Contents

Introduction

Math Mammoth Addition 1 is a self-explanatory worktext, dealing with the concept of addition and addition facts within 0-10 (in few occasions numbers between 10 and 20 are used). The book is suitable for kindergarten and first grade.

The book starts out with very easy addition problems within 0-5, using pictures. If the student does not yet know the symbols + and = , you can introduce them *first orally*. In other words, use blocks or rocks and make addition problems where you use both kinds of wordings: "*Three blocks and four blocks makes seven blocks. Three blocks PLUS four blocks EQUALS seven blocks.*" Play like that until the child can use the words PLUS and EQUALS in his/her own speech. This will make it easier for him/her to use the written symbols.

Soon the lessons start including "missing addend" problems. We first use pictures, and gradually get to the abstract $1 + \_\_ = 5$ with symbols only. Keep in mind that children *may* confuse this problem with $1 + 5 = \_\_$. You can word these problems like this: "1 and how many more makes 5?" You can MODEL them by drawing: First draw 1 ball. Tell the child that we need to have a total of 5 balls. He is to draw more until there are five balls. In the missing addition problem, however many balls the child has to draw is the number that goes on the empty line. So, first there is one ball, then we need to add (draw) some more to make 5. But how many more were drawn?

After that, the book contains many lessons called **<u>Sums with</u>**... whose goal is to help the child memorize addition facts.

My approach to memorization is many-fold:

1. Structured drill, such as you see in the lessons Sums with 5, Sums with 6, and so on. This is not random drill, because you will start it by showing the pattern or the structure in the facts. This will help the student to tie the addition facts in with a context and help him understand the facts more on a conceptual level, instead of merely memorizing them at random. In sums with 5, the child learns the number combinations that add up to 5: 0 & 5, 1 & 4, and 2 & 3. This understanding is the basis for the drills.

2. Using addition facts in games, in math problems, everyday life, or anywhere else. Games are especially useful because they help children like mathematics.

3. Random drilling may also be used as a tool among others.

4. Memory helps such as silly mnemonics or writing math facts on a poster and hanging it on the wall. These are not needful for all children.

However, keep in mind that children will need LOTS of opportunities to add numbers to actually memorize the facts, so the memorization may not totally occur as your child works through this book. These same addition facts are further studied and used in the Math Mammoth Subtraction 1 book, and in all later math work since they are constantly used. At the latest, your child should memorize addition facts during second grade, as recommended by the National Council of Teachers of Mathematics (NCTM).

Please see the following page for a few games that I recommend using while studying this book.

> *I wish you success with math teaching!*

> *Maria Miller, the author*

Games

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

You need: lots of number cards with numbers 1-10, such as regular playing cards without the picture cards, Uno cards without the special cards, etc.

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

At his turn, each player *may* first take one card from the deck. Then, each player *may* ask for one card from the player on their right (like in the game 'Go Fish'), and the person has to give it if he has it. Then the player may discard any two cards in his hand that add up to 10, or the card 10 itself.

The player who first discards all cards from his hand, wins.

Adaptations:
* Deal more cards instead of seven.
* Deal fewer cards if there are very many players or the players are young.
* Allow players to discard three cards that add up to 10.
* Instead of ten, players discard cards that add up to 9, 8, 11, or some other number.
  Use the picture cards for 11, 12, and 13.

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Some Went Hiding

You need: As many small objects as is the sum you're studying. For example, to study the sums with 5, you need 5 marbles, or 5 blocks, etc.

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

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

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Addition Battle

You need: A standard deck of playing cards from which you remove the picture 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: In each round, each player is dealt two cards face up, and has to calculate the sum. The player with the highest sum gets all the cards from other players. After enough rounds so that all cards are used, the player with most cards wins.

If there is a tie, such as two players have the sum 11, those players get additional two cards and 'battle' with those to resolve the tie.

Adaptations:
* This game is easily adapted for subtraction, multiplication, and fractions.
  You can also use dominoes instead of two playing cards.

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Any ***board game*** where you move the piece by rolling two dice also works to practice addition.

Helpful Resources on the Internet

Use these free online resources to supplement the "bookwork" as you see fit.
You can access an up-to-date online version of this list at
www.mathmammoth.com/weblinks/addition_1.htm

Addition Exercise from Dositey.com
Write how many worms are on two leaves, and how many together.
http://www.dositey.com/2008/addsub/addex1.htm

Children Addition Quiz
A set of five interactive addition problems that you answer online.
http://www.thegreatmartinicompany.com/Math-Quick-Quiz/addition-kid-quiz.html

Number Bond Machines
Practice which two numbers add up to a given number.
http://www.amblesideprimary.com/ambleweb/mentalmaths/numberbond.html

Save the Whale
Find how much the given "pipe" length is missing from 10 and save the whale.
http://www.ictgames.com/save_the_whale_v4.html

Exuberant Eye Games
Practice your basic facts with these kid-appealing simple games.
http://www.games.exuberanteye.com/

Children Compare Numbers from Mr. Martini's Classroom
Compare two numbers. Press the number below to choose the biggest number that will appear.
http://www.thegreatmartinicompany.com/Children-Math/compare-number.html

Addition and Subtraction Game from The Little Animals Activity Centre
Solve simple addition and subtraction problems by clicking on the ladybug with the right answer.
http://www.bbc.co.uk/schools/laac/numbers/chi.shtml

Number Line Arithmetic
Use this virtual manipulative to illustrate addition on the number line
http://nlvm.usu.edu/en/nav/frames_asid_156_g_1_t_1.html

Line Jumper
Addition questions on a number line.
http://www.funbrain.com/funbrain/linejump/index.html

Sum Stacker
Drag dies from stack to stack until the sums of each stack equal the sums given.
http://www.carstensstudios.com/mathdoodles/sumsstacker.html

Fun 4 the Brain
Practice basic addition with these games.
http://www.fun4thebrain.com/addition.html