

Monday 25th January

Try these one your own. Remember to be systematic and write anything down that you need to keep track of so you don't make mistakes along the way.

$$\text{a) } 9 + 6 + 6 + 1 + 4 + 5 =$$

$$\text{b) } 8 + 5 + 7 + 8 + 8 + 2 =$$

$$\text{c) } 10 + 6 + 10 + 6 + 11 + 9 =$$

$$\text{d) } 8 + 6 + 4 + 3 + 2 + 9 =$$

$$\text{e) } 12 + 4 + 4 + 18 + 2 =$$

$$\text{f) } 15 + 6 + 15 + 14 + 3 + 7 =$$

Let's look at some vocabulary

perimeter

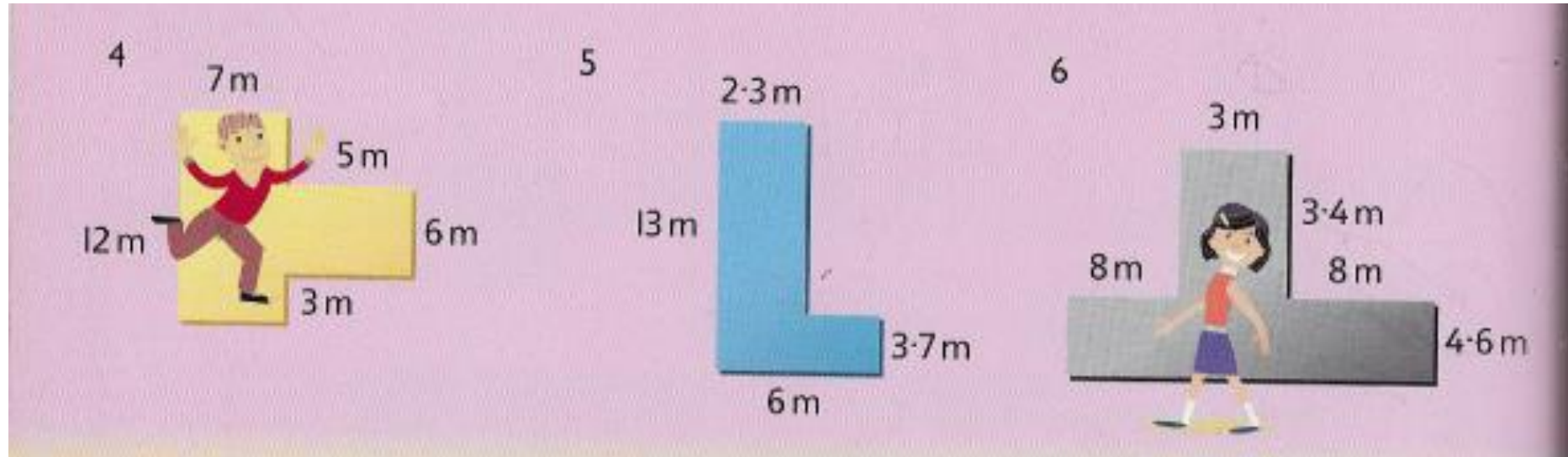
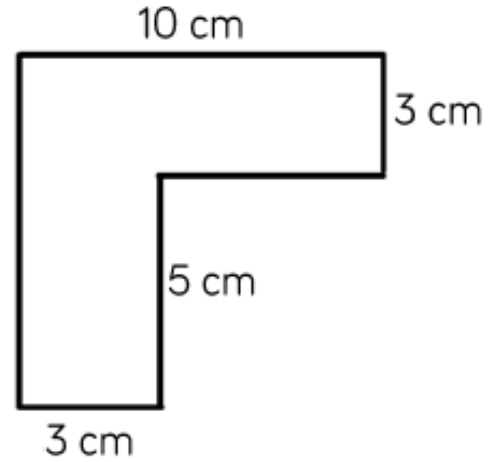
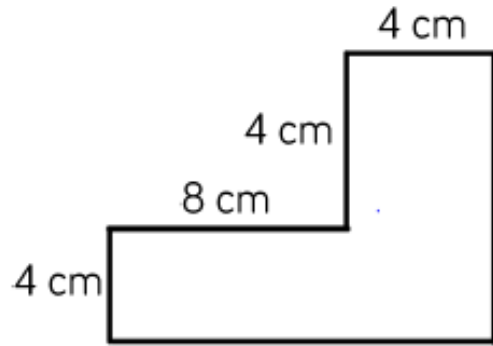
What does this word mean? Can you write a definition including a diagram to help explain.

Click on this link and follow along with the video about finding the perimeter of rectilinear shapes. When you have finished, answer the questions on the separate worksheet or carry on with this video.

<https://whiterosemaths.com/homelearning/year-5/week-11-measurement-perimeter-area/>

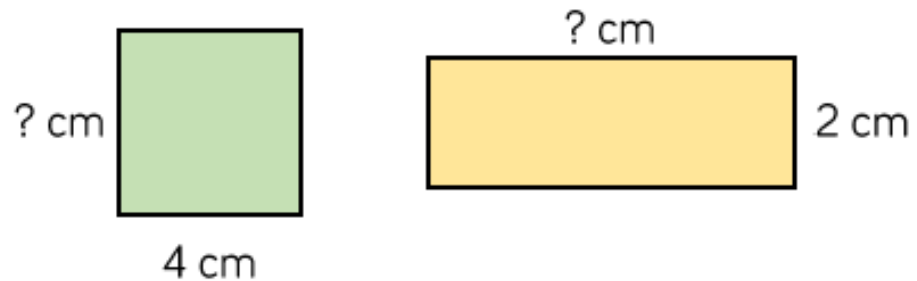
Extra practice Try It

Find the perimeter of the shapes.

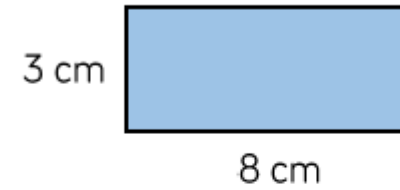


How many different rectilinear shapes can you draw with a perimeter of 24 cm? How many sides do they each have? What is the longest side? What is the shortest side?

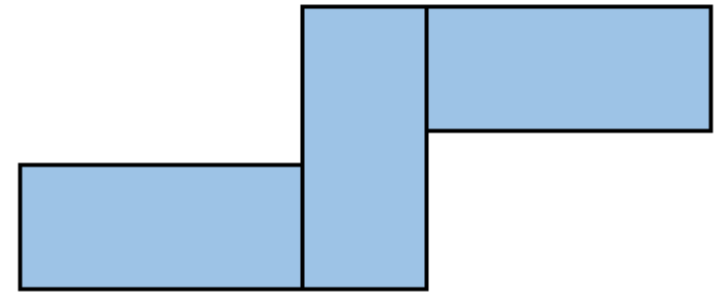
Each of the shapes have a perimeter of 16 cm.
Calculate the lengths of the missing sides.



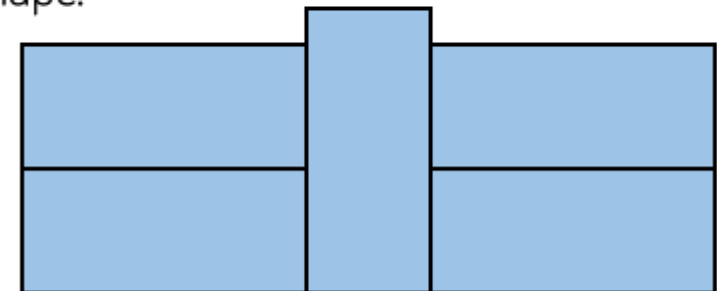
Amir has some rectangles all the same size.



He makes this shape using his rectangles.
What is the perimeter?



He makes another shape using the same rectangles.
Calculate the perimeter of this shape.



ANSWERS

a) $4 + 4 + 8 + 4 + \underline{8 + 12} = \underline{40\text{cm}}$
 b) $10 + 3 + 5 + 3 + \underline{8 + 7} = \underline{36\text{cm}}$

4) $7 + 5 + 6 + 3 + 12 + \underline{3 + 5 + 7} = \underline{48\text{cm}}$

5) Missing lengths =
 $6 - 2.3 = 3.7$
 $13 - 3.7 = 9.3$

$2.3 + 13 + 6 + 3.7 + \underline{9.3 + 3.7} = \underline{38\text{cm}}$

6) $3 + 3.4 + 8 + 8 + 4.6 + \underline{4.6 + 3.4 + 19}$
 $= 3 + 8 + 8 + 8 + 8 + 19 = \underline{54\text{cm}}$

How many different rectilinear shapes can you draw with a perimeter of 24 cm? How many sides do they each have? What is the longest side? What is the shortest side?

Multiple answers

Green square = 4cm

Yellow rectangle = $16 - 2 - 2 = 12$

$12 \div 2 = \underline{6\text{cm}}$

a) $3 + 8 + 8 + 3 + 5 + 3 + 5 + 8 + 8 + 3 =$

$8 + 8 + 8 + 8 + 8 + 8 + 6 = \underline{54\text{cm}}$

$19 + 19 + 6 + 6 + 2 + 2$

$38 + 12 + 4 = \underline{54\text{cm}}$

Each of the shapes have a perimeter of 16 cm.
 Calculate the lengths of the missing sides.

Amir has some rectangles all the same size.
 3 cm 8 cm

He makes this shape using his rectangles.
 What is the perimeter?

He makes another shape using the same rectangles. Calculate the perimeter of this shape.

Tuesday 26th January

LO: To find the area of rectangles

Warm Up

Write the first 3 multiples of each of these numbers:

a) 7

b) 12

c) 14

Tuesday 26th January

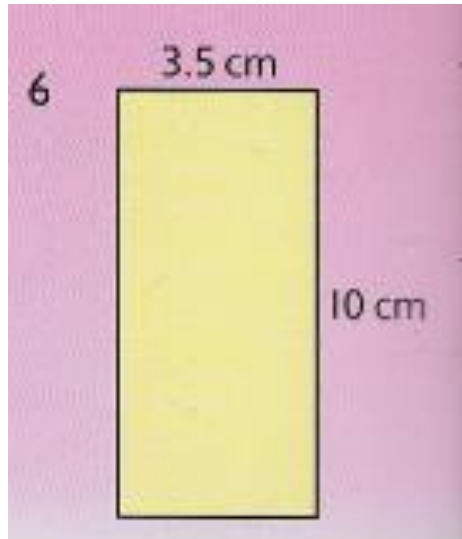
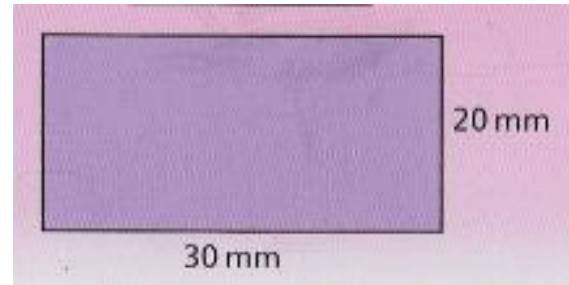
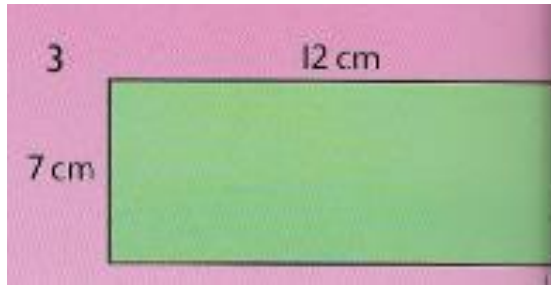
LO: To find the area of rectangles

<https://whiterosemaths.com/homelearning/year-5/week-12-measurement-perimeter-area/>

Watch the video 'Area of rectangles' and work through the problems. Then try the problems on the next few slides if you would like extra practice.

Try it

Find the area of these rectangles.



For these questions, you need to find the area of each rectangle separately and then add the parts together. For some, you will have to find the missing lengths first.

For example:

$$7) \quad 5 \times 3 = 15\text{cm}^2$$

$$3 \times 2 = 6\text{cm}^2$$

$$15 + 6 = 21\text{cm}^2$$

Find the total shaded area.

7
3 m
5 m
5 m
3 m

8
3 m
4 m
5 m
12 m

9
11 m
4 m
9 m
6 m

Use It

Mo buys a house with a small back garden, which has an area of 12 m^2 .

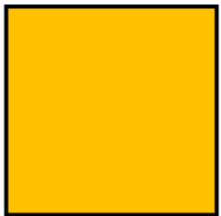
His house lies in a row of terraces, all identical.

If there are 15 terraced houses altogether, what is the total area of the garden space?

Prove It

Investigate how many ways you can make different squares and rectangles with the same area of 84 cm^2

What strategy did you use?



Each orange square has an area of 24 cm^2 .

Calculate the total orange area.

Calculate the blue area.

Calculate the green area.

What is the total area of the whole shape?

ANSWERS

Try It

1) $7 \times 12 = \underline{84\text{cm}^2}$

2) $30\text{mm} \times 20\text{mm} = 3\text{cm} \times 2\text{cm} = \underline{6\text{cm}^2}$

3) $3.5 \times 10 = \underline{35\text{cm}^2}$

8) Rectangle 1 = $12 \times 4 = 48\text{cm}^2$

Rectangle 2 = $7 \times 3 = 21\text{cm}^2$

$48 + 21 = \underline{69\text{cm}^2}$

9) $9 \times 6 = 54\text{cm}^2$

$4 \times 5 = 20\text{cm}^2$

$54 + 20 = \underline{74\text{cm}^2}$

Use It

1. $12 \times 15 =$

$12 \times 10 = 120$

$12 \times 5 = 60$

$120 + 60 = \underline{180\text{cm}^2}$

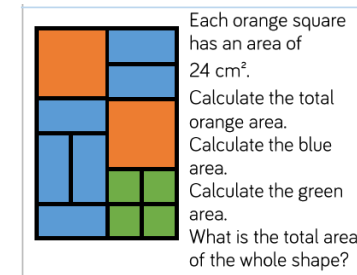
Orange = $24 + 24 = 48\text{cm}^2$

Blue = Each blue = $\frac{1}{2}$ x orange
so 2 blue = 1 orange

$24 + 24 + 24 = 72\text{cm}^2$

Green = 4 green = 1 orange so 24cm^2

Whole shape = $6 \times 24 = 120 + 24 = 144\text{cm}^2$



Wednesday 27th January Warm Up

Write the factors of these numbers. Use the times table grid to help you.

Remember factor means – a number that you can divide the number by equally or you can think of it as ‘Which times table is that number in?’

- a) 10
- b) 21
- c) 36

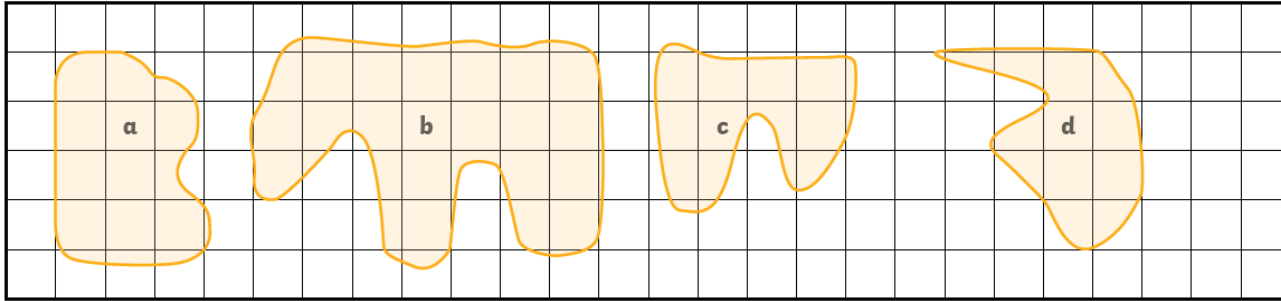
X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

<https://whiterosemaths.com/homelearning/year-5/week-12-measurement-perimeter-area/>

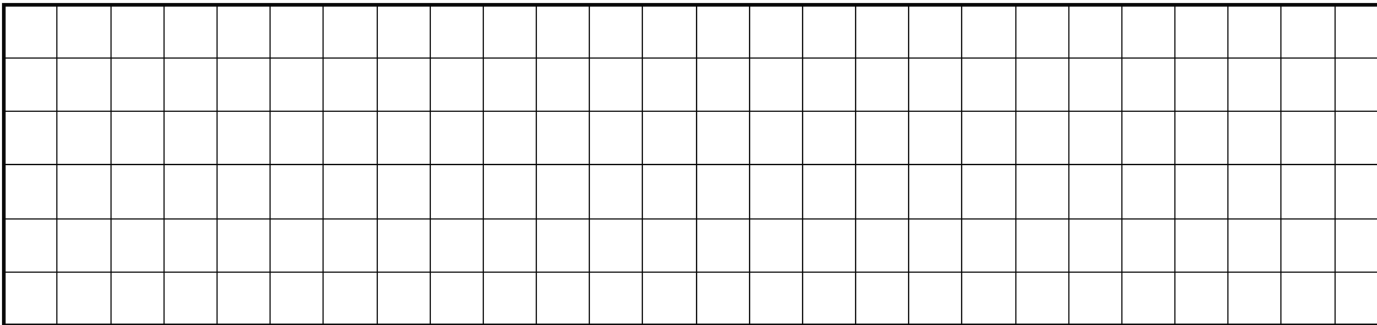
Watch the video 'Area of irregular shapes' and work through the problems.

Try it

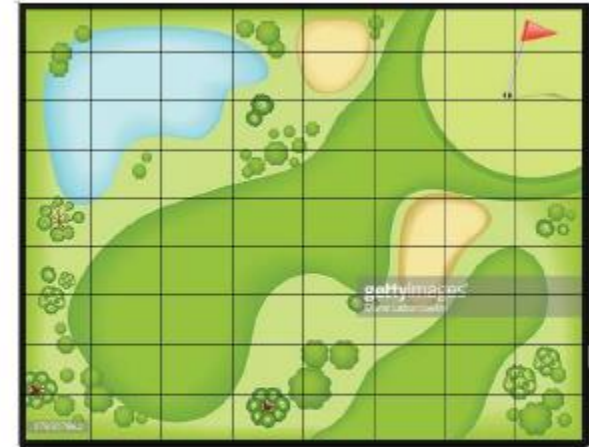
1) Estimate the size of each shape on this grid, in squares:



2) On this grid, draw an irregular shape with an estimated area of 9cm^2 .



Use It



If each square represents 3 m^2 , what is the approximate area of:

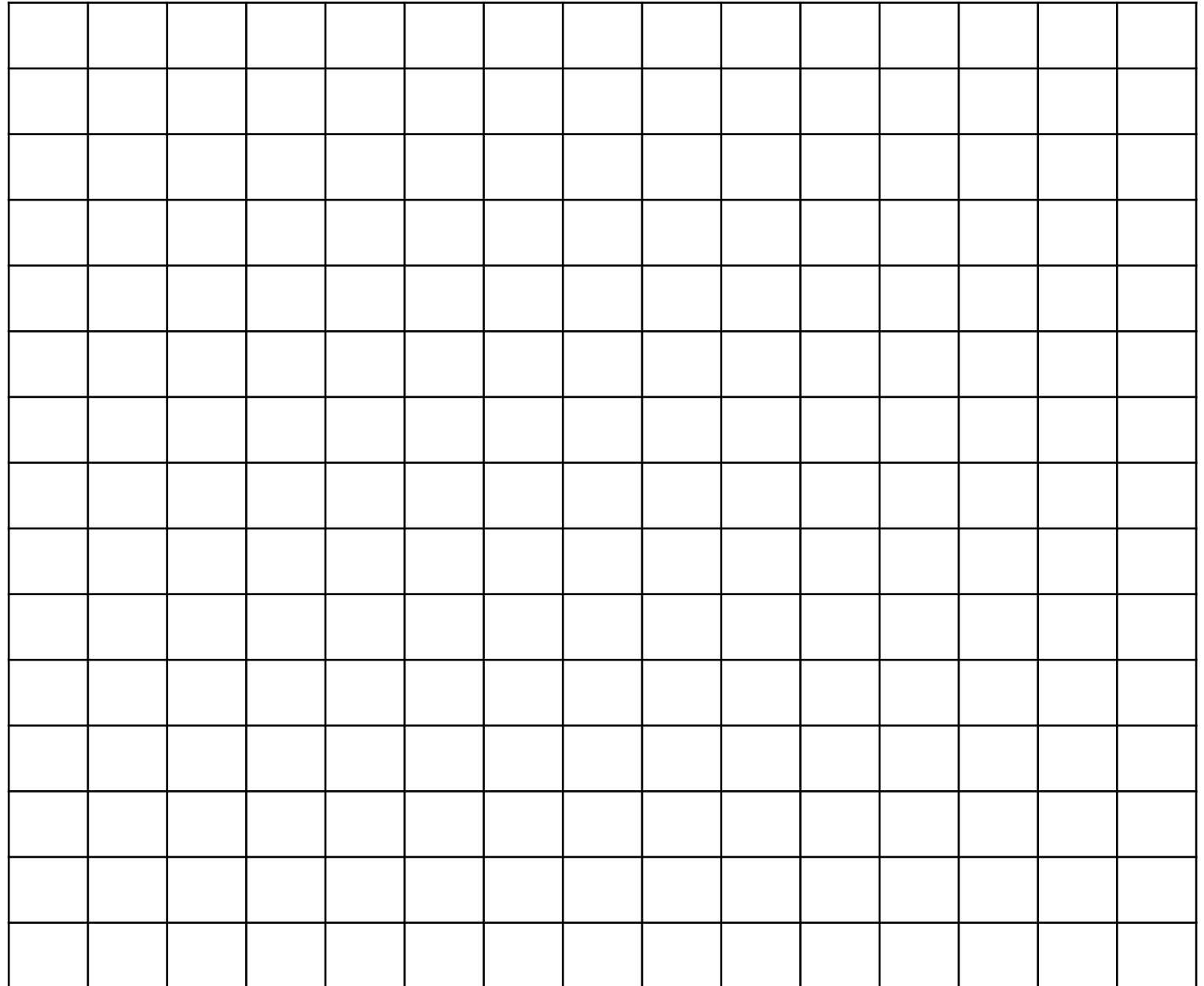
- The lake
- The green (bit around the flag)
- The bunkers (sand)
- The fairway (dark green bit)
- The trees/forest area

Prove It

Can you construct a 'Pirate Island' to be used as part of a treasure map for a new game? Each square represents 4 m^2 .

The island must include the following features and be of the given approximate measure:

- Circular Island 180 m^2
- Oval Lake 58 m^2
- Forests with a total area of 63 m^2 (can be split over more than one space)
- Beaches with a total area of 92 m^2 (can be split over more than one space)
- Mountains with a total area of 57 m^2
- Rocky coastline with total area of 25 m^2



Try it **ANSWERS**

1) Allow +/- 1 square difference.

A = 11 squares

B = 23 squares

C = 9 squares

D = 9 squares

2) Answers will vary.

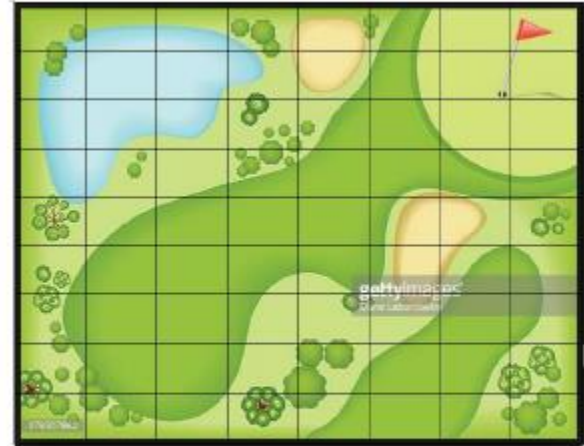
The lake = 7/8 squares so between 21 and 24m²

The green = 7 squares so 21m²

The bunkers = 4/5 squares so between 12 and 15m²

The fairway = 24/25 squares so between 72 and 75m²

Tree/forest area = 13/14 squares so between 39 and 42m²



If each square represents 3 m², what is the approximate area of:

- The lake
- The green (bit around the flag)
- The bunkers (sand)
- The fairway (dark green bit)
- The trees/forest area

Thursday 28th January

Design a Wildlife park

Use a large piece of paper (or a few pieces stuck together) or print the squared paper provided if possible.

You have a budget of **£10 000** to spend on your whole design.

Compulsory buildings – building you must have

Minimum number	Building	Area	Cost per Building (£10 per 1m ²)	Total Cost
1	Ticket Kiosk	10m ²		
1	Café	25m ²		
2	Ice Cream Shop	12m ²		
1	First Aid	12m ²		
1	Staff Room	15m ²		
1 per animal	Keeper hut	4m ²		
1	Vet hospital	16m ²		
2	Toilets	3m ²		
1	Gift Shop	10m ²		
Footpath around each building			£0 – No cost	
			Total Cost	

Your zoo must also include the following things:

2 large animals, 2 medium animals and 2 small animals.

Your zoo will attract more guests if you have a range of animals with large enough habitats.

Animal	Area	Cost (£10 per square)
Large Animals		
Giant Antarctic octopus	32m ²	
Hourglass dolphin	30m ²	
Orca	64m ²	
Seals	28m ²	
Caribou	50m ²	
Polar bear	60m ²	
Walrus	36m ²	
Medium Animals		
Antarctic Toothfish	15m ²	
Penguin	28m ²	
Arctic fox	20m ²	
Snowy owl	16m ²	
Wolverine	25m ²	
Puffin	20m ²	
Dall sheep	20m ²	

Small Animals		
Jellyfish	10m ²	
Arctic woolly bear moth	6m ²	
Arctic hare	8m ²	
Lemming	8m ²	
Sea otter	12m ²	
Ermine	12m ²	

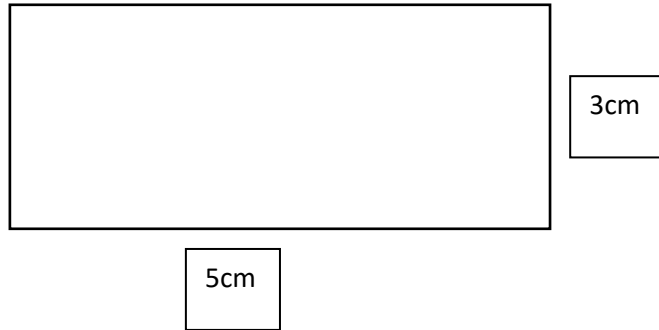
Your animals also need some things to help them stay healthy.

Item	Cost	Quantity needed	Total
Food bowl	£10		
Water bowl	£8		
Bed	£25		
Toy	£20		
Vet check up	£100		
Habitat clean (once a day)	£60		
Total			

Each habitat will also need a fence or barrier. Barriers cost different prices depending on the material they are made out of.

You will need enough barrier to fit around the whole perimeter of your enclosure so if my enclosure looked like this:

Then the perimeter of my enclosure is $5 + 5 + 3 + 3 = 16\text{m}$ so I would need to buy 16m of barrier.



Item	Cost per m	Quantity needed (in m)	Total
Metal fence	£5		
Wooden fence	£3		
Glass	£8		
One-way glass (so the animals can't see the guests)	£10		
Total			