NAME _____

Lesson 1 Metric Prefixes

A **metre** is a unit of *length*.

A **litre** is a unit of *capacity*.

A **gram** is a unit of *mass*.

Kilo means 1000.	*Kilometre* means 1000 m.
Hecto means 100.	*Hectolitre* means 100 L.
Deca means 10.	*Decagram* means 10 g.
Deci means 0.1.	*Decimetre* means _____ m.
Centi means 0.01.	*Centilitre* means _____ L.
Milli means 0.001.	*Milligram* means _____ g.

The most commonly used prefixes are *kilo, centi,* and *milli.*

CHAPTER 7

Tell whether the following would be measured in *metres, litres,* or *grams.*

	a	*b*
1.	amount of juice in a glass _____	mass of a pencil _____
2.	distance a baseball is thrown _____	length of a bus _____
3.	amount of fuel in a truck _____	mass of a bird _____

Complete the following as shown.

4.	Kilolitre means 1000 L.	Kilogram means _____.
5.	Centigram means _____.	Centimetre means _____.
6.	Millilitre means _____.	Millimetre means _____.

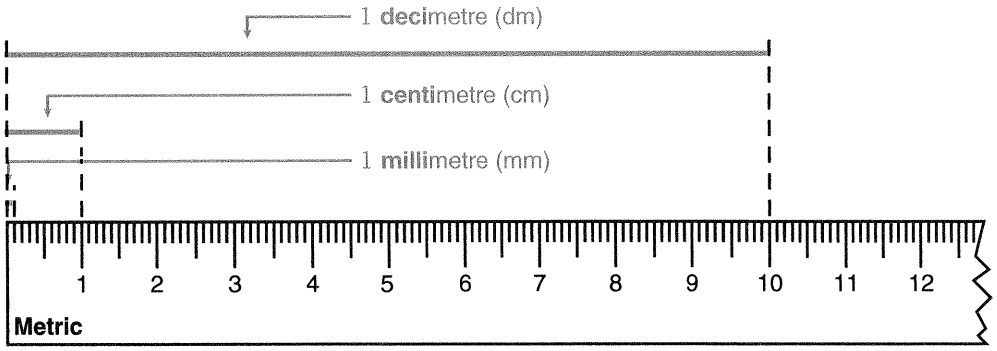
Name two things that could be measured with each of the following.

7.	metres _____	_____
8.	litres _____	_____
9.	grams _____	_____

NAME _____

Lesson 2 Length

To name a unit of length other than the metre, a *prefix* is attached to the word *metre*. This prefix denotes the relationship of that particular unit to the metre.



1 mm = 0.001 m

1 dm = _____ m

1 cm = _____ m

1 **kilo**metre (km) = 1000 m

In each pair of measurements below, circle the measurement for the greater length.

	a	*b*	*c*
1.	1 km ; 1 dm	1 dm ; 1 cm	1 km ; 1 mm
2.	1 mm ; 1 dm	1 cm ; 1 km	1 cm ; 1 mm

Complete the following.

	a	*b*	*c*
3.	1 m = _____ cm	1 m = _____ mm	1 m = _____ dm
4.	0.01 m = _____ cm	0.001 m = _____ mm	0.1 m = _____ dm
5.	1000 m = _____ km	1 m = _____ km	0.001 km = _____ m

NAME _____

Lesson 3 Units of Length

To change from	to millimetres, multiply by	to centimetres, multiply by	to metres, multiply by	to kilometres, multiply by
millimetres		0.1	0.001	0.000 001
centimetres	10		0.01	0.00 001
metres	1000	100		0.001
kilometres	1 000 000	100 000	1000	

Using the table makes it easy to complete exercises like the following.

8.43 km = ? m
1 km = 1000 m
8.43 km = (8.43 × 1000) m
8.43 km = 8430 m

75 mm = ? cm
1 mm = 0.1 cm
75 mm = (75 × 0.1) cm
75 mm = _____ cm

CHAPTER 7

Complete.

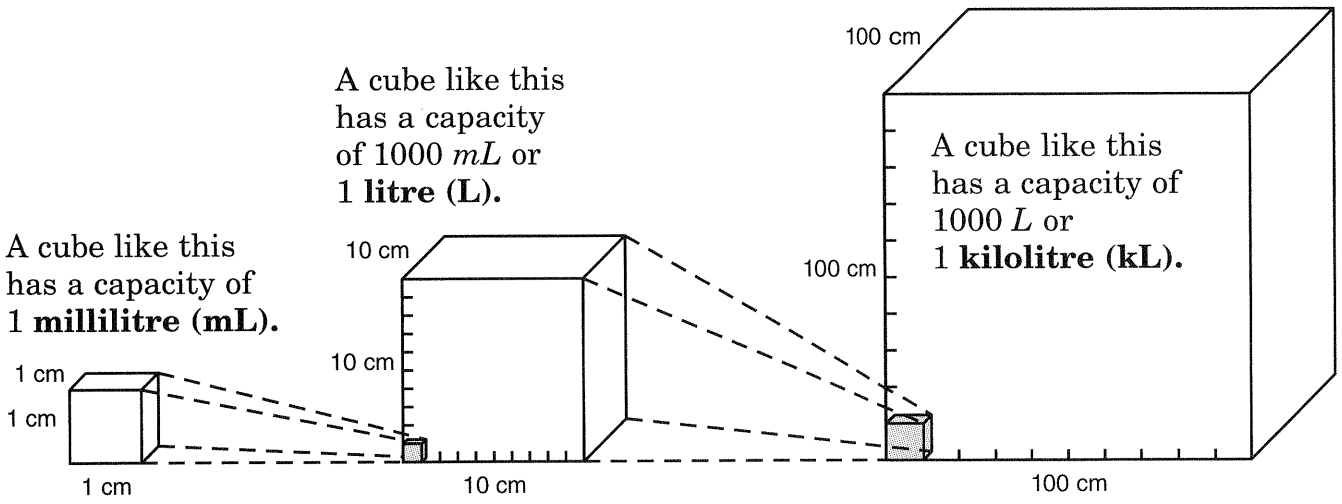
	a	*b*
1.	5 km = _____ m	0.452 km = _____ m
2.	38 m = _____ km	948 m = _____ km
3.	7.5 m = _____ cm	80 m = _____ cm
4.	4 cm = _____ m	75 cm = _____ m
5.	92 cm = _____ mm	4.86 cm = _____ mm
6.	92 mm = _____ cm	7 mm = _____ cm
7.	0.5 m = _____ mm	0.003 m = _____ mm
8.	92 mm = _____ m	3600 mm = _____ m

9. A city block is about 200 m long.
How long is a city block in kilometres? _____

10. How long would five city blocks be in metres? _____ In kilometres? _____

NAME _____

Lesson 4 Capacity



1000 mL = 1 L
0.001 L = 1 mL

1000 L = 1 kL
0.001 kL = 1 L

Underline the measurement for the greater amount.

	a	*b*
1.	10 L, 10 kL	100 mL, 1 kL
2.	0.1 kL, 1000 L	10 mL, 1 L
3.	1000 L, 10 000 mL	0.001 kL, 1 mL
4.	500 L, 1 kL	700 mL, 1 L

Complete the following.

5.	1 L = _____ mL	0.1 L = _____ mL
6.	1 kL = _____ L	0.01 kL = _____ L
7.	0.001 kL = _____ L	1000 mL = _____ L
8.	100 L = _____ kL	10 kL = _____ L

NAME _____

Lesson 5 Units of Capacity

1.2 kL = ? L

1 kL = 1000 L

1.2 kL = (1.2 × 1000) L

1.2 kL = 1200 L

54 L = ? kL

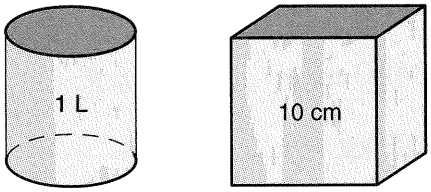
1 L = 0.001 kL

54 L = (54 × 0.001) kL

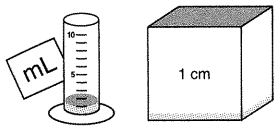
54 L = _____ kL

Complete the following.

	a	*b*
1.	6.4 L = _____ mL	6000 mL = _____ L
2.	25 kL = _____ L	752 L = _____ kL
3.	78 L = _____ mL	529 mL = _____ L
4.	0.986 kL = _____ L	42 L = _____ kL
5.	7.5 L = _____ mL	7.5 mL = _____ L
6.	7.5 kL = _____ L	7.5 L = _____ kL



1 L of water will fill a cube with side length 10 cm.



1 mL of water will fill a cube with side length 1 cm.

Would you use millilitres or litres to measure each of the following?

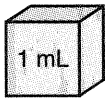
7.	a dose of cough medicine	L	mL
8.	water in an aquarium	L	mL
9.	perfume in a bottle	L	mL

CHAPTER 7

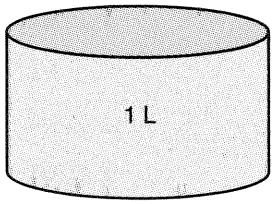
NAME _____

Lesson 6 Units of Mass

An aspirin tablet has a mass of about 350 **milligrams (mg).**



1 mL of water has a mass of 1 **gram (g).**



1 L of water has a mass of 1 **kilogram (kg).**

1000 mg = 1 g	1000 g = 1 kg
0.001 g = 1 mg	0.001 kg = 1 g

65 g = ? mg

1 g = 1000 mg

65 g = (65 × 1000) mg

65 g = 65 000 mg

250 g = ? kg

1 g = 0.001 kg

250 g = (250 × 0.001) kg

250 g = _____ kg

Complete the following.

	a	*b*
1.	26 g = _____ mg	6.2 g = _____ mg
2.	75.2 mg = _____ g	2420 mg = _____ g
3.	89 kg = _____ g	7.5 kg = _____ g
4.	835 g = _____ kg	5.6 g = _____ kg
5.	60.5 g = _____ mg	60.5 g = _____ kg

6. A teaspoon holds about 5 mL of water. What is the mass of 5 mL in grams? In milligrams?

It's mass is _____ g.

It's mass is _____ mg.

6.

7. A nickel has a mass of about 5 g. What is the mass of 200 nickels in grams? In kilograms?

200 nickels have a mass of about _____ g.

200 nickels have a mass of about _____ kg.

7.

NAME _____

Lesson 7 Problem Solving

Solve each problem.

1. A pitcher contained 1.2 L of milk. You used 250 mL of milk from the pitcher. How many millilitres of milk are left in the pitcher?

_____ mL are left.

1.

2. Megan says she is 1.6 m tall. Nicole says she is 162 cm tall. Who is taller? How many centimetres taller?

_____ is _____ cm taller.

2.

3. A jet flew 1 km on 15 L of fuel. How many kilolitres of fuel are needed for the jet to fly 3000 km?

The jet would need _____ kL of fuel.

3.

4. 2 L of grape juice will fill eight glasses of the same size. What is the capacity of each glass in millilitres?

Each glass has a capacity of _____ mL.

4.

5. Tim bought 6 kg of meat for $25.20. What was the cost per kilogram?

The cost was $_____ per kilogram.

5.

6. During a contest, Frog A jumped 59.3 cm. Frog B jumped 590 mm. Which frog jumped farther? How many centimetres farther?

Frog _____ jumped _____ cm farther.

6.

7. Ben drove 158 km. Ali drove 230 km. How much farther than Ben did Ali drive?

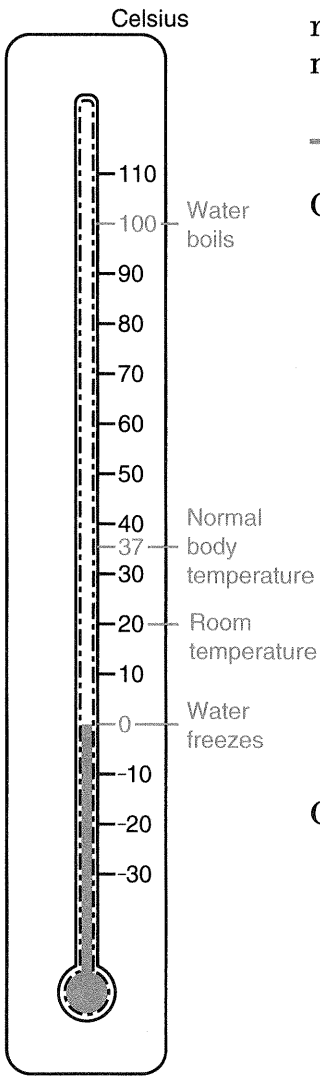
She drove _____ km farther.

7.

CHAPTER 7

NAME _____

Lesson 8 Temperature



A thermometer measures temperature. This thermometer reads 0°C. Temperatures below 0°C are written with a negative sign: −5°C.

Complete each of the following.

1. What is room temperature? _____°C
2. At what temperature does water freeze? _____°C
3. How many degrees warmer is room temperature than the temperature at which water freezes? _____°C
4. At what temperature does water boil? _____°C
5. What is normal body temperature? _____°C
6. How many degrees warmer is the temperature at which water boils than normal body temperature? _____°C

Circle the correct answer.

7.	swimming weather	15°C	28°C
8.	snow-skiing weather	10°C	−5°C
9.	waterskiing weather	27°C	86°C
10.	shirt-sleeve weather	10°C	30°C
11.	water would be frozen	28°C	−2°C
12.	water would be boiling	112°C	85°C

What outdoor activity might be appropriate for each temperature given below?

13. 25°C _____

14. 0°C _____

NAME _____

CHAPTER 7 PRACTICE TEST
Metric Measurement

Measure each line segment to the nearest unit as indicated.

1. _____ cm

2. _____ mm

Complete the following.

	a	*b*
3.	25 cm = _____ mm	35 m = _____ cm
4.	6 km = _____ m	7 m = _____ km
5.	260 cm = _____ m	600 mm = _____ m
6.	7.5 m = _____ mm	2.5 mm = _____ cm
7.	12 L = _____ mL	13.5 mL = _____ L
8.	5.4 kL = _____ L	1200 L = _____ kL
9.	0.045 L = _____ mL	260 L = _____ kL
10.	58 kg = _____ g	400 g = _____ kg
11.	3000 mg = _____ g	3.8 kg = _____ g
12.	0.6 g = _____ mg	50 mg = _____ g

13. Water freezes at _____°C.

14. Water boils at _____°C.

Solve each problem.

15. There are 5.5 kL of water in a tank. If 3200 L of water are used, how many litres will be in the tank? How many kilolitres is that?

There will be _____ L in the tank.

That is _____ kL.

16. Chloe jumped 1.45 m. Evan jumped 138 cm. Who jumped farther? How much farther?

_____ jumped _____ cm farther.

15.

16.

CHAPTER 7

NAME _____

CHAPTER 8 PRETEST

More Metric Measurement and Estimation

Complete the following.

	a	*b*
1.	40 mm = _____ cm	4 cm = _____ mm
2.	48 h = _____ days	5 m = _____ cm
3.	3 h = _____ min	5 kg = _____ g
4.	2000 L = _____ kL	5 min 4 s= _____ s
5.	4000 g = _____ kg	3 kL = _____ L
6.	8000 mL = _____ L	7 g = _____ mg

Add, subtract, or multiply.

	a	*b*	*c*
7.	8 h 3 min +2 h 4 min	3 min 49 s −1 min 27 s	2 kg ×4
8.	5 min 2 s +2 min 2 s	5 h 2 min −2 h 3 min	1 kg ×7

Round as indicated.

	a	*b*	*c*
	nearest ten	*nearest hundred*	*nearest thousand*
9. 8324	_____	_____	_____
10. 74 485	_____	_____	_____