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# Introduction

*Math Mammoth Add & Subtract 2-A* deals with two main themes:

- strategies for adding and subtracting within 0-20; such as adding just one more, a trick with nine and eight, and subtracting using addition;
- memorizing the basic addition and subtraction facts of single-digit numbers.

In the first several lessons we study basic strategies for adding and subtracting within 0-20. After those, we study the idea of completing ten and going over. For example, the child adds  $8 + 5$  by first adding  $8 + 2$  (which makes 10), and then adding the 3 that was “left over”. These lessons prepare the student for the next part of the book, which has to do with memorizing the basic addition facts.

The next lessons in the book, *Adding with 9*, *Adding with 8*, *Adding with 7*, and *Adding with 6*, provide lots of practice for learning and memorizing the basic addition facts. There are 20 such facts:

from  $9 + 2$  till  $9 + 9$ : 8 facts (lesson *Adding with 9*)  
from  $8 + 3$  till  $8 + 8$ : 6 facts (lesson *Adding with 8*)  
from  $7 + 4$  till  $7 + 7$ : 4 facts (lesson *Adding with 7*)  
from  $6 + 5$  till  $6 + 6$ : 2 facts (lesson *Adding with 6*)

Some children will accomplish this quicker, needing less practice. Some will need more practice. You can also add in some internet-based games (a list of online games is provided below).

After those lessons, we study subtraction. First, the child subtracts to ten. This means subtracting from 14, 15, 16, etc. so that the answer is 10, for example  $16 - \underline{\quad} = 10$ . In the next step, we study subtractions with an answer less than 10, such as  $16 - 7$ . The student practices these by subtracting in two parts: First subtracting to ten, then the rest. For example,  $16 - 7$  becomes  $16 - 6 - 1$ , or  $14 - 6$  becomes  $14 - 4 - 2$ .

The last part of the book includes various lessons titled *Number Rainbows* and *Fact Families with ...*, which give lots of practice and reinforcement for the basic addition and subtraction facts. These lessons also include many word problems. They emphasize the connection between addition and subtraction to solve basic subtraction facts such as  $13 - 8$  or  $15 - 6$ . Alongside them, you can also use games or flashcards to reinforce the learning of the facts.

Learning and memorizing the basic addition and subtraction facts of single-digit numbers is very important for later study. For example, regrouping (carrying/borrowing) in addition and in subtraction requires that the student be able to recall all the sums of single-digit numbers and corresponding subtraction facts efficiently and fluently. The goal is to memorize these facts, or at least become so fluent with them that an outsider cannot tell if the student remembers the answer or uses some mental math strategy to get the answer.

*I wish you success with math teaching!*