Module 1
Participant Guide

Focus on Practice Standards

Section 3

Connecticut Core Standards for Mathematics

Grades 6–12

Systems of Professional Learning

Connecticut Core Standards Systems of Professional Learning

The material in this guide was developed by Public Consulting Group in collaboration with staff from the Connecticut State Department of Education and the RESC Alliance. The development team would like to specifically thank Ellen Cohn, Charlene Tate Nichols, and Jennifer Webb from the Connecticut State Department of Education; Leslie Abbatiello from ACES; and Robb Geier, Elizabeth O'Toole, and Cheryl Liebling from Public Consulting Group.

The Systems of Professional Learning project includes a series of professional learning experiences for Connecticut Core Standards District Coaches in English Language Arts, Mathematics, Humanities, Science, Technology, Engineering, Mathematics (STEM), and Student/Educator Support Staff (SESS).

Participants will have continued support for the implementation of the new standards through virtual networking opportunities and online resources to support the training of educators throughout the state of Connecticut.

Instrumental in the design and development of the Systems of Professional Learning materials from PCG were: Sharon DeCarlo, Debra Berlin, Jennifer McGregor, Michelle Wade, Nora Kelley, Diane Stump, and Melissa Pierce.

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Section 3

Section 3: Understanding the Standards for Mathematical Practice: Developing Mathematical Expertise

Problem Set

Solve each of the following eight problems. Think about your process for solving each as your process will be discussed as we look at each of the eight Standards for Mathematical Practice.

Problem 1. Find all of the ways you can divide a square in half.	**Problem 2.** How is multiplying 32x41 like multiplying (x+1) (X+3)?
Problem 3. Explain why all squares are rectangles but not all rectangles are squares.	**Problem 4.** 8^{th} graders are going on a field trip. There are 167 students going. How many buses are needed for the trip if each bus can hold 48 students?

Problem 5.

Using the input and output below, identify the rule.

Input	Output
-1	1
0	3
1	5
2	7
3	9

Problem 6. Farmer Lebowski has some chickens and some cows in her yard. Together, the animals have a total of 90 heads and 286 legs. How many chickens and how many cows are in the yard? Find a way to solve this problem **that does not involve the use of an algebraic equation.**

Hint: Cows have 4 legs, chickens have 2.

Problem 7.

XYZ School Maintenance Budget		
Year	**Maintenance Budget**	**Total XYZ School Budget**
2009	**$30,000**	**$500,000**
2010	**$31,200**	**$520,000**

Rate of inflation between 2009 and 2010: 8%In 2010 the XYZ School received the following comments:

- From parents: The maintenance budget has increased.
- From the maintenance manager: The maintenance budget has decreased.
- From the Principal: There has been no change in spending patterns at the school.

Is it possible that all comments are valid? Why or why not? Where do you stand?

Problem 8. On its menu, a restaurant has three different appetizers, four different entrees, and two different desserts. How many distinct meals of one appetizer, one entrée, and one dessert could you make from this menu? Show how you know.

Understanding the Mathematical Practices

As each of the eight Standards for Mathematical Practices are discussed, use the following charts to record your notes on each.

<table>
<tr><td colspan="2">SMP1:</td></tr>
<tr><td>Instructional Supports:</td><td>Example Problem:</td></tr>
<tr><td colspan="2">Additional Notes:</td></tr>
</table>

SMP2:	
Instructional Supports:	**Example Problem:**
Additional Notes:	

SMP3:	
Instructional Supports:	**Example Problem:**
Additional Notes:	

SMP4:	
Instructional Supports:	**Example Problem:**
Additional Notes:	

SMP5:	
Instructional Supports:	**Example Problem:**
Additional Notes:	

SMP6:	
Instructional Supports:	**Example Problem:**
Additional Notes:	

SMP7:	
Instructional Supports:	**Example Problem:**
Additional Notes:	

SMP8:	
Instructional Supports:	**Example Problem:**
Additional Notes:	