

ST Math and the TEKS Process Standards



ST Math and Puzzle Talks strongly support the Texas Process Standards by promoting critical thinking, problem-solving, and mathematical communication. **ST Math** is a visual instructional program that uses interactive puzzles to help students deeply understand math concepts without relying on language. ST Math **Puzzle Talks** are short, teacher-led mini-lessons that leverage a puzzle from the program to spark student thinking and encourage rich mathematical discussion. Similar to number talks or math talks, 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.

Process Standard	Connection to ST Math & Puzzle Talks	Examples and Resources
1A: Apply mathematics to problems arising in everyday life, society, and the workplace.	<p>Problem Solving Process: The Problem Solving Process is a framework for approaching problems that can be applied to everyday life.</p> <p>Puzzle Talk Exit Tickets: Available wrap-up questions encourage students to make connections to everyday life.</p>	<p>Problem Solving Process Resources</p> <p>Puzzle Talk Exit Tickets K-1: English Spanish 2+: English Spanish</p>
1B: Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.	<p>Problem Solving Process: 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 & Justify, (3) Test and Observe, (4) Analyze and Learn, (5) Connect and Extend in order to solve puzzles and learn from their mistakes.</p>	<p>Problem Solving Process Resources</p>
1C: Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.	<p>Suggested Manipulatives: This document provides ideas for manipulatives and ST Math printable tools related to a specific ST Math Objective.</p>	<p>Suggested Manipulatives</p>
1D: Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.	<p>Puzzle Talk Facilitation Guide: This guide provides a flow for ST Math Puzzle Talks and encourages students to show their thinking through multiple models throughout the discussion.</p>	<p>Puzzle Talk Facilitation Guide</p> <p>Supporting Struggling Students</p>

	<p>Strategies for Supporting Students: Within the flow of support, students are encouraged to use concrete and pictorial representations of their thinking in order to problem solve.</p>	
<p>1E: Create and use representations to organize, record, and communicate mathematical ideas.</p>	<p>Game Mats and Math Mats Suggested Game Mats and Math Mats are provided for each Puzzle Talk and encouraged for independent student use during ST Math game play. Students use these mats to record their thinking and share with peers.</p>	<p>Math Mats Game Mats</p>
<p>1F: Analyze mathematical relationships to connect and communicate mathematical ideas.</p>	<p>Problem Solving Process: The Problem Solving Process utilizes questions that encourage making mathematical connections.</p>	<p>Problem Solving Process Resources</p>
<p>1G: Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.</p>	<p>Puzzle Talk Teacher Notes: Within a Puzzle Talk, discourse questions encourage justification of solutions.</p> <p>Problem Solving Process: The Problem Solving Process utilizes questions that encourage explanation and justification of solutions throughout ST Math play.</p> <p>Journal Pages: Journal Pages guide students to share their thinking, reflect on what they've learned, and make connections through writing.</p>	<p>Open a Puzzle Talk and scroll down to review the Details, Look Fors, and Discourse tabs</p> <p>Problem Solving Process Resources</p> <p>Journal Pages</p>