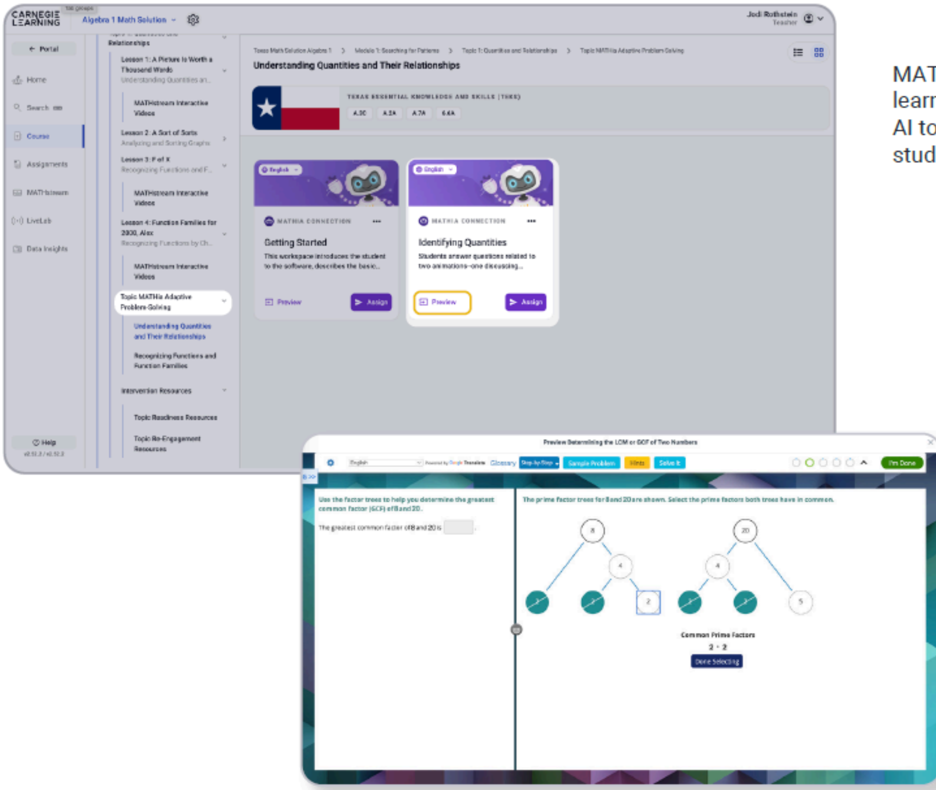
# Texas Supplemental Math Overview

Carnegie Learning Supplemental Math

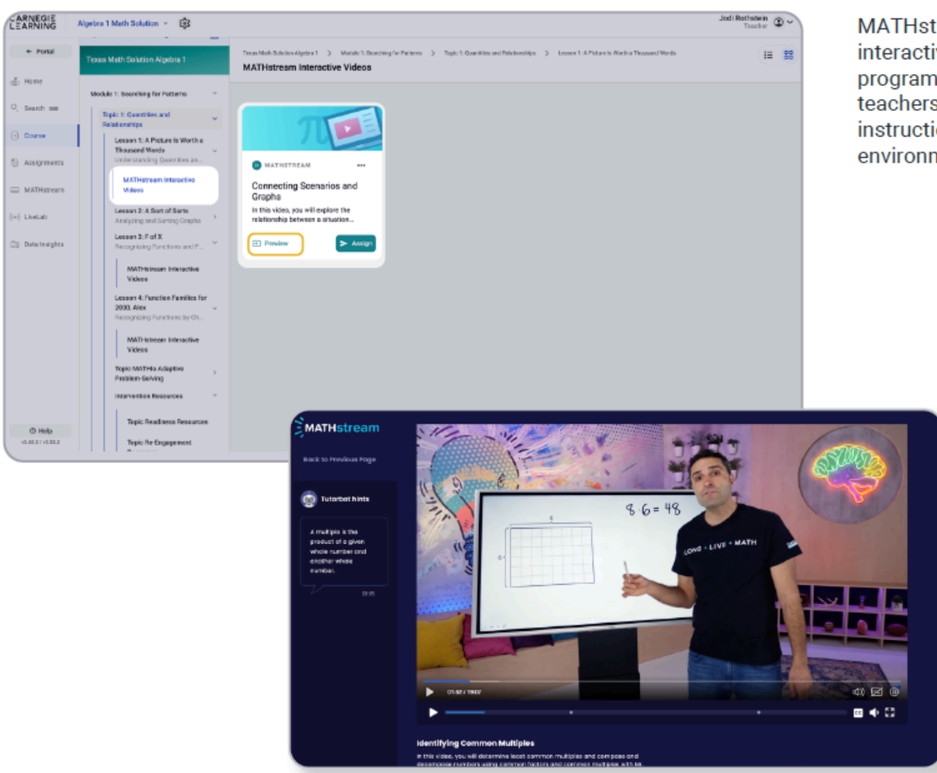
Carnegie Learning's Texas Supplemental Math programs, MATHia and MATHstream, provide Texas Essential Knowledge and Skill (TEKS)-aligned mathematics instruction that adapts to the needs of diverse learners across various classroom environments. Available through the Clear Learning Center (CLC), these programs can support intervention, enrichment, or full-course supplemental instruction, giving educators a complete set of tools, resources, and actionable data for delivering high-quality math instruction. MATHia is an intelligent, adaptive tutoring software that identifies individual learning needs, offers scaffolded practice, and advances students toward mastery at a personalized pace. MATHstream is an adaptive, interactive video platform that brings mathematics to life through dynamic lessons and skill-specific series designed to engage students actively.

# Instructional Purpose and Use

MATHia and MATHstream are intentionally flexible in their implementation. In an intervention setting, MATHia adjusts its sequencing to pinpoint skill gaps and address them through carefully scaffolded practice that progresses from concrete models to abstract reasoning. MATHstream complements this process by providing short, targeted lessons that reteach prerequisite concepts just in time for new instruction. For students ready for advanced learning, the two programs offer opportunities to move beyond grade-level content, explore more complex applications, and compare multiple problem-solving strategies. In a full-course integration, MATHstream can be used to preview or introduce new concepts, while MATHia provides individualized, adaptive practice connected to those same lessons. Throughout the process, educator dashboards provide real-time performance data, helping teachers adjust instruction, group students effectively, and plan reteaching or enrichment activities. The effectiveness of this integration depends on maintaining a deliberate connection between these digital experiences and broader classroom goals so that students see coherence in their learning journey from Grade 6 through Algebra II.




MATHia is a personalized learning software that uses AI to adapt to each student's learning needs.

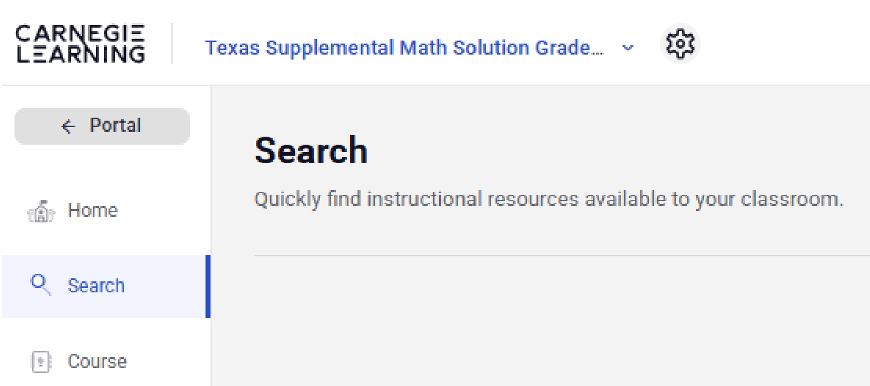



MATHstream is an adaptive, interactive video streaming program in which certi ied teachers deliver targeted instruction in an engaging environment.

# Course-Level Design Philosophy

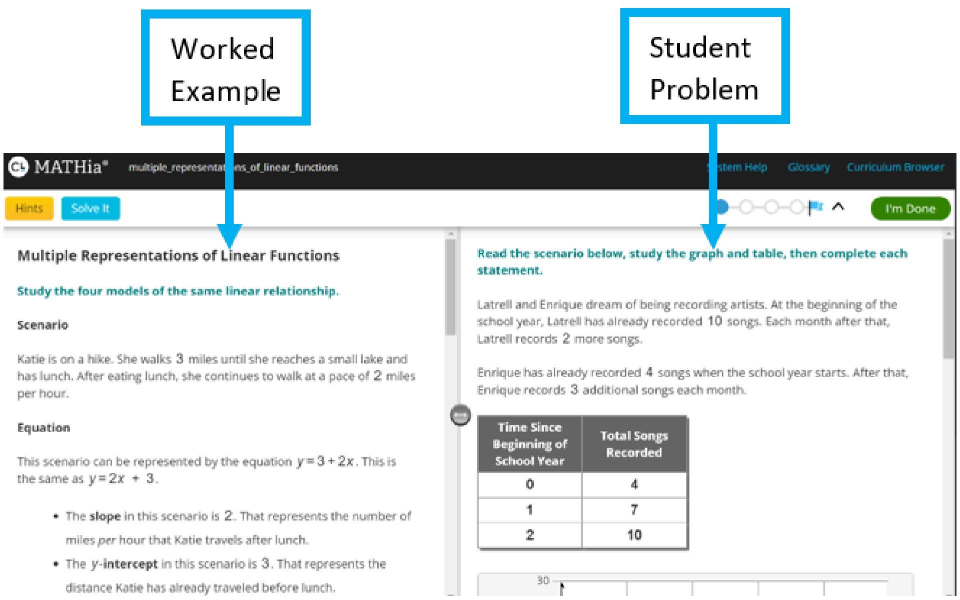
The design of Carnegie Learning's Texas Supplemental Math reflects The Carnegie Learning Way, a research-based instructional approach built on the principles of active learning, the use of multiple representations, and adaptive learning pathways. Instruction integrates assessments, TEKS correlation tools, and enrichment strategies to ensure all students engage in rigorous and coherent mathematics learning. These courses meet students at their current level of understanding and propel them toward and beyond grade-level proficiency by revisiting core concepts at increasing levels of abstraction. Early grades emphasize concrete and pictorial models to ensure strong conceptual grounding, while later courses, such as Algebra II, expect students to apply integrated knowledge from algebra, geometry, and statistics to solve complex, multi-representational problems. Concepts are intentionally embedded across multiple units and topics within the same grade, creating meaningful connections that promote retention and transferability. For example, proportional reasoning may appear in number sense units, in geometric applications such as scale drawings, and later in algebraic contexts involving slope and functions.

Beyond the course-structured organization, Texas Supplemental Math offers the entire Carnegie Learning Supplemental Library. All MATHia Workspaces and MATHstreams with aligned TEKS are easily accessible through the Clear Learning Center Search. Access to the Supplemental Library enables educators to target specific concepts and skills, and empowers them to make the best choices for their students.



# Process Standards in the Learning Pathway

MATHia and MATHstream embed the Mathematical Process Standards throughout the learning pathway, ensuring that students develop procedural fluency alongside the habits of mind required for deep mathematical reasoning. In MATHia, students are prompted from the outset to make sense of problems, persevere in solving them, and connect new learning to prior knowledge. Tasks encourage reasoning, modeling with mathematics, and moving fluidly among graphs, tables, and symbolic forms. As students build procedural fluency, they are expected to select strategies purposefully, attend to precision, and evaluate the reasonableness of their results. The adaptive sequencing of workspaces revisits earlier skills in increasingly complex contexts, aligning with the TEKS expectation of making connections across topics and grades. Teachers can monitor these processes through reporting tools like LiveLab, Standards Reports, and Progress Reports, using this data to strengthen students' reasoning strategies.




MATHstream models these standards in real time through a live, interactive lesson format. Lessons often begin with contextual introductions or "Notice and Wonder" prompts, encouraging students to analyze situations, pose questions, and plan solution strategies. As problems unfold, multiple representations are displayed side by side, and explicit connections are drawn between them. Students justify their reasoning, evaluate others' reasoning, and refine their approaches through polls, discussion prompts, and collaborative summaries. End-of-stream questions and re-engagement segments naturally bridge into MATHia workspaces, reinforcing the same reasoning strategies in a self-paced environment. (*Appendix A*)

# Balancing Conceptual and Procedural Emphasis

MATHia and MATHstream ensure that students develop both a deep understanding of mathematical concepts and the procedural fluency needed to apply them. Conceptual learning is fostered through interactive tools, multiple representations, and activities like Worked Examples and Explore Tools that encourage students to investigate patterns, structures, and relationships before formalizing methods. Procedural skills are built through adaptive, targeted practice in Concept Builder and Mastery workspaces, gradually increasing in complexity until mastery is reached, with teacher-facing reports providing precise feedback for targeted support or enrichment.

In MATHstream, conceptual focus comes from live explanations, visual and verbal modeling, and real-time connections between different representations. At the same time, interactive practice reinforces procedural skills within each video segment and end-of-stream assessments. Because both programs align procedural practice with the contexts in which concepts appear, students experience a continuous feedback loop in which conceptual understanding supports procedural accuracy, and procedural fluency reinforces conceptual insight.

# Coherence Across Lessons and Grade Levels

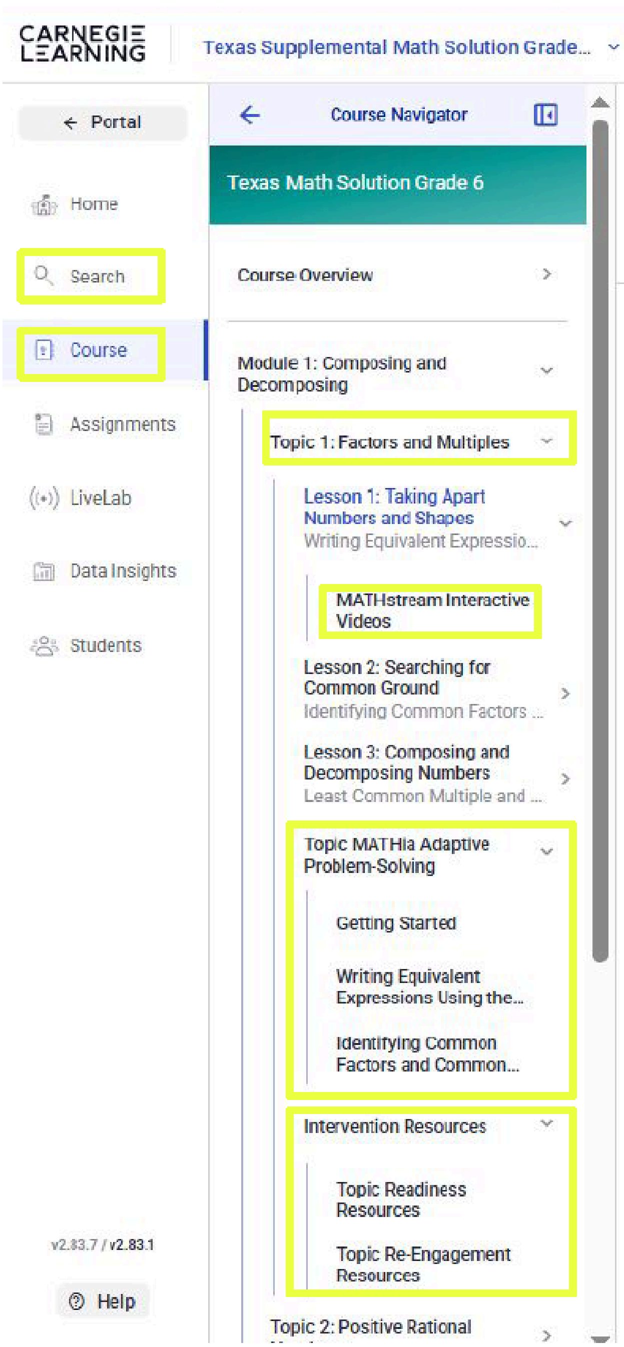
Both platforms maintain vertical coherence by building on prior skills and preparing students for advanced topics. Grade 6 lessons on greatest common factors prepare students for algebraic factoring. Meanwhile, Algebra I Topic Readiness streams revisit proportional reasoning from middle school before tackling linear equations and inequalities. (*Appendix B*)

Horizontally, related concepts are reinforced across topics within the same grade. In Grade 8, slope and proportional relationship work connect directly to linear equations, with consistent visuals and terminology. MATHstream extends these ideas to interpreting dependent and independent variables in various contexts. Across grades and topics, the use of numerical, algebraic, graphical, and verbal forms helps students see mathematics as interconnected and cumulative. (*Appendix B*)

CARNEGIE LEARNING

# Levels of Organization

When accessed through a Supplemental Course in the Clear Learning Center, MATHia is organized into topics comprised of sequenced, adaptive workspaces within units, progressing from Concept Builders to Mastery workspaces. In contrast, MATHstream is organized into Topic Readiness and Topic Re-Engagement collections, including Lessonstreams and Skillstreams.



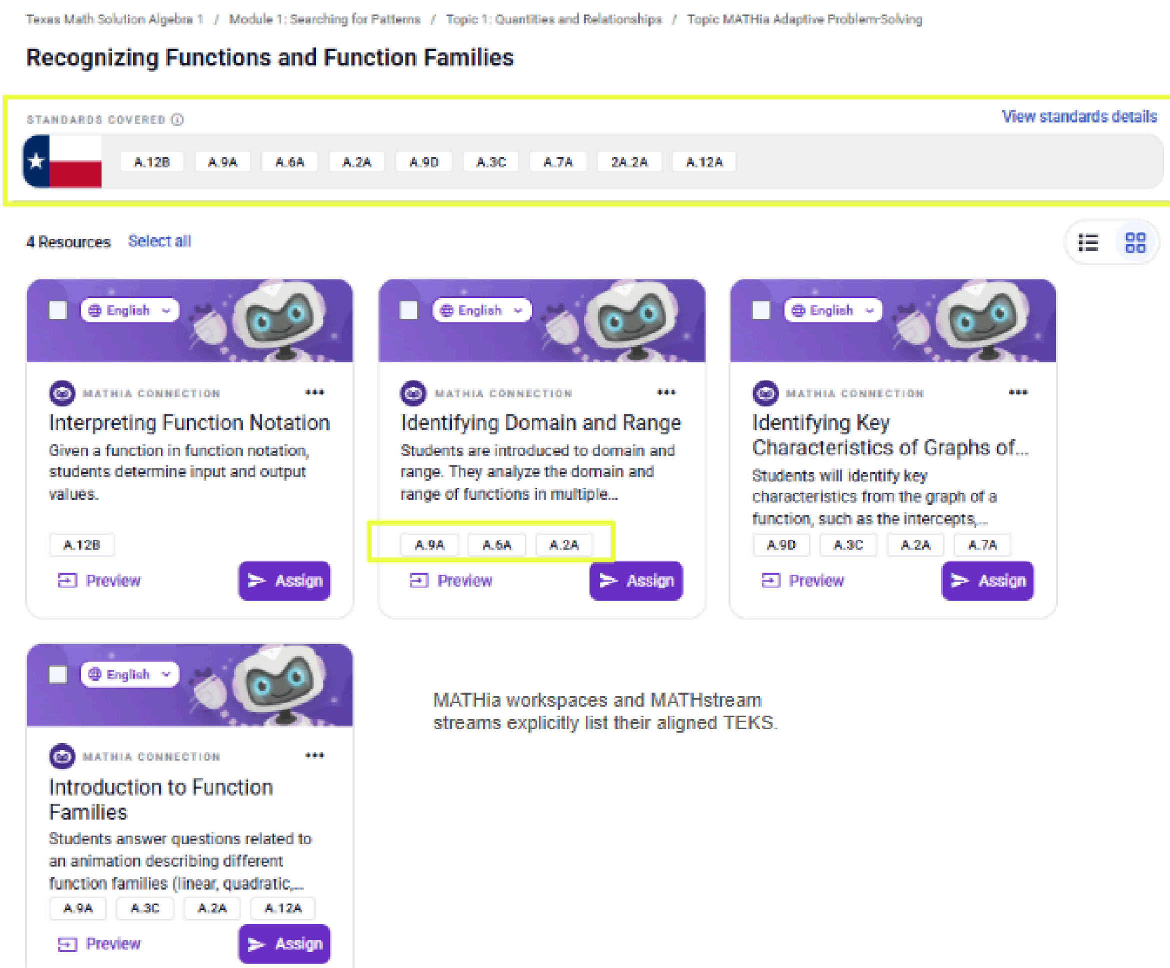

MATHia Adaptive Problem Solving Units are organized at the topic level into collections of related workspaces. Within each unit, workspaces are sequenced to move from scaffolded, accessible problems tied to prior knowledge toward complex, multi-step problems. In MATHia, Concept Builder workspaces are placed before Mastery workspaces (and sometimes at the end of a unit) to introduce, develop, or summarize key concepts using tools like animations, explore tools, classification activities, and Worked Examples. Mastery workspaces provide individualized, self-paced practice, requiring students to show mastery of all targeted skills before completion.

MATHstream Resources are organized into collections and series of Interactive Videos tied to specific content areas. These include topic Readiness Resources for prerequisite skill reinforcement before new topics, and topic Re-Engagement Resources for revisiting and accelerating learning on previously taught concepts. In MATHstream, Lessonstreams include the rigor of full lessons, while Skillstreams target individual skills within a content area.

This structure ensures a clear progression—from readiness and concept development, to mastery, to targeted skill reinforcement—across both MATHia and MATHstream platforms.

# TEKS Correlation and Skill Entry Points

Every lesson, MATHia workspace, and MATHstream stream is explicitly mapped to TEKS, enabling teachers to see exactly which standards are being addressed at any point. This information is available in the CLC, where both digital tools display their corresponding TEKS alignments. The program's assessment tools, including the APLSE and Standards Reports, provide data-driven recommendations for where students should begin in the learning pathway, based on prior performance. This ensures instruction is tailored to readiness levels, allowing targeted intervention or acceleration. MATHia workspaces are also accessible through the Search feature in the CLC, and can be assigned when students need them. MATHstream content is organized into skill- and lesson-based video streams within collections and series aligned to TEKS concepts so that it can be assigned quickly for just-in-time support. (*Appendix C*)




MATHia workspaces and MATHstream streams explicitly list their aligned TEKS.

# Activating Prior Knowledge and Anchoring Big Ideas

In MATHia, each unit begins with an overview linking familiar ideas to new challenges, using real-world examples and visual representations. Step-by-Step features demonstrate solution processes while making connections to earlier topics, and integrated tools such as Explore activities, animations, and a glossary offer alternative perspectives to strengthen understanding.  A workspace on slope might first review unit rates from Grade 7, showing how they connect to rise-over-run in a coordinate plane. Animations, Explore Tools, and glossaries support multiple entry points. Progress is monitored visually through a progress bar, and reported through Standards Reports that track mastery over time.

In MATHstream, lessons weave prior experiences into the introduction of new problems, highlighting structural similarities to previously learned concepts. Representations shift fluidly between graphs, tables, and equations, with built-in pauses for students to make predictions or identify patterns before new information is revealed. For example, before teaching percent decrease, a stream might start with a clearance sale where an item's price drops multiple times. Students estimate the final price before the teacher works through the calculation, emphasizing the difference between subtracting percentages and multiplying by a decimal factor.

# Enrichment, Extension, and Varied Engagement

Enrichment opportunities are embedded in both programs. In MATHia, the adaptive design guides students from foundational practice toward increasingly complex problem solving once mastery is demonstrated. For example, once a student masters simple interest calculations, they may move on to compound interest problems that require multiple steps and formula manipulation. MATHstream incorporates extension segments that push beyond current grade-level TEKS to explore advanced applications. In MATHstream, an "Extension" segment following a linear functions lesson might explore vertical dilations and translations of graphs, inviting students to predict how altering the equation changes the slope and intercept.  Across both platforms, students are encouraged to compare strategies, analyze alternative approaches, and engage with multi-step, real-world problems that demand higher-order thinking.

# Assessment and Reporting Tools

Assessment in Texas Supplemental Math is continuous and adaptive, with MATHia serving as both the primary practice and assessment environment. Every workspace includes embedded formative checks, such as Concept Builder questions and Mastery tasks, that provide immediate feedback and automatically adjust problem difficulty based on student performance. If a student struggles with a concept, MATHia offers additional scaffolded problems, hints, or worked examples before returning to more complex applications.

MATHia delivers assessments that integrate multiple skills, ensuring students can apply what they've learned in varied contexts. Teachers can track progress and plan instruction using reports such as:

- APLSE – Predicts student readiness for year-end assessments and highlights TEKS in need of reinforcement.
- Standards – Shows TEKS mastery at class and individual levels for targeted reteaching or enrichment.
- Session – Summarizes daily or weekly activity, including problems attempted, accuracy, and hint use.
- Student Detail – Provides in-depth data on module, unit, and workspace progress.
- LiveLab – Monitors student work in real time for immediate intervention.

MATHstream complements this with in-lesson polls, quick checks, and end-of-stream questions, offering an immediate read on student understanding and helping teachers decide which skills to reinforce in MATHia or the classroom. Additionally, Teachers can track progress and plan instruction using reports such as:

- Student Grouping Report – Monitors, for each stream, the average score across all students who have completed the stream.
- Stream Progress Report – Monitors the number of streams completed, the total average score, and the performance breakdown for every student.

# Protocols for Unit and Lesson Internalization

Carnegie Learning's Engage → Develop → Demonstrate sequence serves as the foundation for every program. This structure ensures students first activate prior knowledge, then build conceptual understanding through exploration, and finally reflect and demonstrate mastery. The MATHia and MATHstream Lesson and Unit Internalization protocols are designed to ensure teachers deeply understand lesson flow, instructional intent, and how each component supports student mastery. (*Appendix D*)

Instructional leaders are provided with resources to help educators strengthen lesson preparation habits, promote reflective practice, and maintain fidelity to the curriculum design.

# Conclusion

Carnegie Learning's Texas Supplemental Math merges MATHia's adaptive, data-driven practice with MATHstream's engaging, real-time instruction into a cohesive, research-based program. By aligning every activity to TEKS, providing concrete, context-rich examples, and embedding the Mathematical Process Standards throughout, it equips students to think critically, communicate mathematically, and apply their learning in authentic situations, whether they are catching up, keeping pace, or moving ahead.

## Appendecies

### A. TEKS Process Standards Integration

| TEKS Process Standard | MATHia Connection | MATHstream Connection |
|---|---|---|
| **2A.1A**<br>Apply mathematics to problems arising in everyday life, society, and the workplace | Real-world contexts embedded in Concept Builder and Mastery workspaces, adaptive scenarios in Problem Solving tools that require application beyond procedural recall. | Opening contexts and 'Real World' scenarios that tie lesson concepts to authentic problems in society and workplace scenarios. |
| **2A.1B**<br>Use a problem-solving model that incorporates analyzing, formulating, and evaluating | Scaffolded tasks that lead students through problem identification, strategy formulation, and evaluation of results, with feedback loops via LiveLab and Standards Reports. | Modeled think-aloud strategies during live sessions to show iterative problem-solving processes, with pauses for prediction and strategy adjustment. |
| **2A.1C**<br>Select appropriate tools and techniques | Explore Tools, classification activities, and technology integration for graphing, calculation, and symbolic manipulation to reinforce appropriate tool selection. | Demonstrations of calculator use, graph interpretation, and representation choice during lesson walkthroughs. |
| **2A.1D**<br>Communicate mathematical ideas and reasoning | Student-written explanations within workspace prompts, supported by glossary and annotation tools to reinforce mathematical language. | Structured discussion prompts, polls, and chat responses for students to articulate and refine mathematical reasoning in real time. |
| **2A.1E**<br>Create and use multiple representations | Multiple representation requirements in tasks: tables, graphs, equations, and verbal explanations are presented and compared. | Dynamic visual overlays showing how the same situation is represented algebraically, graphically, and verbally. |
| **2A.1F**<br>Make and evaluate mathematical conjectures | Opportunities to identify patterns, make predictions, and test hypotheses in classification and exploration workspaces. | Interactive questioning where students decide whether a conjecture holds and justify with counterexamples or proofs. |
| **2A.1G**<br>Display, explain, and justify solutions | End-of-workspace reflections that require justification of the solution pathway and confirmation of answer reasonableness. | Summary segments and '3-2-1 Stream Summary' activities prompt students to explain methods and validate outcomes. |

**B. Recommended TEKS Entry Points**

## 1. Ratios, Proportionality, and Slope

TEKS Strands:

- 6.4, 6.5, 6.6, 7.4, 7.5, 8.3, 8.4, 8.5, 8.10, A.2, A.3, A.6, A.9, 2A.3

  Skill Progression:
- Grade 6 (MATHia/MATHstream): Understanding ratios and rates using double number lines, ratio tables, and graphs.
- Grade 7: Proportional reasoning in multistep contexts, percent problems, scale drawings.
- Grade 8: Connecting proportionality to slope; analyzing linear relationships.
- Algebra I → A2: Slope in multiple function types, rate of change in nonlinear functions.

Entry Point Recommendations:

- Below grade-level proficiency: Start with Grade 6 ratio tables and double number lines to rebuild proportional reasoning models before connecting to slope.
- At grade-level but struggling with application: Begin in the grade's slope/proportionality module, with spiral review from the previous grade's proportional reasoning tasks.
- Above grade-level: Enter at function-based slope applications (Algebra I/A2) and extend to multi-function comparisons or real-world modeling.

## 2. Expressions, Equations, and Inequalities

TEKS Strands:

- 6.7, 6.8, 7.7, 7.10, 7.11, 8.7, A.2, A.5, A.12, 2A.4, 2A.6

  Skill Progression:
- Grade 6: Equivalent expressions with the distributive property, simple one-step equations.
- Grade 7: Operations with rational numbers, solving multi-step equations and inequalities.
- Grade 8: Systems of equations, transformations between linear forms.
- Algebra I: Quadratic/absolute value equations, systems of linear & quadratic equations.
- Algebra II: Polynomial, rational, exponential, and logarithmic equations.

Entry Point Recommendations:

- Below grade-level: Begin with concrete and pictorial equation models from Grade 6 to ensure symbolic manipulation is grounded in conceptual understanding.
- Approaching grade-level: Start at the current grade's equation-solving lessons, but include prior-grade content on equivalent expressions and multi-step solving for reinforcement.
- Above grade-level: Enter at transformation-based problem solving or multi-equation systems; move to enrichment with non-linear equations and inequalities.

## 3. Functions and Relations

TEKS Strands:

- 6.6, 7.4C, 8.4, 8.5, A.2, A.3, A.6, A.9, A.12, 2A.2, 2A.8

  Skill Progression:

- Grade 6: Independent/dependent variables, simple tables and graphs.
- Grade 7: Direct variation, equations for proportional relationships.
- Grade 8: Introduction to function families; slope-intercept form.
- Algebra I: Linear, quadratic, exponential, and absolute value functions with transformations.
- Algebra II: Advanced function analysis, polynomial, rational, exponential, logarithmic; inverse functions.

Entry Point Recommendations:

- Foundational gaps: Start with Grade 6–7 direct variation models and visual representations.
- Partial proficiency: Begin at the current grade's primary function type and integrate backward connection activities.
- Advanced learners: Start with transformation units in Algebra I/II and apply them to real-world, multi-function modeling.

## 4. Geometry and Measurement

TEKS Strands:

- 6.8, 7.5, 8.3, 8.7, 8.10, G.2–G.6, G.11–G.13

  Skill Progression:

- Grade 6: Area, surface area, volume, triangle properties.
- Grade 7: Scale drawings, similarity, angle relationships.
- Grade 8: Transformations, Pythagorean Theorem, similarity/congruence.
- Geometry: Proof, congruence/similarity, circles, coordinate geometry.
- Algebra II: Geometry in function modeling (e.g., conics).

Entry Point Recommendations:

- Below grade-level: Begin with concrete measurement models and transformations in Grades 6–8.
- Mid-level: Enter at grade-appropriate transformations or similarity/congruence modules with embedded review of prior skills.
- Advanced: Begin with proof-based Geometry modules or Algebra II geometric modeling tasks.

## 5. Data Analysis and Probability

TEKS Strands:

- 6.12, 7.6, 7.12, 8.11, A.4, G.13, 2A.9

  Skill Progression:
- Grade 6: Dot plots, histograms, box plots, measures of center and spread.
- Grade 7: Comparative data analysis, probability concepts.
- Grade 8: Scatter plots, lines of best fit.
- Algebra I: Correlation, regression analysis, residuals.
- Algebra II: Advanced statistical inference and probability distributions.

## Entry Point Recommendations:

- Below grade-level: Start with concrete, visual data representation creation and interpretation.
- Approaching proficiency: Enter at the current grade's primary data representation type, spiraling in prior-grade probability skills.
- Advanced: Begin with regression, correlation, and statistical inference modules in Algebra I/II.

**C. Vertical and Horizontal Alignment**

## 1. Ratios, Proportional Relationships, and Slope

Vertical Alignment:

- Grade 6: Students build foundational ratio understanding through concrete models (double number lines, tables) and proportional reasoning in familiar contexts.
- Grade 7: They extend proportional reasoning to more complex scenarios (scale drawings, percent problems, simple and compound interest), using ratios to model and solve multistep problems.
- Grade 8: Proportional reasoning connects to slope as a rate of change, introducing linear functions and similarity in geometric contexts.
- Algebra I: The slope concept is formalized algebraically, linked to rate of change, graphing, and multiple function families.
- Geometry: Slope relationships are integrated into coordinate proofs and properties of parallel/perpendicular lines.
- Algebra II: Students analyze slopes in varied function types (linear, exponential, quadratic) and use them in systems of equations and inequalities.

Horizontal Alignment:
Within each grade, proportional reasoning appears in multiple strands, ratio tables in number sense, slope in geometry contexts, and rates of change in function units, providing multiple entry points and reinforcing the concept through different representations.

## 2. Expressions, Equations, and Inequalities

Vertical Alignment:

- Grade 6: Foundations in numerical expressions, properties of operations, and simple equations using concrete and pictorial models.
- Grade 7: Extension to operations with rational numbers, solving multi-step equations and inequalities, and interpreting algebraic expressions in context.
- Grade 8: Formalization of linear equations, systems of equations, and transformations between forms of linear equations.
- Algebra I: Expansion to quadratic and absolute value equations, systems of linear and quadratic equations, and inequalities in one and two variables.
- Geometry: Use of equations and inequalities in geometric contexts, such as proving relationships and solving for measures in figures.
- Algebra II: Mastery of polynomial, rational, exponential, and logarithmic equations and inequalities, including modeling complex situations.

Horizontal Alignment:
Each grade blends symbolic manipulation with real-world problem solving, introducing equation-solving in number, geometry, and function contexts to deepen transfer of skills.

## 3. Functions and Relations

Vertical Alignment:

- Grade 6: Informal introduction to dependent/independent variables and representing relationships in tables and graphs.
- Grade 7: Development of direct variation equations and functional relationships through proportional reasoning.
- Grade 8: Introduction to function families, including linear, with emphasis on slope-intercept form and multiple representations.
- Algebra I: Formal study of linear, quadratic, exponential, and absolute value functions, including transformations and modeling.
- Geometry: Functional reasoning through geometric transformations, trigonometric ratios, and coordinate geometry.
- Algebra II: Deep analysis of polynomial, rational, exponential, and logarithmic functions, transformations, and inverses.

Horizontal Alignment:
Functions are revisited in multiple topics within each grade (e.g., in data analysis, geometry, and algebra units) to reinforce representation fluency and conceptual connections.

## 4. Geometry and Measurement

Vertical Alignment:

- Grade 6: Work with area, surface area, volume, and basic geometric relationships (Triangle Sum Theorem) using concrete and pictorial models.
- Grade 7: Scale drawings, similarity, angle relationships, and application of geometric formulas.
- Grade 8: Transformations, congruence, similarity, and introduction to the Pythagorean Theorem.
- Geometry: Formal study of Euclidean geometry, proof, congruence, similarity, circles, and coordinate geometry.
- Algebra II: Geometric contexts appear in function applications (e.g., conics) and modeling situations.

Horizontal Alignment:
Within a grade, geometry concepts are embedded in both pure geometry units and applied contexts in measurement, data analysis, and algebra, ensuring conceptual overlap and application.

## 5. Data Analysis and Probability

Vertical Alignment:

- Grade 6: Focus on measures of center and variability, dot plots, histograms, and box plots.
- Grade 7: More complex data comparisons, probability concepts, and inference-making.
- Grade 8: Bivariate data, scatter plots, and informal lines of best fit.
- Algebra I: Formal introduction to correlation, regression, and residual analysis.
- Geometry: Probability within geometric contexts (area models, compound events).
- Algebra II: Statistical inference, probability distributions, and deeper regression analysis.

Horizontal Alignment:
Data analysis tasks appear alongside algebra and function units in each grade, reinforcing the interpretation of data in varied mathematical contexts.

**D. MATHia & MATHstream Internalization Protocol**

# MATHia & MATHstream Topic Internalization Protocol

| Purpose | Prework |
| --- | --- |
| The Topic Internalization Protocol is the process by which teachers understand what students will be learning, how students will be assessed, and the high-level arc of learning over the course of the topic. Understanding how the topic progresses is critical to the lesson internalization process, enabling teachers to see how each lesson fits into the big picture and move student progress forward. | Use the Module Overview. Read, highlight, and/or record your thoughts about the big ideas across topics. |

For Texas Supplemental Math, MATHia Topics, MATHstream Readiness Collections, and MATHstream Re-Engagement Collections are provided at the topic level within the Course view. MATHia workspaces and MATHstreams are housed within their corresponding Topic or Collection, and are accessible through Search. MATHstream Lessonstreams are available at the lesson level and accessible through Search.

**Step 1: Understand the big picture.**

- Use the Topic Overview in the Clear Learning Center: Read and/or record your thoughts about the big ideas within the current topic.
- Note the TEKS standards and process standards emphasized in this topic.
- Pay attention to any explicit modeling expectations, such as creating and connecting concrete, pictorial, and abstract representations.
- Reflect: Why is this topic important? How does it connect to prior topics (if applicable)?

**Step 2: Know your destination.**

- Use the Topic Re-Engagement Resources and the end-of-unit Mastery MATHia workspaces. Complete each Assessment (when available), or use the teacher Solve-It feature, considering exemplar strategies. Note what students need to know and be able to do by the end of the topic, including examining the Texas Essential Knowledge and Skills (TEKS) and English Language Proficiency Standards (ELPS).
- Reflect: What models, strategies, or terminology are critical for student success on the assessment?

**Step 3: Examining the arc of learning.**

- Use the Topic Overview: Analyze the big ideas for each lesson to understand how knowledge and skills build over the topic, including any necessary prior knowledge students may need to engage with the mathematics in the topic successfully. Examine familiarity with mathematical strategies required for the topic.
- Identify recurring structures, problem types, and representations across workspaces and MATHstreams to reinforce coherence.
- Note where prior knowledge will be activated and how it connects to new concepts.
- Reflect: How does the math in the arc of learning move from simple to complex? Where are enrichment or extension embedded?

**Step 4: Bridge MATHia and MATHstream.**

- Use MATHia to note digital tools (animations, Explore Tools, Worked Examples)
- Check for adaptive branching: how MATHia supports struggling learners and extends for advanced students.
- Use MATHstream videos to identify segments that introduce concepts, model problem-solving strategies, and connect visual/concrete examples to symbolic reasoning.

**Step 5: Organize your resources.**

- Mark where prior knowledge will be activated and how it connects to new concepts.
- Determine explicit opportunities for students to engage in the TEKS Mathematical Process Standards.
- Plan where to pause MATHstream videos for student modeling, partner discussion, or representation creation.
- Schedule data reviews using:
  - APLSE Report (progress and projection)
  - Standards Report (mastery by standard)
  - Student Detail Report (progress, pacing, completion)

# MATHia & MATHstream Lesson Internalization Protocol

| Purpose | Prework |
|---|---|
| The Lesson Internalization Protocol is the process by which teachers understand what students will learn in a specific lesson, how students will be assessed, and determine how to make decisions about teaching the lesson to support all students in their success. The Lesson Internalization Protocol builds on the overall understanding of the topic developed as part of the Topic Internalization Protocol. | Review the Topic Overview and big ideas that emerge when the topic is internalized. |

For Texas Supplemental Math, MATHia Topics, MATHstream Readiness Collections, and MATHstream Re-Engagement Collections are provided at the topic level within the Course view. MATHia workspaces and MATHstreams are housed within their corresponding Topic or Collection, and are accessible through Search. MATHstream LESSONstreams are available at the lesson level and accessible through Search.

**Step 1: Understand the purpose and objectives.**

- Use the CLC: Read the Stream or Workspace Overview and Texas Essential Knowledge and Skills (TEKS). Record your understanding. Determine the knowledge and skills students will gain as a result of this learning experience.
- Leverage given problems to develop aligned and appropriately rigorous, formative assessments considering exemplar strategies.

**Step 2: Understand the sequence and pacing.**

- In MATHstream, preview the stream video segments and interactive moments. Record your understanding.
- In MATHia, open the workspace to review problem types, tool use (Explore Tools, Graphing Tools, Animations), and key hints. Note points where students shift from manipulatives/visuals to equations/algorithms. Record your understanding.

**Step 3: Plan Facilitation Moves**

- Prepare key questions to prompt reasoning and explanation.
- Anticipate multiple solution strategies and plan to highlight them.
- Use structured discourse formats (partner talk, small group share, whole-class discussion).
- In MATHia, formative assessment is embedded—look for multi-level hints, progress bars, and performance tracking to drive real-time feedback.

**Step 4: Organize your resources.**

- In MATHia, formative assessment is embedded—look for multi-level hints, progress bars, and performance tracking to drive real-time feedback.
- Determine how lesson performance will be captured and set next steps for students not meeting the objective.
    - MATHstream: exit tickets, discussion artifacts.
    - MATHia: session data, mastery reports.
- Plan supports and extensions.
    - Use MATHia's adaptive tools and MASTHstream Skillstreams for targeted practice.
    - Assign MATHstream Re-Engagement streams to students who are ready to go deeper.

# MATHia & MATHstream Topic Internalization Planning Form

**Purpose**

Understand what students will learn, how they will be assessed, and the arc of learning across the topic.

---

**Prework**

Read the Module Overview, highlight big ideas, and identify TEKS and process standards emphasized.

---

**Step 1: Understand the Big Picture**

Big ideas in the current topic:

---

TEKS and process standards emphasized:

---

Explicit modeling expectations:

---

Reflection – Why is this topic important? How does it connect to prior topics?

---

---

CARNEGIE LEARNING

**Step 2: Know Your Destination**

Assessment resources reviewed (Topic Re-Engagement, Mastery MATHia workspaces):

What students must know and be able to do by the end of the topic (include TEKS & ELPS):

Reflection – Critical models, strategies, or terminology for success:

**Step 3: Examine the Arc of Learning**

Big ideas by lesson (knowledge/skills progression):

Necessary prior knowledge:

Recurring structures, problem types, or representations to emphasize:

Connections from prior knowledge to new concepts:

Reflection – How does the math move from simple to complex? Where are enrichment or extension points?

**Step 4: Bridge MATHia and MATHstream**

MATHia tools to highlight (animations, Explore Tools, Worked Examples):

Adaptive branching/supports/extensions to note:

MATHstream segments for concept introduction and modeling:

**Step 5: Organize Resources**

Prior knowledge activation opportunities:

Opportunities for TEKS Mathematical Process Standards engagement:

Planned pauses in MATHstream for discussion/modeling:

Scheduled data reviews:

# MATHia & MATHstream Lesson Internalization Planning Form

**Purpose:**

Plan how to teach a specific lesson to support all students' success.

---

**Prework**

Review the Topic Overview and big ideas. Access MATHia workspaces and MATHstream Lessonstreams.

---

**Step 1: Understand Purpose & Objectives**

Lesson objectives (TEKS):

---

Knowledge/skills students will gain:

---

Formative assessment ideas (aligned to exemplar strategies):

---

---

**Step 2: Understand Sequence & Pacing**

MATHstream – key segments/interactive moments:

MATHia – problem types, tool use, hint levels:

Points of transition (manipulatives/visuals → equations/algorithms):

**Step 3: Plan Facilitation Moves**

Key questions to prompt reasoning:

Anticipated solution strategies to highlight:

Planned discourse formats:

Embedded formative checkpoints in MATHia:

**Step 4: Organize Resources**

Performance evidence to collect:

MATHstream: ________________________________

MATHia: __________________________________

Next steps for students not meeting objectives:

________________________________________________________________

Supports and extensions planned:

________________________________________________________________

Re-Engagement/Skillstream assignments:

________________________________________________________________