

Introduction to the Revised Mathematics TEKS

MATHEMATICAL PROCESS STANDARDS
JOURNAL
GRADES 3 - 5



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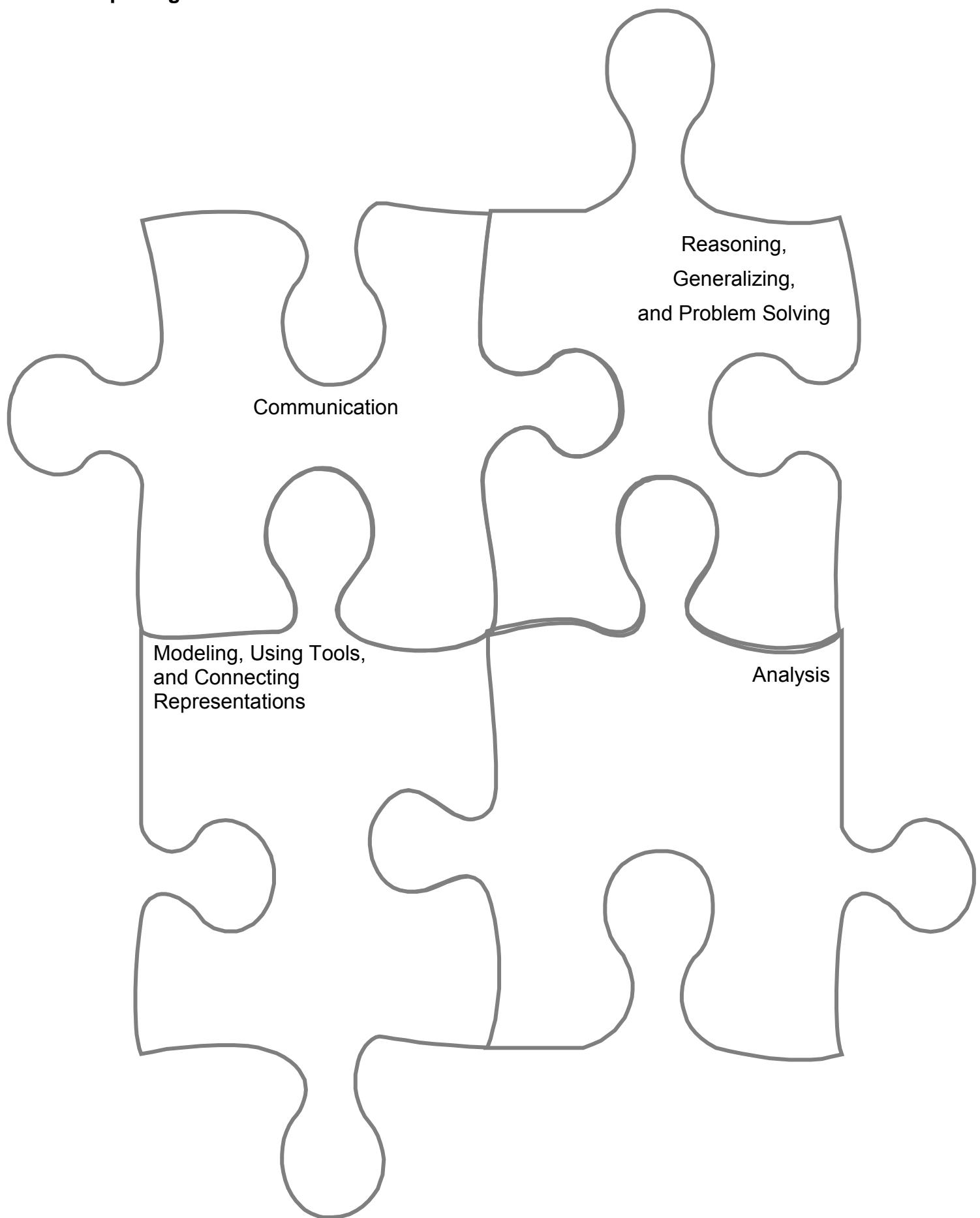
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Exploring The Mathematical Process Standards



Exploring The Mathematical Process Standards (continued)

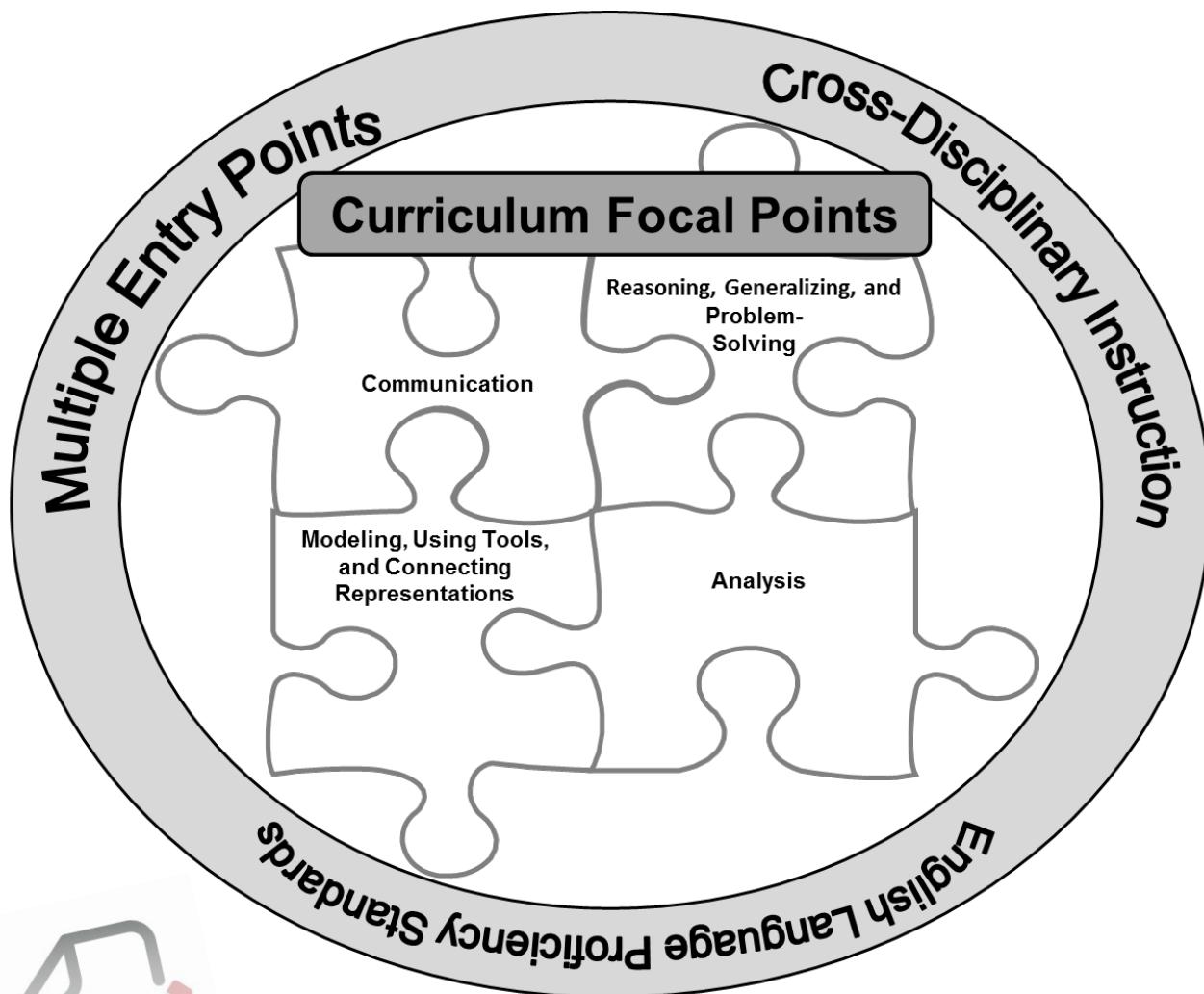
Similarities	Differences



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 3 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>Determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row 3(6)(C)</i>	Standards <ul style="list-style-type: none"> Process standards 3(1)(A)-(G) Decompose composite figures formed by rectangles into non-overlapping rectangles to determine the area of the original figure using the additive property of area 3(6)D Determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems 3(7)(B) Recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts 3(4)(F) Represent multiplication facts by using area models 3(4)(E) Represent and solve one- and two-step multiplication and division problems 3(4)(K) 	<ul style="list-style-type: none"> <i>Area of an irregular shaped garden composed of rectangles</i> <i>Area of an irregular shaped playground composed of rectangles</i> <i>Determine the perimeter of the irregular shape</i> <i>Given whole dollar amounts calculate the cost of materials needed for the perimeter and/or area of the garden or playground (two digit by one digit multiplication)</i> 	Struggling <ul style="list-style-type: none"> Provide grid paper, color pencils and scissors to decompose the figures Hint cards Learning English <ul style="list-style-type: none"> Use sentence frames and sentence starters Hint cards Advanced <ul style="list-style-type: none"> Given the total area construct a garden or playground that is composed of rectangles

Amplifying Instructional Tasks Brainstorming – Grade 4 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>Identify angles 4(6)(A)</i>	Standards <ul style="list-style-type: none"> Process Standards 4(1)(A)-(G) <i>Identify right, acute, and obtuse triangles 4(6)(C)</i> <i>Classify 2-D figures based on presence or absence of attributes 4(6)(D)</i> <i>Approximate angle measures in degrees using a protractor 4(7)(C)</i> 	<ul style="list-style-type: none"> <i>What are the geometric shapes of: road signs, household objects, sports fields, etc?</i> <i>What kinds of angles, lines, points, etc would you expect to see on a map?</i> 	Struggling <ul style="list-style-type: none"> <i>Provide scaffolding tools (additional given information or prompts)</i> <i>Provide a vocabulary hint card</i>
	Related Concepts and/or Skills <i>Representations 4(1)(E)</i>			Learning English <ul style="list-style-type: none"> <i>Provide a word bank</i> <i>Provide intentional opportunities to speak, read, write, and/or listen</i> <i>Provide a vocabulary hint card</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 5 Example

Considerations for Brainstorming				
Guiding Questions	Consider the 2012 TEKS in the Original Task	Consider the Curriculum Focal Point	Consider the Context	Consider the Student
12	<p>What main concepts and/or skills are involved in this task?</p> <p>What are related concepts and/or skills?</p>	<p>What else might be explored or applied?</p> <ul style="list-style-type: none"> Additional mathematical ideas from the focal points Grade level connections Financial literacy standards 	<p>What else could be explored within this context?</p> <p>What related ideas could be added to this context?</p> <p>What connections could be made to other content areas?</p>	<p>What Tier I differentiation may be needed to reach the student who is</p> <ul style="list-style-type: none"> struggling, learning English, and/or advanced?
	<p>Main Concepts and/or Skills <i>Multiplying decimals 5(3)(E)</i></p> <p>Related Concepts and/or Skills <i>Mathematics in everyday life 5(1)(A)</i></p>	<p>Standards</p> <ul style="list-style-type: none"> <i>Process standards 5(1)(A)-(G)</i> <i>Multiplying decimals including money 5(3)(E)</i> <i>Solve for quotients of decimals to the hundredths 5(3)(G)</i> <i>Conversions within a measurement system 5(7)</i> <i>Solve problems using data from a graph 5(9)(C)</i> <i>Gross income or net income 5(10)(B)</i> <i>System for keeping and using financial records 5(10)(D)</i> 	<p>Context</p> <ul style="list-style-type: none"> <i>If she sells individual servings, how many servings could be sold?</i> <i>What was the farmer's total sales amount if all of it was sold?</i> <i>What was the profit?</i> <i>What was the net and gross income?</i> 	<p>Struggling</p> <ul style="list-style-type: none"> <i>Provide tables for processing</i> <i>Scaffolded questions</i> <i>Visual and vocabulary supports</i> <p>Learning English</p> <ul style="list-style-type: none"> <i>Visual and vocabulary supports</i> <i>Sentence stems</i> <p>Advanced</p> <ul style="list-style-type: none"> <i>Given expenses find the profit</i>

Exploring the Texas Gateway

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

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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: