LESSON MAKER PRO

Units That Work

Use rates and conversions to model everyday situations.

HIGH SCHOOL · MT.PLUS.ALG.MOD.3

MT.PLUS.ALG.MOD.3 "Use and interpret units correctly in modeling situations."

NAME _____ DATE _____

TRACK THE UNITS

To find a rate, divide one quantity by another and write the units as a fraction. When you multiply or convert rates, cancel matching units and check that the units left match what the question asks.

WORKED EXAMPLE

A drone travels 144 meters in 4 seconds. What is its speed in meters per second?

1. Write the rate: 144 meters / 4 seconds.
2. Divide the numbers: 144 / 4 = 36.
3. Keep the units: meters / seconds.

Answer: 36 meters per second

PRACTICE 6 problems

1 A train travels 90 kilometers in 2 hours. Find its speed in kilometers per hour.

ANSWER _____

2 Five concert tickets cost $35 in all. Find the cost per ticket.

ANSWER _____

3 A faucet fills a tank at 12 liters per minute. How many liters flow in 7 minutes?

ANSWER _____

4 Convert 2.5 hours to minutes. Use 1 hour = 60 minutes.

ANSWER _____

5 A tutor charges $18 per hour. What is the charge for 50 minutes? Use 1 hour = 60 minutes.

ANSWER _____

6 A car travels 120 miles using 6 gallons of gas. Find its rate in miles per gallon, then explain what that rate means.

ANSWER _____

APPLY IT Show your work

1 A student streams a video that uses data at a rate of 0.8 GB per hour. How much data does the student use in 2 hours 30 minutes? Show a calculation with units.

WORK SPACE

ANSWER _____

2 A club orders 15 custom shirts at $12 per shirt and pays one $8 shipping fee. Write an expression with units and find the total cost.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A student records video at a rate of 2.5 GB per hour for 90 minutes. The student has 3 GB of free storage. How many MB of additional storage are needed? Show how the units work. Use 1 GB = 1000 MB.

WORK SPACE AND ANSWER

Units That Work

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A train travels 90 kilometers in 2 hours. Find its speed in kilometers per hour.	**45 kilometers per hour**
2	Five concert tickets cost $35 in all. Find the cost per ticket.	**$7 per ticket**
3	A faucet fills a tank at 12 liters per minute. How many liters flow in 7 minutes?	**84 liters**
4	Convert 2.5 hours to minutes. Use 1 hour = 60 minutes.	**150 minutes**
5	A tutor charges $18 per hour. What is the charge for 50 minutes? Use 1 hour = 60 minutes.	**$15**
6	A car travels 120 miles using 6 gallons of gas. Find its rate in miles per gallon, then explain what that rate means.	**20 miles per gallon. At this rate, the car travels 20 miles on 1 gallon of gas.**

PART 2 · APPLY IT

1. **0.8 GB/hour × 2.5 hours = 2 GB** Convert 2 hours 30 minutes to 2.5 hours. Multiply by 0.8 GB per hour.
2. **(15 shirts)($12/shirt) + $8 = $188** The shirts cost $180. Add the one-time $8 shipping fee.

CHALLENGE

90 minutes = 1.5 hours. (2.5 GB/hour)(1.5 hours) = 3.75 GB. The student needs 3.75 GB - 3 GB = 0.75 GB = 750 MB of additional storage.

Accept equivalent calculations that carry units correctly. For the challenge, the student must subtract the free storage before converting the additional storage to MB.