

MindBugs-in-Math Elementary Course Overview

Unit One: Numeracy

Learning to speak math is one of the most difficult processes in a student's life, it cannot be approached in the same way as learning letters and words. Math requires manipulating materials, building an image bank for measurement and representing number relationships in many ways. Participants learn to speak the language of mathematics with a focus on place value and number sense. From learning number names to representing groups (bases), students need a strong foundation in the language of math. Familiarity with numbers, counting, place value and bases eases problem solving and the ability to see relationships among numbers. In this Unit, methods and that aid mastery of.

Unit Two: Addition & Subtraction

Use the tools that helped great mathematicians and scientists achieve through history. Gain a solid understanding of process and procedure in mathematics. Participants will gain a conceptual understanding of "place value" and its role in addition and subtraction. Participants will begin to conceptual explanations classroom discussions. Participants will learn to identify and remediate errors related to addition and subtraction proficiency. Participants will gain proficiency in using place value manipulatives, including: Patterns (99s charts and Hidden Numbers); Abacus (Adding and Subtracting on a 3000 years old Place Value board); Number Lines (sliding ones) and Scaleville Class Starters.

Unit Three: Multiplication

Discover the "why" behind the algorithm as we focus on educator core conceptual content knowledge. Participants will gain a conceptual understanding of "place value" and its role in multiplication. Integrate conceptual explanations into classroom discussions using place value manipulatives including; Patterns, Hidden Numbers, Abacus and Napier's Bones. Learn to identify and remediate errors related to multiplication proficiency.

Unit Four: Divide

Deepen understanding of the division algorithm. Participants will gain a conceptual understanding of "place value" and its role in division. Begin to integrate conceptual explanations into classroom discussions, identify and remediate errors related proficiency in division. Participants will gain basic proficiency in using place value manipulatives including Per Cent Boards and Abacus.

Unit Five: Fractions and Decimals

Learn to make the connections between fractions and decimals in a clear, straightforward fashion using math tools you already own! How many times have you heard colleagues say that their students cannot "DO fractions." Things just seem to fall apart for students at the point of working with these symbols of parts of objects. This unit is designed to show how the engineers and educators in the Ten80 Educational Community connect the dots of arithmetic to make UNDERSTANDING and DOING fractions less of an obstacle for teachers and students.



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MindBugs-in-Math Middle School Course Overview

Unit One: Numeracy, Addition & Subtraction

Learning to speak math is one of the most difficult processes in a student's life, but it cannot be approached in the same way as learning letters and words. Math requires manipulating materials, building an image bank for measurement and representing number relationships in many ways. Gain a solid understanding of process and procedure in mathematics. Participants will gain a conceptual understanding of "place value" and its role in addition and subtraction. Participants will begin to integrate conceptual explanations into classroom discussions as they learn to identify and remediate errors related to addition and subtraction proficiency. Begin to gain proficiency on the Abacus and in Scaleville Daily activities.

Unit Two: Multiplication

Discover the "why" behind the algorithm as we focus on educator core conceptual content knowledge. Participants will gain a conceptual understanding of "place value" and its role in multiplication. Integrate conceptual explanations into classroom discussions using place value manipulatives including; Patterns, Hidden Numbers, Abacus and Napier's Bones. Use actual student samples to identify and remediate errors related to multiplication proficiency.

Unit Three: Division, Fractions and Decimals

Learn to make the connections among division, fractions and decimals in a clear, straightforward fashion using math tools you already own! How many times have you heard colleagues say that their students cannot "DO fractions." Things just seem to fall apart for students at the point of working with these symbols of parts of objects. This unit is designed to show how the engineers and educators in the Ten80 Educational Community connect the dots of arithmetic to make UNDERSTANDING and DOING fractions less of an obstacle for teachers and students. Learn the real math behind our division algorithm!

Unit Four: Problem Solving in the Classroom

Help students hone problem solving with daily and weekly reinforcement activities. More than key words, problem solving requires active participation, solid number sense and the ability to recognize unreasonable outcomes. Participants will gain proficiency in useful tools for teaching students to work through word problems and utilize higher order thinking skills.

Unit Five: Applied Math, Graphing and Data Analysis

Engineer-educator teams bring knowledge of the latest neurological research, applied learning and task-oriented authentic assessment. Math2Go programs are field tested and teacher approved to help educators pass on a profound understanding of numbers that makes math and science come alive!



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