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Mathematics Unit Planning in a PLC at Work®, Grades 3–5

By Sarah Schuhl, Timothy D. Kanold, Jennifer Deinhart, Matthew R. Larson, and Mona Toncheff

Study Guide

This study guide is a companion to the book *Mathematics Unit Planning in a PLC at Work, Grades 3–5,* by Sarah Schuhl, Timothy D. Kanold, Jennifer Deinhart, Matthew R. Larson, and Mona Toncheff. *Mathematics Unit Planning in a PLC at Work* provides guidance specifically geared toward grades 3–5 teachers for collectively planning a unit of study.

This guide is arranged by chapter, enabling readers to either work their way through the entire book or focus on the specific topics addressed in a particular chapter. It can be used by individuals, small groups, or an entire team to identify key points, raise questions for consideration, assess conditions in a particular school or district, and suggest steps that might be taken to promote a healthy school culture.

We thank you for your interest in this book, and we hope this guide is a useful tool in your efforts to create a healthy culture in your school or district.

Chapter 1

Planning for Student Learning of Mathematics in Grades 3–5

1. What three components should your team focus on to plan a guaranteed and viable curriculum?

2. Mathematics units of study tell a story of how student learning will progress throughout the school year. What background knowledge for this story should teachers first consider before diving into unit planning?

3. What are some sources you and your team could reference when considering the essential content and skills that grades 3–5 students will need to know and be able to do?

4. Teams can use the Mathematics Unit Planner to consider the content, skills, tasks, tools, and vocabulary that students will learn. How can doing so improve individual practice?

Chapter 2

Unit Planning as a Collaborative Mathematics Team

1. What are some of the tasks that teams should perform together in order to fully address the four critical questions of a PLC?

2. What does it mean to "unwrap" a standard?

3. Describe the actions you and your team could take in order to find resources and activities to help your students learn the essential standards. What are some resources you know of that might be good places to start?

4. What is the difference between tools and strategies? Describe some of both that you might use.

Chapter 3

Grade 3 Unit: Fraction Understanding

1. How does student learning of fractions progress from kindergarten through fifth grade? How can you align this progression to third-grade standards?

2. Think of some *I can* statements that you could generate from your state standards. How could you use this format to express what students should know about partitioning a whole? The value of a fraction? How fraction notations name parts and wholes?

3. Think about when you want to teach your fraction unit. What units have you already taught that might contribute to student understanding? What standards from second grade might connect to your current unit?

4. What are some tasks that you can use to develop conceptual understanding of fractions in your students to ensure that this foundational understanding helps students work with fractions in future grades?

Chapter 4

Grade 4 Unit: Fraction Equivalence, Addition, and Subtraction

1. How does student learning of fractions progress from kindergarten through fifth grade? How can you align this progression to fourth-grade standards?

2. Think of some *I can* statements that you could generate from your state standards. How could you use this format to express what students should know about explaining the meaning of fractions? Generating equivalent fractions? Decomposing fractions in multiple ways?

3. How can you enhance important prior knowledge at the beginning of your lessons?

4. What tools or manipulatives might you use to help students meaningfully explore fraction equivalence? Would your students respond better to physical tools or ones with a technological component?

Chapter 5

Grade 5 Unit: Fraction Addition and Subtraction

1. How does student learning of fractions progress from kindergarten through fifth grade? How can you align this progression to fifth-grade standards?

2. Think of some *I can* statements that you could generate from your state standards. How could you use this format to express what students should know about adding and subtracting fractions? Multiplying and dividing fractions? Working with decimals and connecting these conceptually to fractions?

3. What are some ways that you could help reinforce students' use of appropriate mathematics vocabulary (such as *numerator*, *denominator*, *fraction*, *mixed number*, and *estimate*)?

4. What are some ways that you and your team can support transparent, honest dialogue after an end-of-unit assessment?