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Mathematics Unit Planning in a PLC at Work®, Grades PreK–2

By Sarah Schuhl, Timothy D. Kanold, Jennifer Deinhart, Nathan D. Lang-Raad, Matthew R. Larson, and Nanci N. Smith

Study Guide

This study guide is a companion to the book *Mathematics Unit Planning in a PLC at Work®, Grades PreK–2* by Sarah Schuhl, Timothy D. Kanold, Jennifer Deinhart, Nathan D. Lang-Raad, Matthew R. Larson, and Nanci N. Smith. *Mathematics Unit Planning in a PLC at Work, Grades PreK–2* provides guidance specifically geared toward grades PreK–2 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.

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Chapter 1

Planning for Student Learning of Mathematics in Grades PreK–2

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 PreK-2 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

PreK Unit: Counting and Cardinality

1. How does student learning of counting and cardinality progress from PreK through second grade? How can you align this progression to PreK 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 number names? Counting from 1-10? Other unit standards from counting and cardinality?
3. Think about when you want to teach your counting and cardinality unit. What units have you already taught that might contribute to student understanding? What standards from future grades may connect to your counting and cardinality unit?
4. What are some tasks that you can use to develop conceptual understanding of counting and cardinality in your students to ensure that this foundational understanding helps students work with counting numerals in future grades?

Chapter 4

Kindergarten Unit: Addition and Subtraction to 10

1. How does student learning of addition and subtraction progress from PreK through second grade? How can you align this progression to kindergarten 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 composing and decomposing numbers less than 10? Solving story problems? Adding and subtracting to make 10?
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 addition and subtraction to 10? Would your students respond better to physical tools or ones with a technological component?

Chapter 5

Grade 1 Unit: Addition and Subtraction to 20

1. How does student learning of addition and subtraction progress from PreK through second grade? How can you align this progression to first-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 to 20? Explain thought processes when adding and subtracting? Finding missing numbers in equations?
3. What are some ways that you could help reinforce students' use of appropriate mathematics vocabulary (such as *addition*, *subtraction*, and *equation*)?
4. What are some ways that you and your team can support transparent, honest dialogue after an end-of-unit assessment?

Chapter 6

Grade 2 Unit: Multidigit Addition and Subtraction

1. How does student learning of addition and subtraction progress from PreK through second grade? How can you align this progression to second-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 numbers up to 1,000? Adding and subtracting multidigit numbers? Solve multidigit word problems and explain reasoning?
3. Think about when you want to teach your multidigit addition and subtraction unit. What units have you already taught that might contribute to student understanding? What standards from first grade might connect to your current unit?
4. What tools or manipulatives might you use to help students meaningfully explore multidigit addition and subtraction? Would your students respond better to physical tools or ones with a technological component?