MIND Education

Supplemental English Mathematics, 2

ST Math Texas Grade 2

MATERIAL TYPE	ISBN	FORMAT	ADAPTIVE/STATIC
Supplemental	**9781606653562**	**Digital**	**Adaptive**

Rating Overview

TEKS SCORE	TEKS BREAKOUTS ATTEMPTED	ERROR CORRECTIONS (IMRA Reviewers)	SUITABILITY NONCOMPLIANCE	SUITABILITY EXCELLENCE	PUBLIC FEEDBACK (COUNT)
100%	14	1	Flags Not in Report	Not Applicable	0

Quality Rubric Section

RUBRIC SECTION	RAW SCORE	PERCENTAGE
1. Intentional Instructional Design	16 out of 21	76%
2. Progress Monitoring	14 out of 23	61%
3. Supports for All Learners	26 out of 37	70%
4. Depth and Coherence of Key Concepts	16 out of 16	100%
5. Balance of Conceptual and Procedural Understanding	38 out of 38	100%
6. Productive Struggle	19 out of 19	100%

Breakdown by Suitability Noncompliance and Excellence Categories

SUITABILITY NONCOMPLIANCE FLAGS BY CATEGORY	IMRA REVIEWERS	PUBLIC	Flags NOT Addressed by November Vote
1. Prohibition on Common Core	0	0	0
2. Alignment with Public Education's Constitutional Goal	0	0	0
3. Parental Rights and Responsibilities	0	0	0
4. Prohibition on Forced Political Activity	0	0	0
5. Protecting Children's Innocence	0	0	0
6. Promoting Sexual Risk Avoidance	0	0	0
7. Compliance with the Children's Internet Protection Act (CIPA)	0	0	0

SUITABILITY EXCELLENCE FLAGS BY CATEGORY	IMRA REVIEWERS
Category 2: Alignment with Public Education's Constitutional Goal	0
Category 6: Promoting Sexual Risk Avoidance	0

IMRA Quality Report

1. Intentional Instructional Design

Materials support educators in effective implementation through intentional course and lesson-level design.

1.1 Course-Level Design

GUIDANCE	SCORE SUMMARY	RAW SCORE
1.1a	English Language Proficiency Standards (ELPS) are not included within the product.	4/5
1.1b	All criteria for guidance met.	3/3
1.1c	Assessment Support Tool lists that the pre- and post-assessments can be coupled with district assessments for personalized learning, but explicit entry points were not included in the resource.	1/2
1.1d	All criteria for guidance met.	2/2
1.1e	All criteria for guidance met.	2/2
—	**TOTAL**	12/14

1.1a – Materials include an alignment guide outlining the TEKS, ELPS, and concepts covered, with a rationale for learning paths across grade levels (vertical alignment) and within the same grade level (horizontal alignment) as designed in the materials.

The Texas Essential Knowledge and Skills (TEKS) are listed with each concept in the scope and sequence, as well as in each topic page.

Under the "Learning Objectives" tab, there is a link for the TEKS that corresponds with each objective.

Although the publisher included the "ST Math Puzzle Talks and the English Language Proficiency Standards" document, specific English Language Proficiency Standards (ELPS) cannot be found within the product, including when a search is conducted in ST Help. Additionally, the document lists less than half of the ELPS for the grade level and is not included with each lesson.

Under the "Learning Objectives" tab, users can select a specific objective and choose one or more grade levels to see how the standards for that objective align across grades.

The "Curriculum" tab provides access to all learning objectives, organized by grade level and activity. By clicking on individual activities, users can also view the specific learning objectives associated with each one.

Materials include an alignment guide that outlines the TEKS and concepts covered.

The "Alignment Guide and Objective Learning Progression" shows vertical alignment from kindergarten–grade 5, and it shows how the concepts are connected. It includes a rationale for learning paths within the same grade level (horizontal alignment) as designed in the materials.

Lesson pathways are outlined in the "Objective and Puzzle Talk Scope and Sequence," organized by grade level for easy reference.

1.1b – Materials include an implementation guide with usage recommendations and strategies for effective educator use in various contexts, such as just-in-time supports, advanced learning, or as a course.

The "Puzzle Talk Facilitation Guide" gives the teacher instructions on how to implement the program in the classroom. Within the "Support" tab, there is a link for ST Math Help with ideas for instructional practices for teachers, including supporting struggling students both individually and as a class, celebrating student successes, embedding the program within math instruction, and extending *ST Math*.

The program provides a "Weekly Routine and Pacing Guide" for all grade levels as a resource for the teachers. Materials provide usage recommendations for adapting to meet student needs in various contexts.

1.1c – Materials include a TEKS correlation guide with recommended skill entry points based on diagnostic assessment results.

According to the "Program Introduction Guide," beginning in grade 2, students are given pre- and post-assessments. District assessments can be coupled with the Assessment Support tool to provide personalized intervention to the student beginning in grade 2.

Materials provided for *ST Math* include a "TEKS Correlation Guide for IMRA." Puzzle Talks have a direct correlation to the TEKS.

1.1d – Materials include protocols with corresponding guidance for unit and lesson internalization.

Materials include protocols with corresponding guidance for lesson and unit internalization. Each objective includes a video demonstration that shows what students will experience and do within the corresponding game.

It also lists the TEKS for each objective. Puzzle Talk provides detailed lessons with teacher notes for each objective.

Each Puzzle Talk activity has a guided introduction to introduce *ST Math* to the students through the gaming component. Under each activity, there is a "Game in a Minute" video that explains how to play each game in *ST Math*.

Under Introducing *ST Math*, there is an introduction video to show students how the program works and what they will do for each learning objective. It includes a step-by-step guide for teachers to introduce the program to students.

1.1e – Materials include resources and guidance for instructional leaders to support educators with implementing the materials as designed.

The materials include a variety of resources designed to support instructional leaders in helping educators implement the program as intended. These resources feature links and tools for introducing *ST Math*, such as a guided introduction activity, a Launch Toolkit, a "Weekly Routine and Pacing Guide," and a "Guided Introductory Guide." Additionally, the ST Math Help section includes a three-phase "Implementation Guide" for administrators, as well as walkthrough forms to further assist instructional leaders.

1.2 Lesson-Level Design

GUIDANCE	SCORE SUMMARY	RAW SCORE
1.2a	This guidance is not applicable to the program.	N/A
1.2b	In the Puzzle Talks: Lesson Preview, there is a breakdown of lesson components/lesson plan, which includes lesson alignment to the TEKS; ELPS are not included.	3/5
1.2c	Although general information is provided for parents in Spanish, specific information is not provided for each unit.	1/2
—	**TOTAL**	4/7

1.2a – If designed to be static, materials include detailed lesson plans with learning objectives, teacher and student materials, lesson components with suggested timeframes, and assessment resources aligned with the TEKS and ELPS.

This guidance is not applicable because the program is not designed to be static.

1.2b – If designed to be adaptive, materials include detailed lesson overviews with learning objectives, lesson components with suggested timeframes, and assessment resources aligned with the TEKS and ELPS.

ST Math is an adaptive program in which learning objectives are aligned with the TEKS for each activity. Puzzle Talk lessons come with a lesson plan that has a breakdown of lesson components.

The adaptive materials include blended model lesson components with suggested time allocations. Under Puzzle Talks: Lesson Notes, for each puzzle, there is a list of materials, vocabulary, details, discourse, and look-fors.

Adaptive materials include assessment resources aligned with the TEKS in grade 2. There are pre- and post-quizzes before starting each objective. The program allows these quizzes to be administered in Spanish.

1.2c – Materials contain support for families in Spanish and English for each unit, with suggestions on supporting the progress of their student(s).

In ST Math Help, under "Resources and Printables," there are letters to families with links to resources and other support features. The ST Math Help site has a tab for Spanish resources, including an introduction letter for parents. The Family Introduction to ST Math includes Facilitating Questions, available in English, Spanish, and Portuguese.

Materials contain a video that can be sent to parents, which explains the math program and allows the parents to interact with the platform. This video can be played in English or Spanish.

Specific information for each unit is not provided in Spanish.

Materials provided for *ST Math* include the "Family Guidebook," which is available in English.

2. Progress Monitoring

Materials support educators in effective implementation through frequent, strategic opportunities to monitor and respond to student progress.

2.1 Instructional Assessments

GUIDANCE	SCORE SUMMARY	RAW SCORE
2.1a	All criteria for guidance met.	2/2
2.1b	All criteria for guidance met.	2/2
2.1c	Materials do not include digital assessments that include accommodations, including text-to-speech, content and language supports, and calculators that educators can enable or disable to support individual students.	1/4
2.1d	Materials do not include diagnostic assessments with TEKS-aligned tasks or questions, including interactive item types with varying complexity levels.	0/4
2.1e	All criteria for guidance met.	4/4
—	**TOTAL**	9/16

2.1a – Materials include the definition and intended purpose for the types of instructional assessments.

Within ST Math Help, an Assessment Support Tool is an add-on feature that teachers can use to import diagnostic assessment data from their district assessments to auto-assign foundational *ST Math* objectives based on their assessment scores.

The Student Quiz Experience lists the types of quizzes available within *ST Math* and contains an article explaining the assessments within the product. A Frequently Asked Questions page is available and provides information for students to understand the purpose and intent of the quizzes.

2.1b – Materials include guidance to ensure consistent and accurate administration of instructional assessments.

Consistent administration of the assessments is available through quiz norms found in ST Math Help. An "Auto-Assessment Support Tool" video is available within the Resources section to support the use of district assessments paired with *ST Math*.

To support the intended purpose of the instructional assessments, the Student Quiz Experience lists the types of quizzes available within *ST Math and* contains an article explaining the assessments within the product.

2.1c – Digital assessments include printable versions and accommodations, including text-to-speech, content and language supports, and calculators, that educators can enable or disable to support individual students.

In the ST Math Help tab, there is a Frequently Asked Questions section that provides strategies to use with students for quizzes. The quizzes can also be printed for the teacher and student.

Assessments do not include accommodations other than changing the language to Spanish for individual students or for an entire class. No evidence of text-to-speech or content language supports were included. Calculators are not available with the product, and calculator use is not recommended by *ST Math*.

Use of additional resources, like calculators or hundreds charts, are not recommended for quizzes, but is left to the teacher's discretion.

2.1d – Materials include diagnostic assessments with TEKS-aligned tasks or questions, including interactive item types with varying complexity levels.

In the ST Math Journey section under All Learning Objectives, there are TEKS-aligned tasks, including assessments; for example, under the Addition and Subtraction Situations section, there is an Assess button to click. Once there, students can take a pre-quiz and post-quiz for the objective being taught. The pre-quiz and post-quiz do not include interactive item types with varying levels of complexity.

While teachers can upload data from outside assessments into *ST Math*, the diagnostic assessments are not included in the product.

2.1e – Materials include a variety of formative assessments with TEKS-aligned tasks or questions, including interactive item types with varying complexity levels.

In *ST Math*, Journal Pages can be used as formative assessments by the teacher. The Journal Pages provide opportunities for students to use varying levels of complexity by representing or justifying their responses. Quizzes are available as checks for understanding at the end of each learning objective.

Other formative assessments are input from other outside sources into *ST Math*.

In the ST Math Journey section under All Learning Objectives, there are TEKS-aligned tasks, including assessments. Students can take a pre-quiz and post-quiz for the objective being taught.

ST Math provides equivalents to interactive item types in the form of drag-and-drop items, equation editors, text entry, and short constructed responses through journal entries.

2.2 Data Analysis and Progress Monitoring

GUIDANCE	SCORE SUMMARY	RAW SCORE
2.2a	Instructional assessments do not include scoring information and guidance for interpreting student performance, including a rationale for each correct and incorrect response.	1/3
2.2b	All criteria for guidance met.	1/1
2.2c	All criteria for guidance met.	2/2
2.2d	This guidance is not applicable to the program.	N/A
2.2e	All criteria for guidance met.	1/1
—	**TOTAL**	5/7

2.2a – Instructional assessments include scoring information and guidance for interpreting student performance, including rationale for each correct and incorrect response.

Instructional assessments within *ST Math* are available through quizzes. *ST Math* provides teachers with questions to use in helping students progress through the Puzzle Talks Challenges. The program will also alert teachers when students have made ten attempts on a challenge and need additional support.

Within the Educator Console, the Student Quiz Data and Student Detail Report provide a breakdown of data based on correct and incorrect responses to quizzes. The product does not provide rationales for correct/incorrect responses.

2.2b – Materials provide guidance for the use of included tasks and activities to respond to student trends in performance on assessments.

Within *ST Math*, a printable Action Plan tool is available, which guides teachers in setting class and individual student goals. The tool also gives suggestions for student support and planning guidance for upcoming objectives and assignments.

In the ST Math Help section, there is a page that provides guidance and suggestions for supporting students who are struggling. An Assessment Support tool provides teachers with guidance for interpreting student performance and placing them appropriately within the program. Additionally, the Assessment Support tool has a video that explains the integration of the tool with student assessment scores.

2.2c – Materials include tools for teachers to track student progress and growth, and tools for students to track their own progress and growth.

Within *ST Math*, Journal Pages allow students to see their progress, reflect on their learning, and work with their teacher to set and track appropriate goals. Students can use the Progress Tracker and a blank Quiz Tracking Sheet to take ownership of their learning journey. Within the Quiz Tracking Sheet, students can record pre- and post-quiz data for each objective.

Teachers can track entire class data using the "ST Math Progress Chart" poster. A Student Detail Report is available within the Educator Console, allowing teachers to generate reports based on the following criteria: Objective Name, Objective Type, Puzzle Goal Progress, Pre- and Post-Quiz Scores, Started Date, and Completed Date.

2.2d – If designed to be static, materials provide prompts and guidance to support educators in conducting frequent checks for understanding at key points throughout each lesson or activity.

This guidance is not applicable because the program is not designed to be static.

2.2e – If designed to be adaptive, materials provide frequent checks for understanding at key points throughout each lesson or activity.

Educators can monitor *ST Math* progress through the Journey Progress feature, which provides a metric for educators to determine how far a student has progressed in their currently assigned grade level journey. The program has Objective Replay, which is one way the teacher can check for understanding of the objective during the lesson.

The lesson notes available within Puzzle Talks provide teachers with guidance on teacher-directed checks for understanding throughout the lesson. Each Puzzle Talk has tabs for the teacher to utilize to help facilitate discourse questions. Within the lesson notes, Details and Look-Fors are provided to help teachers note how students are responding to the lesson objectives.

3. Supports for All Learners

Materials support educators in reaching all learners through design focused on engagement, representation, and action/expression for learner variability.

3.1 Differentiation and Scaffolds

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.1a	All criteria for guidance met.	1/1
3.1b	The materials do not include pre-teaching supports for unfamiliar references in text, and do not include embedded supports for unfamiliar references in text.	2/4
3.1c	All criteria for guidance met.	2/2
3.1d	An explanation is provided describing the program's visual learning focus without a heavy reliance on language or accommodations. The use of additional resources, like calculators or hundreds charts, is not recommended. No evidence is found of text-to-speech or content and language supports.	0/3
3.1e	All criteria for guidance met.	2/2
—	**TOTAL**	7/12

3.1a – Materials include explicit educator guidance for lessons or activities scaffolded for students who have not yet reached proficiency in prerequisite or grade-level concepts and skills.

Educator guidance for lessons or activities is provided. Within ST Math Help, in the "Foundational Practices" section, there is a video that gives guidance, through a real-life teacher-student interaction, modeling how a teacher can support a struggling student who has not reached proficiency with a grade-level concept or skill.

Also within ST Math Help, problem-solving bookmarks are available for teachers to use as they walk around the room to support students in solving the nonroutine problem-solving puzzles. There are also suggested lists of manipulatives, math mats, and game mats for students to use to help make connections between what they are learning on the screen and to try different ideas. Beginning in grade 2, there are sentence stems that students can use to help work through the problem.

A "Puzzle Talk Facilitation Guide" is available, which details the Problem-Solving Process lessons guiding scaffolded lessons and activities. The guide also provides detailed questions teachers can ask students who have not reached proficiency with grade-level concepts.

3.1b – Materials include explicit educator guidance for language supports, including pre-teaching and embedded supports for developing academic vocabulary and unfamiliar references in text.

Within ST Math Help, under the Frequently Asked Questions section, a program rationale is provided, explaining how the use of visuals within the program breaks down language barriers.

Within *ST Math*, materials include embedded support for students to develop vocabulary. Each activity is designed to promote the development of academic and nonacademic vocabulary using a game that students have already played. *ST Math* offers a workshop, "Strategies for Developing Language," which gives the teacher ideas and games they can play in the classroom to develop language.

Since the design of the program does not include written text, opportunities for pre-teaching and embedded support for unfamiliar text are not available.

3.1c – Materials include explicit educator guidance for enrichment and extension activities for students who have demonstrated proficiency in grade-level and above grade-level content and skills.

Within *ST Math*, explicit guidance for enrichment and extension activities for students is provided. ST Math Special Projects include a "JiJi Choice Board" for enrichment activities for students who demonstrate proficiency in both grade-level content and above-grade-level content. Teachers can change a student's grade level assignment after they complete their learning pathway for the current grade level. Puzzle Talks offer bonus puzzles for students to complete after each puzzle.

ST Math Chats are available and guide 25- to 35-minute classroom lessons that follow a Play–Discuss–Apply model. Each lesson has an introduction, designated time for students to play a specific game, whole class discussion, and a conclusion featuring an extension question designed to deepen conceptual understanding by having students apply what they have learned and discussed.

3.1d – Digital materials include accommodations, including text-to-speech, content and language supports, and calculators that educators can enable or disable to support individual students.

Within ST Math Help, under Manage Classes and Curriculum, an explanation is provided describing the program's visual learning focus without a heavy reliance on language or accommodations. The use of additional resources, like calculators or hundreds charts, is not recommended.

No evidence is found of text-to-speech or content and language supports.

3.1e – Materials include educator guidance on offering options and supports for students to demonstrate understanding of mathematical concepts in various ways, such as perform, express, and represent.

Within *ST Math*, there is an overview of the Facts Objectives feature, which describes how visual models and tools offer a variety of ways for students to demonstrate understanding. There are also opportunities to engage in problem-solving games to strengthen math fact automaticity. Teachers can use the Assignments feature to assign Math Fact Objectives to students.

ST Math includes repeated exposure to objectives, which is intended to give students opportunities to extend and connect their understanding of concepts. Students are also able to explore and evaluate additional strategies, connect visuals to symbolic notation, and communicate their learning using a Math Journal or Exit Ticket.

The "Puzzle Talk Facilitation Guide" provides the teacher with different ways for students to demonstrate and express their understanding within the lesson. The Journal Pages offer opportunities for students to analyze, express, and represent what they have learned.

3.2 Instructional Methods

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.2a	The materials do not include explicit prompts or guidance for educators to activate prior knowledge.	4/5
3.2b	This guidance is not applicable to the program.	N/A
3.2c	All criteria for guidance met.	3/3
3.2d	All criteria for guidance met.	2/2
3.2e	All criteria for guidance met.	2/2
—	**TOTAL**	11/12

3.2a – Materials include explicit (direct) prompts and guidance for educators to build knowledge by activating prior knowledge, anchoring big ideas, and highlighting and connecting key patterns, features, and relationships through multiple means of representation.

Within *ST Math*, the "Puzzle Talk Facilitation Guide" provides educators with specific guidance through teacher-facilitated mini-lessons designed to engage students in their learning. Puzzle Talks focus on following student thinking, supporting the development of strategies, and understanding mathematical concepts. Materials do not include explicit prompts and guidance for educators to activate prior knowledge.

Materials within Puzzle Talks include an "Engagement Strategies" resource that suggests structures/activities such as One Word Popcorn, Partner Talk, Voting, Strategy Compare, Think-Ink-Pair-Share, Gallery Walk, and Strategy Selection to support ways in which students can highlight and connect key patterns, features, and relationships between multiple means of representation.

ST Math provides a research resource, "Spatial Temporal Math: Underlying Scientific Concepts and Mechanisms," which details the materials within the program, which include explicit prompts and guidance for educators to build knowledge through anchoring big ideas. This resource also highlights and connects key patterns, features, and relationships through multiple means of representation.

3.2b – If designed to be static, materials include educator guidance for effective lesson delivery and facilitation using various instructional approaches.

This guidance is not applicable because the program is not designed to be static.

3.2c – Materials include multi-tiered intervention methods for various types of practice and structures and educator guidance to support effective implementation.

Within Puzzle Talks, "Engagement Strategies" provides educator guidance to support effective implementation of multi-tiered intervention methods. Puzzle Talks has a "Routines and Correlations Guide" that states how this feature can be used for whole-group or small-group instruction. A demonstration video that illustrates multi-tiered intervention methods for guided, independent, and collaborative practice is also included within the product.

ST Math has an ST Math Assessment Support Tool add-on that must be purchased to use for grades 2–8, which allows the program to auto-assign intervention.

In ST Math Help, under "Supporting Students Who Are Below Grade Level," there is a section that includes an action plan for teachers to use to evaluate the lesson and to identify successful students and those who are not.

3.2d – Materials include enrichment and extension methods that support various forms of engagement, and guidance to support educators in effective implementation.

Materials within Puzzle Talks include an "Engagement Strategies" resource that suggests structures/activities such as One Word Popcorn, Partner Talk, Voting, Strategy Compare, Think-Ink-Pair-Share, Gallery Walk, and Strategy Selection.

The "Puzzle Talk Facilitation Guide" provides guidance for the teacher to extend students' thinking through questions and scenarios that ask students to dig deeper and think flexibly. Examples include What-Ifs, Limiting Factors, Multiple Models, Word Problems, and Real-World Application.

ST Math Special Projects gives guidance to support educators in the effective implementation of enrichment and extension methods. There is a "JiJi Choice Board" that gives students opportunities to engage in enrichment and extension activities.

3.2e – Materials include prompts and guidance to support educators in providing timely feedback during lesson delivery.

In *ST Math*, every puzzle serves as a built-in opportunity for students to receive formative feedback. Students can also pause and fast-forward animations in the puzzles. While paused, students can write on their screen to show their work using the annotation tool, providing timely feedback to the teacher.

The "Puzzle Talk Facilitation Guide" provides guidance, such as discourse norms, and prompts to encourage deep thinking, such as further explanation, "How did you figure that out?" and questions to justify thinking and to connect learning to other content. This supports educators in providing timely

feedback during the lessons, including discourse questions and other "look-fors" to help guide teacher questioning.

A "JiJi's Math Strategies" poster provides teachers with feedback on how students are feeling as they are working on their ST Math Puzzles.

3.3 Support for Emergent Bilingual Students

An emergent bilingual student is a student who is in the process of acquiring English and has another language as the primary language. The term emergent bilingual student replaced the term English learner in the Texas Education Code 29, Subchapter B after the September 1, 2021 update. Some instructional materials still use English language learner or English learner and these terms have been retained in direct quotations and titles.

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.3a	This guidance is not applicable to the program.	N/A
3.3b	All criteria for guidance met.	4/4
3.3c	The materials do not include implementation guidance aligned to state-approved bilingual or ESL program models.	0/1
3.3d	The materials do not include embedded guidance for making cross-linguistic connections or building background knowledge through oral or written discourse.	4/8
3.3e	This guidance is not applicable to the program.	N/A
—	**TOTAL**	8/13

3.3a – If designed to be static, materials include educator guidance on providing and incorporating linguistic accommodations for all levels of language proficiency [as defined by the English Language Proficiency Standards (ELPS)], which are designed to engage students in using increasingly more academic language.

This guidance is not applicable because the program is not designed to be static.

3.3b – If designed to be adaptive, materials include embedded linguistic accommodations for all levels of language proficiency [as defined by the English Language Proficiency Standards (ELPS)], which are designed to engage students in using increasingly more academic language.

Within ST Math Help, the resource "Strategies for Developing Language" is available, which describes the program's accessible design. *ST Math* can be used to support the development of language by promoting a language-rich classroom in which expressive and receptive language is not imposed on students, but rather comes from them. Each activity is designed to encourage the development of academic and nonacademic vocabulary using an *ST Math* game that students have already played.

Within "Strategies for Developing Language," the "Back to Screen Strategy Planner" and a "Language Strategy Planner" are designed to support students in developing language using the program. These resources include a language focus, sentence frames, and partner activities.

In Puzzle Talks, students interact with tiered lessons that represent mathematical ideas through animations and visual models, which minimize demands for English learners. Academic language develops as students advance in their understanding of the content.

3.3c – Materials include implementation guidance to support educators in effectively using the materials in state-approved bilingual/ESL programs.

ST Math has a Launch Toolkit that allows the teacher to change the language from English to Spanish.

Materials do not include implementation guidance to support the use of materials in state-approved bilingual/ESL programs.

3.3d – Materials include embedded guidance to support emergent bilingual students in developing academic vocabulary, increasing comprehension, building background knowledge, and making cross-linguistic connections through oral and written discourse.

ST Math includes Puzzle Talks lessons that feature discourse questions designed for teachers to use during instruction. These questions are intended to support student comprehension and the development of academic vocabulary through oral and written discourse. Puzzle Talks also include Exit Tickets, which provide prompts and activities for reflection and vocabulary reinforcement. Both the questions and exit prompts are available in English and Spanish and focus on encouraging students to explain their thinking, describe strategies used, and make math connections.

ST Math Help has a "Back to Screen Strategy Planner" and a "Labeling Strategy Planner" that can be used to guide teachers to support emergent bilingual students in developing academic vocabulary.

Materials do not include guidance to build students' background knowledge or make cross-linguistic connections through oral or written discourse.

3.3e – If designed for dual language immersion (DLI) programs, materials include resources that outline opportunities to address metalinguistic transfer from English to the partner language.

This guidance is not applicable because the program is not designed for dual language immersion (DLI) programs.

4. Depth and Coherence of Key Concepts

Materials are designed to meet the rigor of the standards while connecting concepts within and across grade levels/courses.

4.1 Depth of Key Concepts

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.1a	All criteria for guidance met.	2/2
4.1b	All criteria for guidance met.	4/4
—	**TOTAL**	6/6

4.1a – Practice opportunities throughout learning pathways (including instructional assessments) require students to demonstrate depth of understanding aligned to the TEKS.

Within the ST Math Journey, grade 2 materials contain digital practice activities that guide students to demonstrate depth of understanding on math concepts, including place value practice, addition, and subtraction to solve two-step problems involving situations of adding to, taking from, putting together, taking apart, and comparing with unknowns in different positions. Digital manipulatives are available to support students with conceptual understanding of key concepts.

ST Math is a visual instructional program that uses interactive puzzles to help students understand math concepts. Learning objectives offer different games to support students in learning concepts in various ways.

4.1b – Questions and tasks, including enrichment and extension materials, increase in rigor and complexity, leading to grade-level and above grade-level proficiency in the mathematics TEKS.

Within ST Math Puzzles, "ST Math Activity Pages" are available as practice opportunities for students and are designed to extend students' learning from the *ST Math* game in a fun and engaging way. Students experience questions and tasks that increase in rigor and complexity for the lesson through Puzzle Talk exit tickets.

Learning objectives have different games for the student to learn the material in a variety of ways. Challenge Objectives are used for students who need a challenge or to finish their journey.

Within *ST Math*, teachers can increase rigor and complexity by changing a student's grade level assignment after they complete their learning pathway for the current grade level.

Grade 2 materials contain tasks and questions in ST Math Puzzles Puzzle Talk activities that increase in rigor and complexity. Numeracy concepts are taught and practiced with numbers up to 100, then 1,000,

and then up to 1,200. Puzzle Talk activities contain discourse questions for teachers to ask within each lesson and challenges for students at the end of a lesson sequence called Challenges.

4.2 Coherence of Key Concepts

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.2a	All criteria for guidance met.	1/1
4.2b	All criteria for guidance met.	1/1
4.2c	All criteria for guidance met.	4/4
—	**TOTAL**	6/6

4.2a – Materials demonstrate coherence across concepts horizontally within the grade level by connecting patterns, big ideas, and relationships.

In the Educator Console, there is a scope and sequence by grade level that shows how learning objectives are connected.

Materials within ST Math Help include a "Learning Progression Flow Chart," which shows how the curriculum was intentionally planned year-by-year and across grade levels. ST Math Help also has a "Building Schemas" video that demonstrates how math concepts are an interconnected web of schemas. The program is designed to build schema across concepts and grade levels. For example, it demonstrates how fractions and number lines are used in a variety of ways across all grade levels, such as building understanding from foundational skills, such as 0–10 or 1/2, to more challenging skills with larger numbers.

4.2b – Materials demonstrate coherence vertically across concepts and grade bands, including connections from grade K–6, by connecting patterns, big ideas, and relationships.

An "Objective Learning Progression" is available, which demonstrates coherence across concepts horizontally and vertically.

Within ST Math Help, a "Puzzle Talks and the Standards for Mathematical Practice" document is available, which details Math Practices, Puzzle Talks and Extensions, and Facilitation Questions to connect prior knowledge and encourage the use of multiple strategies to solve problems. The "TEKS Standards Alignment" connects the scope and sequence of Puzzle Talks activities with the TEKS standards. The materials present connections across concepts and grade bands through patterns, overarching ideas, and mathematical relationships.

4.2c – Materials demonstrate coherence across lessons or activities by connecting students' prior knowledge of concepts and procedures to the mathematical concepts to be learned in the current grade level and future grade levels.

Within ST Math Help, the "Puzzle Talks and the Standards for Mathematical Practice," and "TEKS Standards Alignment" connect the scope and sequence of Puzzle Talks activities with the TEKS standards. It demonstrates coherence across lessons by connecting students' prior knowledge of concepts and procedures to the mathematical concepts to be learned in the current grade level and future grade levels.

ST Math has learning progressions across and within grades that follow a Problem-Solving Process, using multiple models for every concept within a grade level and connecting visual models that build in complexity across grade levels.

A "Building Schemas" video is available within ST Math Help that demonstrates how math concepts are an interconnected web of schemas. The program is designed to build schema across concepts and grade levels. *ST Math* provides students with opportunities to engage in nonroutine problem-solving in order to build strong schemas of math concepts across grades.

4.3 Coherence and Variety of Practice

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.3a	All criteria for guidance met.	2/2
4.3b	All criteria for guidance met.	2/2
—	**TOTAL**	4/4

4.3a – Materials provide spaced retrieval opportunities with previously learned skills and concepts across learning pathways.

The *ST Math* curriculum utilizes a spaced-retrieval design, as described in the "Curriculum Design Principles" in ST Math Help. A "TEKS Standards Alignment" document is also available, which shows how students have opportunities to practice previously learned skills and concepts through the learning pathway, including Puzzle Talks.

The article "What is a Student's Journey" is also available within ST Math Help, which addresses Topic Spiraling, ensuring students get key exposure to critical topics before going deeper within each domain.

4.3b – Materials provide interleaved practice opportunities with previously learned skills and concepts across learning pathways.

Materials include opportunities for interleaved practice, as found in Puzzle Talks and Math Challenge Objectives.

Within ST Math Help, the "TEKS Standards Alignment" connects the scope and sequence of Puzzle Talks activities with the TEKS standards. It demonstrates that the materials provide interleaved practice opportunities with previously learned skills and concepts across learning pathways.

The product provides a "Problem-Solving Process and Math Practice Standards" document with ST Math Help, which lists Math Practices, Puzzle Talks and Extensions, and Facilitation Questions to connect prior knowledge and encourage the use of multiple strategies to solve problems.

5. Balance of Conceptual and Procedural Understanding

Materials are designed to balance conceptual understanding, procedural skills, and fluency.

5.1 Development of Conceptual Understanding

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.1a	All criteria for guidance met.	3/3
5.1b	All criteria for guidance met.	2/2
5.1c	All criteria for guidance met.	1/1
—	**TOTAL**	6/6

5.1a – Questions and tasks provide opportunities for students to interpret, analyze, and evaluate models and representations for mathematical concepts and situations.

Within *ST Math*, there is a "Puzzle Talk Facilitation Guide" that gives teachers structure for each lesson. Each Puzzle Talk has tabs for the teacher to utilize to help facilitate discussion. The questions and tasks require students to interpret, analyze, and evaluate models and representations for mathematical concepts and situations within the lessons.

Within Puzzle Talks, students can use digital ten frames to compose and decompose numbers less than or equal to 20. Guidance is provided so that the teacher can lead a discussion, asking questions for tasks that have students interpret, analyze, and evaluate models and representations for mathematical concepts and situations.

With Puzzle Talks, Exit Tickets are provided as an additional opportunity for students to interpret, analyze, and evaluate a math concept or situation.

5.1b – Questions and tasks provide opportunities for students to create concrete models and pictorial representations to represent mathematical situations.

Within *ST Math*, the "Puzzle Talk Facilitation Guide" gives teachers structure for each Puzzle Talk lesson. The questions and tasks require students to create concrete models and pictorial representations of mathematical situations within the Puzzle Talk lessons. In the grade 2 Puzzle Talk lessons, students use digital place value models to construct units of a hundred by regrouping tens and ones. The teacher leads the discussion, asking questions for tasks that have students create concrete models and pictorial representations of mathematical situations.

Additional opportunities for students to demonstrate their understanding of mathematical situations are found in ST Math Special Projects. The "Jiji Choice Boards" allow students to use a variety of models and representations to show what they have learned within the program.

5.1c – Questions and tasks provide opportunities for students to apply conceptual understanding to new problem situations and contexts.

ST Math Chats are available as opportunities for students to apply conceptual understanding to new situations and contexts. These 25- to 35-minute classroom lessons follow a Play-Discuss-Apply model, and each lesson has an introduction, designated time for students to play a specific game, whole-class discussion, and a conclusion featuring an extension question designed to deepen conceptual understanding by having students apply what they have learned and discussed.

ST Math also offers Game Mats as a math tool in which students can use mats to help them work through puzzles or even create their own. Guides are provided for selected mats.

Within *ST Math*, the "Puzzle Talk Facilitation Guide" gives teachers structure for each Puzzle Talk lesson. The questions and tasks require students to apply conceptual understanding to new problem situations and contexts within the Puzzle Talk lessons.

5.2 Development of Fluency

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.2a	All criteria for guidance met.	2/2
5.2b	All criteria for guidance met.	3/3
5.2c	All criteria for guidance met.	3/3
5.2d	All criteria for guidance met.	1/1
—	**TOTAL**	9/9

5.2a – Materials provide tasks that are designed to build student automaticity and fluency necessary to complete grade-level mathematical tasks.

Within Puzzle Talks, students are provided with opportunities to develop automaticity and fluency. Student learning is designed in a specific order that is scaffolded naturally within the design of the program. The order is made so that the students fully understand each objective before moving on.

Math Fact Objectives in addition and subtraction helps students build fluency in math facts. At the end of each Math Fact Objective, one or two games provide opportunities to apply facts in multi-step problems and strengthen fact automaticity.

5.2b – Materials provide opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures throughout learning pathways.

The "ST Math Texas Program Introduction Guide" describes how the materials provide opportunities for the students to practice efficient, flexible, and accurate mathematical procedures throughout all of the *ST Math* games and lessons.

ST Math Puzzle Talks are teacher-facilitated mini-lessons designed to engage students in problem-solving and encourage mathematical discourse. The goal is to get students to communicate and deepen their understanding of mathematics. Puzzle Talks focus on following student thinking, supporting the development of strategies, and understanding the mathematical concepts.

Game Mats and Math Mats are available so that students can demonstrate and evaluate mathematical representations. For example, the Fruit Monster Game Mat includes ten frames in which students can create representations/models of the values provided. The game mats also include Game Cards and a BINGO activity in which students demonstrate models, strategies, and solutions for different values. This activity supports efficient, flexible, and accurate math skills.

5.2c – Materials provide opportunities for students to evaluate mathematical representations, models, strategies, and solutions for efficiency, flexibility, and accuracy throughout learning pathways.

The "ST Math Texas Program Introduction Guide" describes how the materials provide opportunities for the students to evaluate mathematical representations, models, strategies, and solutions for efficiency, flexibility, and accuracy throughout all of the *ST Math* games and lessons.

The "Puzzle Talk Facilitation Guide" provides opportunities for students to evaluate their learning, and it is divided into three sections: Set the Stage, Foster Discourse, and Extend Thinking. In the Extend Thinking section, teachers are guided to prompt students to show multiple models—demonstrating two different ways to solve a problem. Then, students are asked to compare the two and evaluate which problem-solving method was the most efficient.

5.2d – Materials contain guidance to support students in selecting increasingly efficient approaches to solve mathematics problems.

ST Math Puzzle Talks provides a "Resource Guide" for teachers to support struggling students in selecting increasingly efficient approaches to solve the puzzles in the program. The "Problem-Solving Process" guide can be used to help students select efficient ways to solve puzzles in the program. A "Problem-Solving Process Bookmark," suggested manipulatives, and work mats allow the teacher to provide various levels of support for students.

Within Puzzle Talks, students engage in evaluating their mathematical strategies through exit tickets, discourse questions, reflections, and games, which are intended to promote efficiency in problem-solving. The "Puzzle Talk Facilitation Guide" outlines strategies to support math discourse and is organized into three sections: Set the Stage, Foster Discourse, and Extend Thinking. The guidance encourages teachers to respond thoughtfully to student input by observing, listening, and asking follow-up questions. Suggestions include building on student responses to clarify or expand ideas, exploring a variety of potential solutions—including incorrect ones—as learning opportunities, and prompting students to reflect with questions such as, "What did you notice?" or "What would you change?"

5.3 Balance of Conceptual Understanding and Procedural Fluency

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.3a	All criteria for guidance met.	2/2
5.3b	All criteria for guidance met.	3/3
5.3c	All criteria for guidance met.	6/6
—	**TOTAL**	11/11

5.3a – Materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed.

Within ST Math Help, the Objective Learning Progression and a Texas Essential Knowledge and Skills correlation document detail the conceptual and procedural emphasis of the program. A conceptual example can be observed in a grade 2 lesson, "Addition and Subtraction Situations Within 100," in which students develop conceptual understanding of given addition and subtraction up to 100 through digital manipulatives. A procedural example can be observed in grade 2, the "Addition and Subtraction Facts" lesson, in which students use the standard algorithm to solve mixed facts.

ST Math Help also has a document entitled "Curriculum Design Principles of ST Math." This document explicitly states how the conceptual emphasis of the state standards is addressed.

5.3b – Questions and tasks provide opportunities for students to use concrete models, pictorial representations, and abstract models as required by the TEKS.

The "Welcome to ST Math" video presents an overview of the program. The video explains that the program's objectives build student understanding of math concepts by moving the students from the visual to the symbolic (abstract).

In Puzzle Talks, materials including Game Mats and Math Mats are provided to students with opportunities to use concrete models, pictorial representations, and abstract models during their learning. Discourse questions with Puzzle Talks include opportunities for students to use concrete models, etc. Examples of these questions include:

How did the puzzle represent the hundreds, tens, and ones in the number?

How did you represent the hundreds, tens, and ones with [base ten blocks; a picture]?

Is there only one way to create 956? Why or why not?

Digital manipulatives such as ten-frames with counters and base ten blocks are available. Pictorial representations such as ten-frames, number lines, and area models are also available.

5.3c – Materials include supports for students in connecting, creating, defining, and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) concepts, as required by the TEKS.

Puzzle Talks allow students to make connections between concrete, representational, and abstract concepts. In grade 2, "Addition and Subtraction Situations," students use concrete manipulatives to represent pictorial and abstract scenarios within the six game-based activities. Students create pictures to represent addition and subtraction problems.

In Puzzle Talks, materials including Game Mats and Math Mats are provided to students with opportunities to create, define, and explain concrete models to abstract. Discourse questions with Puzzle Talks examples include:

What is each equal share named in the [halves; eighths] rectangle?

Fold your strip into [halves; eighths].

How many eighths are in one whole?

In ST Math Help, the Problem-Solving Process is designed to get students involved in the process of learning, which requires noticing what is going on (in an ST Math Puzzle, on the soccer field, or learning an instrument) and then starting a cycle of predicting, testing, and analyzing. When learning is successful, it is connected to what is already known and extends knowledge.

5.4 Development of Academic Mathematical Language

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.4a	All criteria for guidance met.	1/1
5.4b	All criteria for guidance met.	2/2
5.4c	All criteria for guidance met.	1/1
5.4d	All criteria for guidance met.	2/2
5.4e	All criteria for guidance met.	2/2
—	**TOTAL**	8/8

5.4a – Materials provide opportunities for students to develop academic mathematical language using visuals, manipulatives, or other language development strategies.

Materials within *ST Math* include opportunities for students to develop academic mathematical language in a variety of ways. Puzzle Talks are specifically designed for students to develop academic math language using visual puzzles and concrete manipulatives. A list of manipulatives for each grade level and each subject objective is available.

Within the Puzzle Talks lesson "Addition Within 100 Using Tokens," students use tokens (visually), as well as base ten blocks, place value mats, and base ten mats (physically) to use addition and subtraction within 100 to solve problems. The teacher uses the discourse questions to guide the students to understand this concept. The students are also asked to write a number sentence and discuss verbally what they came up with and how they did it. Academic language is developed through the discussion and the explanations of what the students wrote.

ST Math Help provides strategies for developing language, including the "Back to Screen Strategy Planner" and the "Labeling Strategy Planner" to help students develop expressive and receptive language as well as academic and nonacademic language.

5.4b – Materials include embedded educator guidance to scaffold, support, and extend students' use of academic mathematical vocabulary in context when communicating with peers and educators.

Materials within *ST Math* include embedded educator guidance to support student learning and the use of academic mathematical vocabulary with peers and educators.

Within Puzzle Talks, the materials include mathematical vocabulary to be developed in the lesson under the "Materials" section. ST Math Help also provides strategies for developing language, including the "Back to Screen Strategy Planner" and the "Labeling Strategy Planner," to help students develop expressive and receptive language as well as academic and nonacademic language. The teacher can scaffold, support, and extend the student's academic mathematical vocabulary when communicating with peers and educators.

In the Puzzle Talks Grade 2 lesson, "Using Place Value to Subtract Two-Digit Numbers," the teacher discourse questions are scaffolded in a way to support students' use of academic vocabulary in context when communicating with peers and educators.

The Puzzle 1 Lesson Notes provides guidance to teachers to ask students, "How many tens and ones does each number have?" To extend students' use of mathematical vocabulary, the teacher then asks students, "What makes this a simple subtraction problem?"

5.4c – Materials include embedded guidance to support student application of appropriate mathematical language and academic vocabulary in discourse.

ST Math provides a Puzzle Talk Facilitation Guide. There are sections labeled "Foster Discourse" and "Extend Thinking" that can be used to guide students and support the application of appropriate mathematical language and academic vocabulary in discourse. Sentence stems help students apply their knowledge with the use of appropriate math language.

Within Puzzle Talks, the grade 2 lesson "Using Place Value to Subtract Two-Digit Numbers" has exit ticket questions to summarize the lesson. One of the exit tickets asks the students to reflect and answer the question, "Where else might you use these strategies in math or real life?" "What strategy did you find most efficient?" Students are asked to include academic vocabulary through discourse with the teacher or peers.

5.4d – Materials include embedded guidance to facilitate mathematical conversations allowing students to hear, refine, and use math language with peers.

Within the "Puzzle Talk Facilitation Guide," guidance includes ways to facilitate mathematical conversations, allowing the students to hear, refine, and use math language with their peers. Math Chats give teachers a flexible tool to mathematically engage students in the classroom and are aligned to grade-level standards. Math Chats can be used to introduce new math concepts, dive deeper into concepts, and review concepts, supporting the development of mathematical language.

ST Math provides engagement strategies for teachers to use to help facilitate mathematical conversations and the use of mathematical language between students.

With the "Puzzle Talk Facilitation Guide," there are sections labeled Foster Discourse and Extend Thinking that can be used to guide students and support the application of appropriate mathematical language and academic vocabulary in discourse.

ST Math Help has a "Teacher Resource of Engagement Strategies" that includes an activity called Partner Talk and an activity called Think-Ink-Pair-Share. With Partner Talk, students discuss their thoughts and ideas with a partner. A variation of the strategy has students try to convince their partner to adopt their idea, allowing them to summarize, reflect, evaluate, justify, and revise their thinking. With Think-Ink-Pair-

Share, the teacher asks a question, and the students draw or write their idea. They use their words or illustrations to describe their thinking to their partner.

5.4e – Materials include embedded guidance to anticipate a variety of student answers including exemplar responses to questions and tasks, including guidance to support and/or redirect inaccurate student responses.

The "Puzzle Talk Facilitation Guide" gives embedded guidance for teachers to respond thoughtfully to student responses. The guide states, "thoughtful responses can provide a sense of safety to students as they share and explore their thinking and learn from others." Additionally, the guide encourages teachers to use incorrect solutions or misconceptions as learning opportunities and gives several suggestions for questions for teachers to ask students in these situations.

Within Puzzle Talks, all lessons contain a Look-Fors section in the teacher's Lesson Notes. This provides guidance for teachers to identify things to "look for" in student responses to assess understanding and drive student discourse. Examples of look fors include: use a variety of strategies to subtract (vertical alignment, decomposing, counting back . . .) or try to subtract 5–3, resulting in 22.

ST Math Help provides engagement strategies for teachers to use to help facilitate mathematical conversations and the use of mathematical language between students.

Facilitation Bookmarks give teachers embedded guidance on what to say to the student when support or redirection is needed.

5.5 Process Standards Connection

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.5a	All criteria for guidance met.	1/1
5.5b	All criteria for guidance met.	2/2
5.5c	All criteria for guidance met.	1/1
—	**TOTAL**	4/4

5.5a – TEKS process standards are integrated appropriately into the materials.

Within *ST Math*, Puzzle Talks support the TEKS process standards by promoting critical thinking, problem-solving, and mathematical communication. Puzzle Talks aim to get students talking about math, justifying their reasoning, and exploring multiple strategies, aligning closely with the goals of the TEKS process standards.

ST Math Help has a document titled "Problem-Solving Process and Process Standards," which integrates the TEKS process standards with ST Math Puzzle Talks. This document explains the problem-solving process and states that ST Math Puzzles and Puzzle Talks are built around the perception-action cycle, or problem-solving process." Students are encouraged to (1) Notice and Wonder, (2) Predict and Justify, (3) Test and Observe, (4) Analyze and Learn, and (5) Connect and Extend to solve puzzles and learn from their mistakes.

5.5b – Materials include a description of how process standards are incorporated and connected throughout the learning pathways.

ST Math Help includes a document titled "ST Math and the TEKS Process Standards," which outlines how Puzzle Talks are intended to align with the TEKS process standards. The document describes Puzzle Talks as short, teacher-led mini-lessons that use program puzzles to encourage student reasoning, discussion, and exploration of multiple strategies.

ST Math Help has a document titled "Problem-Solving Process and Process Standards," which explains the problem-solving process and states that ST Math Puzzles and Puzzle Talks are built around the perception-action cycle, or problem-solving process." Students are encouraged to (1) Notice and Wonder, (2) Predict and Justify, (3) Test and Observe, (4) Analyze and Learn, (5) Connect and Extend to solve puzzles and learn from their mistakes.

5.5c – Materials include an overview of the TEKS process standards incorporated into each lesson.

ST Math Help has a document titled "Problem-Solving Process and Process Standards," which explains the problem-solving process and states that ST Math Puzzles and Puzzle Talks are built around the

perception-action cycle, or problem-solving process. This cycle, which aligns with identified process standards, is embedded into each Puzzle Talks lesson.

Each Puzzle Talks lesson includes suggested Game Mats and Math Mats, which encourage independent student use during *ST Math* game play. Students use these mats to record their thinking and share with peers, which aligns with the TEKS process standards.

6. Productive Struggle

Materials support students in applying disciplinary practices to productive problem-solving, including explaining and revising their thinking.

6.1 Student Self-Efficacy

GUIDANCE	SCORE SUMMARY	RAW SCORE
6.1a	All criteria for guidance met.	3/3
6.1b	All criteria for guidance met.	3/3
6.1c	All criteria for guidance met.	3/3
—	**TOTAL**	9/9

6.1a – Materials provide opportunities for students to think mathematically, persevere through solving problems, and to make sense of mathematics.

ST Math contains materials that allow students to think mathematically. Within Puzzle Talks, in the lesson "Visually Adding up to 4 Two-Digit Numbers," students share what they see on the screen (Notice and Wonder). Opportunities are provided for students to share what they think they should do and explain their thinking (Predict and Justify).

Within ST Math Help, a "JiJi's Math Strategies" poster is available to help promote and support perseverance. This resource offers teachers feedback on how students are feeling as they are working on their ST Math Puzzles, as well as strategies students can use when they are engaged in productive struggle. The "How Are You Doing?" poster and cards can help teachers keep tabs on how students are feeling as they work. Students can place a clip or clothespin to indicate how they are feeling, so teachers can see when productive struggle may be becoming unproductive.

ST Math offers a Journal Page for students to help them persevere with a problem or puzzle that they are struggling with mathematically. Once a student fills it out, it gives the teacher more direction on how to help the student with what they have already tried and what they plan to try next to be able to solve the problem.

The materials within Puzzle Talks include discourse questions that provide students with opportunities to make sense of mathematics. Discourse questions help facilitate a discussion about how students used their understanding of place value to find the sum (Test and Observe, Analyze and Learn).

6.1b – Materials support students in understanding, explaining, and justifying that there can be multiple ways to solve problems and complete tasks.

ST Math materials support students in understanding, explaining, and justifying that there are multiple ways to solve problems. Within the Puzzle Talks game, "Building 1000," students share what they think they should do and explain their thinking. Students try different solutions and discuss what happened.

Through the discourse questions provided for teachers, students are supported as they demonstrate understanding, explaining, and justifying that there can be multiple ways to solve problems and complete tasks.

Within ST Math Help, a "Teacher Problem-Solving Facilitation Bookmark" is available and supports students in understanding, explaining, and justifying that there can be multiple ways to solve problems and complete tasks. The bookmark includes a Connect and Extend section with questions such as:

How does what you learned support your understanding of [the concept]?

What would happen if _____?

How would you apply this concept to [this] situation?

ST Math Help also has a "Math Discourse Facilitation Strategies Bookmark" to help students share and discuss their mathematical thinking, encourage deep thinking, respond thoughtfully, and extend their thinking. The bookmark includes a section to encourage deep thinking through questions and prompts such as:

How did you figure that out?

Show me. Justify your solution.

Why do you think that is the answer?

6.1c – Materials are designed to require students to make sense of mathematics through multiple opportunities for students to do, write about, and discuss math with peers and/or educators.

Within *ST Math*, there are various types of Journal Pages that allow students to make sense of mathematics through multiple opportunities for students to write about math with peers and educators. Some of the Journal Pages are adaptive for beginning writers or nonwriters to draw pictures, rather than use words, to demonstrate their understanding and learning. The pages can be printed for student use.

Within the Puzzle Talks game, "Building 1000," students share what they think they should do and explain their thinking. Students try different solutions and discuss what happened with peers. The discourse questions provided for teachers require students to make sense of mathematics through multiple opportunities for students to do and discuss math with peers and educators.

6.2 Facilitating Productive Struggle

GUIDANCE	SCORE SUMMARY	RAW SCORE
6.2a	All criteria for guidance met.	6/6
6.2b	All criteria for guidance met.	4/4
—	**TOTAL**	10/10

6.2a – Materials support educators in guiding students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications.

The "Puzzle Talk Facilitation Guide" supports educators in guiding students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications. The guide lays out the sequence of the lessons, along with questions and sentence stems that encourage students to share their thinking with peers and educators. The questions and sentence stems also encourage students to reflect on what happened and what strategies they may have used to solve the problem.

ST Math provides a "Problem-Solving Process Bookmark" that supports educators in guiding students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications. The bookmark has a section for students to Analyze and Learn, and provides questions such as:

How does this compare to what you thought would happen?

What did you learn?

How will you use what you learned?

Another section on the bookmark is titled Connect and Extend, which includes questions such as:

How does what you learned support your understanding of [the concept]?

What would happen if_____?

How would you apply this concept to [this] situation?

Within the Puzzle Talks game, "Building 1000," students share what they think they should do and explain their thinking. Students try different solutions and discuss what happened. The discourse questions provided for teachers support educators in guiding students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications. Examples of discourse questions include: What if the order of the numbers changed?

6.2b – Materials include prompts and guidance to support educators in providing explanatory feedback based on student responses and anticipated misconceptions.

The "Puzzle Talk Facilitation Guide" includes guidance and prompts to support educators in providing explanatory feedback based on student responses and anticipated misconceptions. In the section Predict and Justify, explanatory feedback is provided for the teacher as detailed below.

Ask students to name or describe the strategy they will use to test their prediction. For example, a student may predict that they have to somehow move the shape from one side to the other. In this case, they would name the strategy of matching. "My strategy is to change the color of the triangle on the left to match the color of the triangle on the right by selecting the block that has the matching color."

Also within the "Puzzle Talk Facilitation Guide" is a section titled Analyze and Learn. This section provides guidance to support educators with anticipated misconceptions as detailed below:

Facilitate students in analyzing the feedback and results to gain an understanding of what worked and what did not work. If their strategy was correct, ask the students to demonstrate how the puzzle confirmed their answer. They might say, "My answer was correct, so now I can . . ." If their strategy was incorrect, ask the students to use the animation to describe why the answer was incorrect and what they think should happen. They might say, "I need to change my strategy because . . ."