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| **Third Trimester**  | Grade: 3 | Unit Number: 9 |
| Unit Overview: * To multiply and divide with multiples of 10, 100, and 1,000
* To use mental math to multiply
* To share money
* To find products of 2-digit numbers
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| Essential Question: |
| Academic Vocabulary: division equation order of operations mass array half/halves plane figure dividend commutative property multiplication estimation standard units quarter unit square divisor associative property rounding line plot fourth area model quotient distributive property volume scale area additive |
| Lesson | Standard | Guiding Questions | Differentiation | Additional Resources | Student Learning Goals |
| 9.1 | **3.0A.3****3.0A.6****3.0A.8****3.NBT.3** | What helps you make a plan to solve a new problem? |  |  | I can* Explain division as repeated subtraction of the same number or as a set of objects divided into an equal number of shares.
* Interpret whole-number of quotients of whole numbers (e.g., 80/4 is 4 groups with 20 in each group, or 20 groups with 4 in each group).
* Identify parts of division equations (dividend, divisor, and quotient).
* Use equal groups, arrays, measurement quantities and drawings to solve multiplication and division word problems within 100.
* Use equations with a symbol for the unknown number to represent multiplication and division.
* Apply the properties of operations as strategies to multiply and divide (commutative, associative, and distributive property of multiplication).
* Explain the relationship between multiplication and division.
* Turn a division problem into multiplication problems with an unknown factor.
* Quickly multiply and divide within 100 using strategies such as the relationship between multiplication and division or properties of operations to find the answers.
* Instantly recall the product of any to one-digit numbers.
* Use the four operations (=,-, x, ÷) to solve two-step word problems.
* Write equations using a letter standing for the unknown number.
* Decide if my answers are reasonable using mental math and estimation strategies including rounding.
* Find the product of a one-digit number and a three- or four-digit number without regrouping.
* Estimate and measure liquid volumes and masses of objects using standard units of measure (grams, kilograms, and liters).
* Use addition, subtraction multiplication, or division to solve one-step word problems involving masses or volumes that are given in the same units.
* Represent one-step word problems involving masses or volumes using drawings.
* Use a ruler to measure lengths in whole, half, and quarter inches.
* Gather and record measurement data using whole, half, and quarter inches.
* Make a line plot with the horizontal scale marked off in whole number, half, or quarter units.
* Define a unit square as a square with a side length of 1 unit.
* Explain area as the measure of a plan figure which has been covered by *n* unit squares without gaps or overlaps.
* Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
* Multiply side lengths of rectangles with whole number side lengths to solve word problems.
* Use the distributive property in mathematical reasoning.
* Decompose an irregular figure into non-overlapping rectangles.
* Explain area as additive and use this understanding to solve word problems.
* Define perimeter.
* Find the perimeter of polygons when given the side lengths.
* Find unknown side lengths of polygons when given the perimeter.
* Show rectangles with the same perimeter that have different areas and rectangles with the same area but different perimeters.
* Solve word problems involving perimeter.
* Round whole numbers to the nearest 10 or the nearest 100.
* Quickly add and subtract within 1,000 using a strategy (
* or algorithm) based on place value, properties of operations, and the relationship between addition and subtraction.
* Multiply one-digit whole numbers by multiples of 10 using strategies based on place value and properties of operation. (e.g., 5 x 40 = 5 x (4 . 10) = (5 x 4) x 10; or 5 x 40 = (5 x 20) + ((5.20).
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| 9.2 | 3.OA.13.OA.3**3.PA.5**3.OA.8**3.NBT.3**3.NF.2 | Are some strategies better suited for certain problems than others? Why or why not? |  |  |
| 9.3 | **3.OA.3****3.NBT.2****3.NBT.3**3.NF.2**3.MD.5b****3.MD.7****3.MD.8** | How did the patterns in the number models help you make up the rule? |  |  |
| 9.4 | ***3.OA.3******3.OA.5******3.NBT.2*****3.MD.5b****3.MD.7** | What are other ways to model multiplication?How could it help you to check your answers with a partner? |  |  |
| 9.5 | **3.OA.3**3.OA.7**3.OA.8****3.NBT.1****3.NBT.2**3NF.3 | When should you check whether your answers make sense? Why? |  |  |
| 9.6 | **3.OA.2****3.OA.3****3.OA.5****3.OA.7** | Can you choose numbers for your board that will give you a better chance of winning? |  |  |
| 9.7 | **3.OA.2****3.OA.3**3.OA.73.NF.3d | What can you learn trying to solve difficult math problems? |  |  |
| 9.8 | **3.OA3**3.NBT.2 | Why do you have to understand what the decimals in your calculator display mean before you can tell the answer? |  |  |
| 9.9 | **3.OA.7****3.NBT.2** | Would you recommend using the lattice method of multiplication to a friend? Why or why not? |  |  |
| 9.10 | **3.MD.2****3.MD.5b****3.MD.7** | How many 1-inch triangles would fit inside a larger triangle measuring 12 inches on each side?If you were building something, what shape might you use to hold lots of weight? |  |  |
| 9.11 | 3.OA.3**3.OA.5****3.NBT.2****3.NBT.3****3.MD.5b****3.MD.7** | Would you recommend using the partial-products method to someone? Explain your reasons. |  |  |
| 9.12 | 3.OA.33.OA4**3.OA.5**3.OA.7**3.NBT.2****3.NBT.3****3.MD.5b****3.MD.7** | How do visual models help you solve problems? |  |  |
|  | **9.13** | **3.NBT.2****3.MD.4****3.MD.6****3.MD.7b** | How do thermometers help you read and write the temperature?When might you use negative numbers in your life? |  |  |  |
| Assessment: |