LESSON MAKER PRO

Units in Action

Use units to choose the right calculation.

HIGH SCHOOL · GDA.NQ.B

GDA.NQ.B "Quantitative reasoning includes, and mathematical modeling requires, attention to units of measurement."

NAME _____ DATE _____

LET UNITS GUIDE YOU

To find a rate, divide one quantity by another and include both units in the answer. When you use a rate, convert units if needed so matching units cancel.

WORKED EXAMPLE

A train travels 65 miles in 5 hours. What is its average speed in miles per hour?

1. Write the rate: 65 miles / 5 hours.
2. Divide: 65 / 5 = 13.
3. Keep the units: miles / hours = miles per hour.

Answer: 13 miles per hour

PRACTICE 6 problems

1 How many hours are in 180 minutes? Use 60 minutes = 1 hour.

ANSWER _____

2 How many pounds are in 24 ounces? Use 16 ounces = 1 pound.

ANSWER _____

3 Six tickets cost $18. What is the cost per ticket?

ANSWER _____

4 A cyclist travels 28 miles in 2 hours. What is the average speed in miles per hour?

ANSWER _____

5 Ribbon costs $4 per meter. What is the cost of 9 meters?

ANSWER _____

6 A robot moves 4 feet per second for 2 minutes. How far does it move? Use 60 seconds = 1 minute.

ANSWER _____

APPLY IT Show your work

1 A music app uses 120 MB of data per hour. You have 1 GB of data left. How many MB will remain after 6 hours of streaming? Use 1 GB = 1000 MB.

WORK SPACE

ANSWER _____

2 A bike-share ride costs $2 to unlock the bike, plus $0.20 per minute. What is the total cost of a 35-minute ride?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A runner travels at 6 miles per hour for 20 minutes, then at 9 miles per hour for 40 minutes. How far does the runner travel in all? Show how you handle the time units.

WORK SPACE AND ANSWER

Units in Action

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	How many hours are in 180 minutes? Use 60 minutes = 1 hour.	**3 hours**
2	How many pounds are in 24 ounces? Use 16 ounces = 1 pound.	**3/2 pounds**
3	Six tickets cost $18. What is the cost per ticket?	**$3 per ticket**
4	A cyclist travels 28 miles in 2 hours. What is the average speed in miles per hour?	**14 miles per hour**
5	Ribbon costs $4 per meter. What is the cost of 9 meters?	**$36**
6	A robot moves 4 feet per second for 2 minutes. How far does it move? Use 60 seconds = 1 minute.	**480 feet**

PART 2 · APPLY IT

1. **280 MB** The app uses 120 MB/hour × 6 hours = 720 MB. Subtract 720 MB from 1000 MB.
2. **$9** The time charge is $0.20/minute × 35 minutes = $7. Add the $2 unlock charge.

CHALLENGE

8 miles. Convert 20 minutes to 1/3 hour and 40 minutes to 2/3 hour. Then (6 miles/hour × 1/3 hour) + (9 miles/hour × 2/3 hour) = 2 miles + 6 miles = 8 miles.

Accept equivalent units and forms, such as 1 1/2 pounds for 3/2 pounds. In the challenge, accept calculations in minutes if the rates are correctly converted to miles per minute.