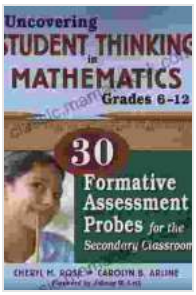
Uncovering Student Thinking in Mathematics: Grades 1-2

Student thinking is a complex and dynamic process that is influenced by a variety of factors, including prior knowledge, experiences, and beliefs. In mathematics, student thinking is often revealed through their work on problems and tasks. By carefully analyzing student work, teachers can gain valuable insights into their students' understanding of mathematical concepts and their ability to apply mathematical skills. This information can then be used to inform instruction and to provide targeted support to students who are struggling.



Uncovering Student Thinking in Mathematics, Grades 6-12: 30 Formative Assessment Probes for the Secondary Classroom by Don Shiach

4.4 out of 5

Language	: English
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Text-to-Speech	: Enabled
Screen Reader	: Supported
Enhanced typesetting	: Enabled
Word Wise	: Enabled
Print length	: 248 pages

Assessment of Student Thinking

There are a variety of ways to assess student thinking in mathematics. Some of the most common methods include:

- **Observations:** Observing students as they work on problems and tasks can provide valuable insights into their thinking processes. Teachers can look for evidence of student understanding, such as the strategies they use to solve problems, the questions they ask, and the errors they make.
- **Interviews:** Interviewing students individually or in small groups can provide more in-depth information about their thinking. Teachers can ask students questions about their understanding of mathematical concepts, their problem-solving strategies, and their beliefs about mathematics.
- **Written work:** Student work on problems and tasks can provide evidence of their understanding of mathematical concepts and their ability to apply mathematical skills. Teachers can analyze student work to identify common errors, patterns of thinking, and areas where students need additional support.

Formative Assessment

Formative assessment is an essential tool for uncovering student thinking and informing instruction. Formative assessment is an ongoing process that occurs throughout the learning process. It involves collecting evidence of student learning and using that evidence to make decisions about instruction. Formative assessment can be used to identify students who are struggling, to provide targeted support, and to adjust instruction to meet the needs of all learners.

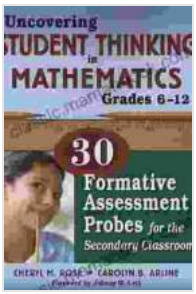
Differentiation

Differentiation is the process of tailoring instruction to meet the individual needs of students. Differentiation can be based on a variety of factors, including student readiness, interests, and learning styles. By differentiating instruction, teachers can ensure that all students have the opportunity to learn and succeed in mathematics.

Equity, Diversity, and Inclusion

Equity, diversity, and inclusion are essential components of effective mathematics instruction. Equity means that all students have access to the same opportunities and resources to learn mathematics. Diversity means that students come from a variety of backgrounds and experiences. Inclusion means that all students feel welcome and respected in the mathematics classroom. By creating an equitable, diverse, and inclusive classroom environment, teachers can help all students to reach their full potential in mathematics.

Uncovering student thinking in mathematics is essential for effective instruction. By carefully assessing student work, observing students as they work, and interviewing students about their thinking, teachers can gain valuable insights into their students' understanding of mathematical concepts and their ability to apply mathematical skills. This information can then be used to inform instruction, to provide targeted support to students who are struggling, and to create an equitable, diverse, and inclusive classroom environment where all students can learn and succeed.



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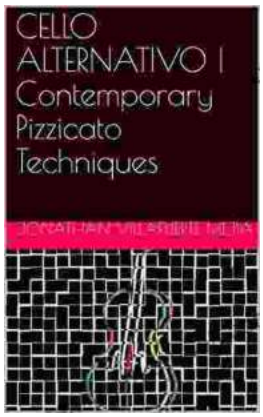

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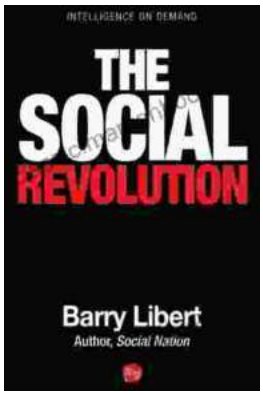

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