

Place Value

ones						
tens						
hundreds						
thousands						
ten thousands						
hundred thousands						
millions						

Name: _____

Really Good Stuff® Instructional Guide

Place Value Foam Tokens Demonstration Magnets

- This Really Good Stuff® product includes:**
- 140 Place Value Foam Tokens Demonstration Magnets (20 each 7 colors)
 - Zippered Storage Bag
 - This Really Good Stuff® Instructional Guide

Congratulations on your purchase of this Really Good Stuff® **Place Value Foam Tokens Demonstration Magnets**—a set of color-coded, magnetic foam tokens designed to offer students a model for demonstrating regrouping on the classroom whiteboard.

Meeting the Standards
The Really Good Stuff® **Place Value Foam Tokens Demonstration Magnets** aligns with the Common Core State Standards for Mathematics below. For alignment with other state standards, please refer to our website's Standards Match.

- Number and Operations in Base Ten**
- 1.NBT.B.2** Understand that the two digits of a two-digit number represent amounts of tens and ones.
 - 1.NBT.B.3** Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.
 - 1.NBT.C.4** Add within 100, including a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
 - 2.NBT.A.1** Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones.
 - 2.NBT.A.3** Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
 - 2.NBT.A.4** Compare two three-digit numbers based on

- meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.
- 4.NBT.A.1** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.
- 4.NBT.A.2** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
- 5.NBT.A.2** Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

Preparing and Storing the Place Value Foam Tokens Demonstration Magnets
Before introducing the **Place Value Foam Tokens Demonstration Magnets**, make copies of this Really Good Stuff® Instructional Guide, and file the pages for future use. Or, download another copy of it from our website at www.reallygoodstuff.com. Place each set of 20 Token Magnets in a small plastic bag. You may want to create and laminate ten-frames that replicate the hundreds, tens, and ones columns of the *Place Value Chart Reproducible* on paper large enough for the *Token Magnets*. This will reduce the need to draw ten-frames on the board for each lesson. When not in use, store the *Token Magnets* in the *Zippered Storage Bag*.

Introducing the Place Value Foam Tokens Demonstration Magnets
Hang or draw three ten-frames on a whiteboard, and label each column with the appropriate place value. Explain that the **Place Value Foam Tokens Demonstration Magnets** will help students to think about whole number place value, addition, and subtraction. Place two *Ones Token Magnets* in the appropriate squares on the ten-frame. Ask

All instructional guides can be found online.

a volunteer to tell you the total value of the *Token Magnets* on the board. Record a 2 below the ten-frame. Remove the ones, erase the 2, and place four *Tens Token Magnets* in the ten-frame. Ask a volunteer to tell you the total value. Record a 4 below the tens and 0 below the ones. Repeat this process for the hundreds. Practice by placing random amounts of *Ones, Tens, and Hundreds Token Magnets* in the ten-frames, recording the number each time, and asking volunteers to tell you the total value each time. For students in the intermediate grades, add ten-frames for larger places, and repeat the process.

Exploring the Place Value Foam Tokens Demonstration Magnets

Hang or draw ten-frames on a whiteboard. Use as many place columns as appropriate for the grade level. Place 10 *Ones Token Magnets* in the ten-frame. Guide students to count along with you from 1 to 10. Discuss what happens when a person gets to 10: Remind students that 10 ones are the same as 1 ten. Place 1 *Tens Token Magnet* in the ten-frame, and remove the *Ones Token Magnets* at the same time. Explain that when a person gets to 10 *Token Magnets* in any column, they always trade them in for 1 *Token Magnet* of the next higher value. Place nine more *Tens Token Magnets* in the ten-frame. Guide students to count along with you from 1 ten to 10 tens. Ask students which *Token Magnets* can be traded for 10 tens. Remove and replace *Token Magnets* as done earlier. Practice the trade from hundreds to thousands and so on. Write a multiplication expression on the board for each place value:

- | | |
|----------------------------------|---|
| <i>Ones</i> 1×1 | <i>Ten thousands</i> $1,000 \times 10$ |
| <i>Tens</i> 1×10 | <i>Hundred thousands</i> $10,000 \times 10$ |
| <i>Hundreds</i> 10×10 | <i>Millions</i> $100,000 \times 10$ |
| <i>Thousands</i> 100×10 | |

Variation: Ask students to consider how other place values are related, such as:

- How many ones does it take to make 100? (100)

- How many tens does it take to make 1,000? (100)
- How many hundreds does it take to make 100,000? (1,000)
- How many thousands does it take to make 1,000,000? (1,000)

Variation: Write each place value as a division sentence:

- | | |
|-------------------------|---------------------------------|
| • $10 \div 10 = 1$ | • $10,000 \div 10 = 1,000$ |
| • $100 \div 10 = 10$ | • $100,000 \div 10 = 10,000$ |
| • $1,000 \div 10 = 100$ | • $1,000,000 \div 10 = 100,000$ |

Representing Numbers with Expanded Form

Copy, laminate, and distribute the *Place Value Chart Reproducible*. Hang or draw ten-frames on a whiteboard. Indicate that **Place Value Foam Tokens Demonstration Magnets** can be used to represent numbers: Model the number 234 with *Token Magnets*. Guide students to draw circles to represent *Token Magnets* in the appropriate ten-frame columns on their reproducible. Explain that this allows them to see the value of each digit. Direct students to record 200 below the hundreds column, 30 below the tens column, and 4 below the ones column. Record the expanded form on the board: $234 = 200 + 30 + 4$. Repeat for several more numbers. Practice using examples with zero in some places, such as $2,054 = 2,000 + 50 + 4$.

Reverse the process: Tell students to draw three *Token Magnets* in the ones column, five *Token Magnets* in the tens column, two *Token Magnets* in the hundreds column, and one *Token Magnet* in the thousands column on the reproducible. Tell students to record the values below each ten-frame column. Ask a volunteer to tell you the expanded form as you write it on the board: $1,000 + 200 + 50 + 3 = 1,253$. Repeat for several more expansions. Practice using examples with 0 *Token Magnets* in some columns, such as $20,000 + 500 + 6$.

Comparing Numbers

Divide students into pairs, and give each pair a dry erase marker. Record the numbers 234 and 245 on the board with space between them. Tell students that one person should draw circles to represent 234 and the other should do the same for 245 on the reproducible. Have the partners compare their numbers and determine which number is bigger, and write a number sentence comparing their two numbers. Ask a student volunteer what symbol is needed to complete the number sentence ($234 < 245$). Repeat the process using various examples to create both less than and greater than statements.

Variation: Prior to this activity, create a group of random numbers less than 1,000 on index cards. Hang or draw ten-frames on a whiteboard. Divide students into two teams. Give each team 10 *Token Magnets* for the ones, tens, hundreds, and thousands. Tell the first member from Team 1 to place *Token Magnets* in the ten-frames to represent the number chosen from the stack of index cards. Instruct the first member from Team 2 to write a number below the ten-frames that is greater than the number in the ten-frames and to write the comparison statement on the board. Remove the *Token Magnets*. Switch roles and have Team 2 choose an index card with a number and model the number on the board. Tell Team 1 to write a number below the ten-frames that is less than the modeled number. Continue until everyone has had a turn doing each part of the activity.

Adding Numbers

Draw a four-column table on a whiteboard, and draw a horizontal line in the middle of each column to divide the columns into top and bottom sections. Label the columns with *Ones, Tens, Hundreds, and Thousands*. Tell students that **Place Value Foam Tokens Demonstration Magnets** can

be used to model addition: Write the expression $342 + 123$ on the board. Model the number 342 in the top section of the table. Model the number 123 in the bottom section of the table. Ask a student volunteer to tell you the sum, and write the addition number sentence $342 + 123 = 465$ on the board. Write the expression $216 + 137$ on the board. Model both numbers. Point out that there are more than 10 *Ones Token Magnets*. Remind students that the 13 *Token Magnets* in the ones column must be regrouped by trading 10 of them for 1 *Tens Token Magnet*. Make the trade, and ask a student to tell you the sum. Write the addition number sentence $216 + 137 = 353$ on the board. Practice several more addition problems including several different types of regroupings; then have students practice on the reproducible.

Subtracting Numbers

Hang or draw ten-frames on a whiteboard. Tell students that **Place Value Foam Tokens Demonstration Magnets** can be used to model subtraction: Write the expression $365 - 123$ on the board. Modeling the number 365, demonstrate how to remove the number 123 starting with the ones and continuing to the hundreds. Ask a student volunteer to tell you the difference. Complete the subtraction number sentence $365 - 123 = 242$ on the board. Write the expression $316 - 134$ on the board. Model the first number of 316. Tell students to check if there are enough *Token Magnets* in each column to remove 134. Model the trade from the hundreds column to the tens column. Ask a student to tell you the difference. Write the subtraction number sentence $316 - 134 = 182$ on the board. Practice several more subtraction problems including several different types of regroupings; then have students practice on the reproducible.