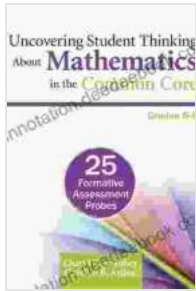


Uncovering Student Thinking About Mathematics in the Common Core Grades



The Common Core State Standards for Mathematics (CCSSM) were developed to ensure that all students graduate from high school with the mathematical knowledge and skills they need to succeed in college, career, and life. However, research has shown that many students struggle to meet the demands of the CCSSM, and that their understanding of mathematics is often fragmented and incomplete.

Uncovering Student Thinking About Mathematics in the Common Core, Grades 6-8: 25 Formative Assessment Probes by Cheryl Rose Tobey



★★★★★ 5 out of 5

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One of the challenges in teaching mathematics is that students often have misconceptions about what mathematics is and how it works. These misconceptions can prevent students from learning new material and can make it difficult for them to apply their knowledge to new situations.

This article explores student thinking about mathematics in the Common Core grades, using data from the National Assessment of Educational Progress (NAEP). The findings suggest that students' understanding of mathematics is often fragmented and incomplete, and that they struggle to apply their knowledge to new situations. The article discusses the implications of these findings for mathematics education, and offers some recommendations for improving instruction.

Student Misconceptions About Mathematics

One of the most common misconceptions that students have about mathematics is that it is a static subject. They believe that there is one right way to do math, and that any other way is wrong. This misconception can

lead students to be afraid of making mistakes, and can prevent them from exploring different strategies for solving problems.

Another common misconception is that mathematics is only about numbers. Students often think that math is just about learning how to add, subtract, multiply, and divide. This misconception can lead students to ignore other important aspects of mathematics, such as geometry, measurement, and data analysis.

These are just a few of the many misconceptions that students have about mathematics. It is important for teachers to be aware of these misconceptions so that they can help students to overcome them. By understanding student thinking, teachers can create more effective instruction that meets the needs of all learners.

Implications for Mathematics Education

The findings of this study have important implications for mathematics education. First, they suggest that we need to do a better job of helping students to understand the nature of mathematics. Students need to know that mathematics is not a static subject, but rather a dynamic and ever-changing field of knowledge. They also need to know that there is more to mathematics than just numbers and computation.

Second, these findings suggest that we need to focus more on developing students' problem-solving skills. Students need to be able to apply their mathematical knowledge to new situations, and they need to be able to do this without always being told how to do it. Problem-solving is a skill that can be developed through practice, so it is important to provide students with plenty of opportunities to solve problems.

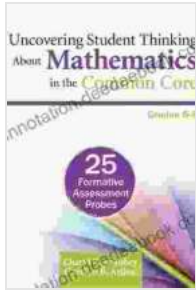
Finally, these findings suggest that we need to use more effective assessment practices. Traditional assessments often focus on what students know, but they do not always measure what students can do. We need to use assessments that measure students' problem-solving skills, their ability to apply their knowledge to new situations, and their understanding of the nature of mathematics.

Recommendations for Improving Instruction

Based on the findings of this study, I offer the following recommendations for improving mathematics instruction:

- Help students to understand the nature of mathematics. Explain that mathematics is a dynamic and ever-changing field of knowledge. Show students how mathematics is used in the real world, and help them to understand the different ways that mathematics can be used to solve problems.
- Focus on developing students' problem-solving skills. Provide students with plenty of opportunities to solve problems, and encourage them to use different strategies. Help students to learn how to think critically about problems, and how to come up with their own solutions.
- Use more effective assessment practices. Use assessments that measure students' problem-solving skills, their ability to apply their knowledge to new situations, and their understanding of the nature of mathematics.

By implementing these recommendations, we can help our students to develop a deeper understanding of mathematics and to become more successful problem solvers.

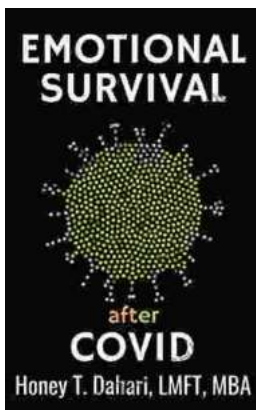


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