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Converting Measurements - Year 6

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Metric Conversion Map

Metric prefixes show powers of ten.
Move one step for each place on the ladder.

Prefix	Value	Length	Mass	Capacity
Kilo	x1000	km	kg	kL
Hecto	x100	hm	hg	hL
Deca	x10	dam	dag	daL
Unit	x1	m	g	L
Deci	x0.1	dm	dg	dL
Centi	x0.01	cm	cg	cL
Milli	x0.001	mm	mg	mL

Larger units:
move left



Smaller units:
move right

Example: 4.5 m = 450 cm

Metric Match Cards

Cut, mix and match each equivalent pair. Check by moving along the metric ladder.



1.2 km



1200 m



450 cm



4.5 m



0.75 L



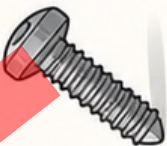
750 mL



3.6 kg



3600 g



82 mm



8.2 cm



0.004 kL



4 L



5600 mg



5.6 g



0.09 m



9 cm



2.5 L

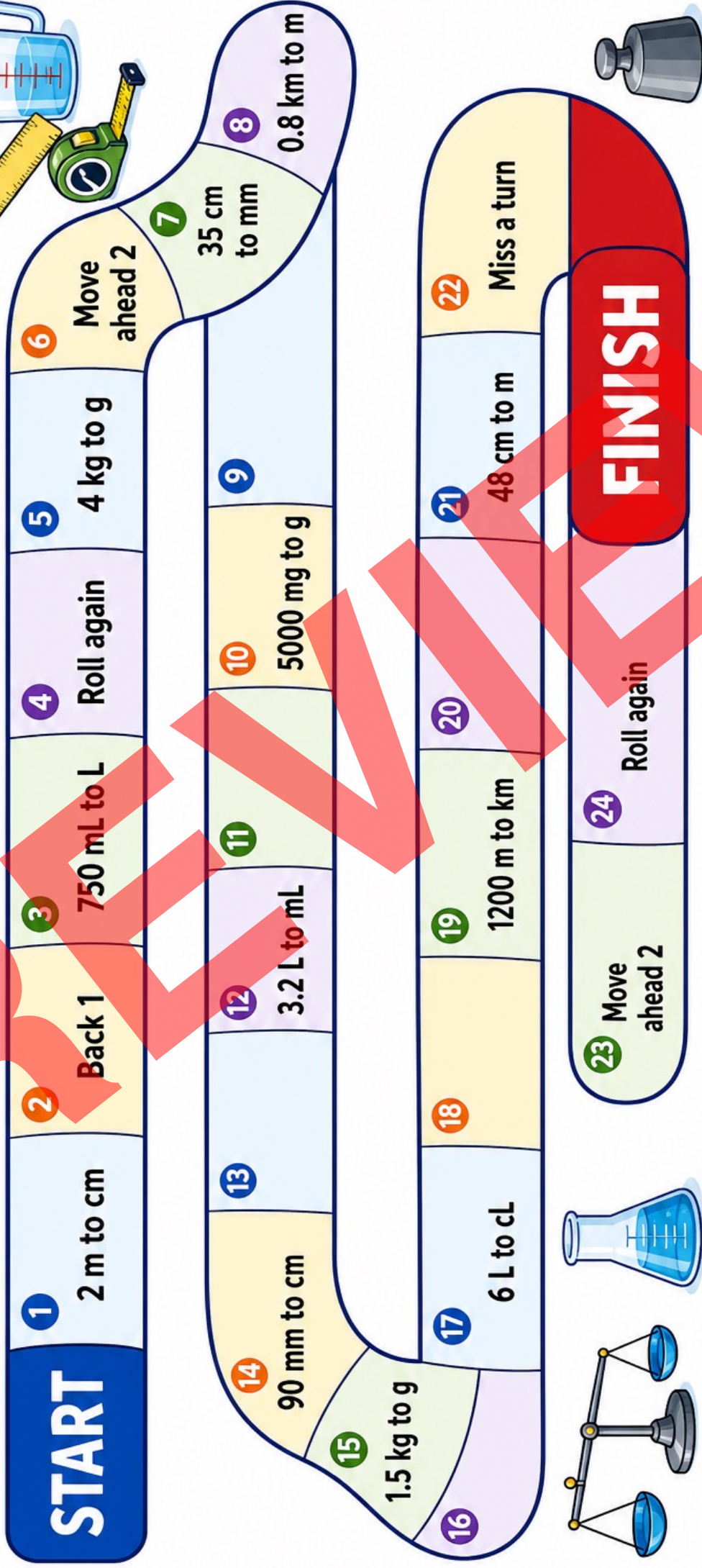


250 cL



Conversion Relay

Convert correctly to move ahead. Check answers with a partner.



1. Roll and move.



2. Solve the space.



3. If correct, stay there.

Metric Prefix Foundations

Name: _____

Date: _____

kilo

hecto

deca

unit

deci

centi

milli

A. Complete the Pattern

kilo	= x1000
hecto	= x100
deca	= x10
unit	= x1
deci	= x0.1
centi	= x0.01
milli	= x0.001

B. Convert

- 1) 7.2 km = _____ m
- 2) 450 cm = _____ m
- 3) 0.35 L = _____ mL
- 4) 6200 g = _____ kg
- 5) 8.04 m = _____ cm
- 6) 52 mm = _____ cm
- 7) 0.006 kg = _____ g
- 8) 3.5 L = _____ cL
- 9) 7800 mL = _____ L
- 10) 0.09 km = _____ m

C. Explain

How do you know which way to move the decimal?

Metric Prefix Foundations

Name: ANSWERS

Date: _____

kilo

hecto

deca

unit

deci

centi

milli

A. Complete the Pattern

kilo	= x1000
hecto	= x100
deca	= x10
unit	= x1
deci	= x0.1
centi	= x0.01
milli	= x0.001

B. Convert

- 1) 7.2 km = 7200 m
- 2) 450 cm = 4.5 m
- 3) 0.35 L = 350 mL
- 4) 6200 g = 6.2 kg
- 5) 8.04 m = 804 cm
- 6) 52 mm = 5.2 cm
- 7) 0.006 kg = 6 g
- 8) 3.5 L = 350 cL
- 9) 7800 mL = 7.8 L
- 10) 0.09 km = 90 m

C. Explain

How do you know which way to move the decimal?

Move towards the target unit on the metric ladder and
shift the decimal the same number of places.

Length Conversion Practice

Name: _____

Date: _____

Convert each length. Show a decimal movement mark or a multiplication/division step for at least six questions.

A. Convert

- 1) 3.6 m = _____ cm
- 2) 0.48 km = _____ m
- 3) 7250 mm = _____ cm
- 4) 6.03 m = _____ mm
- 5) 12 500 cm = _____ m
- 6) 0.007 km = _____ m
- 7) 540 mm = _____ m
- 8) 18.4 dm = _____ cm
- 9) 2.75 m = _____ km
- 10) 906 cm = _____ m
- 11) 0.62 m = _____ mm
- 12) 4.5 km = _____ cm

B. Word Problems

- 13) A training track is 0.4 km long. How many metres is that? _____

- 14) A ribbon is 250 cm long. The class needs 3.2 m. How many more centimetres are needed? _____

Length Conversion Practice

Name: **ANSWERS**

Date: _____

Convert each length. Show a decimal movement mark or a multiplication/division step for at least six questions.

A. Convert

1) 3.6 m = **360** cm

7) 540 mm = **0.54** m

2) 0.48 km = **480** m

8) 18.4 dm = **184** cm

3) 7250 mm = **725** cm

9) 2.75 m = **0.00275** km

4) 6.03 m = **6030** mm

10) 906 cm = **9.06** m

5) 12 500 cm = **125** m

11) 0.62 m = **620** mm

6) 0.007 km = **7** m

12) 4.5 km = **450 000** cm

B. Word Problems

13) A training track is 0.4 km long. How many metres is that? **400 m**

14) A ribbon is 250 cm long. The class needs 3.2 m. How many more centimetres are needed? **70 cm**

Mass Conversion Practice

Name: _____

Date: _____

Convert each mass. Use the metric ladder to decide whether the number should get larger or smaller.

A. Convert

- 1) 5.4 kg = _____ g
- 2) 0.86 g = _____ mg
- 3) 12 500 mg = _____ g
- 4) 7.25 hg = _____ g
- 5) 0.034 kg = _____ g
- 6) 920 cg = _____ g
- 7) 4.6 g = _____ mg
- 8) 0.8 dag = _____ g
- 9) 56 000 mg = _____ kg
- 10) 3.05 kg = _____ cg
- 11) 0.075 kg = _____ dg
- 12) 640 g = _____ kg

B. Reasoning

- 13) A parcel limit is 2.5 kg. An item has a mass of 2480 g. Is it under the limit? Explain.

- 14) Order from lightest to heaviest: 0.45 kg, 425 g, 50 000 cg

Mass Conversion Practice

Name: ANSWERS

Date: _____

Convert each mass. Use the metric ladder to decide whether the number should get larger or smaller.

A. Convert

- 1) 5.4 kg = 5400 g 7) 4.6 g = 4600 mg
2) 0.86 g = 860 mg 8) 0.8 dag = 8 g
3) 12 500 mg = 12.5 g 9) 56 000 mg = 0.056 kg
4) 7.25 hg = 725 g 10) 3.05 kg = 305 000 cg
5) 0.034 kg = 34 g 11) 0.075 kg = 750 dg
6) 920 cg = 9.2 g 12) 640 g = 0.64 kg

B. Reasoning

- 13) A parcel limit is 2.5 kg. An item has a mass of 2480 g. Is it under the limit? Explain.

Under by 20 g (0.02 kg).

- 14) Order from lightest to heaviest: 0.45 kg, 425 g, 50 000 cg

425 g, 0.45 kg, 50 000 cg

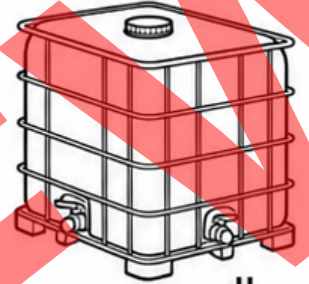
Capacity Conversion Practice

Name: _____

Date: _____

Convert each capacity. Check whether the answer should be larger or smaller.

A. Convert



1) $2.4 \text{ L} =$ _____ mL

7) $0.42 \text{ L} =$ _____ dL

2) $750 \text{ mL} =$ _____ L

8) $3.05 \text{ hL} =$ _____ L

3) $0.035 \text{ kL} =$ _____ L

9) $0.006 \text{ kL} =$ _____ cL

4) $68 \text{ cL} =$ _____ mL

10) $47 \text{ dL} =$ _____ L

5) $5.6 \text{ L} =$ _____ cL

11) $0.58 \text{ L} =$ _____ mL

6) $1200 \text{ mL} =$ _____ L

12) $9000 \text{ mL} =$ _____ L

B. Word Problems

- 13) A recipe needs 1.25 L. The jug has 750 mL.
How many more millilitres are needed? _____



- 14) A tank holds 0.08 kL. How many 2 L jugs would fill it? _____



Capacity Conversion Practice

Name: **ANSWERS**

Date: _____

Convert each capacity. Check whether the answer should be larger or smaller.

A. Convert



1) $2.4 \text{ L} = \underline{2400} \text{ mL}$

7) $0.42 \text{ L} = \underline{4.2} \text{ dL}$

2) $750 \text{ mL} = \underline{0.75} \text{ L}$

8) $3.05 \text{ hL} = \underline{305} \text{ L}$

3) $0.035 \text{ kL} = \underline{35} \text{ L}$

9) $0.006 \text{ kL} = \underline{600} \text{ cL}$

4) $68 \text{ cL} = \underline{680} \text{ mL}$

10) $47 \text{ dL} = \underline{4.7} \text{ L}$

5) $5.6 \text{ L} = \underline{560} \text{ cL}$

11) $0.58 \text{ L} = \underline{580} \text{ mL}$

6) $1200 \text{ mL} = \underline{1.2} \text{ L}$

12) $9000 \text{ mL} = \underline{9} \text{ L}$

B. Word Problems

- 13) A recipe needs 1.25 L. The jug has 750 mL.
How many more millilitres are needed? 500 mL



- 14) A tank holds 0.08 kL. How many 2 L jugs would fill it? 40 jugs



Mixed Metric Challenge

Name: _____

Date: _____

Convert the measurements, then complete the reasoning questions.

A. Convert

- 1) $0.004 \text{ km} = \underline{\hspace{2cm}} \text{ m}$
- 2) $9800 \text{ mg} = \underline{\hspace{2cm}} \text{ g}$
- 3) $72 \text{ cL} = \underline{\hspace{2cm}} \text{ L}$
- 4) $3.75 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$
- 5) $0.052 \text{ kg} = \underline{\hspace{2cm}} \text{ cg}$
- 6) $64 \text{ mm} = \underline{\hspace{2cm}} \text{ m}$
- 7) $15.8 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$
- 8) $2400 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$
- 9) $0.63 \text{ hL} = \underline{\hspace{2cm}} \text{ L}$
- 10) $5.06 \text{ m} = \underline{\hspace{2cm}} \text{ mm}$

B. Reasoning

- 11) Circle the larger amount: 0.75 km or 720 m
- 12) Mia says $4.5 \text{ L} = 45 \text{ mL}$. Correct her answer and explain the mistake.

- 13) Why does converting centimetres to kilometres move the decimal five places left?

Mixed Metric Challenge

Name: ANSWERS

Date: _____

Convert the measurements, then complete the reasoning questions.

A. Convert

- 1) $0.004 \text{ km} = \underline{4} \text{ m}$ 6) $64 \text{ mm} = \underline{0.064} \text{ m}$
2) $9800 \text{ mg} = \underline{9.8} \text{ g}$ 7) $15.8 \text{ L} = \underline{15\,800} \text{ mL}$
3) $72 \text{ cL} = \underline{0.72} \text{ L}$ 8) $2400 \text{ g} = \underline{2.4} \text{ kg}$
4) $3.75 \text{ m} = \underline{375} \text{ cm}$ 9) $0.63 \text{ hL} = \underline{63} \text{ L}$
5) $0.052 \text{ kg} = \underline{5200} \text{ cg}$ 10) $5.06 \text{ m} = \underline{5060} \text{ mm}$

B. Reasoning

- 11) Circle the larger amount: 0.75 km or 720 m
- 12) Mia says $4.5 \text{ L} = 45 \text{ mL}$. Correct her answer and explain the mistake.
 $4.5 \text{ L} = 4500 \text{ mL}$; Mia moved too few places.
- 13) Why does converting centimetres to kilometres move the decimal five places left?
From centi to kilo is five places left on the metric ladder.

Metric Conversion Check-Up - Page 1

Name: _____

Date: _____

Year 6 Mathematics - AC9M6M01

A. Metric Reference

kilo	hecto	deca	unit	deci	centi	milli
km/kg/kL	hm/hg/hL	dam/dag/daL	m/g/L	dm/dg/dL	cm/cg/cL	mm/mg/mL

B. Convert

- 1) 6.8 km = _____ m
- 2) 0.54 m = _____ cm
- 3) 3200 mm = _____ m
- 4) 0.003 kg = _____ g
- 5) 18.5 g = _____ mg
- 6) 7500 mg = _____ kg
- 7) 4.06 L = _____ mL
- 8) 920 cL = _____ L
- 9) 0.025 kL = _____ L
- 10) 63 dm = _____ m
- 11) 0.7 dag = _____ g
- 12) 8 dL = _____ mL

Metric Conversion Check-Up - Page 1

Name: **ANSWERS**

Date: _____

Year 6 Mathematics - AC9M6M01

A. Metric Reference

kilo	hecto	deca	unit	deci	centi	milli
km/kg/kL	hm/hg/hL	dam/dag/dal	m/g/L	dm/dg/dL	cm/cg/cL	mm/mg/mL

B. Convert

- 1) 6.8 km = 6800 m
- 2) 0.54 m = 54 cm
- 3) 3200 mm = 3.2 m
- 4) 0.003 kg = 3 g
- 5) 18.5 g = 18 500 mg
- 6) 7500 mg = 0.0075 kg
- 7) 4.06 L = 4060 mL
- 8) 920 cL = 9.2 L
- 9) 0.025 kL = 25 L
- 10) 63 dm = 6.3 m
- 11) 0.7 dag = 7 g
- 12) 8 dL = 800 mL

Metric Conversion Check-Up - Page 2

Name: _____

Date: _____

Year 6 Mathematics - AC9M6M01

Show your working and write the unit in every answer.

- 13) A school fun run is 1.25 km. Ava has completed 840 m. How many metres are left?

- 14) A science group needs 2.5 L of water. They have 650 mL in a beaker and 1.2 L in a flask. How many more millilitres do they need?

- 15) A bag limit is 3 kg. Three items weigh 1250 g, 0.9 kg and 780 g. Is the bag under or over the limit? Show your working.

- 16) Explain why $45 \text{ cm} = 0.00045 \text{ km}$.

- 17) Noah changed 0.36 L to 36 mL. Write the correct answer and explain the error.

Metric Conversion Check-Up - Page 2

Name: **ANSWERS**

Date: _____

Year 6 Mathematics - AC9M6M01

Show your working and write the unit in every answer.

- 13) A school fun run is 1.25 km. Ava has completed 840 m. How many metres are left?

$1.25 \text{ km} = 1250 \text{ m}; 1250 - 840 = 410 \text{ m left.}$

- 14) A science group needs 2.5 L of water. They have 650 mL in a beaker and 1.2 L in a flask. How many more millilitres do they need?

$2.5 \text{ L} = 2500 \text{ mL}; 2500 - 650 - 1200 = 650 \text{ mL.}$

- 15) A bag limit is 3 kg. Three items weigh 1250 g, 0.9 kg and 780 g. Is the bag under or over the limit? Show your working.

$1250 \text{ g} + 900 \text{ g} + 780 \text{ g} = 2930 \text{ g}; \text{under by } 70 \text{ g.}$

- 16) Explain why $45 \text{ cm} = 0.00045 \text{ km}$.

$45 \text{ cm} = 0.45 \text{ m} = 0.00045 \text{ km}; \text{move five places left.}$

- 17) Noah changed 0.36 L to 36 mL. Write the correct answer and explain the error.

$0.36 \text{ L} = 360 \text{ mL}; \text{Noah moved two places, not three.}$

Converting Measurements Yr6 Rubric

Criterion	BEGINNING	DEVELOPING	ACHIEVING	CONFIDENT	EXCEEDING
Metric relationships	Needs support to identify units and prefixes.	Identifies common units with some errors.	Uses metric prefixes and base units correctly.	Chooses efficient relationships across length, mass and capacity.	Explains metric structure flexibly across unfamiliar units.
Conversion accuracy	Often moves the decimal the wrong way.	Converts simple examples with partial accuracy.	Converts most values accurately using powers of ten.	Converts decimals and larger numbers accurately.	Checks and corrects complex conversions independently.
Problem solving	Needs help to select information from problems.	Solves one-step problems with guidance.	Solves routine length, mass and capacity problems.	Solves multi-step problems and keeps units clear.	Applies conversion strategies to justify efficient solutions.
Reasoning and communication	Gives little explanation of method.	Explains steps using some correct vocabulary.	Explains decimal movement and unit changes clearly.	Uses mathematical language to justify and check answers.	Communicates precise reasoning and evaluates reasonableness.

Converting Measurements



Why Conversions Matter

Length, mass and capacity often use different metric units.

A clear conversion method helps us compare, calculate and explain measurements.



Converting Measurements Quiz



Question 1

Which statement is correct?

A. $1 \text{ km} = 100 \text{ m}$

B. $1 \text{ m} = 100 \text{ cm}$

C. $1 \text{ L} = 100 \text{ mL}$

D. $1 \text{ kg} = 100 \text{ g}$



Answer

B. $1 \text{ m} = 100 \text{ cm}$

