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 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (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)