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Introduction

Math Mammoth Metric Measuring covers measuring related topics over the span of five grades (grades 1-5). The lessons for this book have been compiled from two of my books about measuring, and are presented here as a single book that only deals with metric units.

The lessons cover measuring length, weight, and volume, measuring temperature in the Celsius scale, the 24-hour clock and elapsed time, and using decimals within the metric system in general. While the book contains something for all grades from grades 1 to 5, the bulk of the lessons are targeted for second and third grade.

This book contains both explanations of the material and exercises, and is thus termed a *worktext*. It is designed to be very easy to teach from, requiring fairly little teacher preparation; however in several lessons the teacher needs to gather measuring equipment beforehand, such as a ruler, a scale, or measuring cups.

This book is not organized by grade-levels nor with increasing difficulty. Instead, the lessons are grouped by topic. The first lessons in each section typically have hands-on exercises where the student uses suitable measuring equipment, and the last lessons in each section include problems about conversion between the units.

Length

The very first lessons cover measuring length using centimeters and millimeters. Then we study meters and kilometers.

Weight

Children use the bathroom scales to weigh objects in kilograms. Other lessons teach grams and estimating weight. The goal is to let students become familiar with kilograms, and have an idea of how many kilograms some common things weigh.

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 milliliter and liter are. One lesson also includes deciliters.

Metric System

In these lessons, students learn how to use decimal numbers within the metric system and the various prefixes.

Temperature

The lessons deal with Celsius degrees, how to read a thermometer, changing temperature, and temperature line graphs.

Time

The emphasis is in conversion between various time units, the 24-hour clock, and calculating elapsed time. The lessons do not cover how to read a clock; I have a separate book called *Math Mammoth Clock* that can be used to teach telling time.

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 how to convert from one unit to another. The units your child is not using are likely to be forgotten easily. So encourage the young elementary students to have free “play time” with measuring devices such as scales, measuring cups, measuring tapes, rulers, and thermometers.

I wish you success in math teaching!

Maria Miller, the author

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/metric_measuring.htm

Scales Reader

Practice reading the scales in grams and/or kilograms.

<http://www.ictgames.com/weight.html>

Measure It!

Click on the ruler to measure a red bar.

<http://www.funbrain.com/measure/index.html>

Measuring Units Worksheets

Generate worksheets for conversions between various measuring units. Includes both customary and metric system units.

<http://www.homeschoolmath.net/worksheets/measuring.php>

Measure It!

Practice measuring lines with either centimeters or inches. Multiple choice questions.

<http://onlineintervention.funbrain.com/measure/index.html>

Reading Scales

Helps teachers to illustrate a variety of measuring devices and how to read them.

<http://www.teacherled.com/2009/02/18/reading-scales-2/>

Bunny Balance

Place bunnies on the balance until it is even.

<http://www.peepandthebigwideworld.com/games/bunnybalance.html>

Measurements

Online lessons with interactive exercises on metric prefixes, symbols, number values, metric mass, length, volume, US length and volume, and temperature conversions.

<http://www.aamath.com/B/mea.htm>

Units of Measurement Quizzes

Quizzes for area, distance, volume, and mass - both metric and English systems.

http://www.quiz-tree.com/Units_of_Measurement_main.html