What do the Common Core Standards say about whole number, fraction and decimal multiplication?

Whole Numbers in Second Grade
MACCSS.2.OA.C.4
Use addition to **find the total number of objects arranged in rectangular arrays** with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.
MACCSS.2.G.A.2
Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

Whole Numbers in Third Grade
MACCSS.3.OA.A.1
Interpret products of whole numbers, e.g., interpret 5 × 7 as the **total number of objects in 5 groups of 7 objects each.** *For example, describe a context in which a total number of objects can be expressed as 5 × 7.*
MACCSS.3.OA.A.3
Use multiplication and division within 100 to solve word problems in situations involving **equal groups, arrays, and measurement quantities,** e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.[1]
MACCSS.3.OA.B.5
Apply properties of operations as strategies to multiply and divide.[2] *Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)*

Whole Numbers in Fourth Grade
MACCSS.4.OA.A.1
Interpret a **multiplication** equation **as a comparison,** e.g., interpret 35 = 5 × 7 as a statement that **35 is 5 times as many as 7** and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
MACCSS.4.NBT.B.5
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.**

Whole Numbers in Fifth Grade
MACCSS.5.NBT.B.5
Fluently multiply multi-digit whole numbers using the **standard algorithm.**

Fractions in Fourth Grade
MACCSS.4.NF.B.4

Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

a) Understand a fraction a/b as a multiple of $1/b$. *For example, use a visual fraction model to* **represent 5/4 as the product 5 × (1/4),** *recording the conclusion by the equation 5/4 = 5 × (1/4).*

b) Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express* **3 × (2/5) as 6 × (1/5),** *recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)*

Fractions in Fifth Grade
MACCSS.5.NF.B.4

Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

a) Interpret the product (a/b) × q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b. *For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15.* **(In general, (a/b) × (c/d) = ac/bd.**

b) Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

MACCSS.5.NF.B.5

Interpret multiplication as scaling (resizing), by:

a) Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.

b) Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence a/b = $(n × a)/(n × b)$ to the effect of multiplying a/b by 1.

Decimals in Fifth Grade
MACCSS.5.NBT.B.7

Add, subtract, multiply, and divide decimals to hundredths, 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.