Lesson 7: Solve Multiplicative Comparison Problems

Standards Alignments

Addressing   4.NBT.B.5, 4.NBT.B.6, 4.OA.A.2, 4.OA.A.3

Teacher-facing Learning Goals

- Use the four operations to solve word problems involving multiplicative comparison.

Student-facing Learning Goals

- Let's solve real-world multiplicative comparison problems.

Lesson Purpose

The purpose of this lesson is for students to solve problems involving multiplicative comparison.

This lesson allows students to solve problems that involve multiplicative comparisons in the context of cost of living. Students are presented with different cost information and asked to make comparisons in different ways. For instance, they may be given the cost in one country and told that the cost in a second country is "9 times as much", and asked to find the dollar cost in the second country. They may be given the costs in two countries and then asked to compare the costs using a comparison statement that uses multiplication. Students also reason about how many of an item could be purchased in a country given a certain dollar amount (for example, how many months of rent in Ghana can one afford with $2,000?).

The work requires students to use several operations and to consider estimates where the operations would go beyond grade level (MP1, MP2). In many questions, it is not important that students find exact products, quotients, or answers. The emphasis is on reasoning flexibly about relative sizes of quantities and solving problems multiplicatively.

If students need additional support with the concepts in this lesson, refer back to Unit 5, Sections A and C in the curriculum materials.

Access for:

♿ Students with Disabilities

- Action and Expression (Activity 2)

🌐 English Learners

- MLR8 (Activity 1)

Instructional Routines

Notice and Wonder (Warm-up)

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

What unfinished learning or misunderstandings do your students have about multiplicative comparison? How did you leverage those misconceptions in a positive way to further the understanding of the class?

Cool-down (to be completed at the end of the lesson)   🕐 5 min

Restaurant Budget

Standards Alignments

Addressing   4.NBT.B.5, 4.NBT.B.6, 4.OA.A.2, 4.OA.A.3

Student-facing Task Statement

In the United States, the cost of a meal for two people in a mid-range restaurant is about $50. A similar meal in Ghana is about $25.

1. Write a statement that compares the cost of a meal at a restaurant in the United States to a meal in Ghana and uses the phrase ". . . times as much as . . ."

2. A couple only wants to spend $240 at restaurants each month. How many more times could the couple go out to a restaurant each month if they eat in Ghana than in the United States? Show or explain your reasoning.

Student Responses

1. Sample response: A meal at a restaurant in the United States costs about 2 times (or twice) as much as a meal in Ghana.

2. 5 more times. Sample response: In the United States: $4 \times 50 = 200$, which is less than 240. They could eat at a restaurant 4 times. There will be $40 extra. In Ghana: $9 \times 25 = 225$. They could eat out 9 times and have $15 left.