Unit 3 Lesson 1: Relationships between Quantities

1 Pricing Theater Popcorn (Warm up)

Student Task Statement

A movie theater sells popcorn in bags of different sizes. The table shows the volume of popcorn and the price of the bag.

Complete one column of the table with prices where popcorn is priced at a constant rate. That is, the amount of popcorn is proportional to the price of the bag. Then complete the other column with realistic example prices where the amount of popcorn and price of the bag are not in proportion.

volume of popcorn (ounces)	price of bag, proportional ($)	price of bag, not proportional ($)
10	6	6
20		
35		
48		

2 Entrance Fees

Student Task Statement

A state park charges an entrance fee based on the number of people in a vehicle. A car containing 2 people is charged $14, a car containing 4 people is charged $20, and a van containing 8 people is charged $32.

1. How much do you think a bus containing 30 people would be charged?

2. If a bus is charged $122, how many people do you think it contains?

3. What rule do you think the state park uses to decide the entrance fee for a vehicle?

3 Making Toast (Optional)

Student Task Statement

A toaster has 4 slots for bread. Once the toaster is warmed up, it takes 35 seconds to make 4 slices of toast, 70 seconds to make 8 slices, and 105 seconds to make 12 slices.

1. How long do you think it will take to make 20 slices?

2. If someone makes as many slices of toast as possible in 4 minutes and 40 seconds, how many slices do think they can make?