



The Progression of Understanding Place Value

Grade K

- Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. ([CCSS.Math.K.NBT.A.1](#))

Grade 1

- Understand that the two digits of a two-digit number represent amounts of tens and ones. ([CCSS.Math.1.NBT.B.2](#))
- Use place value understanding and properties of operations to add and subtract. ([CCSS.Math.1.NBT.C.4](#))

Grade 2

- 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. ([CCSS.Math.2.NBT.A.1](#))
- Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. ([CCSS.Math.2.NBT.B.5](#))

Grade 3

- Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. ([CCSS.Math.3.NBT.A.2](#))
- Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations. ([CCSS.Math.3.NBT.A.3](#))

Grade 4

- Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of

operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. ([CCSS.Math.4.NBT.B.5](#))

- Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. ([CCSS.Math.4.NBT.B.6](#))

Grade 5

- Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $1/10$ of what it represents in the place to its left. ([CCSS.Math.5.NBT.A.1](#))
- Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$. ([CCSS.Math.5.NBT.A.3a](#))

High School

Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. ([CCSS.Math.HS.APR.A.1](#))

