Merit Tutoring


# Year 4 Mathematics

## Length Workshop

### Worksheet 31: Units & Scaled Instruments

**Name:** _____ **Date:** _____

**Section 1: Fluency - Choosing Units**

Select the most appropriate unit of measurement for each object.

**Remember:** mm = millimetres, cm = centimetres, m = metres, km = kilometres

**1.** Which unit would you use to measure a ladybug?

Circle one: **mm** **cm** **m** **km**

Answer: _____

**2.** Which unit would you use to measure the distance between Sydney and Melbourne?

Circle one: **mm** **cm** **m** **km**

Answer: _____

**3.** Which unit would you use to measure the height of your desk?

Circle one: **mm** **cm** **m** **km**

Answer: _____

**4.** Which unit would you use to measure the length of a football field?


Answer: _____

**5.** Which unit would you use to measure the width of a pencil?

Answer: _____

**6.** Which unit would you use to measure the distance you travel in a car on a long trip?

Answer: _____

**7.** Match each object with the most suitable unit:

Thickness of a coin _____
Length of a swimming pool _____
Distance between two cities _____
Height of a door _____

**8.** Would you measure your height in centimetres or kilometres? Why?

Answer: _____

_____


**Metric Master!**

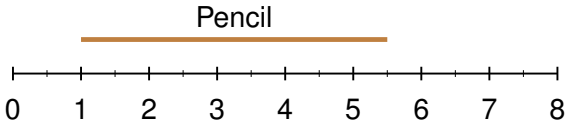
*Why did the ruler go to school?*

*Because it wanted to be a 'measure' of success!*


## Section 2: Visual Modeling - Reading a Ruler

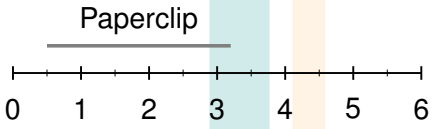
Read measurements from scaled instruments.

**9.** Look at this ruler. How long is the pencil in centimetres?




Answer: _____ cm

**10.** What is the length of this paperclip in centimetres and millimetres?

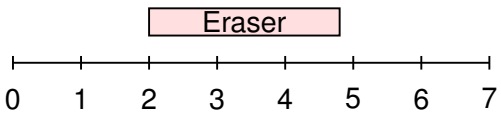



Answer: _____ cm or _____ mm

**11.** Read the measurement shown by the arrow:

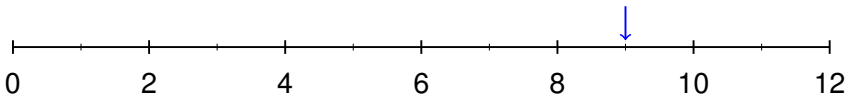

Answer: _____ cm

**12.** How long is this eraser?



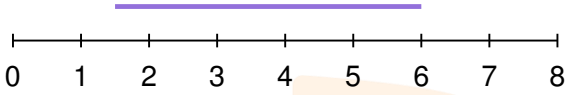

Answer: _____ cm


**13.** What measurement is shown?




Answer: _____ cm

**14.** The line below is measured in centimetres. Write its length:




Answer: _____ cm

**Ruler Reader!**

*Why did the ruler feel happy?*

*Because every line counted!*




## Section 3: Reasoning - Estimation

Estimate and explain your thinking about length measurements.

**15.** Estimate the length of your classroom door in metres. Explain why you chose that number.

Estimate: _____ metres

Explanation: _____

_____

**16.** Which is a better estimate for the height of a Year 4 student?
Circle one: **50 cm** **140 cm** **300 cm**

Explain your choice: _____

**17.** Estimate the length of your school playground. Would it be closer to 50 m or 500 m?

Answer: _____

**18.** Circle the most reasonable estimate for the width of your hand:
**8 mm** **8 cm** **8 m**

**19.** Would a pencil be about 2 cm, 20 cm, or 200 cm long?

Answer: _____

**20.** Estimate how many steps it would take you to walk 10 metres. Explain




your thinking.

Estimate: _____ steps

Explanation: _____

_____

**21.** Is the distance from your house to school more likely to be 2 km or 200 km?

Answer: _____

**22.** Estimate the height of your teacher. Would it be about 1 m, 2 m, or 5 m?

Answer: _____

**Length Legend!**

*Why did the giraffe love measurement?*

*Because it could always reach the highest estimates!*

**Great work! You're becoming a measurement expert!**


# Answer Key

## Worksheet 31: Units & Scaled Instruments

### Section 1: Fluency - Choosing Units

**1.** Answer: **mm or cm** (millimetres or centimetres - both acceptable)
**2.** Answer: **km** (kilometres)
**3.** Answer: **cm** (centimetres)
**4.** Answer: **m** (metres)
**5.** Answer: **mm** (millimetres)
**6.** Answer: **km** (kilometres)
**7.** Answers:

- Thickness of a coin: **mm**
- Length of a swimming pool: **m**
- Distance between two cities: **km**
- Height of a door: **m or cm**

**8.** Answer: **Centimetres. Kilometres are far too large - they're used for long distances like between cities. Height is much shorter.**

### Section 2: Visual Modeling - Reading a Ruler

**9.** Answer: **4.5 cm**
**10.** Answer: **2.7 cm or 27 mm**
**11.** Answer: **7.5 cm**
**12.** Answer: **2.8 cm**
**13.** Answer: **9 cm**
**14.** Answer: **4.5 cm**


## Section 3: Reasoning - Estimation

**15.** Estimate: **About 2 metres** (accept 1.8-2.2 m)
Explanation: **Most doors are about as tall as an adult, which is around 2 metres.**
**16.** Answer: **140 cm**
Explanation: **50 cm is too short (that's about waist height), and 300 cm is too tall (that's 3 metres!). 140 cm is reasonable for a Year 4 student.**
**17.** Answer: **Closer to 50 m**
**18.** Answer: **8 cm**
**19.** Answer: **20 cm** (about the length of a standard pencil)
**20.** Estimate: **Accept 10-15 steps** (depends on student's stride)
Explanation: **Each step is roughly 1 metre, so 10 steps would be about 10 metres.**
**21.** Answer: **2 km** (200 km would be a very long journey!)
**22.** Answer: **About 2 m** (most adults are between 1.6-1.9 m tall)




# Year 4 Mathematics

## Length Workshop

### Worksheet 32: Conversions & Perimeter

**Name:** _____ **Date:** _____

## Section 1: Fluency - Simple Conversions

Convert between different units of length.

**Remember:** 10 mm = 1 cm, 100 cm = 1 m, 1000 m = 1 km

**1.** How many centimetres are in 3 metres?

Answer: _____ cm

**2.** Convert 2,500 metres into kilometres and metres.

Answer: _____ km and _____ m

**3.** How many millimetres are in 5 centimetres?

Answer: _____ mm

**4.** Convert 450 centimetres into metres and centimetres.

Answer: _____ m and _____ cm

**5.** How many metres are in 7 kilometres?


Answer: _____ m

**6.** Convert 85 millimetres into centimetres and millimetres.

Answer: _____ cm and _____ mm

**7.** Complete: 600 cm = _____ m

**8.** Complete: 4 km = _____ m

**9.** Which is longer: 150 cm or 1 m? By how much?

Answer: _____

**10.** Convert 3 m 45 cm into centimetres only.

Answer: _____ cm


**Conversion Champion!**

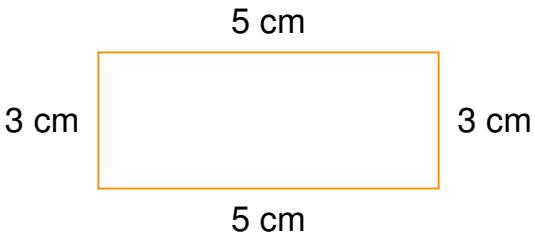
*Why did the centimetre feel important?*

*Because it knew 100 of them made a metre!*


## Section 2: Problem Solving - Calculating Perimeter

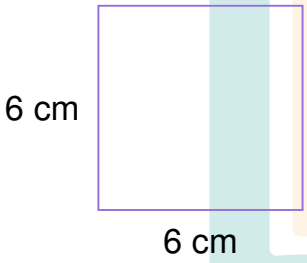
Find the perimeter of shapes by adding all the side lengths.

**11.** Calculate the perimeter of this rectangle:



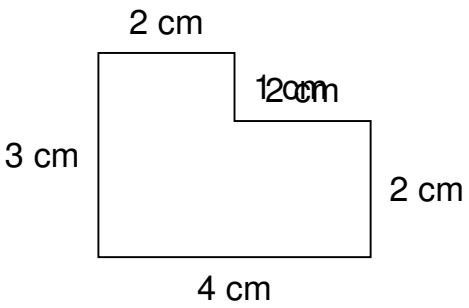

Perimeter = _____ cm

**12.** Find the perimeter of this square:




Perimeter = _____ cm

**13.** Calculate the perimeter of this shape:




Perimeter = _____ cm

**14.** A rectangular garden is 8 metres long and 5 metres wide. What is its perimeter?

Perimeter = _____ m

**15.** Find the perimeter:


Perimeter = _____ cm

**16.** A triangle has sides of length 5 cm, 6 cm, and 4 cm. What is the perimeter?

Perimeter = _____ cm

**17.** The perimeter of a square is 24 cm. How long is each side?

Answer: _____ cm


**Perimeter Pro!**

*Why did the rectangle love its perimeter?*

*Because it surrounded it with care!*


## Section 3: Challenge - Multi-step Length Problems

Solve problems involving multiple conversions or calculations.

**18.** An ant crawls 80 cm, then another 40 cm. How many metres and centimetres has it crawled in total?

Answer: _____ m and _____ cm

**19.** Sarah walks 1 km 250 m to school. How many metres does she walk in total?

Answer: _____ m

**20.** A ribbon is 2 m 35 cm long. If 65 cm is cut off, how much is left? Give your answer in cm.

Answer: _____ cm

**21.** Tom runs 400 m on Monday, 550 m on Tuesday, and 450 m on Wednesday. How many kilometres and metres did he run in total?

Answer: _____ km and _____ m

**22.** A rectangular playground is 25 m long and 18 m wide. If you walk around the whole perimeter, how far do you walk?

Answer: _____ m

**23.** A bookshelf is 180 cm tall. If you stack two bookshelves on top of each


other, what is the total height in metres and centimetres?

Answer: _____ m and _____ cm

**24.** Challenge: A square has a perimeter of 36 cm. If you make a rectangle with the same perimeter where one side is 12 cm, how long is the other side?

Answer: _____ cm

**Measurement Superstar!**

*Why did the metre win the race?*

*Because it always measured up to the challenge!*

**Brilliant work! You've mastered length and perimeter!**


# Answer Key

## Worksheet 32: Conversions & Perimeter

### Section 1: Fluency - Simple Conversions

**1.** Answer: **300 cm**
Working:

$$3 \times 100 = 300$$

**2.** Answer: **2 km and 500 m**
Working:

$$2{,}500 \div 1{,}000 = 2.5$$

km or 2 km 500 m

**3.** Answer: **50 mm**
Working:

$$5 \times 10 = 50$$

**4.** Answer: **4 m and 50 cm**
Working:

$$450 \div 100 = 4.5$$

m or 4 m 50 cm

**5.** Answer: **7,000 m**
Working:

$$7 \times 1{,}000 = 7{,}000$$

**6.** Answer: **8 cm and 5 mm**
Working:

$$85 \div 10 = 8.5$$

cm or 8 cm 5 mm

**7.** Answer: **6 m**
Working:

$$600 \div 100 = 6$$


**8.** Answer: **4,000 m**
Working:

$$4 \times 1{,}000 = 4{,}000$$

**9.** Answer: **150 cm is longer by 50 cm**
Working: 150 cm - 100 cm = 50 cm
**10.** Answer: **345 cm**
Working:

$$(3 \times 100) + 45 = 300 + 45 = 345$$

## Section 2: Problem Solving - Calculating Perimeter

**11.** Perimeter = **16 cm**
Working:

$$5 + 3 + 5 + 3 = 16$$

cm
**12.** Perimeter = **24 cm**
Working:

$$6 + 6 + 6 + 6 = 24$$

cm or

$$6 \times 4 = 24$$

cm
**13.** Perimeter = **14 cm**
Working:

$$4 + 2 + 2 + 1 + 2 + 3 = 14$$

cm
**14.** Perimeter = **26 m**
Working:

$$8 + 5 + 8 + 5 = 26$$




m or

$$(8 + 5) \times 2 = 26$$

m

**15.** Perimeter = **22 cm**

Working:

$$7 + 4 + 7 + 4 = 22$$

cm

**16.** Perimeter = **15 cm**

Working:

$$5 + 6 + 4 = 15$$

cm

**17.** Answer: **6 cm**

Working:

$$24 \div 4 = 6$$

cm per side

## Section 3: Challenge - Multi-step Length Problems

**18.** Answer: **1 m and 20 cm**

Working:

$$80 + 40 = 120$$

cm = 1 m 20 cm

**19.** Answer: **1,250 m**

Working:

$$1{,}000 + 250 = 1{,}250$$

m

**20.** Answer: **170 cm**

Working:

$$235 - 65 = 170$$


cm (converted 2 m 35 cm = 235 cm first)

**21.** Answer: **1 km and 400 m**

Working:

$$400 + 550 + 450 = 1{,}400$$

m = 1 km 400 m

**22.** Answer: **86 m**

Working:

$$25 + 18 + 25 + 18 = 86$$

m or

$$(25 + 18) \times 2 = 86$$

m

**23.** Answer: **3 m and 60 cm**

Working:

$$180 + 180 = 360$$

cm = 3 m 60 cm

**24.** Answer: **6 cm**

Working: Square side =

$$36 \div 4 = 9$$

cm. Rectangle:

$$12 + 12 + x + x = 36$$

, so

$$24 + 2x = 36$$

, therefore

$$2x = 12$$

and

$$x = 6$$

cm


# Magnificent Mastery!

You've conquered length, conversions, and perimeter!

Keep measuring and calculating with confidence!