

Converting Measurement Units

Name: _____

Date: _____

Score: _____ / 24

Q Quick Review

When you change a measurement to a **smaller unit**, the number gets **bigger**, because it takes many small units to fill one big unit. To convert, you **multiply**. The numbers you need are: 1 km = 1,000 m, 1 m = 100 cm, 1 cm = 10 mm, 1 kg = 1,000 g, 1 L = 1,000 mL, 1 hour = 60 minutes, 1 minute = 60 seconds, 1 foot = 12 inches, 1 yard = 3 feet, and 1 pound = 16 ounces. So to change 3 km into meters, multiply $3 \times 1,000 = 3,000$ m. **Tip:** write down the “1 big = ? small” fact first, then multiply by it.

◇ **Example:** How many minutes are in 4 hours?

⇒ First, remember the fact you need: 1 hour = 60 minutes. You are going from a bigger unit (hours) to a smaller unit (minutes), so the number should grow — that means multiply. There are 4 hours, and each one holds 60 minutes, so $4 \times 60 = 240$. That makes sense: 4 hours is a long time, so a big number of minutes is just right.

Answer: 240 minutes

PRACTICE

Convert each measurement to the smaller unit.

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|----------------------------------|-------|-----------------------------------|-------|
| 1. Convert 3 km to meters | _____ | 11. Convert 9 km to meters | _____ |
| 2. Convert 5 m to centimeters | _____ | 12. Convert 12 m to centimeters | _____ |
| 3. Convert 4 hours to minutes | _____ | 13. Convert 5 hours to minutes | _____ |
| 4. Convert 2 kg to grams | _____ | 14. Convert 7 kg to grams | _____ |
| 5. Convert 6 feet to inches | _____ | 15. Convert 10 feet to inches | _____ |
| 6. Convert 3 pounds to ounces | _____ | 16. Convert 8 pounds to ounces | _____ |
| 7. Convert 7 minutes to seconds | _____ | 17. Convert 15 minutes to seconds | _____ |
| 8. Convert 2 L to milliliters | _____ | 18. Convert 6 L to milliliters | _____ |
| 9. Convert 8 yards to feet | _____ | 19. Convert 11 yards to feet | _____ |
| 10. Convert 10 cm to millimeters | _____ | 20. Convert 25 cm to millimeters | _____ |

◆ Word Problems

21. Maya's water bottle holds 2 liters. How many milliliters of water does it hold? _____
22. A soccer game lasts 2 hours. How many minutes long is the game? _____
23. Liam's puppy weighs 5 kilograms. How many grams does the puppy weigh? _____
24. A bookshelf is 4 feet long. How many inches long is the bookshelf? _____



Answer Keys

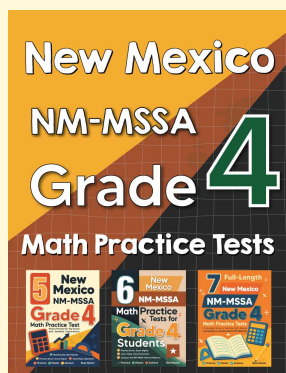
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|--------------|-----------------|
| 1. 3,000 m | 13. 300 min |
| 2. 500 cm | 14. 7,000 g |
| 3. 240 min | 15. 120 in |
| 4. 2,000 g | 16. 128 oz |
| 5. 72 in | 17. 900 sec |
| 6. 48 oz | 18. 6,000 mL |
| 7. 420 sec | 19. 33 ft |
| 8. 2,000 mL | 20. 250 mm |
| 9. 24 ft | 21. 2,000 mL |
| 10. 100 mm | 22. 120 minutes |
| 11. 9,000 m | 23. 5,000 grams |
| 12. 1,200 cm | 24. 48 inches |

Step-by-Step Explanations

- | | |
|---|---|
| <p>1. Since 1 km = 1,000 m, multiply $3 \times 1,000 = 3,000$ m.</p> <p>2. Since 1 m = 100 cm, multiply $5 \times 100 = 500$ cm.</p> <p>3. Since 1 hour = 60 minutes, multiply $4 \times 60 = 240$ min.</p> <p>4. Since 1 kg = 1,000 g, multiply $2 \times 1,000 = 2,000$ g.</p> <p>5. Since 1 foot = 12 inches, multiply $6 \times 12 = 72$ in.</p> <p>6. Since 1 pound = 16 ounces, multiply $3 \times 16 = 48$ oz.</p> <p>7. Since 1 minute = 60 seconds, multiply $7 \times 60 = 420$ sec.</p> <p>8. Since 1 L = 1,000 mL, multiply $2 \times 1,000 = 2,000$ mL.</p> <p>9. Since 1 yard = 3 feet, multiply $8 \times 3 = 24$ ft.</p> <p>10. Since 1 cm = 10 mm, multiply $10 \times 10 = 100$ mm.</p> <p>11. Since 1 km = 1,000 m, multiply $9 \times 1,000 = 9,000$ m.</p> <p>12. Since 1 m = 100 cm, multiply $12 \times 100 = 1,200$ cm.</p> <p>13. Since 1 hour = 60 minutes, multiply $5 \times 60 = 300$ min.</p> <p>14. Since 1 kg = 1,000 g, multiply $7 \times 1,000 = 7,000$ g.</p> | <p>15. Since 1 foot = 12 inches, multiply $10 \times 12 = 120$ in.</p> <p>16. Since 1 pound = 16 ounces, multiply $8 \times 16 = 128$ oz.</p> <p>17. Since 1 minute = 60 seconds, multiply $15 \times 60 = 900$ sec.</p> <p>18. Since 1 L = 1,000 mL, multiply $6 \times 1,000 = 6,000$ mL.</p> <p>19. Since 1 yard = 3 feet, multiply $11 \times 3 = 33$ ft.</p> <p>20. Since 1 cm = 10 mm, multiply $25 \times 10 = 250$ mm.</p> <p>21. Liters are bigger than milliliters, so multiply. Since 1 L = 1,000 mL, her bottle holds $2 \times 1,000 = 2,000$ mL.</p> <p>22. Each hour has 60 minutes, so multiply $2 \times 60 = 120$. The game lasts 120 minutes.</p> <p>23. Kilograms are bigger than grams, so multiply. Since 1 kg = 1,000 g, the puppy weighs $5 \times 1,000 = 5,000$ g.</p> <p>24. Each foot has 12 inches, so multiply $4 \times 12 = 48$. The bookshelf is 48 inches long.</p> |
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