LESSON MAKER PRO

Measure It Right

Use clear calculations, units, and checks.

GRADE 8 · 8.MP.6

8.MP.6 "Attend to precision."

NAME _____ DATE _____

PRECISION MATTERS

Precision means choosing an equation that matches the situation, calculating carefully, and naming the unit in your answer. Check that your result makes sense by estimating or using a related fact, and round only when the question tells you to round.

WORKED EXAMPLE

The drama club buys 9 button pins that cost $1.25 each. Find the exact cost.

1. Multiply: 9 x $1.25 = $11.25.
2. Check: Each pin costs more than $1, so the total should be more than $9.
3. Write the money amount with dollars and cents: $11.25.

Answer: $11.25

PRACTICE 6 problems

1 The aquarium club orders 6 bags of gravel at $1.35 per bag. Write an equation, find the exact cost, and use a quick estimate to check that it makes sense.

ANSWER _____

2 On a fitness app, Jada records a 3.6 km walk and then a 2.45 km walk. Write an equation, find her exact total distance, and check with an estimate.

ANSWER _____

3 The temperature at a skate park is 19.8°C. After sunset, it falls by 7.65°C. Write an equation, find the exact new temperature, and check with an estimate.

ANSWER _____

4 A smoothie station uses 5/8 cup of yogurt for each batch. It makes 8 batches. Write an equation, find the exact amount of yogurt used, and check using division.

ANSWER _____

5 A tablet has 18.6 GB of free storage. A video project uses 5.25 GB. Write an equation, find the exact free storage left, and check with an estimate.

ANSWER _____

6 A robotics cart travels at 2.4 meters per second for 7.5 seconds. Write an equation, find the exact distance traveled, and check whether your unit makes sense.

ANSWER _____

APPLY IT Show your work

1 The student council buys 18 custom phone grips for $3.25 each. It sells every phone grip for $6.50 each and pays $12.40 for shipping. Find the exact profit. Show equations for revenue and total cost, label each amount in dollars, and use an estimate to check your result.

WORK SPACE

ANSWER _____

2 For a tutorial video, Niko records three clips that last 12 minutes 45 seconds, 8 minutes 38 seconds, and 15 minutes 52 seconds. The upload limit is 40 minutes. Find exactly how much recording time is left. Show your addition and subtraction with minutes and seconds lined up correctly.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A bike app reports that Sam rode 7.86 miles in 42 minutes. The app displays average speed to the nearest tenth of a mile per hour. Show the time conversion and calculation, then state the displayed speed with the correct unit. In one sentence, explain why dividing 7.86 by 42 would not give miles per hour.

WORK SPACE AND ANSWER

ANSWER KEY

Measure It Right

GRADE 8 · 8.MP.6

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	The aquarium club orders 6 bags of gravel at $1.35 per bag. Write an equation, find the exact cost, and use a quick estimate to check that it makes sense.	**6 x $1.35 = $8.10. Check: 6 x about $1.50 is about $9, so $8.10 is reasonable.**
2	On a fitness app, Jada records a 3.6 km walk and then a 2.45 km walk. Write an equation, find her exact total distance, and check with an estimate.	**3.6 km + 2.45 km = 6.05 km. Check: about 3.5 km + 2.5 km = about 6 km, so 6.05 km is reasonable.**
3	The temperature at a skate park is 19.8°C. After sunset, it falls by 7.65°C. Write an equation, find the exact new temperature, and check with an estimate.	**19.8°C - 7.65°C = 12.15°C. Check: about 20°C - 8°C = about 12°C, so 12.15°C is reasonable.**
4	A smoothie station uses 5/8 cup of yogurt for each batch. It makes 8 batches. Write an equation, find the exact amount of yogurt used, and check using division.	**8 x 5/8 cup = 5 cups. Check: 5 cups divided among 8 batches is 5/8 cup per batch.**
5	A tablet has 18.6 GB of free storage. A video project uses 5.25 GB. Write an equation, find the exact free storage left, and check with an estimate.	**18.6 GB - 5.25 GB = 13.35 GB. Check: about 19 GB - 5 GB = about 14 GB, so 13.35 GB is reasonable.**
6	A robotics cart travels at 2.4 meters per second for 7.5 seconds. Write an equation, find the exact distance traveled, and check whether your unit makes sense.	**2.4 m/s x 7.5 s = 18 m. The seconds cancel, so meters is the correct unit.**

PART 2 · APPLY IT

1. **$46.10 profit** Revenue is 18 x $6.50 = $117.00. Total cost is 18 x $3.25 + $12.40 = $70.90, so profit is $117.00 - $70.90 = $46.10.
2. **2 minutes 45 seconds** The three clips total 37 minutes 15 seconds. Subtracting 37 minutes 15 seconds from 40 minutes gives 2 minutes 45 seconds remaining.

CHALLENGE

42 min = 42/60 h = 0.7 h. 7.86 mi / 0.7 h = 11.228... mi/h, so the displayed speed is 11.2 mi/h. Dividing by 42 would use minutes instead of hours, so the unit would not be miles per hour.

Accept equivalent equations, correctly labeled units, and reasonable estimates or inverse-operation checks. For the challenge, require the conversion from minutes to hours and the explanation that identifies the unit mismatch.