

GRADE 7

MEASUREMENT & UNIT CONVERSIONS

Complete Printable Worksheet Pack

6 Worksheets	Separate Answer Keys
Metric & Mixed Units	Area & Volume Conversions
Scale & Estimation	Real-Life Problem Solving

Designed for international Grade 7 mathematics practice.

Worksheet 1: Metric Units & Conversions

Show your working where appropriate. Write answers with correct units.

1. Convert 4.75 km to metres.
2. Convert 3,650 g to kilograms.
3. Convert 8.4 L to millilitres.
4. Convert 0.625 m to centimetres.
5. Convert 72,500 mg to grams.
6. Convert 4.08 kg to grams.
7. A ribbon is 2.35 m long. How many centimetres is this?
8. A tank holds 6.75 L. How many millilitres does it hold?
9. Put in ascending order: 2.4 m, 245 cm, 0.024 km, 2,350 mm.
10. Explain which is greater: 0.85 kg or 820 g, and by how much.

Answer Key 1: Metric Units & Conversions

Suggested answers and working. Equivalent methods are acceptable.

1. 4,750 m
2. 3.65 kg
3. 8,400 mL
4. 62.5 cm
5. 72.5 g
6. 4,080 g
7. 235 cm
8. 6,750 mL
9. $2,350 \text{ mm} < 2.4 \text{ m} < 2,450 \text{ mm} (2.45 \text{ m}) < 0.024 \text{ km} (24 \text{ m})$.
10. $0.85 \text{ kg} = 850 \text{ g}$, so it is greater by 30 g.

Worksheet 2: Length, Mass & Capacity Calculations

Show your working where appropriate. Write answers with correct units.

1. A runner completes 3.6 km, then another 850 m. What total distance is this in metres?
2. A shop receives 12.5 kg of rice and sells 3,750 g. How much rice remains?
3. A bottle contains 1.5 L. How much liquid is in 8 identical bottles, in litres?
4. A recipe needs 275 mL of milk per batch. How much milk is needed for 6 batches?
5. A delivery van carries 2.4 tonnes of goods. It unloads 875 kg. How many kilograms remain?
6. A 5 m cable is cut into pieces of 75 cm. How many complete pieces can be made, and how much cable remains?
7. A water container has 18 L. It is filled using 750 mL bottles. How many bottles are needed?
8. A parcel weighs 2.75 kg. Another weighs 1,850 g. What is their combined mass in kilograms?
9. A cyclist travels 4.25 km in the morning and 2,850 m in the afternoon. Find the total distance in kilometres.
10. A tank has 9.6 L. After 2.75 L is used, the remainder is shared equally among 5 containers. How much goes into each?

Answer Key 2: Length, Mass & Capacity Calculations

Suggested answers and working. Equivalent methods are acceptable.

1. 4,450 m
2. 8.75 kg
3. 12 L
4. 1,650 mL
5. 1,525 kg
6. 6 complete pieces, 50 cm remaining
7. 24 bottles
8. 4.6 kg
9. 7.10 km
10. 1.37 L per container

Worksheet 3: Area & Volume Unit Conversions

Show your working where appropriate. Write answers with correct units.

1. Convert 3.5 m^2 to cm^2 .
2. Convert $48,000 \text{ cm}^2$ to m^2 .
3. Convert 2.4 m^3 to litres.
4. Convert $7,500 \text{ mL}$ to litres.
5. A rectangular floor is 6 m by 4.5 m . Find its area in m^2 and cm^2 .
6. A cuboid measures $80 \text{ cm} \times 50 \text{ cm} \times 40 \text{ cm}$. Find its volume in cm^3 and litres.
7. Convert 0.075 m^3 to litres.
8. A garden has area $2,400,000 \text{ cm}^2$. What is its area in m^2 ?
9. A storage box has volume 0.96 m^3 . How many litres is that?
10. Which is larger: 1.2 m^2 or $11,500 \text{ cm}^2$? By how many cm^2 ?

Answer Key 3: Area & Volume Unit Conversions

Suggested answers and working. Equivalent methods are acceptable.

1. 35,000 cm²
2. 4.8 m²
3. 2,400 L
4. 7.5 L
5. 27 m² = 270,000 cm²
6. 160,000 cm³ = 160 L
7. 75 L
8. 240 m²
9. 960 L
10. 1.2 m² = 12,000 cm², so it is larger by 500 cm².

Worksheet 4: Mixed Units & Real-Life Measurement

Show your working where appropriate. Write answers with correct units.

1. A hiking trail is 8 km 450 m long. Write its length in metres.
2. A sack contains 5 kg 250 g of flour. Write its mass in grams.
3. A jug contains 2 L 375 mL. Write its capacity in millilitres.
4. A classroom is 7.5 m long and 6 m wide. Find its area.
5. A rectangular pool is 12 m long, 5 m wide and 1.5 m deep. Find its volume in m^3 .
6. A farmer has 3.2 tonnes of grain and packs it into 25 kg sacks. How many full sacks can be filled?
7. A machine uses 450 mL of oil every hour. How much oil does it use in 9 hours, in litres?
8. A road repair team works on 1.25 km in the morning and 875 m in the afternoon. What distance remains from a 3 km section?
9. A box holds 18 L. It currently contains 12.6 L. How many 600 mL bottles are needed to fill it?
10. A rectangular field is 85 m by 40 m. A path 2 m wide runs all around the inside edge. What is the area of the field not covered by the path?

Answer Key 4: Mixed Units & Real-Life Measurement

Suggested answers and working. Equivalent methods are acceptable.

1. 8,450 m
2. 5,250 g
3. 2,375 mL
4. 45 m²
5. 90 m³
6. 128 full sacks
7. 4.05 L
8. 875 m remaining
9. 9 bottles
10. Outer area 3,400 m²; inner area $81 \text{ m} \times 36 \text{ m} = 2,916 \text{ m}^2$; uncovered area = 2,916 m².

Worksheet 5: Scale, Measurement & Estimation

Show your working where appropriate. Write answers with correct units.

1. A map uses a scale of 1 cm : 5 km. Two towns are 7.4 cm apart on the map. What is the actual distance?
2. A floor plan uses 1 cm : 2 m. A room is shown as 4.5 cm by 3.25 cm. Find the actual dimensions.
3. A recipe is designed for 4 people and uses 650 g of vegetables. How much is needed for 10 people?
4. Estimate $19.8 \text{ m} \times 5.1 \text{ m}$ by rounding each measurement to the nearest metre.
5. A rectangular garden measures 19.7 m by 12.2 m. Estimate its area using whole metres, then calculate the exact area.
6. A 2.8 kg parcel is charged \$6 per kilogram, rounded up to the next whole kilogram. What weight is charged for?
7. A map distance is 9.6 cm at a scale of 1 cm : 2.5 km. A traveller has already covered 17 km. How much remains?
8. A tank is labelled 1,200 L, but it is filled to 78%. Approximately how many litres are in it?
9. A rectangular playground is 48.5 m by 31.8 m. Estimate its perimeter by rounding to the nearest metre.
10. A scale drawing shows a table as 6.2 cm long. The scale is 1 cm : 0.5 m. A 4 m wall is available. Will the table fit along the wall? Show your reasoning.

Answer Key 5: Scale, Measurement & Estimation

Suggested answers and working. Equivalent methods are acceptable.

1. 37 km
2. 9 m by 6.5 m
3. 1,625 g
4. About $20 \times 5 = 100 \text{ m}^2$
5. Estimate $20 \times 12 = 240 \text{ m}^2$; exact = $19.7 \times 12.2 = 240.34 \text{ m}^2$
6. 3 kg charged
7. Total 24 km; 7 km remains
8. 936 L
9. About $2(49+32) = 162 \text{ m}$
10. Actual table length = 3.1 m, so yes; 0.9 m remains.

Worksheet 6: Measurement Challenge

Show your working where appropriate. Write answers with correct units.

1. A rectangular tank measures $2.4\text{ m} \times 1.5\text{ m} \times 1.2\text{ m}$. What is its capacity in litres?
2. A school buys 18 boxes of paper. Each box weighs 2.75 kg. What is the total mass in kg and tonnes?
3. A 7.5 m roll of fabric is cut into 45 cm pieces. How many complete pieces can be cut? How much remains?
4. A map scale is 1 cm : 8 km. A route has three map sections of 3.5 cm, 4.25 cm and 2.75 cm. Find the total real distance.
5. A garden is 24 m by 18 m. A rectangular pond measuring 7.5 m by 4 m is inside it. What area remains for the garden?
6. A container holds 2.4 L. It is filled using a 150 mL cup. How many full cups are needed to fill it?
7. A rectangular prism has volume 1.44 m^3 . Its length is 2.4 m and width is 0.8 m. Find its height.
8. A delivery has 1.85 tonnes of material. It is packed into bags of 25 kg. How many full bags can be made and how much material remains?
9. A 15 m by 10 m rectangular field has a 1.5 m wide path built around the outside. Find the area of the path.
10. A water tank is 75% full and contains 1,350 L. What is the tank's total capacity? How many litres must be added to fill it?

Answer Key 6: Measurement Challenge

Suggested answers and working. Equivalent methods are acceptable.

1. $4.32 \text{ m}^3 = 4,320 \text{ L}$
2. $49.5 \text{ kg} = 0.0495 \text{ tonnes}$
3. 16 complete pieces, 30 cm remaining
4. $10.5 \text{ cm} \times 8 = 84 \text{ km}$
5. $432 - 30 = 402 \text{ m}^2$
6. 16 cups
7. $1.44 \div (2.4 \times 0.8) = 0.75 \text{ m}$
8. 74 full bags, 0 kg remains
9. Outer dimensions $18 \text{ m} \times 13 \text{ m} = 234 \text{ m}^2$; field = 150 m^2 ; path = 84 m^2
10. Total = 1,800 L; add 450 L