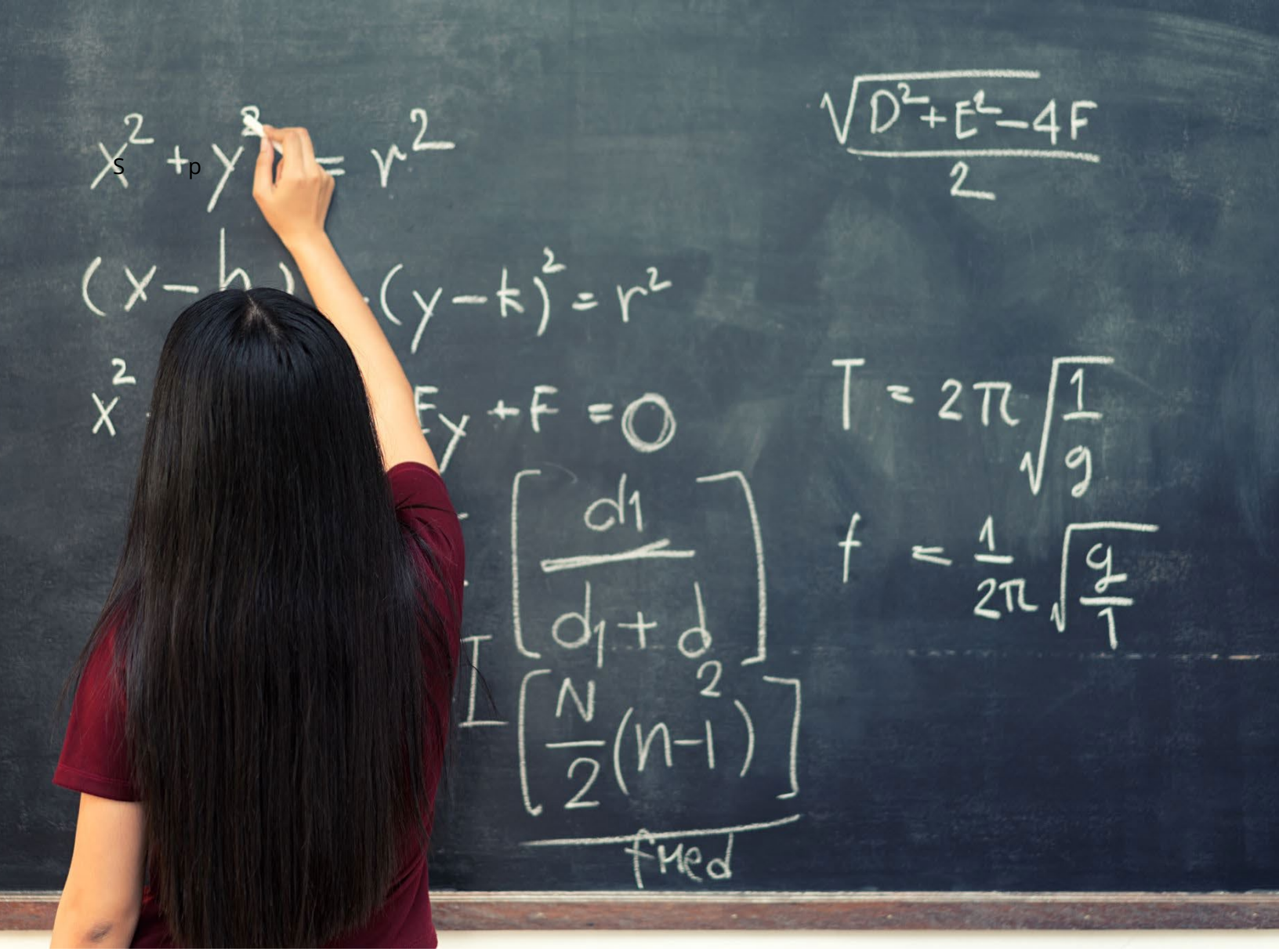

English Language Development & Standards for Mathematical Practice Crosswalk

For Grades K - 12

Tennessee Department of Education | November 2025

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Introduction

A standards crosswalk is a tool designed to align different sets of standards and instructional practices, enabling educators to compare expectations and identify areas of intersection. In this document, the Tennessee **English Language Development (ELD) Standards** are systematically crosswalked with the Tennessee Standards for Mathematical Practice to support integrated instructional planning for English learners (ELs).

The eight **Standards for Mathematical Practice (SMP)** are an essential component of Tennessee's mathematics standards across K-12. They describe the habits of mind, varieties of expertise, and productive dispositions that educators seek to develop in all students. These practices reflect the behaviors of developing mathematicians as they engage in increasingly sophisticated problem-solving and conceptual reasoning throughout their school years. They highlight that doing mathematics is not simply mastering procedures, but also adopting ways of thinking, reasoning, and communicating that are central to the discipline. (ELPA21, 2014).

Background

The Tennessee State Board of Education adopted the Tennessee English Language Development (ELD) Standards in August 2024 to strengthen instructional support for English learners (ELs) and ensure their success in academic settings. These standards are designed to develop students' English language skills in tandem with the rigorous academic content they encounter across core subjects.

To fully realize this goal, it is essential to establish clear alignments between the ELD standards and the Tennessee Academic Standards already in use. The adoption of the ELD Standards builds on this foundation by creating explicit opportunities for educators to connect the SMPs to the language functions and forms that ELs require to fully participate in mathematical thinking. Just as reading and writing form the foundation for engaging with literature, the Standards for Mathematical Practice can be understood as the "reading and writing" of mathematics, while the content standards serve as the "literature." Aligning to the practices rather than to the content standards ensures that the *language* of reasoning, modeling, and explanation is foregrounded (Council of Chief State School Officers, 2012; ELPA21, 2014).

By cross walking the SMPs with the ELD Standards, this document provides a framework for supporting language-rich mathematics instruction that benefits all students, while offering targeted access for English learners. By supporting the development of language through content, this alignment enhances both language proficiency and content mastery. The ELD Standards Crosswalk provides practical guidance to help educators design instruction that closes opportunity gaps and promotes equitable access to grade-level learning for ELs across Tennessee.

Purpose

The purpose of this Crosswalk is to provide educators with a supplementary tool that bridges the Tennessee ELD Standards and the Tennessee Standards for Mathematical Practice. By illuminating where language demands intersect with mathematical practices, this resource supports instructional planning in all phases to embed language objectives meaningfully within mathematics instruction.

This alignment ensures that instruction is not only mathematically rigorous but also linguistically responsive, giving ELs equitable access to grade-level mathematics. By intentionally integrating language development with the SMPs, educators can help students build both the disciplinary habits of mind and the communicative competencies needed for success in college and career.

Ultimately, the goal of the Mathematical Practices Crosswalk is to enhance academic outcomes for English learners by promoting access, fostering high expectations, and supporting instructional coherence across mathematics classrooms statewide.

The Standards

Tennessee English Language Development (ELD) Standards

In August 2024, the Tennessee State Board of Education adopted the ELPA21 English Language Proficiency (ELP) Standards (2014) as the official Tennessee English Language Development (ELD) Standards. These standards serve as the foundation for supporting English learners (ELs) in developing the language skills necessary for full access to rigorous academic content across all grade levels.

The Tennessee ELD Standards outline the critical language knowledge and skills that English learners must acquire to engage meaningfully in content-area practices, including English language arts (ELA), mathematics, and science. The standards are organized into ten overarching expectations:

1. Construct meaning from oral presentations and literary and informational text through grade-appropriate listening, reading, and viewing.
2. Participate in grade-appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions.
3. Speak and write about grade-appropriate complex literary and informational texts and topics.
4. Construct grade-appropriate oral and written claims and support them with reasoning and evidence.
5. Conduct research and evaluate and communicate findings to answer questions or solve problems.
6. Analyze and critique the arguments of others orally and in writing.

7. Adapt language choices to purpose, task, and audience when speaking and writing.
8. Determine the meaning of words and phrases in oral presentations and literary and informational text.
9. Create clear and coherent grade-appropriate speech and text.
10. Make accurate use of standard English to communicate in grade-appropriate speech and writing.

The structure of the standards reflects two major areas of focus:

- **Standards 1 through 7** involve the language necessary for ELs to engage in the central, content-specific practices associated with ELA, mathematics, and science. These standards begin with extracting meaning from academic texts and discourse and then progress toward active engagement in academic practices.
- **Standards 8 through 10** target key micro-level linguistic features such as vocabulary Sdevelopment, text cohesion, and accurate grammar use that support success in the broader academic practices outlined in the first seven standards.

Together, the Tennessee ELD Standards provide a comprehensive framework that integrates language development with academic content learning, ensuring that English learners are equipped for success in school, career, and civic life.

Tennessee Standards for Mathematical Practice

The Tennessee Standards for Mathematical Practice (SMP) articulate the essential habits of mind, reasoning skills, and dispositions students are expected to develop across all grade levels, ensuring they are prepared to apply mathematics in college, career, and daily life. These practices reflect both long-standing principles in mathematics education and research-based proficiencies that enable students to engage deeply with mathematical ideas.

Grounded in the National Council of Teachers of Mathematics (NCTM, 2000) process standards—problem solving, reasoning and proof, communication, representation, and connections—as well as the strands of mathematical proficiency identified by the National Research Council (*Adding It Up*, 2001), the SMPs highlight the integrated nature of mathematical understanding. Together, they emphasize conceptual understanding, procedural fluency, adaptive reasoning, strategic competence, and productive disposition.

The eight Standards for Mathematical Practice are:

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others

- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

The SMPs are not separate from mathematical content but serve as the lens through which students engage with it. Effective mathematics instruction purposefully connects practices with content to cultivate flexible problem solving and meaningful understanding. Content standards that emphasize "understanding" provide natural points of intersection with the practices, allowing students to explain their reasoning, make connections across concepts, and apply mathematics in real-world contexts.

Math Practices Through Language Modalities

The English Language Development (ELD) Standards and the Standards for Mathematical Practice (MPs) are deeply interconnected in both purpose and function. The ELD Standards organize language use into three modalities: receptive, productive, and interactive. These modalities describe how students engage with and communicate ideas. Receptive standards (such as ELD 1 and 8) focus on understanding and interpreting meaning through listening, reading, or observing; productive standards (ELD 3, 4, and 7) emphasize expressing and explaining reasoning through speaking, writing, and representing; and interactive standards (ELD 2, 5, and 6) describe the collaborative exchange of ideas where meaning is negotiated in real time. Together, these modalities capture how language is both comprehended, produced, and used to communicate in academic contexts.

When viewed through this lens, the Standards for Mathematical Practice can be understood as *contextual expressions* of these same modalities. The MPs describe what it looks like to think and communicate mathematically through interpreting information (receptive), constructing and explaining reasoning (productive), and engaging in mathematical discourse (interactive). While the MPs are contextually grounded in mathematical reasoning, the ELD Standards describe the linguistic functions that make that reasoning visible. Viewed together, they form a bridge between *what students do mathematically* and *how they use language to do it*. This supports both disciplinary thinking and language development as integrated, mutually reinforcing practices.

This Crosswalk identifies the primary language modality most closely aligned with each Standard for Mathematical Practice while recognizing that secondary interactive or productive modalities may also be present and instructionally significant. In classroom contexts, students move fluidly between interpreting, expressing, and negotiating meaning, so the designated modality represents the dominant language function of the practice rather than its only possible expression.

Four Literacy Standards of Mathematical Proficiency

In addition to the Standards for Mathematical Practice and the ELD Standards, the *Four Literacy Standards for Mathematical Proficiency* are an integral component of the K–12 mathematics standards. *(See Apprendix E).* Communication in mathematics requires literacy skills in reading, vocabulary, speaking and listening, and writing. These literacy practices provide an essential bridge between language and mathematics, ensuring that all students, including English learners, can access and express mathematical ideas effectively.

The four literacy skills necessary for mathematical proficiency are:

- Use multiple reading strategies
- Understand and use correct mathematical vocabulary
- Discuss and articulate mathematical ideas
- Write mathematical arguments

Together, the ELD modalities, literacy skills, and mathematical practices provide a comprehensive framework for integrating language and content instruction in mathematics.

Integrating with Instruction

This Crosswalk Document is designed to serve as a practical supplementary resource for Tennessee educators who are preparing, delivering, and assessing instruction that meets both the linguistic and academic needs of English learners. It provides clear alignments between the Tennessee English Language Development (ELD) Standards and the Tennessee Standards for Mathematical Practice, offering a framework to guide instructional decision-making.

Educators can use this document to:

- Identify and align English language development standards with academic standards of math practices.
- Plan lessons that integrate language functions and language forms into math content instruction.
- Highlight academic language that allows English learners to fully access and engage in rigorous academic tasks.

The Crosswalk includes a Standards of Mathematical Practice (SMP) correspondence matrix, standards concordance matrix, and detailed crosswalk charts organized by SMPs. Educators are encouraged to use the crosswalks during intellectual preparation to ensure that lessons provide both meaningful access to academic content and opportunities for targeted language development.

The Crosswalk is intended to be used flexibly. While it provides guidance on how ELD standards correspond to the SMP, it is not prescriptive. Educators are encouraged to use professional judgment to adapt and scaffold instruction based on their students' language proficiency levels, academic strengths, and individual learning goals found in the students' Instructional Learning Plan (ILP).

Standards Matrices

The first component of this Crosswalk document is a set of matrices. These matrices provide a high-level overview of how the Tennessee Standards for Mathematical Practice (SMP) align with the Tennessee English Language Development (ELD) Standards across K–12. The matrices highlight natural intersections between mathematical habits of mind and the language functions and forms students need in order to engage meaningfully in mathematics instruction.

The **Standards of Mathematical Practice to ELD Standards Correspondence Matrix** displays:

- Tennessee Standards for Mathematical Practice that identify the habits of reasoning, problem solving, and communication students are expected to develop.
- The associated language modality of each practice shows how students use language to engage in mathematical reasoning; and the
- Corresponding ELD Standards that specify the academic language, language functions, and language forms needed for English learners (ELs) to fully participate in these mathematical practices.

Additionally, a **Concordance Matrix** (also called a reverse matrix) is provided behind the Correspondence Matrix. In the reverse matrix, the ELD Standards are listed first, followed by the related Mathematical Practices. This structure allows educators to flexibly approach instructional planning, whether they are instructing math content based on a mathematical practice focus or on a language development objective.

Purpose of the Matrices

The matrices are designed to serve as a practical starting point for unit and lesson preparation, helping educators integrate content and language goals. Educators should begin by reviewing the matrix that best matches their intellectual preparation entry point:

- If the focus is on a specific **mathematical practice**, the **Correspondence Matrix** serves as the starting point.
- If the focus is on a particular **ELD Standard** or language function, the **Concordance Matrix** provides an efficient way to identify which mathematical practices require those language skills.

This dual-matrix structure ensures educators can plan instruction that is both mathematically rigorous and linguistically responsive. By aligning the SMPs with ELD Standards, educators are better equipped

to prioritize language development alongside mathematical reasoning, enabling all students—and especially English learners—to fully access and engage in mathematics learning.

Standards of Math Practice & ELD Standards Crosswalk Charts

The second major component of this Crosswalk document is the set of detailed **Crosswalk Charts**. These charts provide deeper guidance for instructional planning by connecting each Tennessee Standard for Mathematical Practice (SMP) directly to the Tennessee English Language Development (ELD) Standards.

Each detailed Crosswalk Chart begins with one of the eight Tennessee Standards for Mathematical Practice and identifies the related ELD Standards where natural intersections between mathematical reasoning and language development occur. For each intersection, the chart provides practical, teacher-facing supports to guide instruction:

- **Academic Language (with Spanish Cognates):**
  Lists key mathematical terms and phrases students need to access the practice and carry out the tasks described. The focus is not on content vocabulary but on the words and expressions that may be required to reason, explain, and justify mathematically. Spanish cognates are included to help teachers build on students' home language knowledge.
- **Language Functions:**
  Describes the actions students take with language while engaging in the mathematical practice—for example, explaining solutions, critiquing arguments, or modeling with mathematics. These highlight how students use language to demonstrate mathematical thinking.
- **Language Forms:**
  Provides examples of grammatical structures, sentence types, and discourse features that are critical to the practice. For example, SMP3 (Construct viable arguments) may rely on causal connectors (*because, therefore*), while SMP4 (Model with mathematics) may emphasize conditional structures (*if..., then...*). Embedding these forms into instruction helps students communicate with precision and clarity.
- **Questions and Sentence Stems:**
  Offers sample prompts and scaffolds teachers can use to support mathematical discourse and written responses. These may include frames such as *"My strategy shows..."*, *"I can prove this by..."*, or *"This pattern happens because..."*. These supports guide students to engage more deeply with the practice while developing academic language.

The detailed Crosswalk Charts are intended to serve as planning tools that make visible the **language demands embedded within the Mathematical Practices**. By starting with a practice and identifying its ELD connections, educators can plan lessons that integrate language objectives with content goals,

ensuring that English learners are supported in both developing mathematical expertise and strengthening their English proficiency.

Incorporating with Intellectual Preparation

Before teaching a lesson from HQIM...

Educators can consult the matrix and crosswalk chart to identify which **ELD standards** align with the SMP and content objective in the lesson of their HQIM. The tools help teachers:

- Create a **language objective** that aligns with the lesson's content objective.
- Anticipate **academic language** not explicitly surfaced in the HQIM materials.
- Identify the **language functions** required (e.g., describing, explaining, justifying).
- Prepare mini lessons for explicit teaching of **language forms** to meet the objective**.**
- Plan **questions or sentence frames** that support students' ability to do the task or skill.

*Example: Before teaching a math lesson with a focus on **Mathematical Practice SMP3: Construct viable arguments and critique the reasoning of others**, a fourth-grade teacher consults the crosswalk to identify the aligned ELD Standards. The teacher notices that students will need to use language for **explaining reasoning, agreeing or disagreeing with peers, and justifying conclusions**.*

*The teacher can anticipate that academic language such as "because," "therefore," "my evidence shows," and "I disagree because..." may not be familiar or consistently used by English learners according to the crosswalk. To support students, the teacher plans a mini lesson on using **causal connectors** and prepares sentence frames like: "My solution is correct because..."; "I noticed a mistake in the reasoning because..."; or "Another way to solve this problem is...".*

This preparation ensures that English learners have the language resources needed to participate fully in mathematical argumentation while also developing precision and confidence in their explanations.

During PLCs

Educators can use the Crosswalk to identify the **academic vocabulary, language forms and functions** expected in the HQIM task and consider how students at different proficiency levels might access the task. This tool helps ensure all students engage in the same HQIM task, but with **scaffolded linguistic access points** rooted in the demands of the academic and language standards.

The crosswalk helps teachers:

- Plan **scaffolds** or additional **access points** for students at entering, emerging, or developing stages of English proficiency when coupled with ELPA21's Reporting Performance Level Descriptors and/or the student's **Instructional Learning Plan (ILP**).
- Match **questions and sentence frames** to vocabulary supports and discourse routines that make content engaging while pushing language growth.
- Use **Spanish cognates** to inform targeted academic vocabulary instruction for Spanish-speaking ELs.

Example: During a grade-level PLC, teachers review student work from a task aligned to math content with a focus on ***Mathematical Practice SMP6: Attend to precision****. As they examine the responses, the crosswalk helps them identify that precision in this task requires students not only to calculate correctly, but also to* ***use accurate mathematical language, symbols, and explanations****.*

By consulting the crosswalk, the PLC notes which ELD Standards align with this practice. For example, producing clear explanations (ELD Standard 3) and constructing arguments supported with evidence (ELD Standard 4). Teachers realize that several English learners are solving problems accurately but leaving their explanations incomplete or imprecise.

The PLC uses this insight to identify the ***academic vocabulary*** *needed for precision (e.g., sum, product, difference, equation, solution); discuss* ***language forms*** *that support clarity (e.g., complete sentences with connectors such as equals, is greater than, therefore); and plan targeted scaffolds for future instruction based on these two features.*

By conducting student work analysis through the lens of the crosswalk, the PLC is able to distinguish between errors of ***content understanding*** *and gaps in* ***language use****, leading to more targeted instructional preparation that strengthens both math practice and language development.*

Planning Checks for Understanding

As part of lesson internalization and planning checkpoints, the **Questions and Sentence Stems** column in the Crosswalk Charts is a valuable resource for planning academic discourse and writing tasks and designing formative assessments that are accessible, engaging, and linguistically supportive for English learners. Teachers can use the tool to:

- Embed targeted **question stems and sentence frames** into instructional routines (e.g., turn-and-talks, quick writes, etc.) to support student expression and scaffold productive academic language use.
- Prepare scaffolded discussion protocols, writing prompts, or exit ticket **sentence frames** that align with both content and language goals.

*Example: In lesson preparation for a high school Algebra II lesson aligned to math content with a focus on **Mathematical Practice SMP7: Look for and make use of structure**, a teacher consults the Crosswalk Charts to conduct a check for understanding. The task requires students to recognize patterns in polynomial expressions and factor them efficiently.*

*Using the **Questions and Sentence Stems** column, the teacher anticipates the kinds of language English learners will need to explain their reasoning. The teacher embeds targeted scaffolds into instructional routines so students first have a chance to discuss. The teacher prepares an **exit ticket** that prompts students to complete a sentence frame such as: "Factoring is possible here because I recognized the structure of…".*

Corresponding & Concordance Matrices

The next pages contain the Correspondence Matrix and Concordance Matrix, designed to support instructional planning by connecting the Standards for Mathematical Practice and the TN ELD Standards.

Standards of Mathematical Practice Matrix to ELD Standards

TN Math Practice		TN ELD Standards									
		1	2	3	4	5	6	7	8	9*	10*
MP1	**Make sense of problems and persevere in solving them** Understand the problem, find a solution pathway, and keep working even when it's tough. *(R) Understand and interpret the problem text or context before reasoning.*	✓									
MP2	**Reason abstractly and quantitatively** Represent situations symbolically and make sense of numbers and their relationships. *(P) Generate symbolic or verbal representations to express reasoning about quantities and relationships.*			✓	✓			✓			
MP3	**Construct viable arguments and critique the reasoning of others** Explain your thinking clearly and consider and respond to others' ideas respectfully. *(P)* Construct formalized communication of claims, evidence, and reasoning for an audience *(I) Engages in structured argumentation, responding to counterclaims, and acknowledging or returning reasoning appropriately.*		✓	✓	✓	✓	✓	✓			
MP4	**Model with mathematics** Use math to solve real-world problems using equations, graphs, diagrams, and more. *(P) Express understanding by creating representations and describing how these connect to real-world situations*				✓			✓			
MP5	**Use appropriate tools strategically** Select and use tools (like calculators, rulers, software) that will best support problem-solving. *(P) Explain why and how a particular representation manipulative, or technology was chosen.*				✓			✓			
MP6	**Attend to precision** Communicate clearly, calculate accurately, and use correct math terminology. *(P) Demonstrates precision through the exactness of words, symbols, or sentence structures.*			✓	✓			✓			

MP7	**Look for and make use of structure** Identify patterns or structures in math, such as properties of operations or number systems *(R) Notice and recognize relationships, patterns, or forms within mathematical representations* *(P) Describe and/or apply patterns verbally or symbolically*	✓		✓	✓			✓	✓		
MP8	**Look for and express regularity in repeated reasoning** Notice repeated processes and use them to develop efficient problem-solving strategies. *(R) Observe consistency across problems or processes before expressing generalizations* *(P) Generalize patterns through expression*	✓		✓	✓			✓	✓		

This crosswalk identifies the *primary* language modality most closely aligned with each Standard for Mathematical Practice while recognizing that secondary interactive or productive modalities may also be present and instructionally significant. In classroom contexts, students move fluidly between interpreting, expressing, and negotiating meaning, so the designated modality represents the dominant language function of the practice rather than its only possible expression.

(R) Receptive modality refers to how students *understand and interpret* language through listening, reading, and observing. The core function(s) of the math practice begins with listening and reading and only becomes productive and/or interactive once students interpret language, visuals, and contextual information first.
(P) Productive modality refers to how students *express and communicate* ideas through speaking, writing, or representing understanding visually or symbolically. The core function(s) of the practice focuses on speaking and writing to express mathematical communication to a specific audience (teacher, peer, or written record) with purpose and structure.
(I) Interactive modality combines both, involving *two-way communication* in which students exchange ideas, negotiate meaning, and clarify understanding through discussion. The core function(s) of the practice includes reciprocal communication where meaning is negotiated in real time.

The **interactive modality** applies broadly across nearly all practices. Mathematical reasoning is inherently social and dialogic meaning students explain their thinking, question one another, and refine ideas through discussion. Even when a mathematical practice is primarily receptive or productive, interaction supports the development of precision, reasoning, and shared understanding. Thus, the interactive modality can be seen as an overarching feature that connects and reinforces all other language functions within mathematical discourse.

***Note on ELD 9 and ELD 10:** ELD 9 ("Apply knowledge of language to make meaning of complex texts and discourse") and ELD 10 ("Demonstrate command of conventions and vocabulary") are not explicitly mapped in this crosswalk because they function as cross-cutting language control standards rather than modality-based standards. Both emphasize accuracy, conventions, and word choice that support all three modalities—receptive, productive, and interactive—across every Mathematical Practice. While they are essential to precise mathematical communication, they do not represent a distinct type of language use. Instead, ELD 9 and 10 are embedded throughout the practices wherever students are expected to use academic language precisely, apply conventions correctly, and attend to the form and structure of mathematical reasoning.

ELD Standards to Standards of Mathematical Practice Matrix

TN ELD Standards		TN Standards of Math Practice							
		1	2	3	4	5	6	7	8
1	Construct meaning from oral presentations and literary and informational text through grade-appropriate listening, reading, and viewing (R)	✓						✓	✓
2	Participate in grade-appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions (I)			✓					
3	Speak and write about grade-appropriate complex literary and informational texts and topics (P)		✓	✓			✓	✓	✓
4	Construct grade-appropriate oral and written claims and support them with reasoning and evidence (P)		✓	✓	✓	✓	✓	✓	✓
5	Conduct research and evaluate and communicate findings to answer questions or solve problems (I)			✓					
6	Analyze and critique the arguments of others orally and in writing (I)			✓					
7	Adapt language choices to purpose, task, and audience when speaking and writing (P)		✓	✓	✓	✓	✓	✓	✓
8	Determine the meaning of words and phrases in oral presentations and literary and informational text (R)							✓	✓
9	Create clear and coherent grade-appropriate speech and text								
10	Make accurate use of standard English to communicate in grade appropriate speech and writing								

***Note on ELD 9 and ELD 10:** ELD 9 ("Apply knowledge of language to make meaning of complex texts and discourse") and ELD 10 ("Demonstrate command of conventions and vocabulary") are not explicitly mapped in this crosswalk because they function as cross-cutting language control standards rather than modality-based standards. Both emphasize accuracy, conventions, and word choice that support all three modalities—receptive, productive, and interactive—across every Mathematical Practice. While they are essential to precise mathematical communication, they do not represent a distinct type of language use. Instead, ELD 9 and 10 are embedded throughout the practices wherever students are expected to use academic language precisely, apply conventions correctly, and attend to the form and structure of mathematical reasoning.

Crosswalk Charts

The next pages contain the Crosswalk Charts, arranged by the Standards of Mathematical Practices and designed to support instructional planning by connecting key standards of math practices to the TN ELD Standards.

Mathematical Practice 1 & ELD Standards

TN Math Practice		TN ELD Standards									
		1	2	3	4	5	6	7	8	9	10
MP1	**Make sense of problems and persevere in solving them** Understand the problem, find a solution pathway, and keep working even when it's tough.	✓									

ELD Standard		Academic Language (Cognates)	Language Functions	Language Forms	Questions and Sentence Stems
1	Construct meaning from oral presentations and literary and informational text through grade-appropriate listening, reading, and viewing.	**comprehend** (comprender) **information** (información) **operation** (operación) **problem** (problema) **interpret** (interpretar) **describe** (describir) **identify** (identificar) **evaluate** (evaluar) **understand** **clarify** (clarificar) **analyze** (analizar) **reason** (razonar) **strategy** (estrategia)	**Identify and restate** problem goals in their own words to clarify understanding. **Extract key information** from spoken, written, or visual text to determine what is known and what is being asked. **Interpret meaning** from diagrams, charts, graphs, or multimedia sources to connect visuals with text. **Connect language in the problem** to mathematical representations or operations (e.g., linking "difference" to subtraction or comparing quantities).	**Clarifying questions:** "What does ___ mean?" • "Can you explain that another way?" **Paraphrasing frames:** "So the problem is about…", "In other words, it's asking me to…" **Causal connectors:** because, since, therefore, so that **Conditional reasoning:** if…, then… , when…, I notice… **Comparative phrases:** different from, similar to, related to	**Questions:** What do you already know about this problem? What information might help you get started? How will you know if your strategy is working? What can you do if your first idea doesn't work? What is the problem asking you to do? What information do you need to find? What part of the diagram/chart is most important?

		solution (solución)	**Interpret and clarify meanings** of unfamiliar words or phrases.	**Metacognitive stems:** I think…, I realized…, I need to check…, I'm not sure yet, but…	What do the numbers/words in the problem represent? What is this problem really about? What information or detail seems important? What do you notice about how it's presented (numbers, words, visuals)? How can you restate the problem in your own words? What part is confusing, and how can you clarify it? How does this connect to something you've seen or done before? How do you know your interpretation is correct? **Sentence Stems:** "I see that the question is about…" "This graph shows…" "The word ___ means ___ in this problem." "The numbers tell me to…"

					"I heard the teacher say we should…" "The problem is asking me to…" "I think this means…" "I understand that the goal is to…" "I'm not sure what ___ means, but I think it's related to…" "I noticed that the information shows…" "This reminds me of…" "I need to check if…" "It makes sense because…" "I understand the problem is asking me to…" "I notice that…" / "I wonder if…" "My plan is to…" / "First, I will…" "This might work because…" "If I change ___, then ___ might happen."

					"This strategy is similar to/different from…" "I realized I needed to revise my plan when…" "Now that I've checked my work, it makes sense because…"

Mathematical Practice 2 & ELD Standards

TN Math Practice		TN ELD Standards									
		1	2	3	4	5	6	7	8	9	10
MP2	**Reason abstractly and quantitatively** Represent situations symbolically and make sense of numbers and their relationships.			✓	✓			✓			

ELD Standard		Academic Language (Cognates)	Language Functions	Language Forms	Questions and Sentence Stems
3	Speak and write about grade-appropriate complex literary and informational texts and topics.	**Situation** (situación) **Context** (contexto) **Explain** (explicar) **Describe** (describir) **Analyze** (analizar) **reason** (razonar) **justify** (justificar) **evidence** (evidencia) **represent** (representar) **symbol** (símbolo) **model** (modelo,modelar)	**Describe** quantities, values, and units in mathematical problems. **Describe and define** relationships between quantities or ideas. **Explain** how equations and models represent mathematical situations. **Explain** the meaning of symbols and equations in written and spoken responses. **Justify** solutions by citing numerical evidence. **Analyze** and **compare** solution strategies.	**Simple declaratives:** "This model represents the relationship between time and distance." **Complex sentences with complement clauses:** "The table shows that as x increases, y decreases". "The graph suggests that there is a proportional relationship." **Descriptive Language for Relationships:** **"**The number ___ represents ___." "The unit is ___ because ___."	**Questions:** How does the model/equation represent the situation? What do the numbers/variables mean in this context? How can you explain the relationship between ___ and ___? Why did you choose this model to represent the problem? **Sentence Stems:** "The model/equation ___ shows that ___."

			Compare numerical and symbolic representations of problems. **Use symbolic or representational language** to express abstract reasoning.	"__increases/decreases as ___ changes." "The pattern suggests ___." **Reasoning and Justification Frames:** "I know this is true because ___." "The evidence shows that ___." **Contrast connectors:** however, whereas, while, unlike, instead of **Comparative and Analytical Language with prepositional phrases, comparative structures, and dependent clauses** "This method is more efficient because ___." "Another way to represent this is ___." "The number of cups per serving represents the unit rate."	"This graph/table represents ___ by ___." "I know this solution is correct because ___." "Another way to represent this situation is ___." "Let's represent this with…" "I noticed that ___ because…"

				"The unit is expressed in meters because distance is being measured." "The value of y increases as x changes." **Explanatory writing/speaking forms**: "First, I noticed that…" "This value increases because…"	
4	Construct grade-appropriate oral and written claims and support them with reasoning and evidence.	**Argument** (Argumento), **Evidence** (Evidencia) **Explanation** (Explicación) **Reasoning** (Razonamiento) **Conclusion** (Conclusión) **Justification** (Justificación) , **Strategy** (Estrategia)	**Explain** reasoning used with appropriate mathematical vocabulary. **Justify** an answer with specific vocabulary from the problem. **Compare** and **contrast** relationships between quantities. **Support** with precise examples. **Select/use** precise language. **Use** appropriate symbols, units, and notation.	**Transition phrases** If…then… first…next… however, **Comparative Language** "More/Less than, Equal to, Greater than, Less than" "The best method to use for this is problem _____ because _____." "I chose this method because _____." **Math Discourse Structures** "The data suggests that _____." "My reasoning is based on_____."	**Questions:** What method would help you solve this problem? Why? What is the most efficient method for solving the task? What claim can you make based on your work with this method? How does your reasoning support your answer? What evidence do you have to support your claim? What is the correct way to state your claim using correct mathematical vocabulary/language?

				" The results confirm that _____."	**Sentence Stems:** "I claim that _____ because _____. " "The data suggests that _____." "The most efficient method for solving the problem is..." "I knew....so....."
7	Adapt language choices to purpose, task, and audience when speaking and writing.	Argument (argumento) Evidence (evidencia) Justify (justificar) Explain (explicar) Analyze (analizar) Evaluate (evaluar) Compare (comparar) Reasoning (razonamiento)	Justify reasoning with appropriate evidence. Critique others' reasoning respectfully. Adapt tone and vocabulary for formal/informal settings. Use precise mathematical language. Explain concepts in multiple ways for different audiences.	**Incorporate transition words:** Because, therefore, however, in contrast, for example **Conditional statements:** "If ____, then ____" **Comparative structures:** similar to; different from; greater than	**Questions:** Can you explain your reasoning more formally? How would you describe this to a classmate unfamiliar with the topic? What evidence supports your answer? What mathematical vocabulary should you include for clarity? **Sentence Stems:** "The reasoning here is valid because ___." "One way to clarify this explanation is ___." "A possible flaw in this argument is ___."

Mathematical Practice 3 & ELD Standards

TN Math Practice		TN ELD Standards									
		1	2	3	4	5	6	7	8	9	10
MP3	**Construct viable arguments and critique the reasoning of others** Explain your thinking clearly and consider and respond to others' ideas respectfully.		✓	✓	✓	✓	✓	✓			

ELD Standard		Academic Language (Cognates)	Language Functions	Language Forms	Questions and Sentence Stems
2	Participate in grade-appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions.	**Clarify** (clarificar) **Discuss** (discutir) **Argue** (argumentar) **Justify** (justificar) **Explain** (explicar) **Critique** (criticar)	**Construct** logical mathematical arguments. **Justify** reasoning using appropriate evidence. **Engage** in discussions by agreeing, disagreeing, or questioning ideas. **Ask** and **answer** questions for clarity. **Provide** explanations in both oral and written formats. **Explain** and **justify** your reasoning. **Agree** and **support** their thinking.	**Sentence starters for justifying**: "I used ___ because..." "My answer is correct because..." **Clarifying questions**: "Can you show how you got that?" "Why did you use that operation?" **Response frames**: "I agree with ___ because..." "I see it differently because..." **Collaboration language**:	**Questions:** Can you explain that another way? What do you mean when you say _____? What happens if we change _____? I see your point, but...? How did you arrive at your solution? How is your solution different from others? **Sentence Stems:** "I agree/disagree with___ because__"

			Disagree and **provide** counterexamples. **Provide** feedback to improve reasoning.	"Let's try combining our ideas." "What if we solve it another way?"	"I believe ____ was right, but ___" "I disagree with ____ when he/she said ___" "I see what you mean, and I also think _____" "I got a different answer. I think the correct answer is _____ because _____." "The way they are both alike is that they both have/are _____, but what's different is that they have/are_____"
3	Speak and write about grade-appropriate complex literary and informational texts and topics.	**Evidence** (evidencia) **Conclusion** (conclusión) **Define** (definir) **Demonstration** (demostración) **Reasoning** (razonamiento) **Justification** (justificación) **Explanation** (explicación)	**Construct** arguments, evaluating different solutions. **Explain** mathematical reasoning. **Justify** a mathematical argument. **Critique** the reasoning of others. **Compare** and **contrast** strategies. **Make** predictions and generalizations.	**Claim + evidence structures**: "My answer is correct because I multiplied ___ and ___." "I can prove this with the number line…" **Explanatory and comparative writing**: "This strategy works better because…" "Unlike my method, ___ used…"	**Questions:** How does your solution compare to…? What conclusion can you draw from this data? What evidence supports your answer? **Sentence Stems:** "One has _____, but the other has___" "A ___ is compared to ___" "The evidence shows that _____"

				Reflection and revision structures: "At first I thought ___, but now I see..." "I changed my thinking when..." **Academic connectors**: therefore; for example; in contrast; similarly	"The way they are both alike is that they both have/are _____, but what's different is that they have/are_____" "There are several differences between ___ and ____. The most notable is _____"
4	Construct grade-appropriate oral and written claims and support them with reasoning and evidence.	**Argument** (Argumento), **Evidence** (Evidencia) **Explanation** (Explicación) **Reasoning** (Razonamiento) **Conclusion** (Conclusión) **Justification** (Justificación) , **Strategy** (Estrategia)	**Critique** the reasoning of others. **Support** claims with mathematical evidence. **Present** and **discuss** mathematical findings. **Compare** different strategies for solving problems.	**Transition words:** Because, therefore, however, in contrast, for example **Comparative language:** "This method is more efficient than..." **Conditional sentences:** "If ___, then ___..." **Precision with mathematical academic vocabulary:** "The data suggests that..." **Question structures:** "How do you know...?"	**Questions:** How can you justify your reasoning? What evidence supports your claim? Can you explain this in a different way? What happens if we use a different strategy? How does your argument compare to others? **Sentence Stems:** "I believe this is correct because..." "The evidence shows that..." "A different way to solve this is..."

					"I agree/disagree with ___ because..." "This strategy is more effective because..."
5	Conduct research and evaluate and communicate findings to answer questions or solve problems.	**Evidence** (evidencia) **Reason** (razón) **Justify** (justificar) **Conclusion** (conclusion) **Errors** (errores) **Revision** (revisión) **Evaluation** (evaluación)	**Gather** and **analyze** data. **Justify** conclusions with evidence. **Compare** different problem-solving methods. **Communicate** findings clearly. **Evaluate** the validity of arguments and solutions.	**Cause-and-effect structures:** "Because of this data, we can conclude..." **Comparison structures:** "This result is similar to..." **Precision with mathematical vocabulary**: "The data suggests that..." **Logical transitions:** "First, we found... Next, we analyzed... Finally..." **Question structures:** "What does the data tell us about...?"	**Questions:** What information do you need to answer this question? How can you gather and analyze data to support your argument? What patterns or trends do you notice? How does your conclusion compare to others? What evidence supports your conclusion? **Sentence Stems:** "Based on the data, we can conclude that..." "One way to analyze this is by..." "The evidence suggests that..." "This connects to our research because..."

					"After evaluating different strategies, we found that..."
6	Analyze and critique the arguments of others orally and in writing.	**Assumption** (asunción) **Argument** (argumento) **Evidence** (evidencia) **Critique** (crítica) **Analysis** (análisis) **Justification** (justificación) **Evaluate** (evaluar)	**Identify** errors or strengths in an argument. **Justify** critiques with evidence. **Compare** different problem-solving strategies. **Provide** constructive feedback. **Defend** or **refine** an argument.	**Transition words:** Because, therefore, however, in contrast, for example **Comparative structures**: "This method is more efficient than..." **Conditional statements:** "If ___, then ___..." **Precision with mathematical academic vocabulary** **Evaluative language:** "The argument is valid/invalid because..."	**Questions:** What evidence supports this argument? How can you justify your critique? What assumptions were made in this reasoning? Can you explain why this method works or does not work? How does this argument compare to another approach? What changes would make this argument stronger? **Sentence Stems:** "I agree/disagree with this argument because..."

					"The reasoning is valid/invalid because..." "One strength/weakness of this argument is..." "An alternative way to solve this problem is..." "The evidence suggests that..." "A possible error in this reasoning is..." "This argument could be improved by..."
7	Adapt language choices to purpose, task, and audience when speaking and writing.	**Argument** (argumento) **Evidence** (evidencia) **Justify** (justificar) **Explain** (explicar) **Analyze** (analizar) **Evaluate** (evaluar) **Compare** (comparar) **Reasoning** (razonamiento)	**Justify** reasoning with appropriate evidence. **Critique** others' reasoning respectfully. **Adapt** tone and vocabulary for formal/informal settings. **Use** precise mathematical language.	**Incorporate transition words:** Because, therefore, however, in contrast, for example **Conditional statements**: "If ____, then ____" **Apply comparative structures:** similar to; different from; greater than	**Questions:** Can you explain your reasoning more formally? How would you describe this to a classmate unfamiliar with the topic? What evidence supports your answer? What mathematical vocabulary should you include for clarity?

			Explain concepts in multiple ways for different audiences.		**Sentence Stems:** "The reasoning here is valid because ___." "One way to clarify this explanation is ___." "A possible flaw in this argument is ___." "A clearer way to state this argument might be ___."

Mathematical Practice 4 & ELD Standards

TN Math Practice		TN ELD Standards									
		1	2	3	4	5	6	7	8	9	10
MP4	**Model with mathematics** Use math to solve real-world problems using equations, graphs, diagrams, and more.				✓			✓			

ELD Standard		Academic Language (Cognates)	Language Functions	Language Forms	Questions and Sentence Stems
4	Construct grade-appropriate oral and written claims and support them with reasoning and evidence.	**claim** (reclamo) **justification** (justificación) **analysis** (análisis) **model** (modelo) **represent** (representar) **evidence** (evidencia) **justify** (justificar) **evaluate** (evaluar) **revise** (revisar) **relationship** (relación) **prediction** (predicción) **reasoning** (razonamiento)	**Describe** what the model shows and how it represents a situation. **State** a claim based on analysis of the problem**.** **Make claims** about relationships, processes, or outcomes reflected in the model. **Explain** reasoning using evidence from the model. **Justify** a claim by using data, equations, models, or patterns. **Explain and justify** the logic of their model with reasoning or contextual evidence. **Evaluate** the accuracy and effectiveness of their	**Interactive Sentence Starters** "I think the answer is ___ because..." "My solution is ___ since..." "I believe that ___ because the model shows..." "The correct answer is ___ because I used ___ to solve it." "My claim is that ___ because..." "The solution must be ___ since the diagram/model shows..." "I concluded that ___ after..." "I think the best method is ___ because it matches the problem."	**Questions:** What did you find out? How did you determine ___? What connections can you make between the models that were used to solve the problem? **Sentence Stems:** "I know this because the model shows..." "The diagram helps me see that..." "My drawing represents ___, which proves..." "The table shows that the total is..." "The evidence comes from the chart/graph, which shows..."

			model in representing the situation. **Revise** or refine the model based on new evidence or understanding. **Connect** verbal, symbolic, and visual representations to strengthen their argument.		"The equation confirms that…" "By looking at the diagram, I can see that…" "The bar graph supports my claim because…" "What is your claim?" "What evidence supports your position?"
7	Adapt language for different purposes, tasks, and audience when speaking and writing.	**model** (modelo) **represent** (representar) **precise** (preciso) **explain** (explicar) **justify** (justificar) **audience** (audiencia) **clarity** (claridad) **purpose** (propósito) **formal / informal** (formal / informal) **revise** (revisar) **refine** (refinar) **communicate** (comunicar) **appropriate** (apropiado) **detail** (detalle)	**Justify the solution** to how it connects to the model. **Justify** choices within the model with precise reasoning **Interpret** results using mathematical language and reasoning. **Describe** and interpret mathematical models (e.g., graphs, tables, equations) clearly and accurately. **Explain** how the model represents the situation and supports understanding. **Adapt** tone, vocabulary, and level of detail for the intended audience (peer vs. teacher vs. formal presentation).	**Transition phrases for explanation:** first, next, for example, in conclusion **Precision phrases:** approximately, exactly, equal to, related to, represents **Audience-awareness markers:** another way to say this…, this means that… **Comparative and contrastive structures:** more precise than, similar to, different from **Clarifying clauses:** which shows that…, that means…, in other words… **Formal register indicators:** according to the model…, the data suggest that…, this	**Questions:** What did you try first? What happened? Did your first strategy/model work? Why or why not? What changes did you make? Which method/model gave you the best result? How would you address this in a formal setting? How can you explain your model clearly to someone unfamiliar with it? What vocabulary best fits your audience or purpose? Where can you make your explanation more precise or formal?

			Refine language to be concise, precise, and coherent when describing relationships or processes. **Reflect** on how their communication choices influence clarity and understanding.	representation demonstrates…	How does your choice of words change how others understand your model? How might you simplify or expand your explanation depending on who's listening? What language choices show confidence and accuracy in your reasoning? **Sentence Stems:** "I started with ___, but then I tried ___." "I learned that…" "This works better because…" "I checked my work by…" "My results show that…" "My model represents ___, which means…" "This model shows…" "For a more precise explanation, I would say…" "When I explain this to my classmates, I say…, but in a formal presentation, I would say…"

Mathematical Practice 5 & ELD Standards

TN Math Practice		TN ELD Standards									
		1	2	3	4	5	6	7	8	9	10
MP5	**Use appropriate tools strategically** Select and use tools (like calculators, rulers, software) that will best support problem-solving.				✓			✓			

ELD Standard		Academic Language (Cognates)	Language Functions	Language Forms	Questions and Sentence Stems
4	Construct grade-appropriate oral and written claims and support them with reasoning and evidence.	**tools** **construct** (construir) **reasoning** (razonamiento) **evidence** (evidencia) **results** (resultados) **strategy** (estrategia) **evidence** (evidencia) **justify** (justificar) **evaluate** (evaluar) **analyze** (analizar) **appropriate** (apropiado) **effective** (efectivo) **data** (datos) **process** (proceso)	**Provide** reasoning around tool selection for this particular problem. **Support** conclusions using data, visuals, or representations from the tool. **Construct** arguments around which tool is most appropriate. **Justify** tool selection. **Formulate** claims based on data from the use of the chosen tool.	**Transition phrases**: If…then…; First…next…; However **Comparative Language:** "The best tool to use for this is _____ because _____" "I chose this tool because _____" **Math Discourse Structures:** "The data suggests that _____" "My reasoning is based on_____" "The results confirm that _____"	**Questions:** How does this tool connect to your claim? What tool would help you solve this problem? Why? What is the best tool for the task? What claim can you make based on your work with this tool? How does your reasoning support your answer? What evidence do you have to support your claim? How would a different tool change your strategy?

		support **argument** (argumento) **reasoning** (razonamiento) **accuracy** **clarity** (claridad)			**Sentence Stems:** "This tool is best for this task because …." "When I tried _____ I discovered _____." "I chose this tool because…" "This tool helps me show that…" "The evidence that supports using this tool is…" "If I use ___, then I can better understand…" "This tool is more effective than ___ because…"
7	Adapt language choices to purpose, task, and audience when speaking and writing.	**Explain** (explicar) **Represent** (representar) **Compare** (comprarar) **Contrast** (contraste) **Interpret** (interpretar) **Solve** (resolver) **Reason** (razón) **Validate** (validar) **Conclude** (concluir)	**Justify** an answer using a tool. **Compare** and **contrast** multiple tools that could be used to solve a problem. **Make predictions** about which tool could be used to solve a problem. **Interpret** data & graphs.	**Transition phrases:** first, next, another way, however, also **Precision and purpose adverbs:** exactly, approximately, clearly, accurately, effectively **Comparative structures:** more efficient than, clearer than, better for	**Questions:** Why did you choose that tool for this problem? How can you make your explanation clearer? What mathematical terms best describe this situation? How can you explain your process to someone unfamiliar with this topic?

		Predict (predecir) **Summarize**	**Summarize** why a tool was chosen to determine the solution.	**Conditional phrases:** if I use..., then I can... **Comparative language** "Both tools can be used to solve the problem, but ___ is more efficient because ___." "One difference between these tools is ___." "While tool A works well for ___, tool B is better for ___." "Unlike ___, this tool uses ___ to find the solution.	How would you explain this to a classmate? How would you explain this to a teacher? Why is it important to be precise in your answer? **Sentence Stems:** "The term for this situation is...." "First, I.... then I..." "It is important to be precise because...."

Mathematical Practice 6 & ELD Standards

TN Math Practice		TN ELD Standards									
		1	2	3	4	5	6	7	8	9	10
MP6	**Attend to precision** Communicate clearly, calculate accurately, and use correct math terminology.			✓	✓			✓			

ELD Standard		Academic Language (Cognates)	Language Functions	Language Forms	Questions and Sentence Stems
3	Speak and write about grade-appropriate complex literary and informational texts and topics.	**Analyze** (analizar) **Explain** (explicar) **Interpret** (interpretar) **Construct** (construir) **Summarize** **Evaluate** (evaluar) **Discuss** (discutir)	**Justify** answers using precise mathematical language. **Evaluate** solutions for precision. **Support** claims and **construct** arguments using mathematical language. **Provide** examples using precise mathematical language. **Summarize** strategies using appropriate math terms. **Refine** approaches & **identify** challenges in the	**Descriptive language structures:** "This problem has three parts…" "The numbers represent…" **Process verbs and sequencing:** First, Next, Then, Finally I calculated, I subtracted, I multiplied **Math-specific comparative structures:** "This equation is more efficient than…" "This method takes fewer steps than…"	**Questions:** How can you explain this problem in your own words? Can you write or say the steps you took to solve it using precise mathematical language? How does each part of the problem connect to your work? Why does your strategy work? **Sentence Stems:** **"**This problem is about…" "I know this because the text says…"

			use of mathematical terms/vocabulary. **Use** appropriate symbols, units, and notation.	**Cause-effect/reasoning language:** "I did ___ because…" "This works since…"	"The steps I used were…" "This method works best because…" "Another way to solve it would be…"
4	Construct grade-appropriate oral and written claims and support them with reasoning and evidence.	**Claim** **Evidence** (Evidencia) **Reasoning** (Razonamiento) **Argument** (Argumento) **Data** (Datos)	**Explain** reasoning used with appropriate mathematical vocabulary. **Justify** an answer with specific vocabulary from the problem. **Compare** and **contrast** relationships between quantities. **Support** with precise examples. **Select/use** precise language. **Use** appropriate symbols, units, and notation.	**Transition phrases** If…then…; first…next…; however **Comparative Language:** "More/Less than, Equal to, Greater than, Less than" "The best method to use for this is problem _____ because _____." "I chose this method because _____." **Math Discourse Structures:** "The data suggests that _____." "My reasoning is based on_____." " The results confirm that _____."	**Questions:** What method would help you solve this problem? Why? What is the most efficient method for solving the task? What claim can you make based on your work with this method? How does your reasoning support your answer? What evidence do you have to support your claim? What is the correct way to state your claim using correct mathematical vocabulary/language? **Sentence Stems:** "I claim that _____ because _____. "

					"The data suggests that _____." "The most efficient method for solving the problem is…" "I knew….so….."
7	Adapt language choices to purpose, task, and audience when speaking and writing.	**Adapt** (Adaptar) **Purpose** (Propósito) **Task** (Tarea) **Audience** (Audiencia) **Precision** (Precisión)	**Adjust** language for clarity and accuracy. **Use** precise vocabulary based on context. **Explain** using appropriate detail. **Choose** formal/informal language as needed. **Use** accurate mathematical terms, units, and symbols.	**Clarifying Sentences** "The correct term for this is…" "The most appropriate word/notation is…" "The steps to solve this are…" " In a formal explanation, you should say…" "The exact value/measurement is…"	**Questions:** How can you make your explanation clearer? What mathematical terms best describe this situation? How can you explain your process to someone unfamiliar with this topic? How would you explain this to a classmate? How would you explain this to a teacher? Why is it important to be precise in your answer? **Sentence Stems:** "The term for this situation is…." "First, I…. then I…"

					"It is important to be precise because…." "How can you make your explanation clearer?" "What mathematical terms best describe this situation?" "How can you explain your process to someone unfamiliar with this topic?" "How would you explain this to a classmate?" "How would you explain this to a teacher?" Why is it important to be precise in your answer?

Mathematical Practice 7 & ELD Standards

TN Math Practice		TN ELD Standards									
		1	2	3	4	5	6	7	8	9	10
MP7	**Look for and make use of structure** Identify patterns or structures in math, such as properties of operations or number systems.	✓		✓	✓			✓	✓		

ELD Standard		Academic Language (Cognates)	Language Functions	Language Forms	Questions and Sentence Stems
1	Construct meaning from oral presentations and literary and informational text through grade-appropriate listening, reading, and viewing.	**Structure** (estructura) **Pattern** **Operation** (operación) **Identify** (identificar) **Equation** (ecuación) **Order** (orden) **Relationship** (relación)	**Identify** number structures and relationships. **Recognize** mathematical patterns. **Understand** and **apply** properties of operations. **Follow** and **interpret** mathematical explanations.	**Interpreting Visual Representations:** Reading and interpreting graphs, charts, and diagrams. Recognizing math symbols (+, −, ×, ÷, =) and their meanings in context. **Recognizing Problem Structures:** "What kind of problem is this? Is it a pattern, comparison, or proportional relationship?" **Understanding Sequence and Order:**	**Questions:** What is the action/mathematical operation involved in the problem? How are the numbers related? What do you think you might do to solve the problem? What question are you trying to find the answer to? What information do you know? **Sentence Stems:**

				"First, I need to find…" "Next, I will…" **Confirming Understanding with Clarification Strategies:** Does this make sense? Can you explain this in your own words?	"I notice that the numbers ____, so I think ____." This pattern helps because ____. " If ____, then ____."
3	Speak and write about grade-appropriate complex literary and informational texts and topics.	**Solution** (solución) **Understand** (entender) **Explain** (explicar) **Reasoning** (razonamiento) **Pathway** **Strategy** (estrategia) **Persevere** (perseverar)	**Identify** and **explain** key information. **Express** reasoning and describe steps. **Explain** strategies to solve problems.	**Explaining problem understanding:** "I understand that I need to find…" "The problem requires me to…" **Describing a solution pathway:** "First, I will…" "Then, I can…" **Using conditional statements:** "If I add instead of multiplying, then I will get…" **Expressing Perseverance:**	**Questions:** What patterns do you notice? What strategy will you use to solve this problem? Why is this the right solution? Can you explain why your solution makes sense? What did you learn by persevering through this problem? **Sentence Stems:** "The pattern is ____." "First, I will ____." "This is the solution that occurred because ____."

				"At first, I thought…, but then I realized…" **Comparing and Connecting strategies:** "This problem is similar to…" "I noticed a pattern because…" **Asking for help or clarification:** "I do not understand this step. Can you help me…" **Transitions:** First, Next, Then, After that, Finally, Because, Therefore. in conclusion	"I will use the strategy of ____ to solve this problem." "I understand this problem because ____." "To solve the problem, I will ____ and then ____."
4	Construct grade-appropriate oral and written claims and support them with reasoning and evidence.	**structure** (estructura) **pattern** **relationship** (relación) **property** (propiedad) **analyze** (analizar) **justify** (justificar) **explain** (explicar) **generalize** (generalizar) **compare**	**Identify and describe** mathematical patterns or relationships. **Explain** how a pattern or structure supports a solution. **Justify** reasoning using evidence from the problem.	**Comparative/relational phrases:** is related to, as opposed to, in the same way, because. **Causal connectors:** so that, since, as a result. **Conditional forms:** If [condition], then [result].	**Questions:** What patterns or structures do you notice in this problem? How does recognizing this pattern help you solve the problem? What happens if we change one part of the structure?

			Compare multiple structures or representations. **Generalize** a rule or property based on observed structure.	**Verbs of reasoning:** analyze, recognize, apply, justify, generalize.	Can you describe how these two equations are similar or different? Why does this pattern always work? How can you use what you know about one structure to understand another? **Sentence Stems:** "I noticed that the structure of ___ is similar to ___." "This pattern shows that ___." "If ___, then ___." "The relationship between ___ and ___ helps me see that ___." "I can justify my reasoning because ___." "One example of this structure is ___." "When I look for patterns, I see that ___." "The same property applies because ___."

7	Adapt language choices to purpose, task, and audience when speaking and writing.	**Pattern** **Sequence** (secuencia) **Relationship** (relación) **Repetition** (Repetición) **Order** (Orden) **Organization** (Organización) **Arrangement** (Arreglo)	**Identify** and **describe** mathematical patterns and relationships. **Explain** reasoning behind solutions in group discussions. **Share** ideas and strategies for recognizing mathematical structures. **Justify** solutions and discuss patterns using mathematical properties. **Use** academic language to express mathematical solutions.	**Collaborating in discussions:** "I agree with your strategy because..." "I understand your point, but I think we should..." **Justifying reasoning:** "I know my answer is correct because..." "I used ____, and it worked because..." **Clarifying steps taken:** "First, I ..." "After that, I..."	**Questions:** Can you explain the relationship between ____ and ____? Why do you think this pattern works in every case? How can we use this structure to find a solution? What other way can we apply this property to solve the problem? **Sentence Stems:** "The pattern is ____." "I see that the numbers increase by ____." "The relationship is that ____." "The pattern shows that ____ happens every time because ____." "The property of ____ helps us solve this problem by ____."

					"In this equation, the numbers relate because ____." "By following the structure of ____ we can predict that ____."
8	Determine the meaning of words and phrases in oral presentations and literary and informational text.	**Structure** (estructura) **Pattern** **Operation** (operación) **System** (sistema) **Identify** (identificar) **Equation** (ecuación) **Expression** (expresión)	**Analyze** and **describe** patterns. **Recognize** relationships in number systems. **Apply** mathematical properties. **Justify** reasoning with examples.	**Identifying key math vocabulary by recognizing key verbs:** e.g. sum, product, difference, quotient, increase, decrease… **Using conditional statements:** e.g. "Unless I check my answer, I will not know if it is correct." **Confirming understanding with clarification strategies:** "Does this make sense?"	**Questions:** What word helped you decide on a solution path? What does ____ mean? Choose: ___ or ____. What did your peer mean when they said _____? Explain what _____ means using the drawing. **Sentence Stems:** "I noticed that when we ____, the result is ___." "This means we can apply the property of ___." "If ___ happens, then ___ must be true."

Mathematical Practice 8 & ELD Standards

TN Math Practice		TN ELD Standards									
		1	2	3	4	5	6	7	8	9	10
MP8	**Look for and express regularity in repeated reasoning** Notice repeated processes and use them to develop efficient problem-solving strategies.	✓		✓	✓			✓	✓		

ELD Standard		Academic Language (Cognates)	Language Functions	Language Forms	Questions and Sentence Stems
1	Construct meaning from oral presentations and literary and informational text through grade-appropriate listening, reading, and viewing.	**Pattern** **Expression** (expresión) **Notice** (notar) **Meaning** **Key Detail** **Repeat** (repetir)	**Identify** key details. **Recognize** and **describe** patterns in the mathematical process. **Summarize** mathematical observations.	**Phrases for identifying key details:** "___ is important because ___." "One key detail is..." **Structures for describing patterns:** "___ happens repeatedly." "Every time ___ occurs, the result is ___" **Structures for summarizing mathematical observations:** "I noticed..." "A pattern I observed is..."	**Questions:** What do you notice? Which numbers are important to focus on? What pattern do you see? What does this pattern mean? **Sentence Stems:** "Each time I ___, I notice ___." "This means..." "The pattern suggests that ___, so we can conclude ___."

					"Each time we ___, the result is ___, which proves ___."
3	Speak and write about grade-appropriate complex literary and informational texts and topics.	**Pattern** **Repeat** (repetir) **Expression** (expresión) **Reasoning** **Summarize** **Findings** **Explore** (explorar)	**Describe** patterns and repeated reasoning. **Summarize** findings from mathematical explorations.	**Descriptive structures:** "The pattern I saw was…" "I noticed…" **Structures to summarize findings:** **"**Every time ___ happens, we see ___." "Since ___ happens repeatedly, we know that ___."	**Questions:** Can you summarize your findings for us? What did you notice while you were exploring this mathematical process? How can you clearly explain the pattern in this problem? Can you explain what is happening in your own words? **Sentence Stems:** "Each time I ___, I noticed ___." "The more I explored, the more I noticed…" "Because ___, I came to the conclusion that ___."
4	Construct grade-appropriate oral and written claims and support them with reasoning and evidence.	**regularity** (regularidad) **repetition** (repetición) **reasoning** (razon) **strategy** (estrategia) **process** (proceso) **pattern**	**Identify and describe** repeated processes or patterns. **Explain** how repetition leads to a general rule or strategy. **Justify** reasoning based	**Causal connectors:** because, since, therefore as a result **Conditional clauses:** if ___, then ___ whenever ___, ___ happens each time ___, ___ results **Comparative and relational phrases:**	**Questions:** What pattern or process repeats in this problem? How can you use what happens each time to predict what will happen next? Why does this rule or process work every time?

		explain (explicar) **justify** (justificar)	on observed regularity. **Predict** outcomes using established patterns. **Compare** current reasoning to previous examples. **Reflect** on errors or adjustments in repeated reasoning. **Generalize** a mathematical principle from repeated steps.	similar to different from like / unlike compared to **Generalizing structures:** in general, for every ___ it always / never happens when ___, the pattern shows that ___ **Transition words for reasoning:** first, next, then, finally after repeating ___, we notice ___. at first I thought ___, but now I see ___ **Verbs of reasoning:** notice, observe, recognize, realize, repeat, apply, extend, conclude, predict	How does this step connect to the one before it? What general rule can you make from this pattern? How can you explain your reasoning to show it always works? What changes and what stays the same each time? **Sentence Stems:** "I notice that each time ___ happens, ___." "This pattern shows that ___." "If ___, then ___." "Every time we ___, we get ___." "In general, when we ___, we always ___." "This works because ___." "I realized that ___ repeats, so ___." "The process is similar to ___ because ___."
7	Adapt language choices to purpose, task, and audience when speaking and writing.	**Vocabulary** (vocabulario) **Pattern** **Reasoning**	**Describe** mathematical reasoning clearly in speech and writing.	**Formal vs. Informal language:** "The pattern suggests..." vs. "I noticed that..."	**Questions:** How can you explain this pattern to someone unfamiliar with it?

		Explanation (explicación) **Idea** (idea) **Precise** (preciso)	**Use** precise mathematical language to explain patterns. **Ensure** accuracy in grammar and mathematical vocabulary. **Use** complete sentences to explain reasoning.	**Justifying reasoning concisely:** "Since ___ repeats, we can conclude ___" **Transition words:** Therefore As a result Consequently	What is the best way to describe this reasoning to a younger student? How can you adjust your explanation for a formal math presentation? What is another word we could use to express that mathematical idea? What precise mathematics vocabulary best describes pattern? **Sentence Stems:** "In a formal explanation, I would describe the pattern as ___." "Since my audience is ___, I need to explain the pattern as ___" "To make it clearer, I would say ___." "Using more precise vocabulary, I would say ___." "A more clear way to explain this pattern is ___."
8	Determine the meaning of words and phrases in oral presentations and literary and informational text.	**Pattern** **Repetition** (repetición) **Expression** (expresión)	**Identify** patterns in mathematical problems.	**Descriptive structures:** "The pattern I saw was…" "I noticed…"	**Questions:** What do the symbols in this expression mean?

		Idea (idea) **Adapt** (adaptar)	**Describe** repeated processes. **Explain** how patterns help solve problems efficiently. **Make** predictions based on repeated structures.	**"**Every time ___ happens, we see ___." "Since ___ happens repeatedly, we know that ___."	What did your classmate mean when they said ___? **Sentence Stems:** "This symbol tells us to…" "When ___ said ___, they meant ___."

Conclusion

The Tennessee English Language Development and Academic Standards Crosswalks are intended to be working documents to serve as dynamic, supplementary tools to support with high-quality instructional materials (HQIM). It is not a script or a checklist, but a resource to help educators intentionally align language development goals with academic content objectives to better meet the needs of English learners.

By bringing together content learning and language development, educators create classrooms that are more accessible, engaging, and rigorous for all students. Language-rich content instruction not only supports English learners but also enhances academic discourse, critical thinking, and communication skills across the entire student population.

This Crosswalk is designed to grow and evolve based on feedback from the field. Educators' insights are essential to refining and strengthening its use. Questions or feedback regarding this document should be directed to Raven Cleveland (Raven.Cleveland@tn.gov), Statewide Manager of English Learners, Tennessee Department of Education.

Together, through thoughtful integration of language and content, we can ensure that every student in Tennessee is equipped for academic success and beyond.

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Their insights, feedback, and commitment helped shape a resource that will support teachers in integrating language and content instruction, advancing the success of English learners statewide. We extend our sincere appreciation for their professionalism, thoughtful collaboration, and passion for serving all students.

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Appendix A: Glossary

The following glossary defines key terms used throughout this document. These terms are provided to support common understanding of language development concepts and instructional planning tools referenced in the Crosswalk.

Term	Definition
academic language	Language used in school settings for acquiring and expressing academic content knowledge; includes vocabulary, structures, and ways of organizing communication.
Adding It Up (2001)	A National Research Council report outlining five strands of mathematical proficiency: conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and productive disposition.
Check for Understanding	A formative assessment technique used to gauge student comprehension and guide instruction.
cognate	A word in two languages that shares a common origin and similar meaning (e.g., *model* – *modelo*).
concordance matrix	The reverse matrix of the concordance matrix listing ELD Standards first, followed by aligned Standards for Mathematical Practice (SMPs)
correspondence matrix	Tool that provide a high-level overview of how Tennessee's Standards of Math Practice align with the TN ELD Standards.
crosswalk charts	In-depth tools that map each ELD standard to specific academic standards and provide practical instructional supports, including language functions, forms, vocabulary, and scaffolds.
English language development (ELD) standards	Standards that define the language skills English learners need to engage meaningfully in academic content across subjects.
ELPA21	The English Language Proficiency Assessment for the 21st Century; the consortium that developed the ELD Standards adopted by Tennessee.
Habits of Mind	Dispositions that promote perseverance, reasoning, and reflection in mathematics.

high quality instructional material (HQIM)	Instructional materials that are aligned to rigorous academic standards, support high levels of student engagement, and promote strong academic outcomes.
Instructional Learning Plan (ILP)	A personalized document outlining language goals, proficiency levels, and supports for English learners.
intellectual preparation	The process in which educators deeply study instructional materials, anticipate student thinking, identify language and content demands, and plan purposeful scaffolds and questions to ensure rigorous, accessible instruction.
interactive language	The use of language to exchange ideas, negotiate meaning, and build shared understanding with others in real time.
language forms	The grammatical structures, sentence patterns, and discourse features that enable students to carry out language functions.
language functions	The purposes for which language is used in academic tasks (e.g., describing, explaining, justifying).
language modality	The mode through which students use or process language: receptive, productive, or interactive.
mathematical reasoning	The process of making sense of relationships and drawing logical conclusions in math.
modeling	Representing real-world situations using mathematical structures, symbols, or tools.
NCTM Process Standards	National Council of Teachers of Mathematics principles: problem solving, reasoning and proof, communication, representation, and connections.
precision	Using exact language, notation, and reasoning in mathematical communication.
productive language	Using language to communicate ideas through speaking or writing (e.g., explaining reasoning).
questions and sentence stems	Teacher tools consisting of prompts, starter phrases, and sentence frames that help scaffold student speaking and writing in academic tasks.
receptive language	Understanding language through listening, reading, or viewing (e.g., interpreting word problems).

reverse matrix (concordance)	A matrix format where ELD standards are listed first, followed by the related SMP, offering flexible entry points for instructional planning.
Spanish cognates	Words in Spanish and English that have similar forms and/or meanings, used to support vocabulary instruction for Spanish-speaking students.
standards crosswalk	A tool designed to align different sets of standards, enabling educators to compare expectations and identify areas of intersection.
Standards for Mathematical Practice (SMP)	Eight habits of mind and reasoning practices that describe how students engage in and communicate about mathematics.

Appendix B: Academic Language

Academic Language for Language Development

This refers to the structured language that helps students learn how language works. It's taught *explicitly* and focuses on:

- Functions (e.g., describing, comparing, arguing)
- Forms (e.g., sentence structures, grammar, connectors)
- Vocabulary (especially general academic words like *analyze*, *define*, *contrast*)
- Discourse structures (e.g., how to organize an explanation or argument)
- Metalinguistic awareness (understanding how language choices affect meaning)

> *Think of academic language for language development as the language students need to talk about learning and learn how to use language in increasingly complex ways.*

Academic Language for Content

This is different than Academic Language for Language Development. Academic Language for Content is the language used within specific disciplines like math, science, social studies, or ELA. It includes:

- Discipline-specific vocabulary (e.g., *photosynthesis*, *allegory*, *denominator*)
- Ways of reasoning and communicating unique to the subject
  (e.g., arguing from evidence in science, proving in math, analyzing themes in ELA)
- Genre expectations (e.g., lab report vs. literary essay vs. historical analysis)

> *Think of academic language for content as the language students need to do the work of the discipline and demonstrate understanding in academic settings.*

Understanding academic vocabulary matters because academic language must be taught explicitly. It's not enough for students to "pick it up" through exposure—teachers must plan for it (Echevarría, Vogt, & Short, 2017).

- For language instruction, teachers need to scaffold the academic language so students can grow in proficiency (language development).
- In content instruction, teachers must integrate language supports so students can access and express learning (content learning).

Appendix C: Language Functions

Language functions are the purposes for which we use language in academic tasks. Functions align with academic tasks students encounter across disciplines.

> *Think of language functions as what students need to do with language to engage in academic tasks—such as explaining a process, arguing a claim, or interpreting a text.*

Here's an overview of these functions as outlined in the TN ELD standards:

1. ***Construct Meaning***: Students interpret and derive understanding from oral presentations and literary or informational texts through listening, reading, and viewing.
2. ***Participate in Exchanges:*** Engage in oral and written discussions, sharing information, ideas, and analyses, and responding to comments and questions from peers, audiences, or readers.
3. ***Speak and Write About Complex Texts and Topics:*** Express ideas and information related to complex literary and informational texts and topics through speaking and writing
4. ***Construct Claims and Support with Evidence:*** Develop oral and written assertions, backing them with logical reasoning and relevant evidence.
5. ***Conduct Research and Communicate Findings:*** Investigate questions or problems and effectively convey conclusions through speaking and writing.
6. ***Analyze and Critique Arguments:*** Evaluate and provide feedback on the reasoning and evidence presented in others' arguments, both orally and in writing.
7. ***Adapt Language to Purpose, Task, and Audience:*** Modify language choices appropriately based on the context, including the purpose of communication, the specific task, and the intended audience.
8. ***Determine Meaning of Words and Phrases:*** Ascertain the definitions and nuances of words and phrases within oral presentations and texts.
9. ***Create Clear and Coherent Speech and Text:*** Produce well-structured and organized spoken and written communication appropriate to the grade level.
10. ***Use Standard English Conventions:*** Apply correct grammar, punctuation, and usage to communicate effectively in speech and writing.

These language functions are integral to the TN ELD Standards and serve as a foundation for developing the academic language proficiency of English learners. By focusing on these functions, educators can better scaffold instruction to help students engage with complex content

Appendix D: Language Forms & Structures

Each language function comes with expected **language forms**—the grammatical structures, syntax, and vocabulary patterns that enable students to carry out that function effectively. Language forms encompass the specific tools students need to express their ideas within academic tasks.

Think of language forms as the building blocks that allow students to do the work of the function—like the sentence frames, word choices, and grammar structures that support academic communication.

Although essential, language forms are often overlooked in instruction, as educators may assume students have acquired grammar and structure implicitly over time. However, these elements of language must be explicitly taught—especially for English learners. Teachers can embed language forms into lessons through direct instruction, modeling, and guided practice, helping students internalize the structures they need to express increasingly complex ideas.

For example, to carry out the function of comparing, students might use comparative adjectives or conjunctions such as *"more than," "less than,"* or *"similarly."* If the language function is analyze, students may need to use complex sentences with causal clauses like *"because," "since,"* or *"due to,"* and vocabulary such as *"evaluate," "determine,"* or *"assess."*

While the TN ELD standards emphasize the integration of language functions and forms within content instruction, they do not prescribe a fixed list of pairings. Educators can draw upon linguistic frameworks and instructional scaffolds to intentionally support English learners in using both functions and forms in meaningful ways across content areas.

Appendix E: Literacy Standards for Mathematical Proficiency

The Literacy Standards for Mathematical Proficiency describe the reading, vocabulary, discussion, and writing skills necessary for students to engage meaningfully with mathematics. This matrix demonstrates how these literacy expectations align with the Tennessee ELD Standards, highlighting the shared emphasis on comprehension, precision, and communication within mathematical reasoning.

Literacy Standard for Mathematical Proficiency	Primary ELD Standard(s)	Modality
1. Use multiple reading strategies	**ELD 1** – Construct meaning from oral presentations and literary and informational text through listening, reading, and viewing; **ELD 8** – Determine the meaning of words and phrases in oral and written text	Receptive
2. Understand and use correct mathematical vocabulary	**ELD 1** – Construct meaning from oral presentations and literary and informational text through listening, reading, and viewing **ELD 2** – Participate in oral and written exchanges of information, ideas, and analyses; **ELD 3** – Speak and write about grade-appropriate complex texts and topics; **ELD 4** – Construct oral and written claims and support them with reasoning and evidence; ELD 5 – Conduct research and communicate findings **ELD 6** – Analyze and critique the arguments of others; **ELD 7** – Adapt language to purpose, task, and audience **ELD 8** – Determine meaning of words and phrases in oral and written text;	Receptive & Productive
3. Discuss and articulate mathematical ideas	**ELD 2** – Participate in oral and written exchanges of information, ideas, and analyses; **ELD 5** – Conduct research and communicate findings **ELD 6** – Analyze and critique the arguments of others;	Interactive
4. Write mathematical arguments	**ELD 3** – Speak and write about grade-appropriate complex texts and topics; **ELD 4** – Construct oral and written claims and support them with reasoning and evidence; **ELD 5** – Conduct research and communicate findings **ELD 6** – Analyze and critique the arguments of others; **ELD 7** – Adapt language to purpose, task, and audience	Productive

Note on ELD 9 and ELD 10: ELD 9 ("Apply knowledge of language to make meaning of complex texts and discourse") and ELD 10 ("Demonstrate command of conventions and vocabulary") are not explicitly mapped in this crosswalk because they function as cross-cutting language control standards rather than modality-based standards. Both emphasize accuracy, conventions, and word choice that support all three modalities—receptive, productive, and interactive—across every Mathematical Practice. While they are essential to precise mathematical communication, they do not represent a distinct type of language use.

Appendix F: Additional Resources

ELPA21

ELPA21 Assessment System https://www.elpa21.org/

ELPA21 ELD Standards https://elpa21.org/elp-standards/

ELPA21 Resources https://elpa21.org/resources/

Tennessee ELPA21 https://elpa21.org/resources/?state=Tennessee

Tennessee

Tennessee Department of Education – English Language Development Standards

https://www.tn.gov/education/districts/academic-standards/english-language-development.html

Tennessee Department of Education – English Learners
https://www.tn.gov/education/families/student-support/english-learners.html

Tennessee Department of Education – Math Standards
https://www.tn.gov/education/districts/academic-standards/mathematics-standards.html

Tennessee Department of Education – Standards for Mathematical Practices
https://www.tn.gov/content/dam/tn/education/standards/math/std_math_standards_mathematical_practice.pdf

Tennessee Department of Education – Instructional Practice Guide (IPG) for Mathematics
https://bestforall-cms.tnedu.gov/sites/default/files/documents/TN_Math_IPG.pdf

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