LESSON MAKER PRO

# Unit Mission Control

*Convert units, then solve the whole problem.*

**GRADE 5 · MA.5.M.1**

**MA.5.M.1** "Convert measurement units to solve multi-step problems."

NAME _____ DATE _____

## MATCH THE UNITS

To change a larger unit to a smaller unit, multiply by the number of smaller units in one larger unit. To change a smaller unit to a larger unit, divide. Before you add or subtract, make sure the measurements use the same unit.

## WORKED EXAMPLE

A rope is 6 m 48 cm long. Another rope is 1 m 27 cm long. What is the total length in meters and centimeters?

1. Change each length to centimeters: 6 m 48 cm = 648 cm, and 1 m 27 cm = 127 cm.
2. Add: 648 cm + 127 cm = 775 cm.
3. Change back: 775 cm = 7 m 75 cm.

**Answer: 7 m 75 cm**

## PRACTICE 6 problems

**1** A banner is 8 ft long. A second banner is 3 ft long. What is their total length in inches?

**ANSWER** _____

**2** A container holds 3 L 500 mL of juice. Another container holds 2 L 250 mL. How many milliliters of juice are there altogether?

**ANSWER** _____

**3** One path is 4 yd 2 ft long. A second path is 2 yd 2 ft long. What is the total length in feet?

**ANSWER** _____

**4** A bag has 9 lb 5 oz of birdseed. After 3 lb 11 oz is used, how much birdseed is left?

**ANSWER** _____

**5** A ribbon is 4 m 60 cm long. A student cuts off 125 cm. How much ribbon is left in meters and centimeters?

**ANSWER** _____

**6** A cooler has 5 gal 3 qt of water. Then 9 qt of water are used. How much water is left in gallons and quarts?

**ANSWER** _____

## APPLY IT Show your work

**1** For a robotics project, a team joins 4 wire pieces. Each piece is 2 ft 9 in long. The team uses 5 ft 8 in of the joined wire. How much wire is left?

WORK SPACE

**ANSWER** _____

**2** A school garden has 9 watering cans. Each can holds 925 mL. The gardeners use 2 L 675 mL of water. How much water is left?

WORK SPACE

**ANSWER** _____

## CHALLENGE One step up

A makerspace has 5 strips of material. Each strip is 2 m 40 cm long. The class cuts 4 pieces that are 135 cm each. How many centimeters of material are left? Show calculations and explain why you converted the lengths to centimeters.

WORK SPACE AND ANSWER

**ANSWER KEY**

# Unit Mission Control

**GRADE 5 · MA.5.M.1**

## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | A banner is 8 ft long. A second banner is 3 ft long. What is their total length in inches? | **132 in.** |
| 2 | A container holds 3 L 500 mL of juice. Another container holds 2 L 250 mL. How many milliliters of juice are there altogether? | **5,750 mL** |
| 3 | One path is 4 yd 2 ft long. A second path is 2 yd 2 ft long. What is the total length in feet? | **22 ft** |
| 4 | A bag has 9 lb 5 oz of birdseed. After 3 lb 11 oz is used, how much birdseed is left? | **5 lb 10 oz** |
| 5 | A ribbon is 4 m 60 cm long. A student cuts off 125 cm. How much ribbon is left in meters and centimeters? | **3 m 35 cm** |
| 6 | A cooler has 5 gal 3 qt of water. Then 9 qt of water are used. How much water is left in gallons and quarts? | **3 gal 2 qt** |

## PART 2 · APPLY IT

1. **5 ft 4 in** Each wire piece is 2 ft 9 in = 24 in + 9 in = 33 in, and 4 × 33 in = 132 in = 11 ft 0 in. Regroup to subtract: 11 ft 0 in = 10 ft 12 in, then 10 ft 12 in - 5 ft 8 in = 5 ft 4 in.
2. **5 L 650 mL** The cans hold 9 × 925 mL = 8,325 mL, and 2 L 675 mL = 2,675 mL. In 8,325 - 2,675, regroup 12 tens - 7 tens = 5 tens and 12 hundreds - 6 hundreds = 6 hundreds, so 8,325 mL - 2,675 mL = 5,650 mL = 5 L 650 mL.

## CHALLENGE

**660 cm. Convert to centimeters so every length uses the same unit: 5 × 240 cm = 1,200 cm, 4 × 135 cm = 540 cm, and 1,200 cm - 540 cm = 660 cm.**

Accept equivalent measurements when they name the same amount, such as 5,750 mL for 5 L 750 mL. For subtraction items, accept correct regrouping shown in either mixed units or a single smaller unit.