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| **Synopsis of high-quality task:**  This task relates multiplication or division of decimals to money. Students will be able to use multiplication or division of multi-digit decimals to solve a real-world problem of a bake sale and will learn to use effective strategies to make enough money to fund computers and a basketball hoop.  **Anticipated student time spent on task:** 45 minutes  **Student task structure(s):** Partner work |
| [**Math Content Standards and Practices:**](http://www.doe.mass.edu/frameworks/math/2017-06.pdf)  **6.NS.B.2** Fluently divide multi digit numbers using the algorithm.  **SMP 1** Make sense of problems and persevere in solving them.  **SMP 2** Reason abstractly and quantitatively.  **SMP 4** Model with mathematics. |
| **Prior Knowledge:**  **5.NBT.B.6** Find whole-number quotients of whole numbers with up to four-digit dividends and two-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.  **5.NBT.A.1** Recognize that in a multi-digit number, including decimals, a digit in any 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.  **6.RP.A.2** Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship.  **5.NF.B.3** Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers. |
| **Connections to the real-world:**  Most students have participated in bake sales and earning money to pay for desired goods. |
| **Mastery Goals:**  **Learning Objective:**  Students will fluently add, subtract, multiply, or divide multi-digit decimals using the standard algorithm for each operation to answer a real-world word problem that involves critical thinking skills.  **Language Objective:**  Students will be able to annotate a word problem for evidence to support their critical thinking. Students will be able to explain their thinking using academic language from the word problem. |
| **Teacher instructions**  **Instructional Tips/Strategies/Suggestions:**   * Use graphic organizer for annotating Word Problems * Multiplication Chart * Heterogeneous groupings * Algorithm (step-by-step) scaffolds * Unit rates and ratios are a helpful tool to solve this multi-step word problem |
| **Instructional Materials/Resources/Tools:**  Include:   * Graphic organizer * Multiplication chart * Highlighters for annotations * Investigation worksheet * Group Job Roles * Worksheet (see below) |
| **Accessibility and Supports:**  -graphic organizers (place value chart)  -reference sheets (multiplication)  -step by step organizer for multiplication and division (algorithm)  -graph paper  -key terms word bank  -sentence starters for discourse and explanation  **Potential sentence starters:**  I know that we need to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because in the word problem it says \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  I used this strategy because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  The key terms that helped me solve this problem are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  **Key academic vocabulary:** annual, profit, pricing sheet |

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| Last year, the Doran Community School held their annual bake sale. They made a profit of $755.00 by selling brownies, cupcakes, and cookies. They were able to buy equipment for the gym and install a basketball hoop on the playground. Mrs. Raposa’s computer crashed and the pricing sheet was lost. She doesn’t remember the cost per item, but she was able to retrieve the number of items sold and the total amount made.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Original Price List**   |  |  |  |  | | --- | --- | --- | --- | | Baked Good | Total Amount | # of Items Sold | Cost per Item | | Brownies | $275.00 | 220 |  | | Cupcakes | $300.00 | 120 |  | | Cookies | $180.00 | 240 |  | |   Part A  This year they are looking to raise $1200 at their annual Holiday Bake sale in order to purchase additional computers for each classroom and install an additional basketball hoop to make a full court. If the prices did not change, determine how many of each item they would need to sell in order to raise $1200.  Part B  Tania decided to use the standard algorithm to find the cost per brownie for last year.  Below is a copy of her work:     |  | | --- | | Brownie Price  125.00  220) 275.00  - 220.00  055.00  - 044.00  0 1 1.00  - 0 1 1.00  000.00 |     Do you agree with her? Why or why not? Please justify your answer using a model or appropriate strategy. |

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| **Sample Student Work:**  **Student work**  **Student work** |