EPISD Grade 7 Pre-AP Math Curriculum 2013-2014
Unit 0: Process Skills and Strategies
Week 1

The Written Curriculum				
	Reporting Category	**TEKS Knowledge & Skills**	**TEKS Student Expectation**	**Standard Clarification**
Content	1	**7.2 Number, Operation, and Quantitative Reasoning** The student adds, subtracts, multiplies, or divides to solve problems and justify solutions.	**7.2G** Select and use appropriate operations to solve problems and justify the selections. *Readiness Standard*	To include: • Selecting and performing correct operations given a problem situation, especially in word problems.
		TEKS Knowledge & Skills	**TEKS Student Expectation**	
Process	**Underlying Processes and Mathematical Tools**	**7.13 Underlying processes and mathematical tools.** The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.	**7.13B** Use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness. **7.13C** Select or develop appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler	Note: The focus of Week 1 is teaching the problem solving model to include: • Being able to remember and practice using a 4-step problem solving model that parallels the steps indicated in 7.13B in both classroom assignments and assessments. • Opportunities to evaluate an answer and reflect on the steps taken to arrive at a solution. • Knowledge of mathematical tools, strategies, and techniques, as listed in 7.13C and D, and when those tools, strategies, and techniques are

		problem, or working backwards to solve a problem **7.13D** select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems.	appropriate to use. • Knowledge of words and phrases within a word problem that identify the mathematical operations to be performed. • Knowledge of representing operations in number sentences such as:8 x 4, 8(4), 8·4 or 8÷4, 8/4

The Taught Curriculum

Guiding Questions	Enduring Understandings

• *What is the difference between problem-solving strategies and the problem solving model?*
• *What are some strategies that can be used when solving problems?*
• *What keywords can you identify that might help you select an operation in order to solve an addition, subtraction, multiplication, or division problem?*
	1. A problem-solving strategy is a plan for solving a problem.
	2. Different strategies work better for different types of problems. Sometimes you can use more than one of the above strategies to solve a problem. Below is just one example of the steps/procedures to solve a problem:
	   ✓ Read and understand the problem
	   ✓ Plan
	   ✓ Carry out the plan
	   ✓ Check answer for reasonableness
	3. Some problem-solving strategies include:
	   ✓ Drawing a picture
	   ✓ Making a table
	   ✓ Looking for a pattern
	   ✓ Working a simpler problem
	   ✓ Guessing and checking
	   ✓ Working backwards

Academic Vocabulary	Resources

• Select
• Justify
• Appropriate operation
• Strategy
• Guess and check
• Table
• Pattern
• Problem-solving model
	Textbook/Workbook:
	  ▪ **Problem Solving Using Appropriate Operations**
	    • Region 4: Supporting STAAR Achievement
	     Pg. 28 - 41
	  ▪ **Problem Solving Strategies and Activities:**
	    • Region 4: Closing the Distance Grade 7
	      ○ Lesson 5 page 85, 87 (student problem-solving board and bookmarks)
	    • The Problem Solver 7(Creative Publications binder) Set up in stations or completed as whole group.
	      ✓ Use or Look for a Pattern #10 p.T19, #33 p. T65
	      ✓ Make a Picture or diagram #14 p. T27, #19 p. T37,
	      ✓ Work Backwards #18 p. T35, #43 p. T85, #44 p. T87
	      ✓ Guess & Check #30 p. T59
	      ✓ Make it Simpler #45 p. T89
	    • Prentice Hall: Texas Mathematics, Course 2:
	      ✓ Problem Solving Plans, p. xlviii
	      ✓ Draw a Picture, p. l,
	      ✓ Look for a Pattern, p. li,
	      ✓ Systematic Guess and Check, p. lii,
	      ✓ Make a Table, p. liv,
	      ✓ Work a Simpler Problem, p. lv,
	      ✓ Work Backward, p. lvi,
	  ▪ **Addition and Subtraction of Decimals**
	    Prentice Hall: Texas Mathematics, Course 2: pg. 10, problems #17, 33, pg. 11, problems #37-40, 42-44
	
	Interactive Notebook Activity: Region IV - Closing the Distance - Grade 7: Lesson 5, pages 85 and 88-89. Students cut & paste the 3 problem-solving organizers into their notebooks and solve the problems using the appropriate process and strategies.
	
	Journal Prompt: In paragraph form, state why knowing when to perform specific operations in math is important. Describe how identifying keywords in a problem can help you know what operation to perform.

Provide examples of keywords that are associated with specific operations.

Technology:
- **Khan Academy: www.Khanacademy.org**
- **Discovery Education: http://streaming.discoveryeducation.com/**
- **Nat'l Library Manipulatives: http://nlvm.usu.edu/**
- **Math-Games: http://www.math-play.com/7th-grade-math-games.html**
- **Math Playground: http://www.mathplayground.com/game_directory.html**
- **IXL: http://www.ixl.com/math/grade-7**
- **Thinking Blocks: http://www.thinkingblocks.com/**
- **Super Teach Tools: http://www.superteachertools.com/**
- **Gizmos:http://www.explorelearning.com/index.cfm?method=cResource.dspStandardCorrelation&id=517**
- **Math Academy: http://mathacademy.com/pr/index.asp**

Math Counts: https://mathcounts.org/Page.aspx?pid=1573

Other Curricular Connection (ELA, Science, SS)	None

The Tested Curriculum

None

| **Sample Question(s)** | Obj 6, SE 7.13 C, 2009, Q#31, Ans: B, Lev 4 | **31** A soccer league has 64 teams competing in a tournament. In each round, pairs of teams compete. The team that wins advances to the next round. The table below shows the results of the first 2 rounds. At the end of which round will there be only 2 teams remaining, assuming there are no ties? | Soccer League Tournament

 | **A** Round 4
 B Round 5
 C Round 6
 D Round 7 |

Soccer League Tournament

Round	Number of Teams Competing	Number of Teams Remaining
1	64	32
2	32	16