Book 7 - Ages 11+

Measurement in Mathematics Series

Practical measuring activities for the classroom.

Contents

Measurement: How Long? How Far?

❏ Use a ruler to find the lengths of the following items.
  Choose three more items and measure their length.

Item: Find the length of ...	mm	cm	m
this page			
your pen			
the blackboard			
your desk			
your classroom			
your maths book			

❏ Using a tape measure, metre ruler or a trundle wheel, find the distance of the following.
  Choose two more distances to measure and list them with their measurements.

Item: Find the distance	mm	cm	m
From your room to the canteen			
From your room to the office			
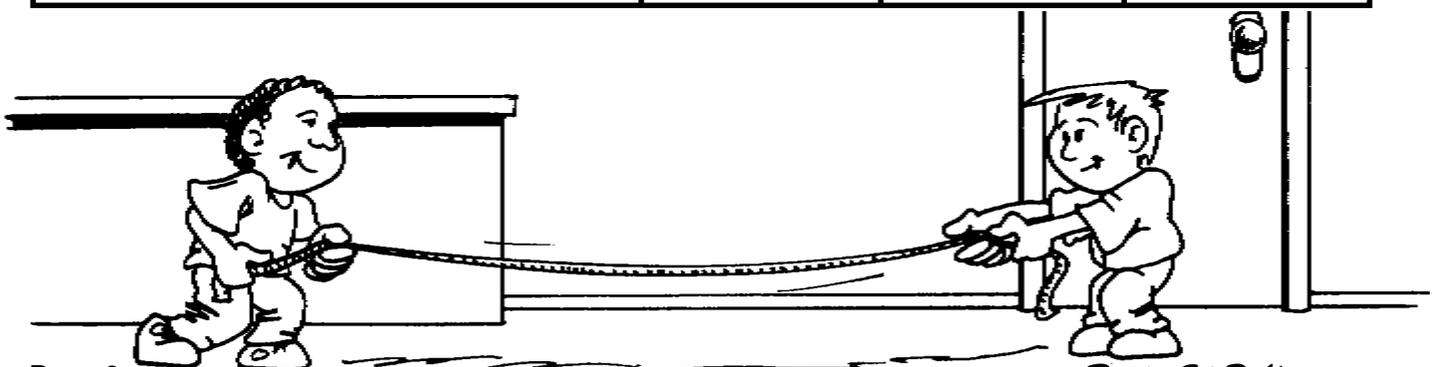
Measuring in Kilometres

	Home	School	Supermarket	Friend	Cousin
Home	0	3	2.4	1.3	6
School	3	0	0.64	3.8	9.55
Supermarket	2.4	0.64	0	6.37	7.32
Friend	1.3	3.8	6.37	0	8.4
Cousin	6	9.55	7.32	8.4	0

All distances given in kilometres (km).

❏ Using the above table, find the distance Jared would travel if he went:

(***Example:*** *If Jared went from school, to his cousin's house, then the supermarket and then home, he would have travelled 9.55 + 7.32 + 2.4 = 19.27 km.*)

a) From home to his cousin's house via school. ....

b) From home to school, then to his friend's house, the supermarket and then home

   again. ....

c) From school to the supermarket and then home. ....

d) From his cousin's to the supermarket, then return to his cousin's and finally home.

   ....

e) What would be the shortest distance to visit all the destinations, starting and finishing at

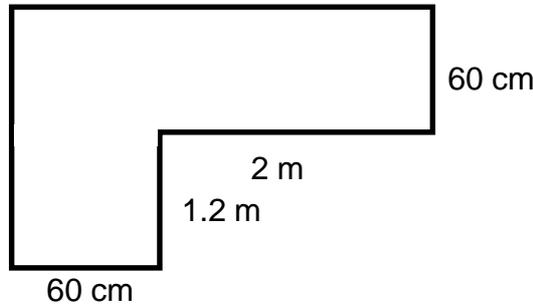   home? Write down the route and the distance.

   ....

   ....

   ....
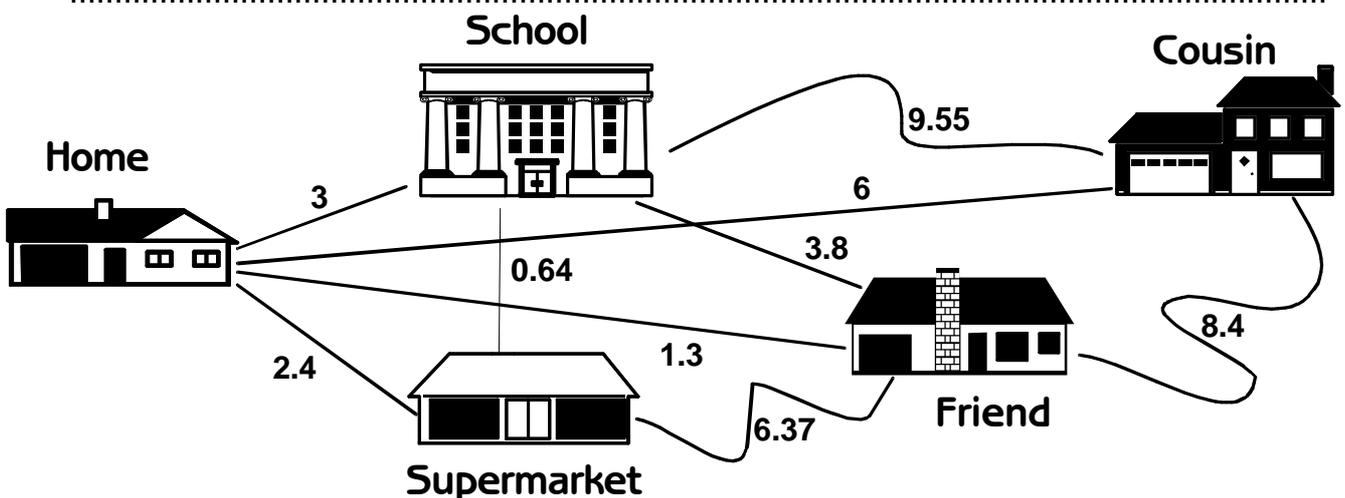
What's the Cost?

❑ The cost of pine wood laminate is $2.50 per metre.

1. I wish to put this laminate around the edge of a table top. The dimensions are 2.4 m x 1.2 m. How much will it cost me to edge the table? ....

2. How much will it cost to edge the bench top below? ....

60 cm

2 m

1.2 m

60 cm

❑ It costs Paul 86¢ to drive 12 km. Using the table below, calculate the costs of the following trips:

3. Sydney to Melbourne ....

4. Adelaide to Melbourne ....

5. Albury to Ballarat ....

6. Adelaide to Sydney ....

7. Adelaide to Canberra ....

	Adelaide	Sydney	Melbourne	Canberra	Albury	Ballarat
Adelaide	0	1410	731	1111	1014	620
Sydney	1410	0	989	285	779	1110
Melbourne	731	989	0	736	306	111
Canberra	1111	285	736	0	337	847
Albury	1014	779	306	337	0	417
Ballarat	620	1110	111	847	417	0

All distances given in kilometres (km)
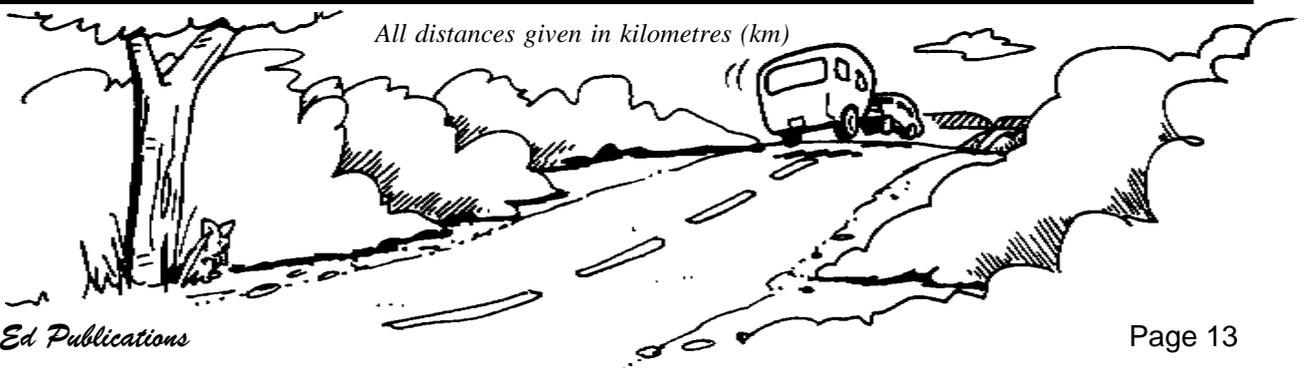
Area of Rectangles

1. Calculate the area of the following rectangles using Area = Length x Width.

a)
2 m
10 m

b)
5 m
6 m

....

....

c)
24 cm
7 cm

d)
6 km
6 km

....

....
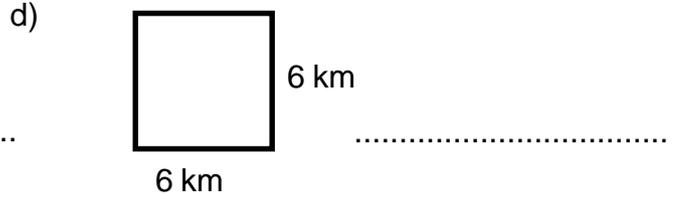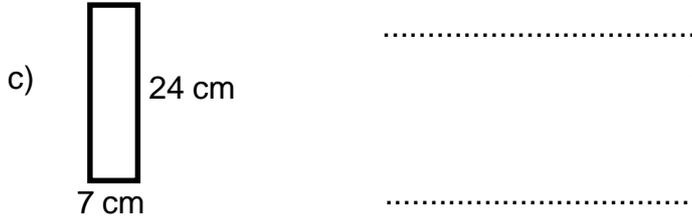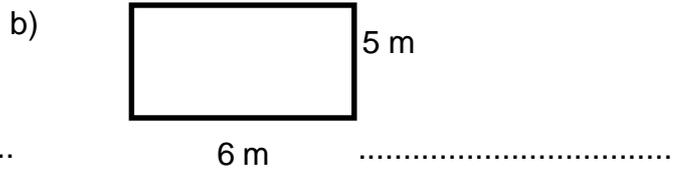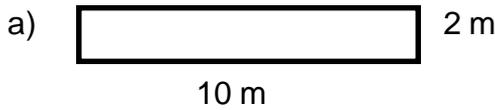
❑ Find the area of the shapes at the bottom of the page.
Hint: Find a way to make each shape into a rectangle and then work out the area.
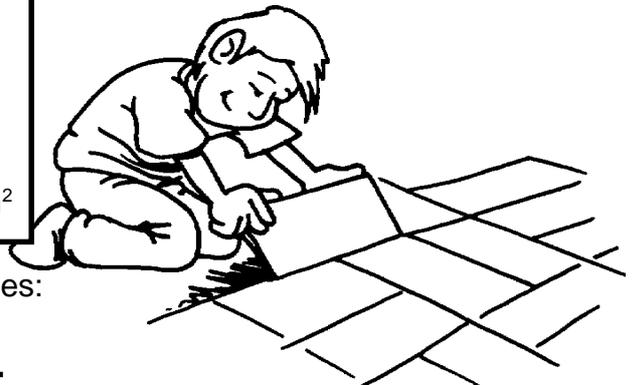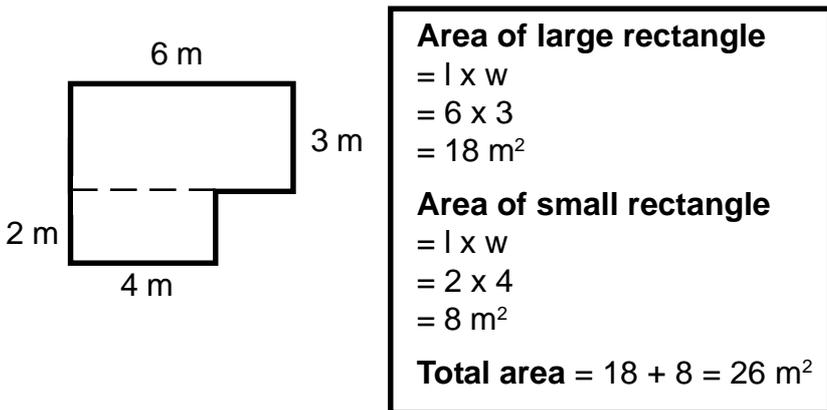An example is done for you below.

Method 1: Subtraction

6 m
3 m
2 m
2 m
4 m

2 m
2 m
6 m
5 m
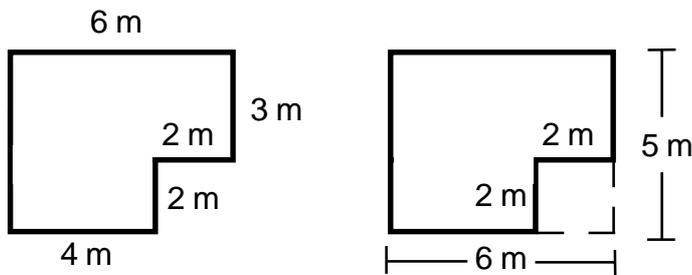
Area of large rectangle
= l x w
= 6 x 5
= 30 m^2

Area of small rectangle
= l x w
= 2 x 2
= 4 m^2

Total area = 30 - 4 = 26 m^2

Method 2: Addition

6 m
3 m
2 m
4 m

Area of large rectangle
= l x w
= 6 x 3
= 18 m^2

Area of small rectangle
= l x w
= 2 x 4
= 8 m^2

Total area = 18 + 8 = 26 m^2

2. Use one of the methods to find the area of these shapes:

15 m
5 m
12 m
2 m
3 m

2 cm

6 km
5 km
4 km
3 km
10 km
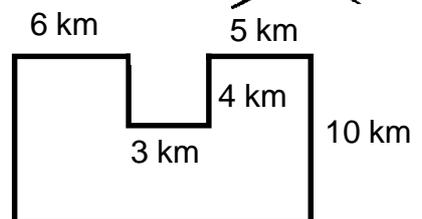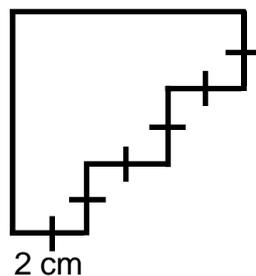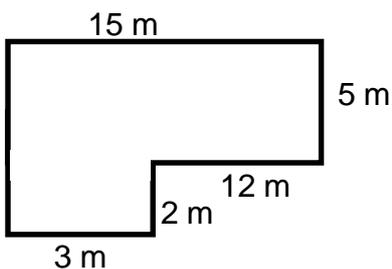
a) ....

b) ....

c) ....

Hectares or Metres?
The Choice is Yours!

A square 100 m x 100 m is called a **hectare**.

```
    100 m                          1 hectometre
  ┌─────────┐                    ┌─────────┐
  │         │ 100 m       =      │         │ 1 hectometre       = 1 hectare
  │         │                    │         │
  └─────────┘                    └─────────┘
```
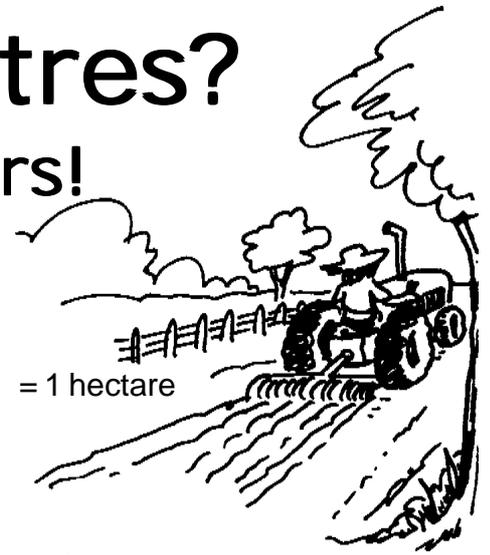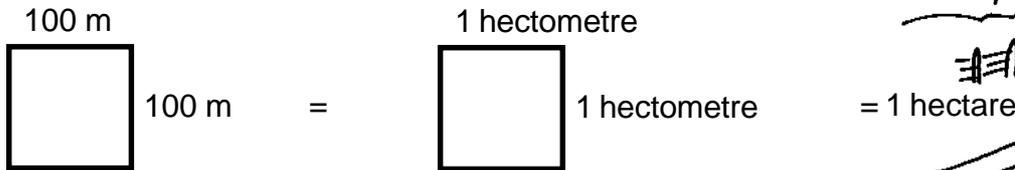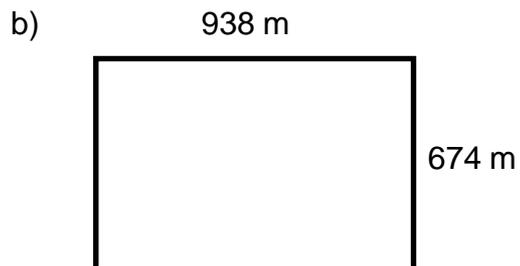
So 100 m x 100 m = 10 000 m² = 1 Hectare.

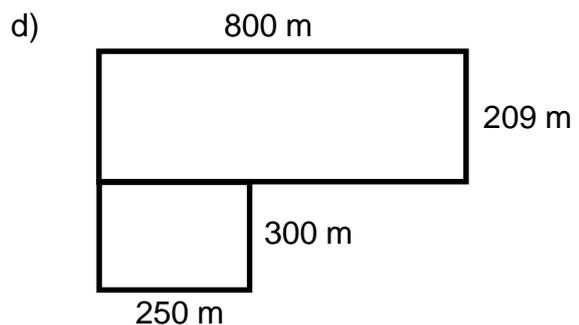1. Find the area of a rectangular field 300 m x 500 m. Convert this to hectares.

    ....

2. A field is to be ploughed. Its dimensions are 250 m x 175 m. Find the area in m² and then in hectares.

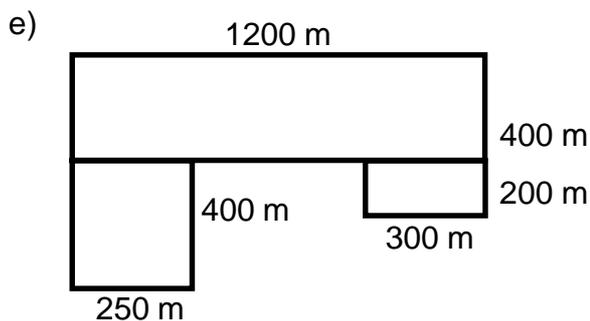   ....

3. Find the area of the following plots of land in m² **or** in hectares.

a)
```
      250 m
  ┌──────────────┐
  │              │ 68 m
  └──────────────┘
```

b)
```
        938 m
  ┌───────────────────┐
  │                   │
  │                   │ 674 m
  │                   │
  └───────────────────┘
```

....

....

c)
```
  ┌────────┐
  │        │
  │        │ 500 m
  │        │
  │        │
  └────────┘
    200 m
```

d)
```
            800 m
  ┌──────────────────────┐
  │                      │ 209 m
  │                      │
  │         ┌────────────┘
  │         │  300 m
  └─────────┘
     250 m
```

....

....

e)
```
          1200 m
  ┌──────────────────────┐
  │                      │ 400 m
  ├──────┐        ┌──────┤
  │      │ 400 m  │      │ 200 m
  │      └────────┘  300 m
  └──────┘
    250 m
```

....