

Kolbe Academy Home School

GRADE THREE MATHEMATICS

Singapore Math ® Primary Mathematics 3A
Singapore Math ® Primary Mathematics 3B

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COURSE TITLE: Mathematics

COURSE TEXTS:

First Semester (3A)

Required Texts

- Primary Mathematics 3A Textbook, Standards Edition*
- Primary Mathematics 3A Workbook, Standards Edition*
- Primary Mathematics 3A Home Instructor’s Guide, Standards Edition*

Optional Texts (available from Singapore Math ®)

- Primary Mathematics 3 Extra Practice, Standards Edition*
- Primary Mathematics 3A Intensive Practice, US Edition*
- Primary Mathematics 3, Challenging Word Problems*

Second Semester (3B)

Required Texts

- Primary Mathematics 3B Textbook, Standards Edition*
- Primary Mathematics 3B Workbook, Standards Edition*
- Primary Mathematics 3B Home Instructor’s Guide, Standards Edition*

Optional Texts (available from Singapore Math®)

- Primary Mathematics 3 Extra Practice, Standards Edition*
- Primary Mathematics 3B Intensive Practice, US Edition*
- Primary Mathematics 3, Challenging Word Problems*

TEXT DESCRIPTIONS: Descriptions below adapted from Singapore Math ®

Components	
Textbook	The textbook contains the learning tasks for students to do with adult supervision and interaction, along with practice and review problems. This text is a non-consumable book and to be used along with the workbook, at minimum. There is a book for each semester: 3A and 3B. Answers to textbook questions are in the Home Instructor’s Guide.
Workbook	The workbook is consumable and should be used along with the textbook. They contain the exercises the student does independently after each learning task. There is a book for each semester: 3A and 3B. Answers to workbook questions are in the Home Instructor’s Guide
Home Instructor’s Guide	The Home Instructor’s Guides are strongly recommended. The Home Instructor’s Guide provides parents with the Singapore Math® methodology. The depth achieved by the Home Instructor’s Guides can help the parent understand and handle misconceptions or lack of comprehension early before they become problematic. It prepares parents to initiate discussions on various approaches to understanding a concept or solving a problem and aids the parent in using the textbook most effectively. The guide contains mathematical background and objectives for each unit, objectives for each chapter, activities using manipulatives where appropriate, reinforcement and enrichment activities. It also includes answers and solutions to textbook pages and learning tasks for the chapter, answers to the workbook exercises and solutions to many of the problems. It also includes several mental math pages. There is a book for each semester: 3A and 3B.
Extra	This optional supplement consolidates and reinforces the mathematical concepts taught in the

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Practice	textbook. Extra practice problems in this text allow students to master concepts presented in the textbook or provide review after long period away from school such as summer break. The exercises are short and topic-specific to make it easy to assign work in those topics in which the student needs more practice. This, together with the simple language used, allows students to review mathematics with minimal guidance. There is only one book for the entire year. Answers are in the back of the book.
Intensive Practice	This optional supplement is recommended for advanced students as a source of interesting review and challenging questions. The problems are arranged in topics corresponding to each unit in the US edition. However, they can easily be used with the Standards edition. However, note that it does not include all topics and the sequence of topics will be different in places than the Standards edition. Kolbe accounts for this within the course plan. There is a book for each semester: 3A and 3B. Answers are in the back of the book.
Challenging Word Problems	This optional supplement provides not only ample practice of graded exercises for students of mixed abilities but also offers advanced math students with challenging questions to promote problem-solving skills. It includes worked examples, additional practice questions, challenging word problems, and miscellaneous questions for review. There is only one book for the entire year. Answers are in the back of the book.

COURSE DESCRIPTION:

Primary Mathematics 3 (Standards Edition) is an objective-based curriculum that aids students in their mathematical problem solving skills both in practical and abstract concepts. The third grade curriculum has a significant emphasis on applications and problem solving strategies. Lessons begin with a concrete representation of a concept, followed by pictorial representation and finally a symbolic representation of the general or abstract concept so that students will achieve mastery of each concept and be able to apply the abstract ideas to a range of practical problem solving situations. Reasoning and understanding patterns and concepts are emphasized throughout the course. It is hoped that students will develop important logic and reasoning skills that will be invaluable in future mathematics courses and throughout life.

SKILLS TO BE DEVELOPED:

- Readiness for fourth grade
- Read, relate and understand place value in 4-digit numbers from 0 to 10,000
- Compare and order numbers 1 to 10,000
- Estimation and problem solving
- Understand properties of Addition and Subtraction for multi-digit numbers
- Understand properties of Multiplication and Division for multi-digit numbers
- Use place value in performing arithmetic operations
- Measurement and calculation of length, weight and volume
- Data analysis including representing and interpreting bar graphs and line graphs
- Understanding simple probability problems
- Solve problems involving money
- Understanding fractions as numbers
- Measurement and estimation of time and time intervals
- Reason with shapes and their attributes in both two-dimensions and three-dimensions
- Understand area, perimeter and volume, distinguish between linear and area measurements

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SCOPE AND SEQUENCE:❖ **Quarter 1 (Begin 3A)****Unit 1: Numbers to 10,000**

- Chapter 1: Thousands, Hundreds, Tens and Ones
- Chapter 2: Number Patterns
- Chapter 3: Rounding Numbers

Unit 2: Addition and Subtraction

- Chapter 1: Mental Calculation
- Chapter 2: Sum and Difference
- Chapter 3: Estimation
- Chapter 4: Word Problems
- Chapter 5: Adding Ones, Tens, Hundreds, and Thousands
- Chapter 6: Subtracting Ones, Tens, Hundreds, and Thousands
- Chapter 7: Two-step Word Problems

Unit 3: Multiplication and Division

- Chapter 1: Looking Back
- Chapter 2: More Word Problems

❖ **Quarter 2**

- Chapter 3: Multiplying Ones, Tens, Hundreds, and Thousands
- Chapter 4: Quotient and Remainder
- Chapter 5: Dividing Hundreds, Tens and Ones

Unit 4: Multiplication Tables of 6, 7, 8, and 9

- Chapter 1: Multiplying and Dividing by 6
- Chapter 2: Multiplying and Dividing by 7
- Chapter 3: Multiplying and Dividing by 8
- Chapter 4: Multiplying and Dividing by 9
- Chapter 5: More Multiplication and Division

Unit 5: Data Analysis

- Chapter 1: Presenting Data
- Chapter 2: Probability

❖ **Quarter 3 (Begin Book 3B)****Unit 6: Length**

- Chapter 1: Meters and Centimeters
- Chapter 2: Kilometers
- Chapter 3: Yards, Feet and Inches
- Chapter 4: Miles

Unit 7: Weight

- Chapter 1: Kilograms and Grams
- Chapter 2: Word Problems
- Chapter 3: Pounds and Ounces

Unit 8: Capacity

- Chapter 1: Liters and Milliliters
- Chapter 2: Gallons, Quarts, Pints, and Cups

Unit 9: Money

- Chapter 1: Dollars and Cents
- Chapter 2: Addition
- Chapter 3: Subtraction
- Chapter 4: Multiplication and Division

❖ **Quarter 4****Unit 10: Fractions**

- Chapter 1: Fractions as a Whole
- Chapter 2: Equivalent Fractions
- Chapter 3: Adding Fractions
- Chapter 4: Subtracting Fractions
- Chapter 5: Fraction of a Set
- Chapter 6: Fractions and Money

Unit 11: Time

- Chapter 1: Hours and Minutes
- Chapter 2: Other Units of Time

Unit 12: Geometry

- Chapter 1: Angles
- Chapter 2: Right Angles
- Chapter 3: Quadrilaterals and Triangles
- Chapter 4: Solid Figures

Unit 13: Area, Perimeter and Volume

- Chapter 1: Area
- Chapter 2: Perimeter
- Chapter 3: Volume

COURSE PLAN METHODOLOGY:

Kolbe Academy has worked diligently to create the best possible course plans with the home schooling family in mind. Remember, however, that our program is intended to be flexible. Per the principle of subsidiarity, these course plans are a **suggested** course of study. As the teacher, you should adapt and modify these course plans to meet the individual learning needs of your child. **Do not feel obligated to follow these course plans exactly.**

The optional supplements in the Singapore® program enable a parent to customize instruction based on needs and ability of each particular student. Most students will use only the required texts, but the optional supplements allow a parent to provide extra assistance and reinforcement for a struggling student or extra challenge and interest for a particularly advanced student.

There are several books used in this course. A list of abbreviations follow to help aid you in reading the Kolbe Academy course plan.

Legend	
PMA	<i>Primary Mathematics</i> Textbook, 3A
WBA	<i>Primary Mathematics</i> Textbook, 3A
HIGA	<i>Primary Mathematics</i> Home Instructor's Guide, 3A
PMB	<i>Primary Mathematics</i> Textbook, 3B
WBB	<i>Primary Mathematics</i> Textbook, 3B
HIGB	<i>Primary Mathematics</i> Home Instructor's Guide, 3B
EP	<i>Primary Mathematics</i> Extra Practice 3 (optional for extra reinforcement of material)
IPA	<i>Primary Mathematics</i> Intensive Practice, 3A (optional for advanced understanding)
IPB	<i>Primary Mathematics</i> Intensive Practice, 3B (optional for advanced understanding)
CWP	<i>Primary Mathematics</i> Challenging Word Problems 3 (optional for extra challenge)
DAY	<input type="checkbox"/> Assignments and activities that are a recommended part of the course are included in each day's schedule.
OPT	<input type="radio"/> Optional assignments and/or activities that can be used as reinforcement for a skill not yet mastered or enrichment for a child that wants to go that extra step. These are located in each day's optional schedule indicated by "OPT."

Each weekly assignment is summarized in the first rows of the week's daily course plan along with the goals, notes, and suggested materials for that week. The specific daily assignments for the student are outlined in the following lines indicated by the **DAY 1**, **DAY 2**, **DAY 3**, **DAY 4**, and **DAY 5** abbreviations and include a checkbox.. The assignments in the **OPT** box are meant to be **OPTIONAL** and coincide with that particular day's assignments. These optional assignment that are included for reinforcement or enrichment are indicated with the symbol . See the legend above to help you determine whether your child might benefit from the optional assignments. Parent daily guidelines are given to the right of the student assignments. These guidelines are meant to be flexible. Feel free to combine lessons when able, or slow down where desired. A family's schedule can and should vary as needed. Most weeks will have five days of lessons assigned, however, for some weeks

there are only four days of assignments. You may either use the extra day as a 'catch-up' day or to review material for extra reinforcement.

This mathematics course contains 36 weeks broken into four 9-week quarters. Three exams are given for each quarter, except for the third quarter, which has four exams, for a total of thirteen exams for the year. Exams generally cover a Unit of material, except for Unit Three which has two exams since it is broken between the first and second quarter, and the last exam which covers two Units.

Finally, begin every class with a prayer. This is a good way to help the child memorize new prayers. Repeat the same ones every day until they are known. Be sure to explain the meanings of the prayers. Repetition in all areas of study is most beneficial.

◆◆◆ FIRST QUARTER ◆◆◆

WEEK 1		
Book	Weekly Breakdown	Goals and Notes for the Week
PMA	Unit 1 Chapter 1 Chapter 2	Mastery of Numbers to 10,000. Place Value. Comparison and Number Patterns. Materials: Base-10 blocks, place-value discs, number cube. This week's lessons should be mostly review, so take the time to become familiar with the format of the various textbooks, workbooks and supplementary materials as you develop a routine for the year. Note in particular the information in the instructor's guide (HIGA) pp. x-xi describing the manipulatives. Also in the textbooks(PMA and PMB), the breaking spot on the page for daily lessons is usually indicated by a purple pencil at the right margin that also lists the corresponding workbook (WBA and WBB) pages associated with the lesson.
<div style="border: 1px solid black; padding: 5px; width: fit-content;">Notes</div>		
Student Daily Assignments		Parent Daily Guidelines
DAY 1	PMA, pp. 8-11	<input type="checkbox"/>
	WBA pp. 7-9 (ex 1)	<input type="checkbox"/>
OPT	EP pp. 5-6 (ex 1A)	<input type="radio"/>
DAY 2	PMA, pp. 11-12	<input type="checkbox"/>
	WBA pp. 10-11 (ex 2)	<input type="checkbox"/>
OPT	EP pp. 7-8 (ex 1B)	<input type="radio"/>
	IPA, pp. 1-3	<input type="radio"/>
DAY 3	PMA, pp. 13-14	<input type="checkbox"/>
	WBA pp. 12-13 (ex 3)	<input type="checkbox"/>
OPT	EP pp. 9-10 (ex 1C)	<input type="radio"/>
	IPA, pp. 4-5	<input type="radio"/>

◆ COURSE PLAN ◆

DAY 4	PMA, pp. 15-17	<input type="checkbox"/>	Begin Ch. 2 by reviewing the HIGA pp. 8-9. Refer to HIGA, pp. 10-11 for guidance on teaching today's concepts. Students will be adding 1's, 10's, 100's and 1000's and recognizing the patterning involved in addition and subtraction. Mental Math practice: 5-6, HIGA p. a2		
	WBA pp. 14-16 (ex 4)	<input type="checkbox"/>			
OPT	EP pp. 11-12 (ex 2)	<input type="radio"/>	Supplements to be used as needed.		
	IPA, pp. 5-6	<input type="radio"/>			
Week 1 Grade Book					
Assignments		Include <input checked="" type="checkbox"/>	(A) Points Earned	(B) Possible Points	A/B x100 =% (C)
PMA: Pages 8-14		<input type="checkbox"/>			
WBA: Pages 7-9		<input type="checkbox"/>			
PMA: Pages 15-17		<input type="checkbox"/>			
WBA: Pages 10-11		<input type="checkbox"/>			
WBA: Pages 12-13		<input type="checkbox"/>			
WBA: Pages 14-16		<input type="checkbox"/>			
Other:		<input type="checkbox"/>			
Other:		<input type="checkbox"/>			
Other:		<input type="checkbox"/>			
Add up column C & divide by number of included <input checked="" type="checkbox"/> assignments =					%

WEEK 2		
Book	Weekly Breakdown	Goals and Notes for the Week
PMA	Chapter 3 Review 1 Exam 1	Rounding numbers to the nearest 10, 100, or 1000. Placing numbers and understanding scale on a number line from 1-10,000. Both rounding numbers and placement of numbers on a number line help to give a more concrete understanding of our number system which will be important for future lessons. Please use the number lines in the HIGA appendix, pp. a18-a22. Materials: Place-value chart, place-value discs. Comprehensive exam covering all of Unit 1.
<p>Exam Guidance: Verbal communication of math concepts is emphasized in the Singapore® Mathematics Program with the aim of instilling an appreciation for the elegance and beauty of numbers and mathematics across the curriculum. The exams emphasize this verbal understanding and may be more <i>verbal</i> than other math programs. Please use your judgment to “translate” problems into math equations as needed for your student. The goal will be for the verbal interpretation of abstract concepts to become natural for the students eventually, but the immediate goal is enjoyment of math and numbers, and parents are encouraged to facilitate this process as they deem appropriate for each individual child.</p>		
<div style="border: 1px solid black; padding: 5px; min-height: 100px;"> <p>Notes</p> </div>		
Student Daily Assignments		Parent Daily Guidelines
DAY 1	PMA, pp. 18-21	<input checked="" type="checkbox"/>
	WBA pp. 17-18 (ex 5)	<input type="checkbox"/>
OPT	IPA, p. 7	<input type="radio"/>
DAY 2	PMA, pp. 21-23	<input type="checkbox"/>
	WBA pp. 19-20 (ex 6)	<input type="checkbox"/>
OPT	IPA, p. 8	<input type="radio"/>
DAY 3	PMA, pp. 23-24	<input type="checkbox"/>
	WBA pp. 21-22 (ex 7)	<input type="checkbox"/>
OPT	EP, pp. 13-14	<input type="radio"/>
	IPA, pp. 9-10	<input type="radio"/>

◆ COURSE PLAN ◆

DAY 4	PMA Pages 25-26	<input type="checkbox"/>	Refer to HIGA, p. 17 for guidance on teaching today's concepts. Students will review all concepts covered thus far.		
	WBA pp. 23-25 (Rev1)	<input type="checkbox"/>			
OPT	IPA, pp. 10-11	<input type="radio"/>	Supplements to be used as needed.		
DAY 5	EXAM 1	<input type="checkbox"/>	Comprehensive exam over material covered thus far (found at end of lesson plan).		
Week 2 Grade Book					
Assignments		Include <input checked="" type="checkbox"/>	(A) Points Earned	(B) Possible Points	A/B x100 =% (C)
PMA: Pages 18-24		<input type="checkbox"/>			
WBA: Pages 17-18		<input type="checkbox"/>			
WBA: Pages 19-20		<input type="checkbox"/>			
WBA: Pages 21-22		<input type="checkbox"/>			
PMA: pp. 25-26 (Review 1)		<input type="checkbox"/>			
WPA: pp. 23-25 (Review 1)		<input type="checkbox"/>			
Exam 1		<input type="checkbox"/>	Record in Quarter 1 Grade Book		
Other:		<input type="checkbox"/>			
Other:		<input type="checkbox"/>			
Other:		<input type="checkbox"/>			
Week 2 Average	Add up column C & divide by number of included <input checked="" type="checkbox"/> assignments =				%