



## How Do You Measure Up? (Metric Length)

Suggested time: 45 minutes

### **What's important in this lesson:**

It is important for you to be accurate when you are measuring with the ruler. It is also important for you to find everyday objects that will help you estimate the reasonableness of the answers you get.

### **Complete these steps:**

1. Read through the Lesson portion of the package independently.
2. Complete the required 'Practice' questions.
3. If you have questions about the examples or the 'Practice' questions seek assistance from the teacher as needed.
4. Use 'Practice' Answer Keys to check your answers as they work through the package. If you are making errors, have your teacher review these questions with you.
5. Complete the Metric Length Assignment

### **Hand-in the following to your teacher:**

1. Practice Problems from the Student Handout
2. Metric Length Assignment

### **Questions for the teacher:**



## How Do You Measure Up? (Metric Length)

### Part A - Length (or Distance)

Do you know the difference between a millimetre and a centimetre?  
How many metres is it from your house to your school?  
How big is a kilometre?

If **any** of these questions are difficult to answer, then read **extra** carefully:

A millimetre is about the THICKNESS of a small paperclip.

A centimetre is about the width of your smallest finger.

A metre is about the width of a school doorway.

A kilometre is about the total length of walking about 1000 – 1200 long strides.

### Examples

1. Which of the four units above would be BEST to measure the following?

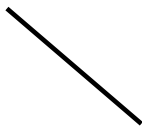
the length of your arm - \_\_\_\_\_

the width of your pencil - \_\_\_\_\_

the distance between 2 nearby cities - \_\_\_\_\_

the height of your school - \_\_\_\_\_

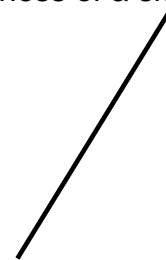
2. Measure the length of the following line segments in millimeters. (You must first find a ruler with mm markings on it – remember – 1mm is about the thickness of a small paperclip!)



Length = \_\_\_\_\_ mm



Length = \_\_\_\_\_ mm

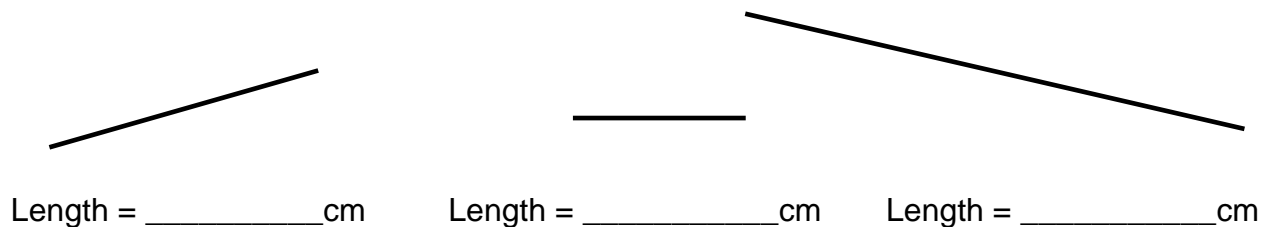


Length = \_\_\_\_\_ mm



3. Measure the length of the following line segments in centimetres. (Remember that every 10mm is the same as 1cm – about the width of your smallest finger!)

**\*ALSO** – you can ESTIMATE the first decimal place by looking at the mm markings!



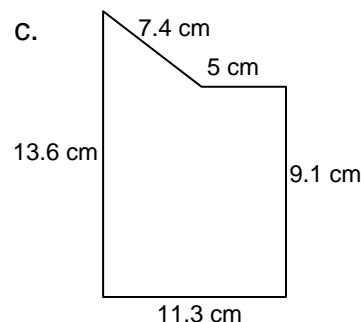
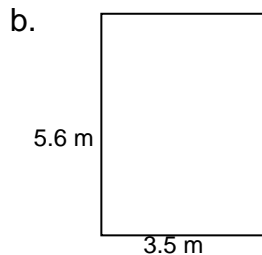
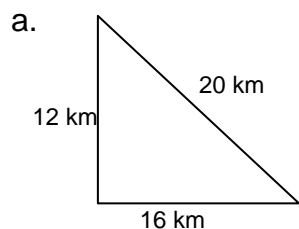
**\* Check the answers to these questions before moving on to part B!**

Part B - Getting Around – Perimeter

To find the distance around (i.e. the **PERIMETER**) of an object, we **ADD** the lengths of all sides.

Examples

1. Find the perimeter of the following shapes:



Are the numbers in these pictures the actual lengths of the line segments?

**NO! The shapes are just DIAGRAMS to show SHAPE – Actual SIZES are much different!**

**Solutions**

a. PERIMETER = 12km + 20km + 16km  
= 48km

## Student Handout: Unit 3 Lesson 2



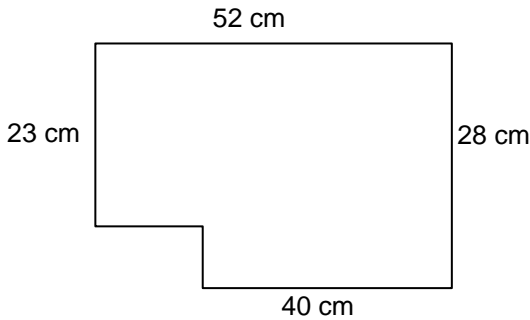
b.  $P = 5.6\text{m} + 3.5\text{m} + 5.6\text{m} + 3.5\text{m}$   
 $= 17.2\text{m}$

(notice that there are 4 numbers to add in a shape with 4 sides – it’s always a good idea to check!)

c.  $P = 7.4\text{cm} + 5\text{cm} + 9.1\text{cm} + 11.3\text{cm} + 13.6\text{cm}$   
 $= 46.4\text{cm}$

(5 sides in total)

2. Find the perimeter of the shape below.



*Before we find the PERIMETER, it is important to know how many sides this shape has.*

*This shape has \_\_\_\_\_ sides.*

*Next, we must find the lengths of the missing sides:*

*Since the total HEIGHT is 28cm, and the far left side is 23cm, side A =  $28 - 23 =$  \_\_\_\_\_ cm*

*Since the total LENGTH is 52cm, and the bottom length is 40cm, side B =  $52 - 40 =$  \_\_\_\_\_ cm*

**Now, that we have the length of all \_\_\_\_\_ sides, we can calculate:**

$P =$  \_\_\_\_\_  $+$  \_\_\_\_\_  $+$  \_\_\_\_\_  $+$  \_\_\_\_\_  $+$  \_\_\_\_\_  $+$  \_\_\_\_\_

$P =$  \_\_\_\_\_ (Don’t forget the units!)

**\* Check the answers to these questions before moving on!**

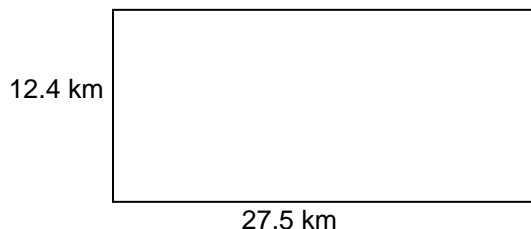
### Practice Problems

**\*\*\*Don’t forget to SHOW ALL STEPS as well as UNITS in your final answer!**

1. Calculate the perimeter:

a.

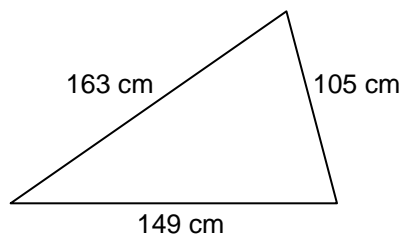
P =



P =



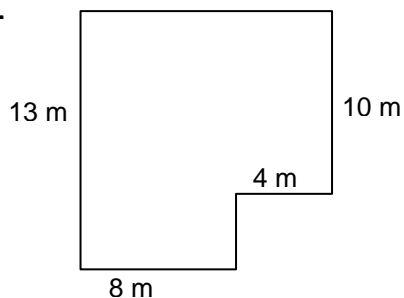
b.



P =

P =

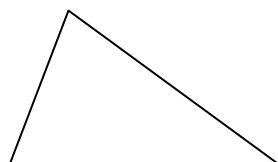
c.



P =

P =

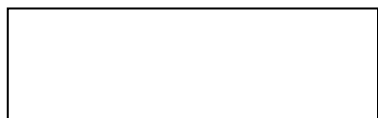
d. Measure each side of the triangle (in mm) and then calculate the perimeter.



P = \_\_\_\_\_ mm + \_\_\_\_\_ mm + \_\_\_\_\_ mm

P = \_\_\_\_\_ mm

e. Measure each side of the rectangle (in cm – to 1 decimal place) and then calculate the perimeter.



P = \_\_\_\_\_ cm + \_\_\_\_\_ cm + \_\_\_\_\_ cm + \_\_\_\_\_ cm

P = \_\_\_\_\_ cm

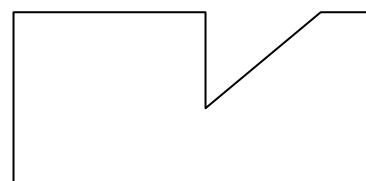
2. ESTIMATE the total perimeter of this shape. (Do not measure it yet!)

a. Is the perimeter of this shape closest to...

(Circle the best answer)

A) 1.5mm    B) 15mm    C) 150mm

D) 1.5cm    E) 150 cm





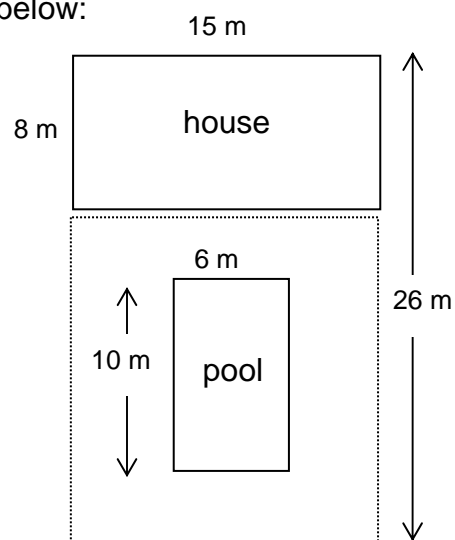
- b. EXPLAIN how you knew the answer to this question. (You may want to include calculations of each estimated length and/or an explanation of any answers that you know is NOT CORRECT.)

- c. MEASURE the length of each side of the shape shown above, and then CALCULATE the perimeter (in millimeters)

3. Use the diagram of a yard to answer the questions below:  
(All shapes are RECTANGLES!)

- a. Calculate the perimeter of the pool

- b. Calculate the perimeter of (distance around) the whole yard (including house)



- c. Calculate the total length of fencing (dotted line) needed to fence the 3 sides of the yard

**\* Check the answers to all practice questions before moving on!**



## Student Evaluation: Unit 3 Lesson 2



3. MEASURE the LENGTH and WIDTH of this page (in centimetres, to 1 decimal place).

Then, CALCULATE the perimeter.

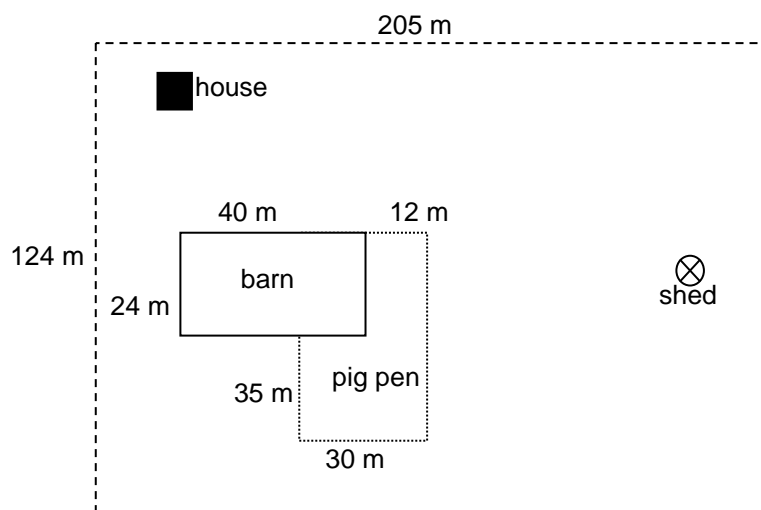
LENGTH = \_\_\_\_\_

WIDTH = \_\_\_\_\_

P =

P = \_\_\_\_\_

4. Use the diagram of the farm below to answer the remaining questions.



- a. Find the perimeter of the entire property.
- b. Find the amount of fencing needed to put up around the pig pen (You don't need fence along the barn wall!).