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# Introduction

*Math Mammoth Measuring 1* is a worktext that covers measuring length, weight, volume, and temperature as they are typically covered during grades 1-3. Most of the lessons are suitable for second and third grade. The book contains both textbook explanations and exercises, and is designed to be very easy to teach from, requiring fairly little teacher preparation; however in several lessons you need to find beforehand measuring equipment such as a ruler or a scale or measuring cups.

This book is *not* organized by grade-levels nor with increasing difficulty. Instead, I have grouped together first of all the lessons on measuring length, then measuring weight, then measuring volume, and lastly temperature.

In each section, measuring in customary system comes first, followed by lessons about the metric system. The first lessons in each unit typically have hands-on exercises where the student actually uses the suitable measuring equipment, and the last lessons in each section include abstract problems about conversions between the units. The conversion problems in this book are fairly easy; students will study unit conversions more in later grades.

For youngest children (first-graders), the easiest lessons to use are *Measuring Lines in Inches* and *Measuring Lines in Centimeters*.

The lesson “*Exploring Measuring*” conveys the idea of measuring as repeatedly applying the measuring unit. In the rest of the lessons, the student learns many of the commonly used measuring units.

The lessons on measuring weight have several activities to do at home using a bathroom scales. The goal is to let students become familiar with pounds and kilograms, and have an idea of how many pounds or kilograms some common things weigh. In order to estimate weight, a child has to know the approximate weights of some objects, and then compare the weight of the unknown object to some known weight. This knowledge is gained through experience.

Similarly, in studying volume, the lessons include many hands-on activities so that the student gets first-hand experience in measuring, and has a basic knowledge of how “big” the units cup, pint, quart, gallon, milliliter, and liter are.

When it comes to measuring, experience is the best teacher. We all use various measuring units in our everyday life, and using them is the key to remembering what they are and what the conversion factors are. Naturally, people in the United States often do not use the metric system a lot, while people elsewhere do not use the customary system. The units your child is not using are likely to be forgotten easily. So encourage the student(s) to have free play time with measuring devices such as a scale, measuring cups, a measuring tape, and rulers - including equipment that uses metric units.

Math Mammoth Blue Series also has another worktext about measuring, *Math Mammoth Measuring 2*, which is a sequel to this one. In it, students practice measurement unit conversions and problem solving.

*I wish you success in math teaching!*

*Maria Miller, the author*