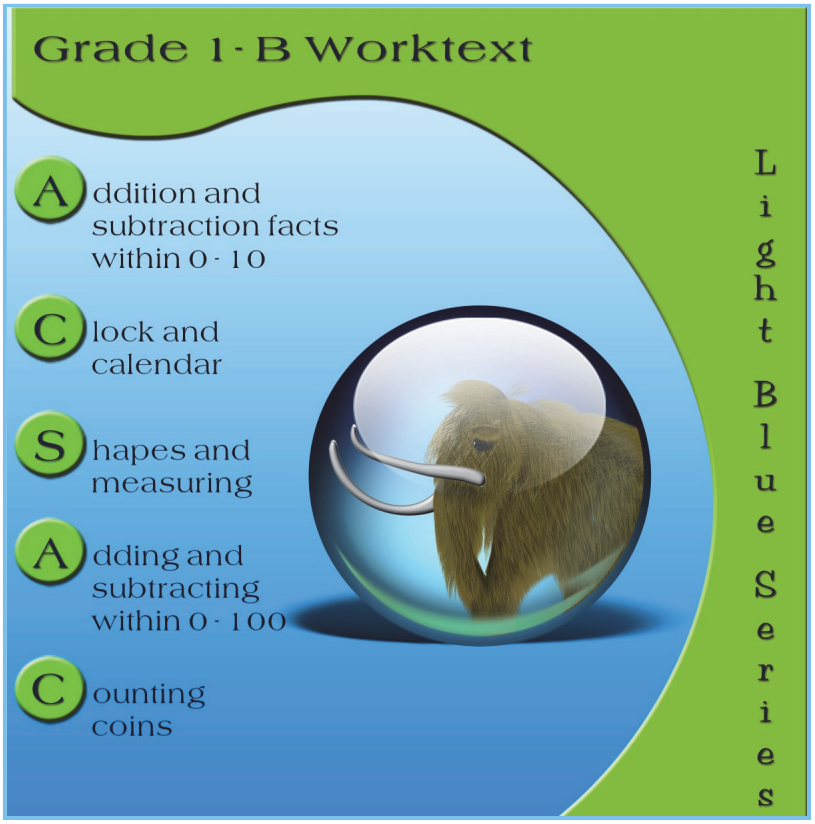
Math Mammoth
Grade 1-B Worktext



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ISBN 978-1-942715-01-6

Edition 1/2020

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Foreword

Math Mammoth Grade 1 comprises a complete math curriculum for the first grade mathematics studies. The curriculum meets and exceeds the Common Core standards.

The main areas of study for first grade are:

1. The concepts of addition and subtraction, and strategies for addition and subtraction facts;
2. Developing understanding of place value up to 100;
3. Developing understanding and some basic strategies for two-digit addition and subtraction.

Additional topics we study in the first grade are telling time (whole and half hours), geometric shapes, measurement, and counting coins.

The portion of first grade included in this book, Part B, covers strategies for addition and subtraction facts (chapter 4), telling time and the calendar (chapter 5), shapes and measuring (chapter 6), adding and subtracting two-digit numbers and reading pictographs (chapter 7), and counting coins (chapter 8). The book 1-A covers addition concept, subtraction concept, and place value with two-digit numbers.

Some important points to keep in mind when using the curriculum:

- These two books (parts A and B) are like a "framework", but you still have a lot of liberty in planning your child's studies. While addition and subtraction topics are best studied in the order they are presented, feel free to go through the sections on shapes, measurement, clock, and money in any order you like.

  This is especially advisable if your child is either "stuck" or is perhaps getting bored with some particular topic. Sometimes the concept the child was stuck on can become clear after a break from the topic.

- Math Mammoth is mastery-based, which means it concentrates on a few major topics at a time, in order to study them in depth. However, you can still use it in a *spiral* manner, if you prefer. Simply have your child study in 2-3 chapters simultaneously. This type of flexible use of the curriculum enables you to truly individualize the instruction for your child.

- Don't automatically assign all the exercises. Use your judgment, trying to assign just enough for your child's needs. You can use the skipped exercises later for review. For most children, I recommend to start out by assigning about half of the available exercises. Adjust as necessary.

- For review, the curriculum includes a worksheet maker (Internet access required), mixed review lessons, additional cumulative review lessons, and the word problems continually require usage of past concepts. Please see more information about review (and other topics) in the FAQ at **https://www.mathmammoth.com/faq-lightblue.php**

I heartily recommend that you view the full user guide for your grade level, available at **https://www.mathmammoth.com/userguides/**

And lastly, you can find free videos matched to the curriculum at **https://www.mathmammoth.com/videos/**

I wish you success in teaching math!

Maria Miller, the author

Chapter 4: Addition and Subtraction Facts
Introduction

This chapter provides lots of practice for learning and memorizing the basic addition and subtraction facts with numbers from 0 to 10. The Common Core Standards require children in the first grade to demonstrate fluency in addition and subtraction with numbers up to 10, and we aim for that goal.

Since this chapter is repetitive, consider studying it simultaneously with some other section of the curriculum, such as telling time, shapes, measuring, or counting coins. For example, the child could study the telling time and topics of this chapter each day, or study the two different chapters on alternate days. This is not compulsory but just a suggestion to "mix things up" in a somewhat spiral fashion.

The series of lessons entitled *Addition and Subtraction Facts With...* aim to help the student to memorize the basic facts for numbers from 0 to 10. We approach it from the concept of "fact families," which makes the process logical and structured. These lessons have a lot of repetition and practice for both subtraction and addition facts.

Many children may not need all the practice problems provided, so don't assign all of them by default. Use your judgment, and only assign a certain portion, such as half of them, at first. The rest of them can then be used later as a review. If assigning only half of the exercises is not enough, adjust as necessary.

Alongside this book, you can also use math games or flashcards to reinforce these facts. You will find a list of some free online games below.

While your child does not absolutely have to learn these facts by heart while studying this chapter, it is advisable to learn them fairly well. Mathematics builds upon previously learned concepts and facts, and learning addition and subtraction facts is essential for later study, such as when students add 24 + 2 (in chapter 7 of this curriculum). However, if the child has not memorized these facts before the end of the chapter, don't worry. Go on with the curriculum, but keep practicing the facts with games, worksheets, drills, *etc.*, until the student has mastered them.

Besides practicing the facts with the help of fact families, the student will also solve word problems, fill in number patterns, get used to a symbol that represents an unknown number, compare expressions (such as $5 - 2 < 2 + 5$), and subtract more than one number at a time.

The Lessons in Chapter 4

Games for Addition and Subtraction Facts

10 Out (or *5 Out* or *6 Out etc.)*

You need: lots of number cards with numbers 1-10. (Regular playing cards with the face cards removed will work.)

Rules: Deal seven cards to each player. Place the rest in a pile in the middle, face down.

At the beginning of his turn, a player may optionally take the top card from the pile. Then the player may optionally ask the player on his right for one card (like in "Go Fish": "Do you have a seven?"), and the player on the right must give it to him if he has it. Then the player whose turn it is may discard either: (a) a single "10" card by itself or (b) any *two* cards in his hand that add up to 10.

The winner is the player who first discards all cards from his hand.

Variations:
* Deal more than seven cards.
* Deal fewer cards if there are a lot of players or if the players are very young.
* Also allow players to discard a set of *three* cards that add up to 10.
* Instead of 10, players discard cards that add up to 9, 8, 11, or some other number.
* Use the face cards for 11, 12, and 13.

Some Went Hiding

You need: An amount of small objects that is equal to the sum you are studying. For example, to study the sums with 12, you need 12 marbles, or 12 blocks, or 12 of something else.

Rules: The first player shows the objects, then quickly hides SOME behind her back without showing how many she has. Then she shows the remaining objects to the next player to her right, who has to say how many "went hiding." If that player gives the right answer, then it becomes his turn to hide some and ask the next player to answer. If he gives the wrong answer, then he misses his turn, and the next player shows and hides the objects. This game appeals best to younger students.

Variations:
* Instead of getting a turn, the player may gain points or other rewards for the right answer.

Addition (or Subtraction) Challenge

You need: A standard deck of playing cards from which you remove the face cards, and perhaps also some of the other higher number cards such as tens, nines, and eights. Alternatively, a set of dominoes works well for children who don't yet know their numbers beyond 12.

Rules: At the beginning of each round, each player receives two cards face up, and calculates their sum (adds). The player with the highest sum gets all the cards from the other players. Once there are no longer enough cards left in the pack to deal two cards to each player, players count their cards and the player with the most cards wins.

If there is a tie, such as two players have the sum of 11, those players get an additional two cards and use those to resolve the tie.

Variations:
* This game is easily adapted for subtraction or fractions.
* You can also use dominoes instead of playing cards.

Addition and Subtraction Facts with 4 and 5

Facts with 4		4 + 0 = 4 0 + 4 = 4	4 – 4 = 0 4 – 0 = 4
		1 + 3 = 4 3 + 1 = 4	4 – 3 = 1 4 – 1 = 3
		2 + 2 = 4	4 – 2 = 2

Facts with 5		5 + 0 = 5 ____ + ____ = 5	5 – 5 = 0 5 – ____ = ____
		4 + 1 = 5 1 + 4 = 5	5 – 4 = ____ 5 – ____ = ____
		3 + 2 = 5 ____ + ____ = 5	5 – 3 = ____ 5 – ____ = ____

1. Find the missing numbers.

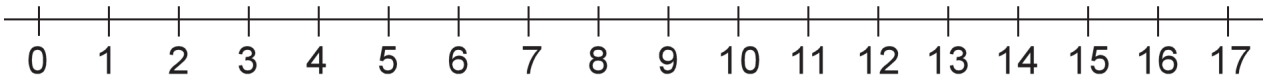
a.	b.	c.	d.
3 + _____ = 4	2 + _____ = 5	5 – 0 = _____	4 – 0 = _____
1 + _____ = 4	1 + _____ = 5	5 – 4 = _____	4 – 3 = _____
1 + _____ = 5	4 + _____ = 5	5 – 2 = _____	5 – 1 = _____
2 + _____ = 4	3 + _____ = 5	4 – 1 = _____	4 – 2 = _____

2. Color the square:

- yellow if the answer is 0.
- red if the answer is 1,
- blue if the answer is 2,
- green if the answer is 3,
- purple if the answer is 4,
- orange if the answer is 5.

5 – 4	2 + 3	4 – 4	1 + 2	4 – 2	1 + 3
2 + 2	3 – 2	5 – 0	0 + 0	5 – 2	1 + 1
0 + 2	5 – 1	0 + 1	1 + 4	0 – 0	4 – 1

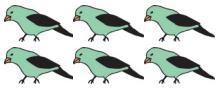
3. Continue the patterns until the boxes are full!



a.	**b.**	**c.**
17 – 0 = _____	10 + ____ = 10	5 – 2 = _____
17 – 1 = _____	10 + ____ = 11	6 – 2 = _____
17 – 2 = _____	10 + ____ = 12	7 – 2 = _____
17 – ____ = _____	10 + ____ = ____	_____ – 2 = _____
17 – ____ = _____	____ + ____ = ____	_____ – ____ = _____
_____ – ____ = _____	____ + ____ = ____	_____ – ____ = _____
_____ – ____ = _____	____ + ____ = ____	_____ – ____ = _____

Addition and Subtraction Facts with 6

1. Complete the fact families in which the sum is six. At the top, write the three numbers that you are using for the fact family.

6, 0, 6	_____, _____, 6	_____, _____, 6
		
6 + 0 = 6	5 + 1 = 6	4 + 2 = 6
____ + ____ = 6	____ + ____ = 6	____ + ____ = 6
6 – 6 = 0	6 – 5 = ____	6 – 4 = ____
6 – 0 = 6	6 – ____ = ____	6 – ____ = ____

_____, _____, 6

3 + 3 = 6
6 – 3 = ____

2. Write the numbers that add up to 6. Memorize these!

0 + _____ = 6	or	_____ + 0 = 6
1 + _____ = 6	or	_____ + 1 = 6
2 + _____ = 6	or	_____ + 2 = 6
3 + _____ = 6		

3. Subtract.

a.	**b.**	**c.**	**d.**	**e.**	**f.**
6	6	6	6	6	6
– 5	– 4	– 6	– 2	– 1	– 3
____	____	____	____	____	____

4. Play the "6 Out" card game (see p. 7, in the introduction to this chapter).