At-Home Investigation

Come up with a plan to measure the perimeter of your lounge room and your bedroom

My plan: answer these questions

- Look at the lengths that you will have to measure for each room. What problems can you see? Come up with a plan for measuring the length of each wall without having to move your furniture.

- How will I make sure that I am measuring accurately when there is furniture in the way? What would happen if I didn't measure straight along?

Carry out my plan: follow these steps and answer the questions

- Measure each room and calculate the perimeter. Explain how you did it in the space below and give the final measurement for each.

Extend your learning: follow this step and answer the question

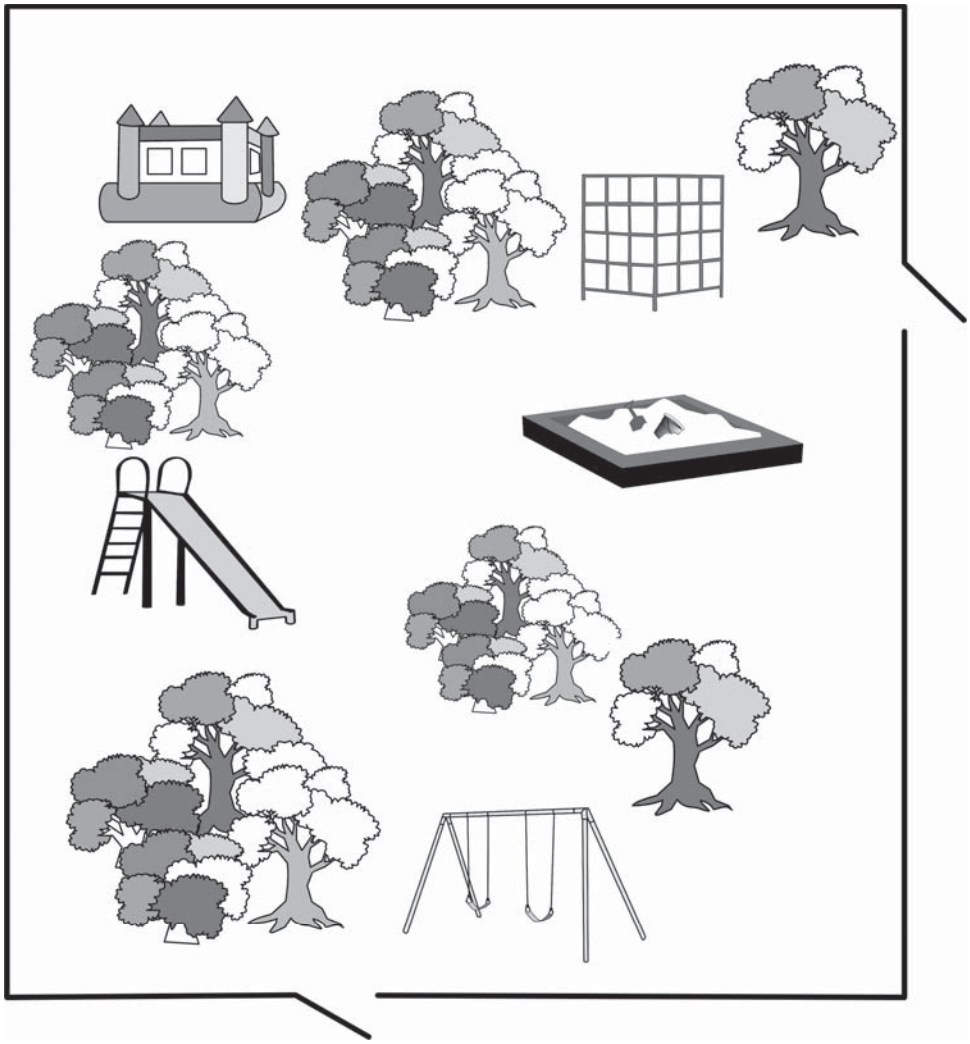
How would you write the perimeter of each room in centimetres? How about millimetres?

Problem 18: Measuring Perimeter

TR p90

A garden is pictured below. Planners are working out the best way to make a path through the garden (gate to gate) past all the play equipment. They must use straight lines 3m long. Design a path through the garden and work out how long it is. Answer the questions that follow.

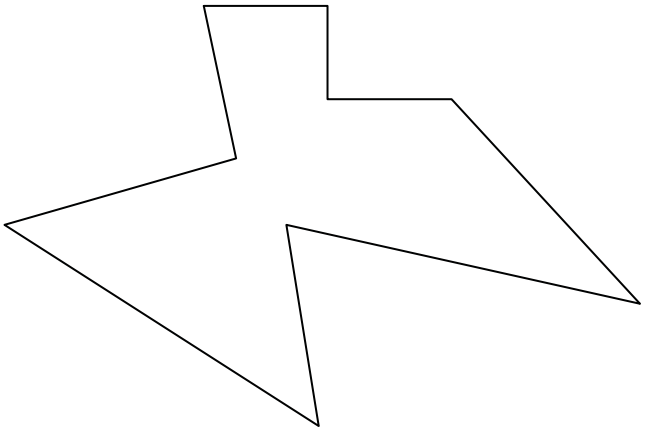
Our garden uses the scale 1cm = 1m



Draw a path through the garden from gate to gate using straight lines. How long is your path? How did you work it out?

Now join your path back up to the start instead of going out the second gate. Use a different colour. The length of this path is called the perimeter. Work out the perimeter of your revised path. What is it and how did you work it out?

The following shape has a perimeter too. Work out what you think the perimeter is and explain how you found it.



Communicating:
How did you work out the perimeter? What operations did you use?

Understanding:
If you had a different shape, how would you work out the perimeter?
How do you know that this is the right way to work out the solution?

Manipulation problems:
If a square had a side of 5cm, what would its perimeter be?
How did you solve it?

If a regular hexagon had a side of 8cm, what would its perimeter be?
How did you solve it?

Teacher initials:

Date:

Problem solving / T&R:
- o Problem solved with minimal or non-mathematical prompting
- o Some leading questions were used to prompt thinking
- o Solved after explanation
- o Did not work out solution
- o N/A- not a novel problem

Reasoning / Comm.:
(verbal, written, working and equations, or visual representations)
- o Clearly and logically reasoned
- o Easily understood
- o Understood with some interpretation needed
- o Some gaps but on topic
- o Minimal or off topic

Understanding / Reflect:
- o Connected manipulation problems to previous questions and answered easily
- o Connected manipulation problems to previous questions with some prompting, and answered correctly
- o Answered once the similarities to previous questions had been pointed out
- o Had some problems in answers but was on the right track
- o Did not answer appropriately

- o Student not observed

Multiplication Practise:

X	3	4	5	6	7	8	9
3							
4							
5							
6							
7							
8							
9							

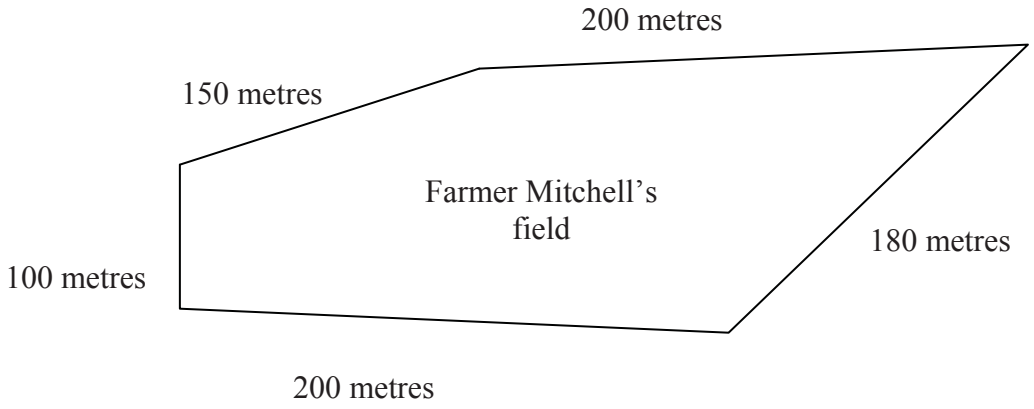
Record your time here for the 49 questions:

Mark your answers using a calculator or with an adult. Circle any that are wrong.

E4. Measuring boundaries

TR p99

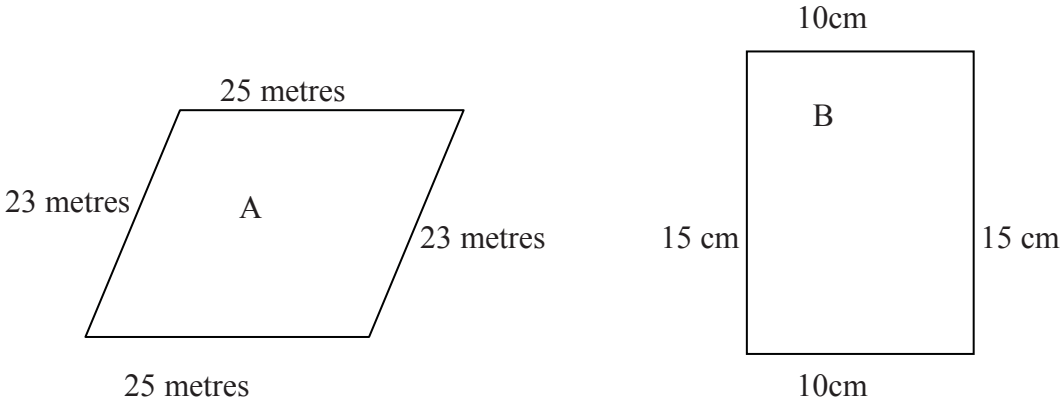
Farmer Mitchell needed to find the distance around his paddock so that he could fence it. He didn't have anything long enough to reach around the outside, but he did know the length of each side of the field. Below is a diagram showing his field. Use it to help you answer the following questions.



1. Farmer Mitchell worked out that the **perimeter** around his field was 830 metres. How did he work this out?

2. How did he work out what the **perimeter** was?

3. Use the same method to work out the **perimeter** for the following shapes:



1. What do you think **perimeter** might mean?

2. How could you check? Go and check your understanding of what **perimeter** means.

3. Are you right?

4. How would you work it out what the **perimeter** was for other shapes?

Interleaved practise

Number:

1. Complete the following number sequence: 3 , 6 , ___ , ___ , 15 , ___ , 21

2. 12 478 + ____ = 13 623

3. Read this number and say it: 2 423 048. Write it in words. How many millions, thousands, hundreds, tens and ones does it have?

4. What change would you get from $50.00 if you purchased a t-shirt for $27.80? Show two different combinations of dollars and cents that you might receive.

5. Share 48 counters equally to show halves. How many other ways could you share the counters? Draw them and describe the groups you have made.

Measurement/Geometry:

6. Find 4 objects that would be measured in kilograms. Find 4 objects that would be measured in grams. List them in order from heaviest to lightest.

7. What time is it? What time will it be in an hour and half? Write both times using 24-hour time.

8. Draw what the next shape in this sequence would look like. Describe how you worked it out.

Chance/Data:

9. What could the weather be like tomorrow? List as many possibilities as you can. Write them in order from most likely to least likely.

E12. Converting between units for length

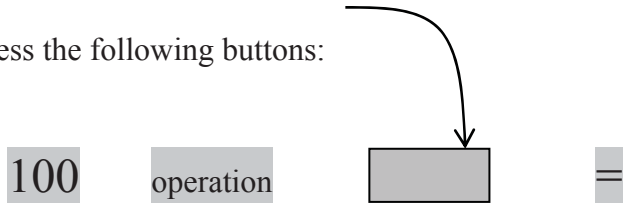
TR p102

Examine the pattern below and work out what operations were used to change between units for length.

Pattern: centimetres to metres

1. How many centimetres are in a metre?
2. Put the answer for question one in the box below.

On your calculator press the following buttons:



Choose any operation from + - x ÷
You should keep trying different operations until you get **1** as the answer.

3. Which operation worked?

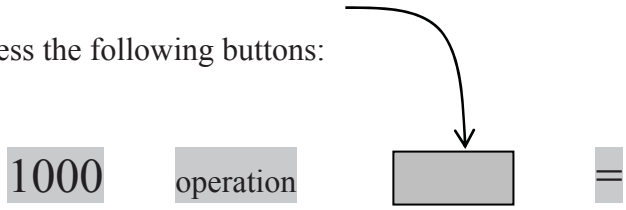
Now try out your operation on these to check if you get the right answers:
154cm = 1.54m 267cm = 2.67m 521cm = 5.21m 893cm = 8.93m

4. What do we do to change from centimetres to metres?

Pattern: millimetres to metres

1. How many millimetres are in a metre?
2. Put the answer for question one in the box below.

On your calculator press the following buttons:



Choose any operation from + - x ÷
You should keep trying different operations until you get 1 as the answer.

3. Which operation worked?

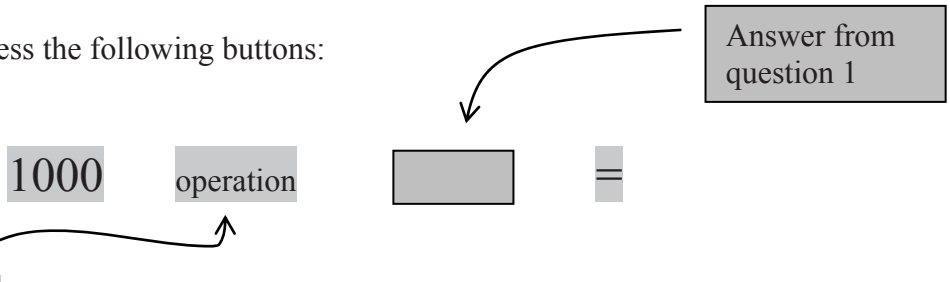
Now try out your operation on these to check if you get the right answers:
1534mm = 1.534m 2525mm = 2.525m 5598mm = 5.598m 8275mm = 8.275m

4. What do we do to change from millimetres to metres?

Pattern: metres to kilometres

1. How many millimetres are in a metre?
2. Put the answer for question one in the box below.

On your calculator press the following buttons:



Choose any operation from + - x ÷
You should keep trying different operations until you get 1 as the answer.

3. Which operation worked?

Now try out your operation on these to check if you get the right answers:
1534m = 1.534km 2525m = 2.525km 5598m = 5.598km 8275m = 8.275km

4. What do we do to change from metres to kilometres?

Complete the following statements showing how to change units:

To change:

From centimetres to metres _____

From metres to centimetres _____

From millimetres to metres _____

From metres to millimetres _____

From metres to kilometres _____

From kilometres to metres _____

BACKWARDS QUESTION:

Your teacher will now draw a curved line on the blackboard for you to measure. You need to record how long it is in millimetres, centimetres and metres. Do you need to measure it three times? Explain how you could work it out: