

Metric Mission

Choose, convert, and combine metric lengths.

GRADE 5 • 5.MG.1.b.i

5.MG.1.b.i "Estimate and measure to solve contextual problems that involve metric units: length (millimeters, centimeters, and meters);"

NAME _____

DATE _____

METRIC LENGTHS

Use millimeters for very small lengths, centimeters for medium lengths, and meters for longer lengths. There are 10 millimeters in 1 centimeter and 100 centimeters in 1 meter. Estimate first to check whether a measured answer makes sense.

WORKED EXAMPLE

A toy train track is 4 m 18 cm long.
How many centimeters is it?

1. $4 \text{ m} = 400 \text{ cm}$.

2. $400 \text{ cm} + 18 \text{ cm} = 418 \text{ cm}$.

Answer: 418 cm

PRACTICE 6 problems

- 1** A bead is 32 mm wide. Write its width in centimeters and millimeters.

ANSWER _____

- 2** A jump rope is 165 cm long. Write its length in meters and centimeters.

ANSWER _____

- 3** A 74 cm shelf and a 680 mm shelf are compared. Which shelf is longer, and by how many millimeters?

ANSWER _____

- 4** Which is a reasonable estimate for the length of a book: 24 mm, 24 cm, or 24 m?

ANSWER _____

- 5** A caterpillar travels 9 cm 6 mm. How many millimeters does it travel?

ANSWER _____

- 6** A seedling is 27 cm tall. It grows 15 cm. How tall is it now?

ANSWER _____

APPLY IT Show your work

- 1** For a school podcast, Amir uses 2 m 40 cm of cable from the microphone to the recorder and 175 cm more cable to reach a speaker. How much cable does he use in all?

WORK SPACE

ANSWER _____

- 2** An art display needs a support strip that is 3 m long. One piece is 1 m 35 cm long, and another piece is 86 cm long. How much more strip is needed?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A gaming club marks a race path with 1 m 26 cm of tape, 845 mm of tape, and 73 cm of tape. Estimate the total length to the nearest meter. Then find the exact total length.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A bead is 32 mm wide. Write its width in centimeters and millimeters.	3 cm 2 mm
2	A jump rope is 165 cm long. Write its length in meters and centimeters.	1 m 65 cm
3	A 74 cm shelf and a 680 mm shelf are compared. Which shelf is longer, and by how many millimeters?	The 74 cm shelf is longer by 60 mm.
4	Which is a reasonable estimate for the length of a book: 24 mm, 24 cm, or 24 m?	24 cm
5	A caterpillar travels 9 cm 6 mm. How many millimeters does it travel?	96 mm
6	A seedling is 27 cm tall. It grows 15 cm. How tall is it now?	42 cm

PART 2 • APPLY IT

- 4 m 15 cm** Convert 2 m 40 cm to 240 cm. Add 240 cm and 175 cm to get 415 cm, which is 4 m 15 cm.
- 79 cm** Convert all lengths to centimeters: 3 m is 300 cm and 1 m 35 cm is 135 cm. The two pieces total 221 cm, so $300\text{ cm} - 221\text{ cm} = 79\text{ cm}$.

CHALLENGE

Estimate: 3 m. Exact: 2 m 83 cm 5 mm.

Accept equivalent metric forms when they are exact, such as 415 cm for 4 m 15 cm. For the challenge, accept 2,835 mm or 283.5 cm as the exact total.