

Comparing Rates  
Foundations 11

Name: \_\_\_\_\_  
Block: \_\_\_\_\_ Date: \_\_\_\_\_

Rate: \_\_\_\_\_

Ex.

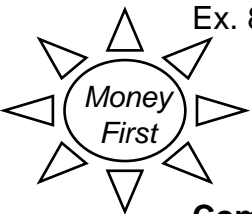
Unit Rate: \_\_\_\_\_

Ex.

**Expressing a Rate as a Unit Rate**

Ex. 240 words/8 min

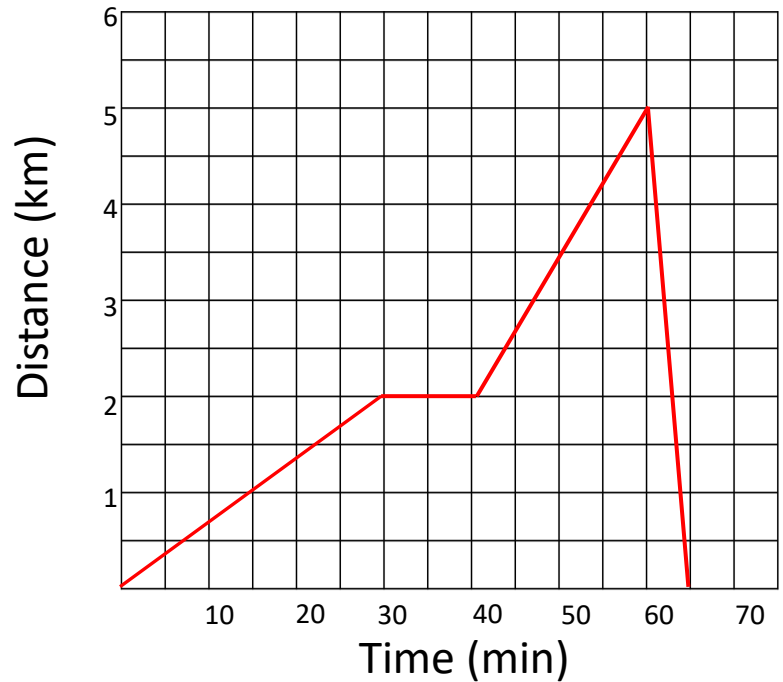
Ex. 8 kg of veggies for \$12



**Comparing Rates**

Ex. Natasha can buy a 12 kg turkey from her local butcher for \$42.89. The local supermarket has turkeys advertised in its weekly flyer for \$1.49/lb. There are about 2.2 lb in 1 kg. Which store has the lower price?

## Slope and Rates



## Solving Problems Involving Rates

Ex. The gas tank of Mario's new car has a capacity of 55 L. The owner's manual claims that the fuel efficiency of Mario's car is 7.6 L/100 km on the highway. Before Mario's first big highway trip, he set his trip meter to 0 km so he could keep track of the total distance he drove. He started with the gas tank full. Each time he stopped to fill up the tank, he recorded the distance he had driven and the amount of gas he purchased:

Fill-up	Total Distance Driven (km)	Quantity of Gas Purchased (L)
1	645	48.0
2	1037	32.1

Did the car achieve the manufacturer's fuel efficiency rating of 7.6 L/100 km on either leg of the trip?

Ex. It takes 4 hours 15 minutes to drain tank A, which holds 300 L of water. It takes 2 hours 10 minutes to drain tank B, which holds 150 L of water. Which has the greater rate?

Ex. Person A runs 400 m in 1 min 15 sec. Person B runs 1 km in 5 min 20 sec. Who is the faster runner? (m/s)

### **Rates**

Where might the following rates be used?

a) 45 words/min

d) 35 ppm (parts per million)

b) 98.5 ¢/L

e) 0.05 mg/kg

c) 7.2 MBps

f) 2500 rpm (rotations per minute)

## Unit Analysis

Ex. A car travels at 80 km/h. Express this as ft/min. (1 km = 3281 ft)

## Solving Problems With Rates

Ex. Paula is asked to order snacks for an office meeting of 180 people. She decides to order dessert squares, which come in boxes of 24. She estimates that she will need 2.5 squares/person. How many boxes should she buy?

Ex. Amelia walks briskly, at 6 km/h. When she walks at this rate for 2 h, she burns 454 Cal. Bruce walks at a slower rate, 4 km/h, burning 62 Cal in 30 min. If Amelia walks for 3 h, how much longer will Bruce have to walk in order to burn the same amount of Calories?

Ex. Jeff lives in a town near the Canada-U.S. border. He can either buy his gas in his town at \$1.32/L or travel across the border into the U.S. to fill up at \$2.95/gal. Which option makes the most sense economically if the exchange rate today is \$1 U.S./\$1.32 Cdn?

(1 gallon = 3.79 L)