|  |
| --- |
| **Synopsis of high-quality task:**  This task is set in a context that supports financial literacy. Students fluently add using the standard algorithm, multiply whole numbers and find whole-number quotients and remainders.  **Anticipated student time spent on task:** 45 minutes  **Student task structure(s):** Small group work |
| [**Math Content Standards and Practices:**](http://www.doe.mass.edu/frameworks/math/2017-06.pdf)  **4.OA.A.3** Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.  **4.OA.C.5** Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.  **4.NBT.B.4** Fluently add and subtract multi-digit whole numbers using the standard algorithm.  **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.  **4.NBT.B.6** 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.  **SMP 1** Make sense of problems and persevere in solving them.  **SMP 3** Construct viable arguments and critique the reasoning of others.  **SMP 5** Use appropriate tools strategically.  **SMP 7** Look for and make use of structure. |

|  |
| --- |
| **Prior knowledge:**  **3.OA.A.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers.  **4.NBT.B.4** Fluently add and subtract multi-digit whole numbers using the standard algorithm  **4.NBT.B.6** 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. |
| **Connections to the real-world:** The movie theater is a place many students are familiar with and enjoy going to on days off from school, rainy days, or for a birthday party (like in the extension). Students also have to decide how they would budget and spend money. |
| **Mastery goals:**  Learning Objective(s): Students will be able to interpret the remainder of a division problem when needed. Students will be able to determine if the solutions are reasonable.  Language Objective(s): Students will be able to discuss their answers from part C and share the most efficient strategy for solving. Students will explain their thinking in the answer section of the answer sheet using a sentence starter of “I know this because…” |
| **Teacher instructions:**  Begin by introducing the task with a whole group “Notice-and-Wonder” and display the movie ticket images below. Ask the students what they notice about the receipt and what conclusions they can draw about the prices of tickets and snacks at the movie theater.  Break students into small groups and disseminate the student worksheet. Encourage them to try different ways to get their answers.  Have small groups discuss and support their answers for Part C. |
| **Instructional materials:**  Materials required include student worksheets, a visual of the movie ticket receipt and a projector. |
| **Accessibility and Supports:**  **Potential sentence starters:**  It costs \_\_\_\_\_\_\_ to buy \_\_\_\_\_\_\_ movie tickets on \_\_\_\_\_\_ .  It costs \_\_\_\_\_\_\_more.  I know this because\_\_\_\_\_\_\_\_\_\_\_\_\_.  **Key academic vocabulary:** Per, how many, increase, decrease, how much more, more and less, left over, difference |

|  |  |
| --- | --- |
| ###########################################  MOVIE THEATER  Enjoy the show!  ###########################################  Tuesday, Dec. 18 7:43 p.m.  1 child...................$12.00  1 adult...................$18.00  2 popcorn.................$9.00  One 16 ounce Coke................$2.50  2 M&M box.................$4.00 | ###########################################  MOVIE THEATER  Enjoy the show!  ###########################################  Saturday, Dec. 22 1:03 p.m.  1 child...................$8.00 ($5.50 when you purchase 10 or more)  1 adult...................$12.00  2 popcorn.................$9.00  One 16 ounce Coke................$2.50  2 M&M box.................$4.00 |

|  |
| --- |
| ##########################################################  MOVIE THEATER  Enjoy the show!  ##########################################################  Saturday, Dec. 22 8:00 p.m.  1 child...................$15.00  1 adult...................$20.00  2 popcorn.................$9.00  One 16 ounce Coke................$2.50  2 M&M box.................$4.00 |

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Going to the Movies**

|  |
| --- |
| a) On Saturday afternoon, Sara and two of her friends went to the movies. Sara’s mom went with them. How much did it cost for their tickets? They had $60.00. How much did they have left to buy snacks? Which snacks could she buy? |
| b) If Sara has $50.00, how many movie tickets could she buy on a Tuesday evening? Does she have any money left over? Is it enough to buy another ticket on a different day? Explain. |
| c) **Solve Independently:** Does it cost more or less to buy three adult movie tickets on a Saturday evening than three adult tickets on a Saturday afternoon? How much more or less? |
| d) How much money would Sara need to buy four child tickets on Tuesday evening and three child tickets for Saturday evening? Write an equation to show how you solved.  **Extension:**  Sara is having a movie birthday party. She is inviting her entire class of 24 students (including her). How much would it cost to buy Saturday afternoon tickets for the entire class? What is the difference in price if she bought all 24 tickets at full price? Sara wants to provide snacks and drinks for her friends. How much would it cost to buy enough popcorn, M&Ms, and cokes for herself and her classmates? |

|  |
| --- |
| **Sample Student Work:**  **Sample student work showing a student's understanding of parts a, b and c. In part a, the student calculated cost of tickets and the amount of money left out of $60 using addition. The student also found 5 options of snack combinations that Sara could buy with the leftover money.  In part b, the student showed that Sara could buy 4 tickets with $50 on a Tuesday evening, and that she could not buy any more tickets with the remaining $2.  In part c, the student showed calculations for the cost of movie tickets on Saturday afternoon and Saturday evening. They also used the sentence starter "I know this because..." to explain their answer.**  **Sample student work showing part d and the extension. Part d shows calculating the price of tickets for four children on Tuesday evening and three children on Saturday evening using multiplication. The extension shows how the student used multiplication to calculate the cost of tickets for the whole class, and how they used subtraction to find the difference between the discounted and full-price deals. The student also used multiplication and addition to find the cost of buying snacks for all of the students.**  **Student work showing parts a, b and c. In part a, the student used multiplication, addition and subtraction to calculate the cost of the tickets and the amount of money left over to buy snacks. They also found 5 options for snack combinations that could be bought with the leftover money. In part b, the student explains how they used multiplication to figure out how many tickets she could buy on a Tuesday evening, and explains why she could buy another ticket with the $2 she has left over. In part c, the student explains how they used multiplication to find the cost of saturday evening and afternoon tickets. They also explain how they used subtraction to find the difference between the 2 costs.**  **Student work for part d and the extension. In part d, the student shows how they used multiplication to find the cost of 4 child tickets on Tuesday evening and 3 child tickets on Saturday evening. In the extension problem, the student shows how they used multiplication and addition to find the cost of tickets for the class at the discounted and full-price deals. They also used subtraction to find the difference between these deals. The student also used multiplication and addition to find the cost of snacks for the class.** |