

Introduction to the Revised Mathematics TEKS

MATHEMATICAL PROCESS STANDARDS
JOURNAL
GRADES 6 - 8



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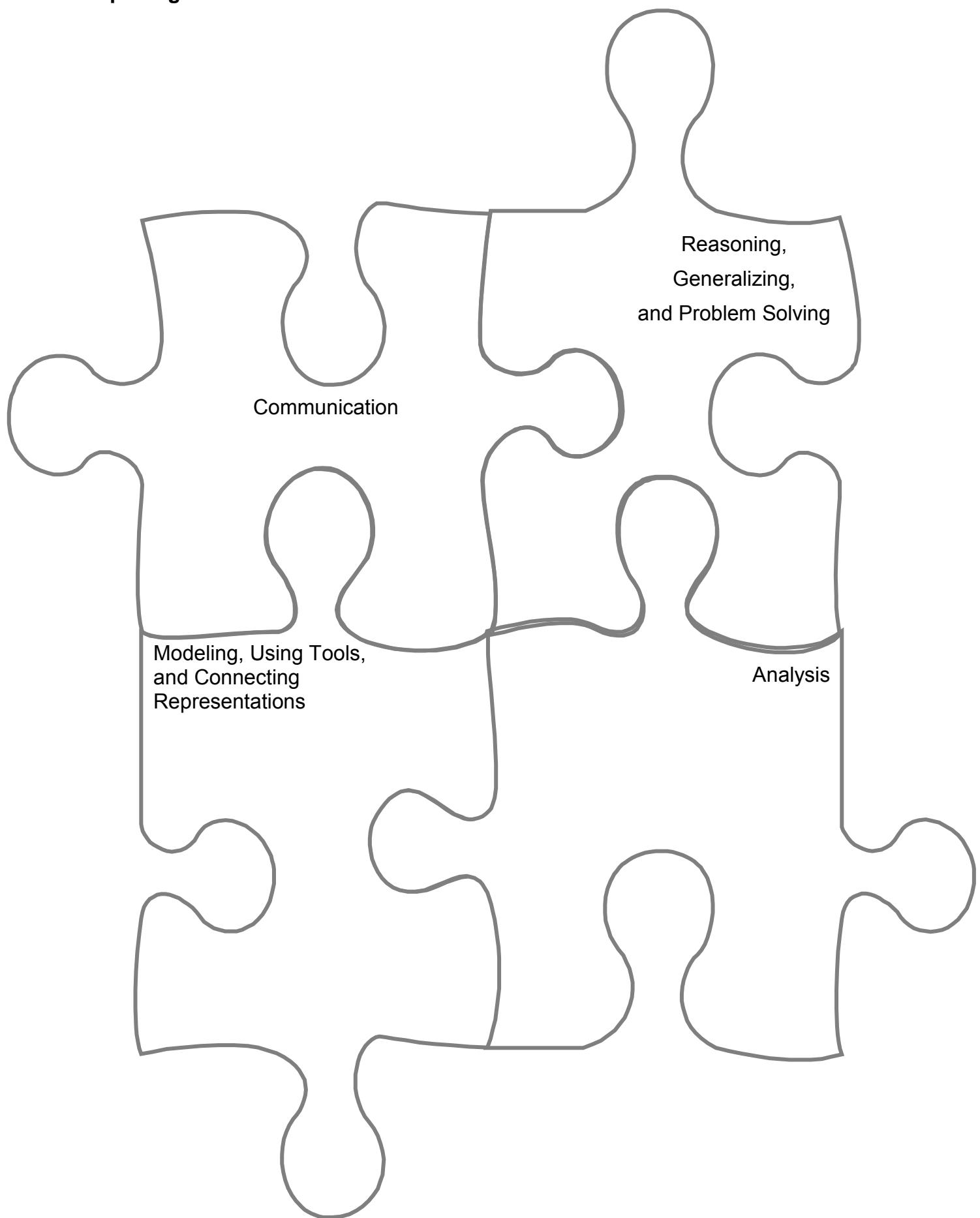
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Exploring The Mathematical Process Standards



Exploring The Mathematical Process Standards (continued)

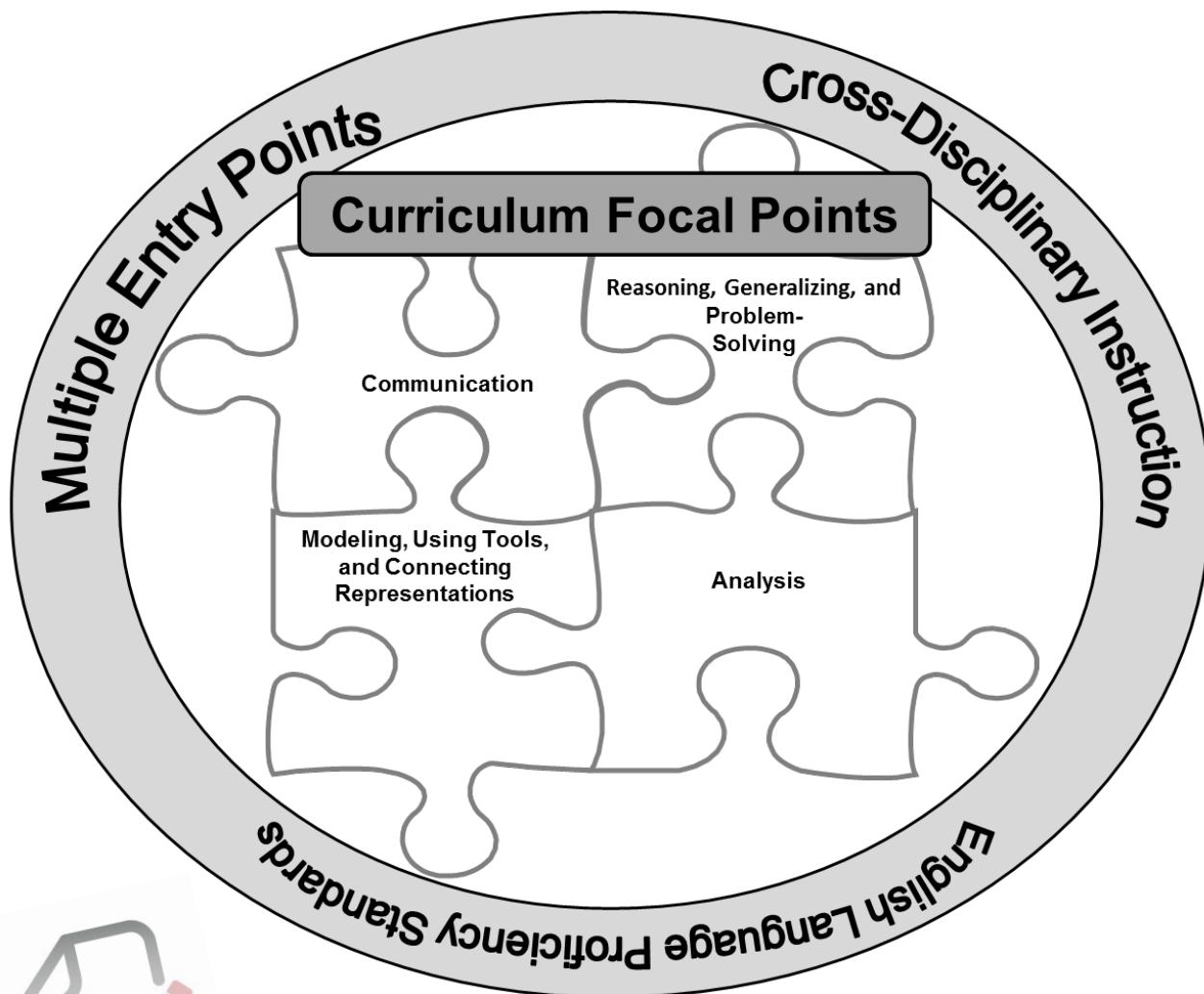
Similarities	Differences



How do the new mathematical process standards compare to the current mathematical process standards?

Vocabulary Notes

ELPS	Cross-Disciplinary Instruction	Multiple Entry Points	Levels of Cognitive Demand
<p>The English Language Proficiency Standards (ELPS) outline the instruction school districts must provide to English language learners in order for them to have full _____ to learn English and _____ academically. The ELPS are to be implemented as an integral part of the instruction in each _____ and _____ subject of the TEKS. Effective instruction and second language acquisition involves giving English language learners opportunities to listen, speak, read, or write at their _____ level of English language development in _____.</p>	<p>This term refers to skills and processes that cut across _____ disciplines (English/language arts, reading, math, science, and social studies). Related standards are found in the _____.</p> <p>CCRS</p> <p>The CCRS (College and Career Readiness Standards) includes the _____ and _____ Standards and is a resource designed to help students, parents, teachers, and counselors understand the specific _____ knowledge and _____ skills necessary for college and career readiness. The cross-disciplinary standards are organized into two major areas: Key _____ Skills and _____ Skills.</p>	<p>Tasks with _____ entry points are those which have varying degrees of _____ within the task, or provide students with varied _____, _____, and _____ to actively participate in the task.</p>	<p>Tasks that command engagement with the concepts and that encourage students to make connections leading to different opportunities for student thinking, such as _____ tasks, procedures _____ connections tasks, procedures _____ connections tasks, and _____ mathematics tasks.</p>



Since the new mathematical process standards are identified within each TxRCFP focal point, what are the implications for students' acquisition and demonstration of their mathematical understandings?



Examining Amplified Instructional Task 1

Task: _____

		Communication	Reasoning, Generalizing, and Problem Solving	Modeling, Using Tools, and Connecting Representations	Analysis
Instructional Strategies	English Language Proficiency Standards				
	Multiple Entry Points				
CCRS	Cross-Disciplinary				

Mark your perceived level of cognitive demand for this task on the continuum below:



Examining Amplified Instructional Task 2

Task: _____

		Communication	Reasoning, Generalizing, and Problem Solving	Modeling, Using Tools, and Connecting Representations	Analysis
Instructional Strategies	English Language Proficiency Standards				
	Multiple Entry Points				
CCRS	Cross-Disciplinary				

Mark your perceived level of cognitive demand for this task on the continuum below:



Amplifying Instructional Tasks Brainstorming – Grade 6 Example

		Considerations for Brainstorming		
		Consider the Curriculum Focal Point	Consider the Context	Consider the Student
Guiding Questions	Consider the 2012 TEKS in the Original Task	Consider the Curriculum Focal Point	Consider the Context	Consider the Student
	What main concepts and/or skills are involved in this task? What are related concepts and/or skills?	What else might be explored or applied? <ul style="list-style-type: none"> Additional mathematical ideas from the focal points Grade level connections Financial literacy standards 	What else could be explored within this context? What related ideas could be added to this context? What connections could be made to other content areas?	What Tier I differentiation may be needed to reach the student who is <ul style="list-style-type: none"> struggling, learning English, and/or advanced?
	Main Concepts and/or Skills <i>Write one-variable, one-step equations 6(9)(A)</i>	Standards <ul style="list-style-type: none"> <i>Process Standards 6(1)(A)-(G)</i> <i>Determine if two expressions are equivalent 6(7)(C)</i> <i>Generate equivalent expressions using properties of operations 6(7)(D)</i> <i>Model and solve one-variable, one-step equations 6(10)(A)</i> <i>Determine if the given values make one-variable, one-step equations true 6(10)(B)</i> 	<ul style="list-style-type: none"> <i>Geometry concepts</i> <i>Sports</i> <i>Time</i> <i>Music</i> 	Struggling <ul style="list-style-type: none"> <i>Provide scaffolding tools (leading questions)</i> <i>Provide opportunities to check in and verify content</i>
Brainstorming	Related Concepts and/or Skills <i>Everyday life 6(1)(A)</i>			Learning English <ul style="list-style-type: none"> <i>Provide opportunities to speak and listen</i> <i>Provide opportunities to check in and verify vocabulary</i>
				Advanced <ul style="list-style-type: none"> <i>Extend problem to new situations</i> <i>Open-ended applications</i>

Amplifying Instructional Tasks Brainstorming – Grade 7 Example

		Considerations for Brainstorming		
		Consider the Curriculum Focal Point	Consider the Context	Consider the Student
Guiding Questions	Consider the 2012 TEKS in the Original Task			
	What main concepts and/or skills are involved in this task? What are related concepts and/or skills?	What else might be explored or applied? <ul style="list-style-type: none"> Additional mathematical ideas from the focal points Grade level connections Financial literacy standards 	What else could be explored within this context? What related ideas could be added to this context? What connections could be made to other content areas?	What Tier I differentiation may be needed to reach the student who is <ul style="list-style-type: none"> struggling, learning English, and/or advanced?
	Main Concepts and/or Skills <i>Represent linear relationships 7(7)(A)</i>	Standards <ul style="list-style-type: none"> Process standards 7(1)(A)-(G) Add, subtract, multiply and divide rational numbers to solve problems 7(3)(B) Write and solve equations using geometry concepts 7(11)(C) Circumference and area of circles 7(9)(B) Area of composite figures 7(9)(C) Write one-variable, one-step equations and inequalities to represent constraints or conditions within problems 7(10)A Model and solve one-variable, two-step equations and inequalities 7(11)(A) 	Context <ul style="list-style-type: none"> How many plants would be needed to outline the garden? What might be the cost for plants to outline a garden that is twice as large? What if I wanted to create a garden of concentric circles? 	Struggling <ul style="list-style-type: none"> Model use of additional tools (hands-on, pictures) Model use of table to look for a pattern Learning English <ul style="list-style-type: none"> Provide sentence stems and frames Provide opportunities to speak Pre-teach vocabulary Advanced <ul style="list-style-type: none"> Extend to proportional changes with length as described in grade 8 Explore similarity of circular gardens Create a garden using different a combination of geometric shapes

Amplifying Instructional Tasks Brainstorming – Grade 8 Example

		Considerations for Brainstorming		
		Consider the Curriculum Focal Point	Consider the Context	Consider the Student
Guiding Questions	Consider the 2012 TEKS in the Original Task	Consider the Curriculum Focal Point	Consider the Context	Consider the Student
	What main concepts and/or skills are involved in this task? What are related concepts and/or skills?	What else might be explored or applied? <ul style="list-style-type: none"> Additional mathematical ideas from the focal points Grade level connections Financial literacy standards 	What else could be explored within this context? What related ideas could be added to this context? What connections could be made to other content areas?	What Tier I differentiation may be needed to reach the student who is <ul style="list-style-type: none"> struggling, learning English, and/or advanced?
Brainstorming	Main Concepts and/or Skills <i>Volume of a Cylinder 8(7)(A)</i>	Standards <ul style="list-style-type: none"> Process Standards 8(1)(A)-(G) Describe the volume formula of a cylinder in terms of its base area and height 8(6)(A) Model the relationship between cylinders and cones 8(6)(B) 	<ul style="list-style-type: none"> <i>How much water does it take to fill the pan?</i> <i>How can I compare water levels in the pan?</i> <i>If I double a recipe, will my ingredients fit into this pan?</i> <i>If the water level decreases when boiling, how much water evaporated?</i> 	Struggling <ul style="list-style-type: none"> Provide scaffolding tools (more given information) Require fewer methods for problem solving
	Related Concepts and/or Skills <i>Everyday life 8(1)(A)</i>			Learning English <ul style="list-style-type: none"> Provide a word bank Provide opportunities to speak
				Advanced <ul style="list-style-type: none"> Extend problem to new situations Open-ended applications

Exploring the Texas Gateway

TEKS	Type of Activities	Do you see evidence of the mathematical process standards? Justify your answer.	Notes

13

My Reflections:



Amplifying Instructional Tasks – Grade _____

		Considerations for Brainstorming		
		Consider the Curriculum Focal Point	Consider the Context	Consider the Student
Guiding Questions	Consider the 2012 TEKS in the Original Task	Consider the Curriculum Focal Point	Consider the Context	Consider the Student
	What main concepts and/or skills are involved in this task? What are related concepts and/or skills?	What else might be explored or applied? <ul style="list-style-type: none">Additional mathematical ideas from the focal pointsGrade level connectionsFinancial literacy standards	What else could be explored within this context? What related ideas could be added to this context? What connections could be made to other content areas?	What Tier I differentiation may be needed to reach the student who is <ul style="list-style-type: none">struggling,learning English,and/or advanced?
	Main Concepts and/or Skills	Standards	Context	Struggling
	Related Concepts and/or Skills			Learning English
				Advanced



Amplifying Instructional Task Worksheet – Grade ____

Original Task:

Amplified Instructional Task: