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# Math Mammoth Place Value 1

Tens and Ones - in Place!

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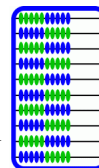
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# Introduction

**Math Mammoth Place Value 1** teaches students two-digit numbers, or place value with tens and ones.

The initial lessons that introduce tens and ones use a 100-bead abacus extensively. A 100-bead abacus or school abacus simply contains 10 beads on 10 rods, a total of 100. It is *not* a special abacus as used by the Chinese or the Russians. In the school abacus, each bead simply represents one. It can look, for example, like the picture on the right. The 100-bead abacus lets children both “see” the numbers and use their touch while making them.



Here's a link to the Melissa & Doug Classic Wooden Abacus at Amazon:

<http://www.amazon.com/exec/obidos/ASIN/B00005BVRQ/?tag=homeschoolmath-20>

If you cannot obtain a real abacus, you can probably use this virtual abacus:

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=8>

The abacus is not the only model used in the book. We also use a visual model of blocks where ten of them “snap” together to form a stick-like stack. If you already have so-called base-ten blocks, you can use them along with the visual exercises, if you want to.

Then, the book also uses the 100-chart and number lines. Number lines help to visualize how the numbers continue indefinitely and also connect with the concept of measuring. The 100-chart helps the child to be familiar with the numbers below 100 and find patterns in the number system.

When children count, they basically just learn numbers as some kind of continuum that continues and continues. With simple counting, your child might not catch on to the inherent structure and how it goes into groups of tens and hundreds and thousands.

For children to understand place value, they first need to know their numbers up to 10, do simple addition with small numbers, and understand about counting in groups. Our whole number system is based on the idea that if you have lots and lots of objects, the efficient way is to count them in groups of tens, hundreds, and thousands - not individually.

The crucial point in understanding the concept of place value is that a **certain position** *represents* a **certain-size group**. Then the digit in that position tells you how many groups of that size there are. For example, in the number 2,381, we adults already know that 8 represents eight tens, and not just “8”. The number 3 represents three hundreds, and not just “3”. The placing or positioning of the digit tells us what size groups we mean, and the digit itself tells how many of those groups.

In this book, children learn this idea for just two digits, or two place values.

For that matter, we could start a different system of writing numbers where the font size tells you the place value: for example  $7\text{8}_2$  would be 7 tens, 8 hundreds, and 2 ones = 872. Please note that this idea is NOT developed in this book. It is just an example to let *you* see that the place value concept is about something abstract (certain positioning) representing a certain-size group.

The two lessons in the end, about tally marks and graphs, are included as real-life applications of two-digit numbers. The last lesson about regrouping is optional.

*I wish you success in teaching math!*

*Maria Miller, the author*

## Helpful Resources on the Internet

*Use these free online games and resources to supplement the “bookwork” as you see fit.*

### Base 10 Blocks from National Library of Virtual Manipulatives

Place enough ten-sticks and one-blocks to the work area to show given numbers. Choose “Columns = 2” to restrict the program to two-digit numbers.

[http://nlvm.usu.edu/en/nav/frames\\_asid\\_152\\_g\\_1\\_t\\_1.html?from=category\\_g\\_1\\_t\\_1.html](http://nlvm.usu.edu/en/nav/frames_asid_152_g_1_t_1.html?from=category_g_1_t_1.html)

### Electronic Abacus

Use this to illustrate two-digit numbers. It shows the amount of beads with a number and with a format “2-ten 5”.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=8>

### Tens and Ones Exercise

Enter the two-digit number displayed by the ten-bags and one-counters

<http://www.dositey.com/2008/addsub/tenoneex.htm>

### Shark Pool Place Value

Click on the number shown by the ten-stacks and individual blocks.

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

### Count to 99!

Enter the number shown by the colored blocks of a hundred chart.

<http://www.thegreatmartinicompany.com/Kids-Math/kids-count-99.html>

### Give the Dog a Bone

Find the hidden bones on a 100-chart.

<http://www.oswego.org/ocsd-web/games/DogBone/gamebone.html>

### Number Charts

Create different kinds of printable number charts.

<http://www.homeschoolmath.net/worksheets/number-charts.php>

### Base 10

Build the given number using ten-sticks and blocks.

<http://www.learningbox.com/Base10/BaseTen.html>

### Two-Digit Numbers in English

Draw the number name to the correct number.

<http://www.crickweb.co.uk/numbers2-english.html>

### Number Track

Place the number tiles in the correct order in the track.

<http://www.crickweb.co.uk/assets/resources/flash.php?&file=ntrack>

### Number Comparison at Mr. Martini's Classroom

Click on the  $<$ ,  $>$ , or  $=$  sign to be put in between two numbers.

<http://www.thegreatmartinicompany.com/inequalities/number-comparison.html>

**Techno Tortoise**

Move the tortoise in steps of 10s, 5s, and 1s on the number line to the target number.

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

**Number Line**

Useful for illustrating two-digit numbers. Draw leaps and click on the line to reveal number tags. Change lines to get to two-digit numbers and more.

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

**Connect the Dots**

Connect the dots by counting by twos.

[http://www.abcya.com/connect\\_the\\_dots\\_bear\\_2s.htm](http://www.abcya.com/connect_the_dots_bear_2s.htm)

**Octopus Game**

Find the shell that contains a number 10 more than the given number.

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

**Froggy Hop**

Find 10 more or 1 more of a given number.

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

**Football**

Click the ball that shows the number 10 less than the shirt.

<http://www.ictgames.com/football2.html>