How does Singapore Math's *Discovering Mathematics* Series Work?

Singapore's middle-school to high-school level *Discovering Mathematics* curriculum is currently going through a transition.

Previously, the program was organized as *Discovering Mathematics* Levels 1A-4B, which covered grades 7-10.

However, the publisher has begun changing this system to align with common core standards, and the level numbers were changed to reflect the grade they covered. Thus, the first two years of the program now are now revised and re-labeled as "*Discovering Mathematics*" 7A & 7B and 8A & 8B. They still flow into *Discovering Mathematics* 3A & 3B (Grade 9) and 4A & 4B (Grade 10); however, these latter grades are not common-core aligned.

The books are also structured differently, with the new Grade 7 & 8 Common Core book series containing a textbook, a teacher's notes book, a student workbook, and a workbook solution book. The Grade 9 & 10 curriculum is structured with a textbook, teacher's guide, question bank book, workbook, and workbook teacher's edition.

This challenging series integrates pre-algebra, algebra, and geometry and includes some trigonometry and advanced math topics. Like other Singapore programs, teacher involvement will generally be required. See the Scope & Sequence for a detailed list of concepts covered.

For Grades 7 & 8:

The **Discovering Math Textbooks** remain the core of this program, and follows the Singapore Mathematics Framework as well as the topics in the Common Core State Standards.

Textbook Features include:

- Worked examples followed by a "Try It!" question to ensure understanding.
- Lesson exercises that include the following exercise categories: Basic Practice (simple questions involving a direct application of the concepts); Further Practice (more challenging questions); Maths@Work (questions that apply mathematical concepts to real-life situations); and Brainworks (questions involving higher order thinking or an open-ended approach to problems).
- Each chapter is followed by a review exercise, an "Extend Your Learning Curve" activity, and questions requiring sentence or paragraph answers that encourage reflection.

The answer key at the back of the book provides answers to the Try It! and the problems in the exercises for the Basic Practice, Further Practice, and Maths@Work questions. It does not include answers to the class activities, Brainworks questions, or the Extend Your Learning Curve activities; those answers are found in the sold-separately Teacher's Guide. Softcover.

The ***Discovering Mathematics*** **Common Core Workbooks** are designed as a supplement to the textbooks. Emphasizing the empowerment of students to learn math independently and effectively, a variety of approaches are used to help students master concepts.

Questions are arranged by topic, and are categorized into four sections according to difficulty and thinking skills. “Basic Practice” questions are simple and drill concept comprehension; “Further Practice” questions are harder and involve direct application; “Challenging Practice” questions require synthesis; and “Enrichment” questions demand higher order thinking skills. Exercises follow the text. A line-listed answer key is included in the back of the book. Perforated, consumable pages (not-reproducible), softcover.

While the workbook does have a line-listed answer key in the back, the **Workbook Solutions** book contains the entire student question with fully worked-out solutions arranged by chapter.

The **Teaching Notes & Solutions** manual contains one page of teaching notes for each chapter, with a paragraph for each concept and an overall suggested approach. Class Activities are included from the student text with answer and objectives. Fully-worked solutions for all questions and problems in the textbook are included. Softcover.

Families using the 7A level will notice some errors. Singapore’s website has published a revised key with correct answers.

<u>For Levels 3A-4B, Grades 9 & 10</u>

The **Discovering Mathematics Textbook** features are the same as Grades 7 & 8, however they are not aligned to the Common Core standards.

The **teacher's guides** contain a weekly schedule lists the objectives for each lesson, brief notes on teaching for each chapter, and fully worked solutions for all questions and problems in the textbook.

The **workbook** is designed to be used alongside the textbooks. Providing additional practice, students should refer to the important concepts in each textbook chapter for review before attempting the questions in the workbook.

The questions in each workbook chapter are categorized into 4 parts according to the level of difficulty and the thinking skills involved:

- Basic Principle: simple questions that drill concept comprehension
- Further Practice: harder questions that involve direct applications
- Challenging Practice: questions that require synthesis
- Enrichment: questions that demand higher order thinking

These questions encourage students to think analytically, reason logically, use appropriate connections between mathematical ideas, and apply problem-solving skills in daily life situations. Answer key included. Softcoverwith perforated pages; two punch-holes. The workbook comes with an answer key.

The **workbook teacher's edition** includes line-listed answers provide completely worked-out solutions to the problems in the workbook. Softcover.

The **question bank** accompanies the textbooks. Approximately 30 questions for each chapter are followed immediately by a detailed solution. Each question includes a suggested difficulty level of Low, Medium, or High for grading purposes. The exact number of question per chapter and distribution between different difficulty levels varies from chapter to chapter. This is not a student book, since the question is immediately followed by a fully worked solution.