
Contents

Introduction	4
Time Units	6
The 24-Hour Clock	11
Elapsed Time or How Much Time Passes	13
Temperature 1	18
Temperature 2	21
Remember Fractions?	23
Measuring Length	24
More of Measuring Length	27
Measuring in Inches	29
Inches, Feet, Yards, and Miles	33
Metric Units for Measuring Length	35
Measuring Weight	37
Measuring Weight in the Metric System	39
Customary Units of Volume	41
Metric Units of Volume	43
Review	45
Decimals in Measuring Units and More	47
The Metric System	50
Rounding and Estimating	53
Fractions and Decimals in Measuring Units.....	55
Answers	57
About the Author	70

Introduction

Math Mammoth Measuring 2 is a worktext that covers time, temperature, length, weight, and volume related lessons, aimed for 4th-5th grade. The focus in these lessons is no longer on the actual act of measuring (as was the case in earlier grades), but on calculations that involve conversions between different measuring units.


In the lessons about time, the students get to do fairly complex calculations concerning hours and minutes. In lessons about temperature, the students are introduced to negative numbers and even get to do a few simple calculations with them.

Each lesson about measuring units, whether it is for length, volume, or weight, includes a table or a chart that lists the units and the conversion factors. For metric units, those tables always include all of the units, even when they are not in common usage. For example, when studying metric units of volume, the chart looks like this:

10	liter	L	for larger amounts of volume
10	deciliter	dl	(not used much)
10	centiliter	cl	(not used much)
10	milliliter	l	for small amounts of volume

Only milliliters and liters are dealt with in the lesson, but the chart shows the two other units (deciliters and centiliters) as well, in order to familiarize students with the two basic ideas of metric measuring units:

1. The units always differ by a factor of ten;
2. The units are *named* consistently, with always the same prefixes (milli-, centi-, deci-, deca-, hecto-, and kilo-). These prefixes and their meanings are *not* commonly studied in detail in fourth or fifth grade; instead they are typically studied in 6th grade or later in conjunction with scientific notation. You may, of course, at your discretion, explain them to the student even at an earlier time.

The last three lessons deal with using decimal numbers with measuring units, such as expressing 0.7 liters in milliliters, or converting 3.4 miles to miles and feet. These lessons are better left for 5th grade. In these lessons, the symbol of a calculator next to a problem () means that students are allowed to use a basic calculator to solve the problem.

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.

Calculating Time from BBC SkillsWise

Factsheets, worksheets, and an online game to practice time calculations.

<http://www.bbc.co.uk/skillswise/numbers/measuring/time/calculatingtime/>

A Dictionary of Units of Measurement

Explains the common measuring systems and has lots of background info of their history.

<http://www.unc.edu/~rowlett/units/>

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>

Measures

Activities, revision bites, and quizzes about measuring time, weight, and capacity (in metric units).

http://www.bbc.co.uk/schools/ks2bitesize/maths/shape_space_measures.shtml

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.aaamath.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

Metric Measurement Matching Game

Match metric terms and prefixes with the correct match

<http://www.quia.com/mc/4177.html>

Reading a tape measure worksheets

Worksheet generator - you can choose to which accuracy to measure, inches, or inches & feet.

http://theworksheetgenerator.com/read_tape.html