# Dimensions Math    Grade 4 Letter Home    Chapter 1 Numbers to One Million

## Home Connection

In third grade students learned to relate each digit of a four-digit number to its place value. They also learned how to order, round, and compare 4-digit numbers. Students in third grade learned how to increase or decrease by 1 ten, 1 hundred, or 1 thousand.

## Place Value

The position of the digit in relation to other digits determines its value. Each place represents a value ten times the place to its right.

The number 865,423 is the same value as: 8 hundred thousands, 6 ten thousands, 5 thousands, 4 hundreds, 2 tens, and 3 ones.  Students learn that the terms "digit" and "value" have different meanings. In 865,423 the digit 8 has the value of 800,00 and the digit 4 has the value of 400.

865,423 can also be written as a sum of its place values, which is called the expanded form. 800,000 + 60,000 + 5,000 + 400 + 20 + 3

## Place- Value Discs

In order to gain a solid foundation of understanding place value, students should have sufficient hands-on experience with manipulatives and see different representations of place value. There are printable place value squares on the TCA website here: Printable Place Value Discs. These are a helpful resource if your child is struggling to comprehend the values of digits in numbers. These discs are also helpful in regrouping strategies.

Students should recognize that each disc (or square) represents a value. For example; six hundreds discs have the value of 600.
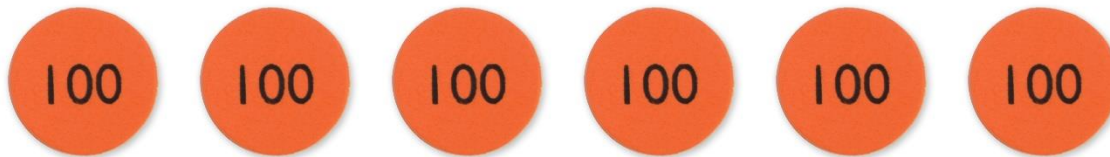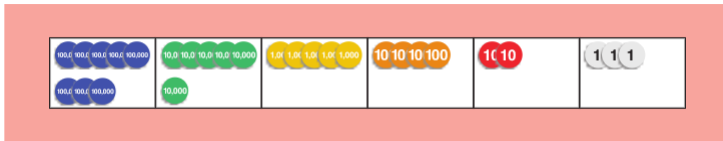


## Place- Value Charts and Organizers

Students will continue to use a place value chart, writing each digit of the number in the correct column according to its place:

| Hundred Thousands | Ten Thousands | Thousands | Hundreds | Tens | Ones |
|---|---|---|---|---|---|
| 8 | 6 | 5 | 4 | 2 | 3 |

You can also use place value discs in the correct columns to represent numbers.



## Number Lines and Rounding

Rounding is a skill that is used for estimating calculations. We can also round when it is more convenient or where it is difficult to accurately determine the real world measurement. This chapter formally introduces rounding five-digit and six-digit numbers. Number lines help students visualize the position of the number relative to the place-value to which they are rounding.

Students often have difficulty locating the position of a number on the number line. In the example of 25,446, rounding to the nearest thousand requires students to first identify the intervals between tick marks and then identify the nearest thousands (25,000 and 26,000). The number 25,446 rounded to the nearest thousand is 25,000.
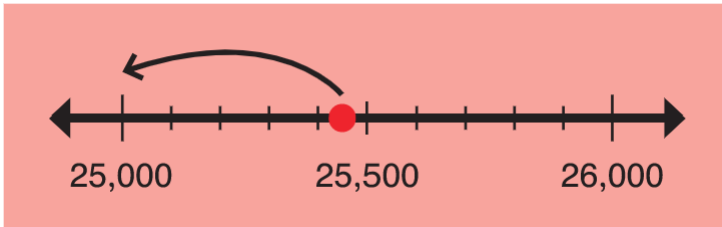


The number 25,446 rounded to the nearest ten thousand is 30,000.
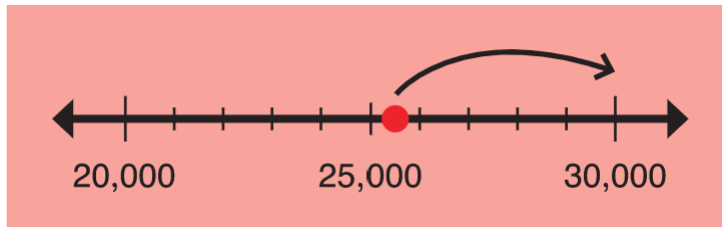


If a number is exactly halfway between two interval numbers, we will always round up to the greater number.

A very important skill students will learn in this chapter is to round numbers based on the given place value. For example, 25,446 could be rounded to 30,000, 25,000, or 25,500 depending on the prompt.

**What Can We Do At Home?**

**Place Value 20 Questions Game**

**Materials needed:**
Paper
Pencil

You can play this with your student using six-digit numbers. Player One will choose a six-digit number in which no digits repeat. They will write the number then hide it so the other player can't see but he/she can remember it. Then Player One draw 6 lines:

_____  _____  _____  _____  _____  _____

Player Two guesses with questions such as:
- "Is the digit in the hundreds place greater than 4?"
- "Is the value of the digit in the tens place less than 50?"
- "Is the digit in the thousands place odd?"

When Player Two guesses a digit correctly, Player One will write the digit into the corresponding blank space. The goal is to guess the correct six-digit number within 20 questions.