple examples in contexts that students are familiar with.
- **Focus on grammar throughout a math lesson.** Provide activities where students have to use the language while they are doing math.
- **Do not correct students’ grammar mistakes.** Instead, model the correct structure by rephrasing what students say when you respond to them.

How Does ALN Fit Different Classroom Models?

1

Mainstream Academic Classrooms

- Non-sequential, topic-based modules that easily plug into the grades 3–5 curriculum
- Direct support of grade-level math curriculum and textbooks to ensure focus on the academic language ELLs need to succeed in the regular classroom

2

ESL and Structured English Immersion Programs

- Comprehensive scope of essential academic language, as identified by research
- Combination of performance-based and standardized assessments to measure and support learning—on the lesson level and throughout the school year

3

Bilingual Education Programs

- Visual presentation of content accesses students’ background knowledge first and connects what they know to learning academic English
- English-Spanish glossary and list of cognates leverages Spanish-speaking students’ native language to help them transfer math knowledge into English

4

After School and Summer Programs

- Built-in professional development, including models of comprehensible “teacher talk,” makes the program easy to implement for inexperienced teachers, aides, and tutors
- Interactive, engaging activities motivate students to review essential math concepts while building academic language



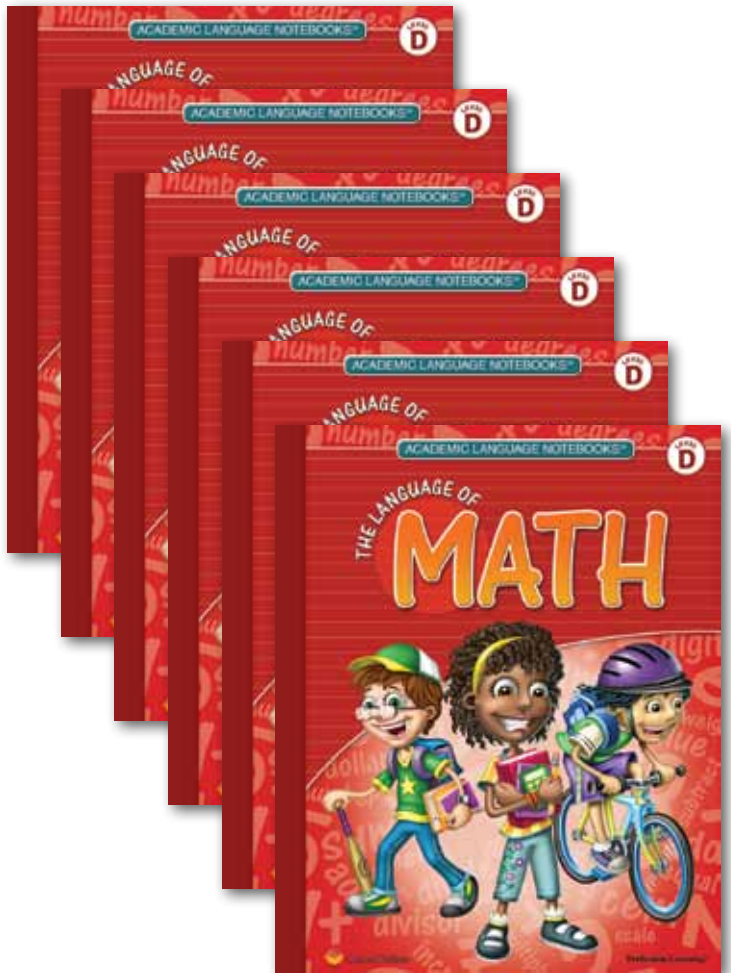
Program Materials

Exceptional Support for ELLs and Their Teachers

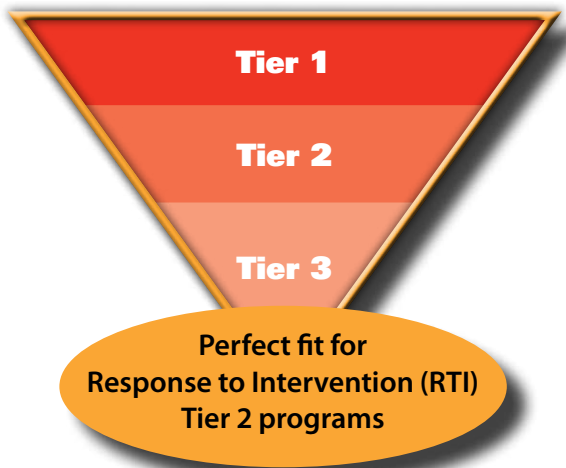
Student Components

Student Worktext (6-Pack)

Thirty modules at each grade level build background knowledge, model correct academic language usage, and encourage language practice.



RESPONSE TO INTERVENTION



“Learning content in a new language is a challenge for English Language Learners. Materials such as the Academic Language Notebooks provide ELLs with an exceptional, high quality opportunity to develop the academic language needed for attaining high standards. Not only do students have an opportunity to learn vocabulary and other language needed for academics, they also acquire important strategies that build a foundation for success.”

Myriam Met, Ed.D.

National Foreign Language Center
University of Maryland • College Park, MD

All of the materials in the easy-to-use *Academic Language Notebooks (ALN)* program support ELLs' success—and their teachers' success, too.

Teacher Components

Teacher/Tutor Resource Book (TTRB)

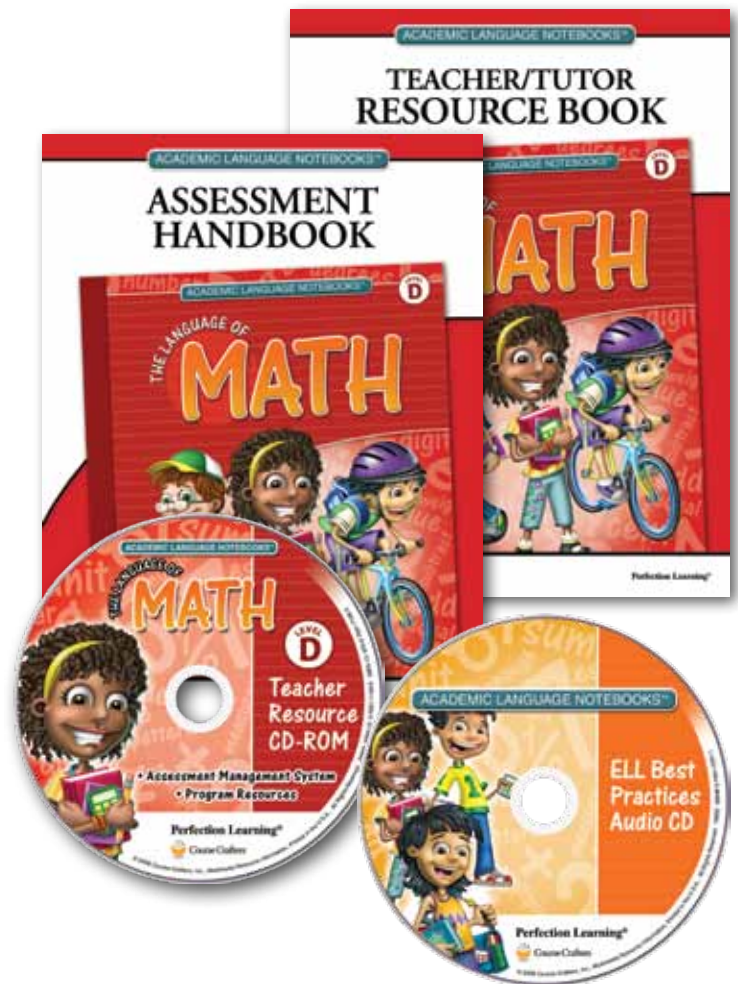
Designed for all ELL teachers, tutors, and aides—even those with little or no experience with these students. All lessons follow a simple, predictable format: Introduce, Teach, and Learn; Review and Practice; and Assess and Intervene. Research-based ELL Best Practices are directly translated into teacher practice through suggested teacher talk, models for differentiated instruction, and assessment rubrics.

Teacher Resource CD-ROM

- **NEW!** diagnostic tests—two 100-question tests aid in evaluating students' understanding of math concepts for placement and summative assessment purposes.
- assessment management system
- student worksheets
- **NEW!** reproducible pdfs of Student Vocabulary Cards
- pdfs of teacher transparencies for whiteboard use
- lesson-level assessment rubrics
- textbook correlations and planning resources
- **NEW!** correlation to Common Core State Standards

Assessment Handbook

An overview of the assessments in ALN, instructions for using the assessment management system, and reproducible copies of lesson-level assessment rubrics.



Teacher Transparencies

Reproductions of important illustrations, charts, diagrams, and other teaching aids and activities from the Student Worktext and the TTRB. There are two for every module in ALN, 60 per grade level.

ELL Best Practices Audio CD

Portable professional development for teaching ELLs—takes research and turns it into actual techniques to use in your classroom.



The Teacher/Tutor Resource Book

Translates ELL Best Practices into Effective Instruction

All lessons follow a simple, predictable format.

- A INTRODUCE**
Teachers encourage students to connect what they know about the topic to what they will be learning.
- B TEACH AND LEARN**
Essential vocabulary is explicitly taught during the lesson. For students needing additional help, more activities to teach vocabulary are included in the TTRB.
- C REVIEW AND PRACTICE**
Review and Practice activities help to reinforce new language, key skills, and concepts taught in the lesson.
- D ASSESS AND INTERVENE**
Assessment rubrics in each lesson make it easy for teachers to determine if students have achieved the objective, and which learners could benefit from intervention.

TTRB Lesson One: *Understand the Main Idea*

- 1. Teachers are alerted** to the mathematical concepts and academic language ELLs need to know to be successful in the module.
- 2. Before teachers begin,** they know how long the lesson will take, when to teach the material in relation to the core math textbook and the Student Worktext, and what materials will be needed.
- 3. Six ELL Best Practices are integrated** throughout the TTRB—professional development built into every lesson.

Understand the Main Idea
Objective: Identify an estimation problem and practice how to talk about it using clear words.

30 minutes

TEACH AND LEARN
Introduce the concept of estimation. Use the estimate and an estimator on the board. Read to and pronounce the words, and have students repeat them. Say, 'Estimate' and repeat. Repeat the same step to add on subject to my friend, 'estimate.' A good estimate is a quick way to find an amount. Tell students that \$2.00 was an estimate of what the eggs, milk, butter, and cheese would cost.

REVIEW AND PRACTICE
Write each, exactly, approximately, and approximately on the board.
Have students fold and tear a sheet of strip paper into four pieces. Ask them to write one of the four words on each piece of paper.
Pick up a handful of paper clips. Say, 'I have approximately an amount of paper clips. I have the approximate number of paper clips. Then count the paper clips. Say, 'I have exactly 10 paper clips.' Do it a few more times with paper clips. Model holding up the paper with the correct word on it so you say each of the four words.

ASSESS AND INTERVENE
Does every student understand what students have to focus on Practice Applying the Main Idea on page 111 (in the rubric) to identify students who need extra support through additional help and the intervention activity.

- 4. Words and phrases that may affect comprehension**, and a student's ability to get the correct answer, are highlighted on each reduced Student Worktext page.
- 5. Language support is provided** where appropriate for Spanish-speaking students during the lessons. Support is also provided in the Student Worktext in the glossary where English and Spanish words are listed. A list of Spanish/English cognates is also included.
- 6. Each lesson includes a rubric** that uses specific tasks from the Practice Activity to allow teachers to evaluate students' performance.

Every mathematics module is made up of four lessons—Understand the Main Idea, Learn the Vocabulary, Use More Language, and Solve Math Problems.

TTRB Lesson Two: *Learn the Vocabulary*

1. Teachers encourage students to connect what they know about the topic to what they'll be learning.

2. Essential Vocabulary is explicitly taught during the lesson. Some students may need help with Additional Vocabulary related to the math topic. More activities to teach vocabulary are included in the TTRB.

Lesson Objective Our vocabulary words that will help you talk about estimation.

Essential Vocabulary
 reasonable, an exact answer, impossible, an estimate

Additional Vocabulary
 overestimate, greater than/less than, estimate, high, rough

Word	Definition	Example
an estimate	an amount that is close to the actual amount, but not exact. (A rough guess.)	\$3.47 + \$4.25 = \$7.72 My estimate: \$2.00 + \$3.00 = about \$5.00
an exact answer	a precise, accurate answer, an answer that is not an estimate.	$41.92 + 21.36 = 63.28$ exactly That is the exact answer.
overestimate	when an estimate is too high.	$12 + 18 = 30$ is an overestimate.
underestimate	when an estimate is too low.	$28 + 18 = 46$ is about 22. My underestimation: $28 + 18 = 30$ is about 40, that is too low.

Review and Practice

Assess and Intervene

3. Essential Vocabulary is introduced and taught orally and contextually, by making frequent use of visuals and manipulatives.

4. Other core program components, such as vocabulary cards and transparencies, are integrated in the lesson plan at point-of-use.

5. Intervention activities provide specific suggestions and easy-to-implement extra practice for students who need it.



Carefully-Crafted Lesson Plans

Strong, Effective Teacher Support

Each Teacher/Tutor Resource Book (TTRB) lesson plan provides suggestions for differentiating instruction with intermediate and advanced ELLs in grades 3–5. The TTRB also features guidelines for assessment and intervention in every lesson, and extension and enrichment activities in every module.

TTRB Lesson Three: *Use More Language*

1. ELLs use and build background knowledge by transforming words or pictures in their math textbook lesson about estimation and using language they already know.

2. Ease of use by the teacher is key. All reduced Student Worktext pages in the TTRB include answers.

Objective Use language to explain how to solve estimation problems.

45 minutes

- After lesson on estimation to the math textbook.
- Before students complete the activity on page 3 of the student worktext.

Use More Language Materials:

- A blank number line for each student.
- A hand page.
- A hand page.
- Estimation problems from grade-level math textbook.
- Worksheet 3 (one copy for each student).

Introduce

Revised students that they have learned about rounding before. Ask: Is rounding used in real life situations? If so, what are some examples? (e.g., \$1.55, 1.55, and 1.55) Ask students to round each number up or down and explain why. Then say: Rounding up or down helps us estimate.

Teach and Learn

Have students open the student worktext to page 3. Say: When you explain how to do something, you should first tell what you do, and then tell why. The steps on this page will show you how to do that.

Read Step 1 with students. Say: (What does the picture tell me that I need to estimate? I know I need some rounding to make a good estimate. Have students circle the words rounding and estimate.)

- Say: Now we need to write the problem. Write the example problem on the board, and have a volunteer write the estimated answer.

Review and Practice

Review the Lesson Objective by asking students: (What's an important word that helps explain estimation problems?) (discuss)

Ask several volunteers to paraphrase the steps involved in explaining how to solve estimation problems. Summarize the steps. Write: 1. Estimate. 2. Explain how and why you estimated. Point to the sentence frame on the board and provide a model sentence.

Write the following problems on the board:

1,234	6,789
- 567	- 345
-----	-----

Have partners estimate the answers to each problem and then explain the problems in writing. Make sure students know that when adding or subtracting, it's best to pick a place value such as hundreds and round all numbers in that place. Remind students that they can use their student worktext for reference.

Have individual students solve and explain the problems set in Practice the Language on page 3 of the student worktext. Circulate and assess students as they do the activity.

Assess and Intervene

How well can students explain how they solved estimation problems based on Practice the Language on page 3? Use the rubric to identify students who need extra support through additional help and the intervention activity.

Intervention

If students cannot solve how an estimation problem was solved, give them to explain the steps of an estimation problem only, without a picture. If they still cannot succeed, have them write the correct steps that they did in the student worktext, and any necessary vocabulary on the back card. Provide a list of additional vocabulary with simple definitions that will help students make sense. Write general, fully correct explanations if students continue to struggle.

3. During Review and Practice, students work in small groups or pairs and teachers circulate to check and assess progress.

4. Assessment rubrics in each lesson make it easy for teachers to determine if students have achieved the objective, and which learners could benefit from intervention.

The Teacher/Tutor Resource Book (TTRB) is designed for all ELL teachers, tutors, and aides—even those with little or no experience with these students.

“This is a wonderful program that will benefit students as well as teachers. Teachers and tutors will now have appropriate materials to teach students the vocabulary and language they need to function in the mainstream math classroom. The presentation is focused, functional, and concrete.”

Ellen Balla

ELL and Basic Skills Teacher, K-6, Simsbury (Ct.) Public Schools

TTRB Lesson Four: *Solve Math Problems*

1. Teachers use the final lesson in the module after the grade-level math class, and before students complete the Solve Math Problems lesson in their Student Worktext.

2. In Extension and Enrichment, hands-on activities encourage proficient students to use and apply what they've learned.

The screenshot shows a lesson page titled "Solve Math Problems" with a "30 minutes" duration. It includes sections for "Objective", "Teach this lesson", "You need these materials", "EXTENSION AND ENRICHMENT", "A Introduce", "B Teach and Learn", "Think Aloud", "Review and Practice", "D Assess and Intervene", and "INTERVENTION".

3. As teachers do the Think Aloud, students hear academic language and polish their listening and problem-solving skills.

4. Worksheets provide opportunities for extra, structured practice with difficult concepts and language.

5. Intervention activities provide direct support in reteaching the most difficult language or content. In the Intervention for this lesson, the problem is not likely to be language, but determining an estimate or approximate answer.



The Student Worktext

Focused on Building ELLs' Academic Success

Builds Math Background and Academic Language

The unique Student Worktext—one per grade level—is at the core of the *Academic Language Notebooks (ALN)* program. These engaging, interactive materials build background knowledge, model correct academic language usage, and encourage lots of language practice.

Each of the 30 modules in the Student Worktext includes four lessons:

Lesson 1: Understand the Main Idea

1. Objectives tell students in easy-to-understand language what they'll be able to do after completing each lesson.

2. Characters use language in real-life contexts, providing models of academic language use for students.

3. The written Main Idea explicitly states the critical math concepts for the module in comprehensible language.

4. Practice Applying the Main Idea makes sure students understand the critical math concepts and can apply what they know about the main idea.

Lesson 2: Learn the Vocabulary

1. Charts contextualize the academic vocabulary and provide visual definitions of math concepts.

2. Clear definitions for all Essential Vocabulary are provided in the lessons and in the glossary at the back of the Student Worktext.

4. Students are challenged to use academic vocabulary to create complete sentences.

3. Practice the Words checks students' understanding of vocabulary needed to meet lesson objectives.

The engaging Student Worktext develops the academic language ELLs need to understand and accomplish grade-level math work.

Prepares ELLs for Math Class, Textbooks, and Tests

The modules in the grades 3, 4, and 5 Student Worktexts correspond to grade-level topics in the math curriculum and math textbooks. Each of the modules zeros in on the most difficult academic language of the topic, helping students prepare for class work and tests.

Lesson 3: Use More Language

Use More Language

Objective Use because to explain how to solve estimation problems.

Learn the Language

Directions Follow each step to explain how to solve estimation problems.

Step 1: Use rounding to estimate. Solve the problems by calculating the sum or difference.

Example $456 \rightarrow 500$
 $-314 \rightarrow 200$
about 200

Step 2: Describe how and why you estimated.

Example 456
I rounded _____
because _____
is closer to _____
than to _____.

400 500
I rounded 456 up to 500 because the number 456 is closer to 500 than to 400.

300 400
I rounded 314 down to 300 because the number 314 is closer to 300 than to 400.

Practice the Language

Directions Use rounding. Explain how to solve each problem on a separate sheet of paper using the word because.

Example 659 First, I rounded 659 up to 700 because 659 is closer to 700 than to 600. Then, I rounded 136 down to 100 because the number 136 is closer to 100 than to 200. I added 700 and 100. My estimated sum is 800.

278 84.96 $13,289$
 -222 -83.83 $-84,799$

1. Students practice and use language and math concepts through activities that motivate and engage.

3. Students demonstrate understanding of academic language and concepts by answering questions using data.

2. ELLs learn better if learning objectives are clear and achievable. Lesson objectives are shared frequently with students, in oral and written form.

Lesson 4: Solve Math Problems

Solve Math Problems

Objective Use clue words to identify and explain when to estimate and when to find an exact answer.

Learn to Solve Problems

Directions Follow each step to solve the problem. Go back to page 1 to review important clue words.

Problem It takes approximately 2 to 4 lemons to make a pitcher of lemonade. Malik expects to sell about 2 pitchers of lemonade. About how many lemons will Malik need?

Step 1: Read the problem. Circle the clue words. Should you find an estimate or an exact answer? I should estimate. Explain why. I need to estimate because the problem uses the clue words approximately, about, and about how many.

Step 2: Solve the problem. What is the answer? Malik needs about 10 lemons.

Step 3: Read the problem again. Check your answer to see if it is reasonable? Yes, my answer is reasonable. There are 2 to 4 lemons in a pitcher of lemonade. So 2 pitchers would need about 10 lemons.

Practice Solving Math Problems

Directions Follow the steps above to solve the problems. Write the answer to each step on a separate sheet of paper.

1. Fatima is having a birthday party. There are 22 children in her class, and she wants to invite all of them. She also wants to invite 8 or 9 children from her neighborhood. About how many invitations will Fatima need?

2. Last Saturday, Tachis went to a family reunion. 77 people came in the morning, and 124 people came in the afternoon. How many more people came to the family reunion in the afternoon than in the morning?

3. Maria's father wants to build a desk for Maria's room. Maria's room is 9 feet 10 inches wide. Her bed is 2 feet 8 inches wide. Maria already has a small bookshelf next to her bed that is 2 feet 4 inches wide. About how much space is left for the desk?

4. On Friday, exactly 253 people went to the movies. On Saturday, the movie theater sold 202 tickets. How many people went to the movies on both days?

1. ELLs use problem-solving strategies and solve math problems to demonstrate their understanding of the topic.

2. Learn to Solve Problems model the thinking process and the language students need to complete each step of the problem.

3. ELLs solve grade-level-appropriate word problems to demonstrate knowledge and understanding. To answer, they use sentence-level language they've learned in the module.



ACADEMIC LANGUAGE NOTEBOOKS™

THE LANGUAGE OF
MATH

Try ALN in your classroom!
Grade-Level Samplers and Program Scope are available at perfectionlearning.com/aln

5 Ways to Order

- 1 Call: (800) 831-4190**
Monday–Friday,
7:30 a.m. to 4:00 p.m.
(Central Time)

Outside the U.S.A.
and Canada, call
(712) 644-2831
- 2 Fax your order:**
(800) 543-2745
(24-hour fax service)
- 3 Visit our Web site:**
perfectionlearning.com
- 4 Email your order:**
orders@perfectionlearning.com
- 5 Mail your order:**
Perfection Learning
1000 North Second Avenue
P.O. Box 500
Logan, Iowa 51546-0500

Item Number	Item Description	Price	Qty.	Total
TCT25454	Grade 3 Grade-Level Kit	\$495.00		
TCT22320	Grade 3 Student Worktext (6-pack)	\$ 89.70		
TCT25455	Grade 4 Grade-Level Kit	\$495.00		
TCT22321	Grade 4 Student Worktext (6-pack)	\$ 89.70		
TCT25456	Grade 5 Grade-Level Kit	\$495.00		
TCT22322	Grade 5 Student Worktext (6-pack)	\$ 89.70		
TCT2571001	ELL Math Collection	\$345.36		
TCT2571101	The ELL Reading Corner, Grades K–2	\$193.26		
TCT2571201	The ELL Reading Corner, Grades 3–5	\$249.92		
TCT2571301	The ELL Reading Corner, Grades 6–8	\$223.58		
TCT2571401	The ELL Reading Corner, Teacher Reference Collection	\$ 37.76		

Prices are subject to change without notice.

Each Grade-Level Kit includes

Student Components

- Student Worktext (6-pack)

Teacher Components

- Teacher Tutor Resource Book
- Teacher Resource CD-ROM
- Assessment Handbook
- Teacher Transparencies
- ELL Best Practices Audio CD

Total	
*Sales Tax	
**Shipping	
GRAND TOTAL	

TCT
4048/1011/8/1