

# MEASUREMENT

## MATHS AROUND THE WORLD

### PRINTABLE ACTIVITY & PROBLEM-SOLVING PACK

| WHAT'S INSIDE                   | SKILLS                             |
|---------------------------------|------------------------------------|
| Length • Mass/Weight • Capacity | Measure & estimate                 |
| Temperature • Time              | Read & calculate                   |
| Unit conversions                | Convert between units              |
| Area • Perimeter • Volume       | Apply formulas                     |
| Maths Around the World          | Real-life international challenges |

**Suggested age: 10–14 years • Grades 5–8**

**Teacher-friendly • Print-ready • Answer key included**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

# 1. LENGTH

Measure, compare, estimate and solve length problems.

A. Choose a sensible unit: mm, cm, m or km.

1. Length of a pencil: \_\_\_\_\_ 2. Distance between two cities: \_\_\_\_\_

3. Height of a door: \_\_\_\_\_ 4. Thickness of a coin: \_\_\_\_\_

B. Convert: 5. 3 m 45 cm = \_\_\_\_\_ cm 6. 780 cm = \_\_\_\_\_ m \_\_\_\_\_ cm

7. 4.6 km = \_\_\_\_\_ m 8. 2,350 mm = \_\_\_\_\_ m \_\_\_\_\_ cm

C. Estimate then measure a room/classroom. Estimated: \_\_\_\_\_ m Actual: \_\_\_\_\_ m

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## 2. MASS / WEIGHT

Use grams and kilograms to compare, convert and solve problems.

A. Choose g or kg: 1. A packet of rice: \_\_\_\_\_ 2. A paper clip: \_\_\_\_\_ 3. A bicycle: \_\_\_\_\_ 4. An apple: \_\_\_\_\_

B. Convert: 5. 3 kg = \_\_\_\_\_ g 6. 4,500 g = \_\_\_\_\_ kg \_\_\_\_\_ g 7. 2.75 kg = \_\_\_\_\_ g 8. 6,250 g = \_\_\_\_\_ kg \_\_\_\_\_ g

9. A shop receives 8 boxes weighing 2.5 kg each. Total mass? \_\_\_\_\_ kg

10. A 5 kg bag is split equally into 10 packets. Each? \_\_\_\_\_ kg

11. Which is heavier: 2.4 kg or 2,350 g? Explain.

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### 3. CAPACITY

Work with litres and millilitres in practical situations.

A. Choose mL or L: 1. A swimming pool: \_\_\_\_\_ 2. A medicine spoon: \_\_\_\_\_ 3. A water bottle: \_\_\_\_\_ 4. A bucket: \_\_\_\_\_

B. Convert: 5. 4 L = \_\_\_\_\_ mL 6. 3,500 mL = \_\_\_\_\_ L \_\_\_\_\_ mL 7. 2.75 L = \_\_\_\_\_ mL 8. 650 mL = \_\_\_\_\_ L

9. A jug holds 1.5 L. How much do 6 full jugs hold? \_\_\_\_\_ L

10. A 2 L bottle fills 250 mL cups. How many full cups? \_\_\_\_\_

11. A tank contains 7.5 L. 2.25 L is removed. How much remains? \_\_\_\_\_ L

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## 4. TEMPERATURE

Read temperatures, compare changes and interpret real-life contexts.

1. Water freezes at approximately \_\_\_\_\_ °C.
  2. Water boils at approximately \_\_\_\_\_ °C.
  3. Which is colder:  $-3^{\circ}\text{C}$  or  $4^{\circ}\text{C}$ ? \_\_\_\_\_
  4. Which is warmer:  $18^{\circ}\text{C}$  or  $12^{\circ}\text{C}$ ? \_\_\_\_\_
  5. Morning temperature  $6^{\circ}\text{C}$  rises  $9^{\circ}\text{C}$ . Afternoon temperature? \_\_\_\_\_ °C
  6. Temperature  $4^{\circ}\text{C}$  falls  $11^{\circ}\text{C}$ . New temperature? \_\_\_\_\_ °C
  7. A freezer at  $-18^{\circ}\text{C}$  warms by  $5^{\circ}\text{C}$ . New temperature? \_\_\_\_\_ °C
  8. City A is  $28^{\circ}\text{C}$  and City B is  $11^{\circ}\text{C}$ . Difference? \_\_\_\_\_ °C
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## 5. TIME & ELAPSED TIME

Calculate durations and solve timetable-style problems.

A. Convert: 1. 3 hours = \_\_\_\_\_ minutes 2. 240 minutes = \_\_\_\_\_ hours

3. 2.5 hours = \_\_\_\_\_ hours \_\_\_\_\_ minutes 4. 90 seconds = \_\_\_\_\_ minute \_\_\_\_\_ seconds

5. A lesson starts at 9:15 and ends at 10:05. How long? \_\_\_\_\_

6. A train leaves at 14:20 and arrives at 16:05. How long? \_\_\_\_\_

7. A film starts at 18:35 and lasts 1 h 45 min. When does it end? \_\_\_\_\_

8. Study 25 min, break 10 min, study 40 min. Total elapsed time? \_\_\_\_\_

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## 6. UNIT CONVERSIONS

Use the conversion facts to solve mixed measurement problems.

| Conversion | Equivalent |
|------------|------------|
| 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 min     |

1. 5.2 m = \_\_\_\_\_ cm   2. 7.05 km = \_\_\_\_\_ m   3. 8.4 kg = \_\_\_\_\_ g  
4. 3.6 L = \_\_\_\_\_ mL   5. 2,750 mm = \_\_\_\_\_ m   6. 4,500 g = \_\_\_\_\_ kg  
7. 2 h 30 min = \_\_\_\_\_ min   8. 180 min = \_\_\_\_\_ h  
9. A runner completes 3.25 km. How many metres? \_\_\_\_\_ m  
10. A recipe needs 750 mL of water. How many litres? \_\_\_\_\_ L
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## 7. AREA

Calculate and reason about area using square units.

Remember: Rectangle area = length  $\times$  width; square area = side  $\times$  side.

1. Rectangle  $8\text{ cm} \times 5\text{ cm} = \underline{\hspace{2cm}}$   $\text{cm}^2$
2. Rectangle  $12\text{ m} \times 4\text{ m} = \underline{\hspace{2cm}}$   $\text{m}^2$
3. Square side  $7\text{ cm} = \underline{\hspace{2cm}}$   $\text{cm}^2$
4. Garden  $15\text{ m}$  by  $9\text{ m}$ . Area?  $\underline{\hspace{2cm}}$   $\text{m}^2$
5. Rectangle area  $48\text{ cm}^2$  and width  $6\text{ cm}$ . Length?  $\underline{\hspace{2cm}}$   $\text{cm}$
6. Two rectangles have the same area of  $60\text{ m}^2$ . Give two possible dimensions for each.
7. Floor  $6\text{ m}$  by  $4\text{ m}$ ; each tile covers  $1\text{ m}^2$ . Tiles needed?  $\underline{\hspace{2cm}}$

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## 8. PERIMETER

Find the distance around 2D shapes and solve missing-side problems.

Perimeter is the total distance around a shape.

1. Square side 9 cm: \_\_\_\_\_ cm
  2. Rectangle 8 cm  $\times$  5 cm: \_\_\_\_\_ cm
  3. Triangle sides 7 cm, 9 cm, 11 cm: \_\_\_\_\_ cm
  4. Regular pentagon side 6 cm: \_\_\_\_\_ cm
  5. Rectangle perimeter 30 cm, length 9 cm. Width? \_\_\_\_\_ cm
  6. Square perimeter 48 m. Side? \_\_\_\_\_ m
  7. Garden perimeter 50 m; two sides are 15 m each and the other two are equal. Each? \_\_\_\_\_ m
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## 9. VOLUME

Calculate volume using cubic units and apply it to containers.

Remember: Rectangular prism volume = length  $\times$  width  $\times$  height.

1.  $5\text{ cm} \times 3\text{ cm} \times 2\text{ cm} = \underline{\hspace{2cm}}\text{ cm}^3$

2.  $10\text{ m} \times 4\text{ m} \times 2\text{ m} = \underline{\hspace{2cm}}\text{ m}^3$

3. Box  $8\text{ cm} \times 5\text{ cm} \times 4\text{ cm}$ . Volume?  $\underline{\hspace{2cm}}\text{ cm}^3$

4. Volume  $120\text{ cm}^3$ , length  $10\text{ cm}$ , width  $3\text{ cm}$ . Height?  $\underline{\hspace{2cm}}\text{ cm}$

5. Storage box  $0.5\text{ m} \times 0.4\text{ m} \times 0.3\text{ m}$ . Volume?  $\underline{\hspace{2cm}}\text{ m}^3$

6. Which is greater:  $4 \times 5 \times 6$  or  $3 \times 6 \times 7$ ?  $\underline{\hspace{2cm}}$

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## 10. MATHS AROUND THE WORLD — MEASUREMENT CHALLENGE

Travel around the world through realistic measurement problems.

- 1. LONDON — A walking route is 3.6 km. How many metres? \_\_\_\_\_ m
- 2. PARIS — A recipe uses 750 mL of milk. How many litres? \_\_\_\_\_ L
- 3. TOKYO — A train journey is 2 h 35 min. How many minutes? \_\_\_\_\_ min
- 4. DUBAI — Temperature 41°C at midday and 29°C evening. Change? \_\_\_\_\_ °C
- 5. SYDNEY — Trail 8.4 km; group completes 5.75 km. Remaining? \_\_\_\_\_ km
- 6. NEW YORK — Parcel weighs 2.75 kg. How many grams? \_\_\_\_\_ g
- 7. NAIROBI — 12 L shared equally among 4 containers. Each? \_\_\_\_\_ L
- 8. ZURICH — Garden 12 m × 7 m. Area? \_\_\_\_\_ m<sup>2</sup> Perimeter? \_\_\_\_\_ m
- 9. MULTI-CITY — 2.4 km + 1,850 m + 0.75 km. Total in km? \_\_\_\_\_ km
- 10. Create your own measurement problem based on a place in the world. Include at least two units, then solve it.

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## 11. MEASUREMENT MASTER CHALLENGE

Mixed review: choose the right unit, convert, calculate and explain.

1. 4.5 kg = \_\_\_\_\_ g
2. 2,500 mL = \_\_\_\_\_ L
3. 7.2 km = \_\_\_\_\_ m
4. Rectangle 11 cm × 6 cm. Find area and perimeter.
5. Box 9 cm × 4 cm × 3 cm. Find volume.
6. Lesson begins 10:25 and lasts 55 min. Finish time? \_\_\_\_\_
7. Temperature changes  $-4^{\circ}\text{C}$  to  $8^{\circ}\text{C}$ . Change? \_\_\_\_\_  $^{\circ}\text{C}$
8. 6 L shared equally among 8 people. Each? \_\_\_\_\_ L
9. 2.5 m ribbon cut into 25 cm pieces. How many? \_\_\_\_\_
10. Explain why choosing the correct unit matters.

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## ANSWER KEY — PAGES 2–6

Teacher/parent reference.

| Page          | Answers                                                                                                |
|---------------|--------------------------------------------------------------------------------------------------------|
| 2 Length      | 1 cm; 2 km; 3 m; 4 mm; 5 345 cm; 6 7 m 80 cm; 7 4,600 m; 8 2 m 35 cm. Estimation varies.               |
| 3 Mass        | 1 kg; 2 g; 3 kg; 4 g; 5 3,000 g; 6 4 kg 500 g; 7 2,750 g; 8 6 kg 250 g; 9 20 kg; 10 0.5 kg; 11 2.4 kg. |
| 4 Capacity    | 1 L; 2 mL; 3 L; 4 L; 5 4,000 mL; 6 3 L 500 mL; 7 2,750 mL; 8 0.65 L; 9 9 L; 10 8 cups; 11 5.25 L.      |
| 5 Temperature | 1 0°C; 2 100°C; 3 –3°C; 4 18°C; 5 15°C; 6 –7°C; 7 –13°C; 8 17°C.                                       |
| 6 Time        | 1 180 min; 2 4 h; 3 2 h 30 min; 4 1 min 30 sec; 5 50 min; 6 1 h 45 min; 7 20:20; 8 75 min.             |

## ANSWER KEY — PAGES 7–11

Teacher/parent reference.

| Page               | Answers                                                                                                                                   |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 7 Conversions      | 1 520 cm; 2 7,050 m; 3 8,400 g; 4 3,600 mL; 5 2.75 m; 6 4.5 kg; 7 150 min; 8 3 h; 9 3,250 m; 10 0.75 L.                                   |
| 8 Area             | 1 40 cm <sup>2</sup> ; 2 48 m <sup>2</sup> ; 3 49 cm <sup>2</sup> ; 4 135 m <sup>2</sup> ; 5 8 cm; 6 examples: 10×6 and 12×5; 7 24 tiles. |
| 9 Perimeter        | 1 36 cm; 2 26 cm; 3 27 cm; 4 30 cm; 5 6 cm; 6 12 m; 7 10 m.                                                                               |
| 10 Volume          | 1 30 cm <sup>3</sup> ; 2 80 m <sup>3</sup> ; 3 160 cm <sup>3</sup> ; 4 4 cm; 5 0.06 m <sup>3</sup> ; 6 126 is greater.                    |
| 11 World Challenge | 1 3,600 m; 2 0.75 L; 3 155 min; 4 12°C; 5 2.65 km; 6 2,750 g; 7 3 L; 8 84 m <sup>2</sup> and 38 m; 9 5.0 km; 10 answers v                 |
| 12 Mixed           | 1 4,500 g; 2 2.5 L; 3 7,200 m; 4 66 cm <sup>2</sup> and 34 cm; 5 108 cm <sup>3</sup> ; 6 11:20; 7 12°C; 8 0.75 L; 9 10 pieces; 10 answ    |