

## Garden Design Challenge Part 1

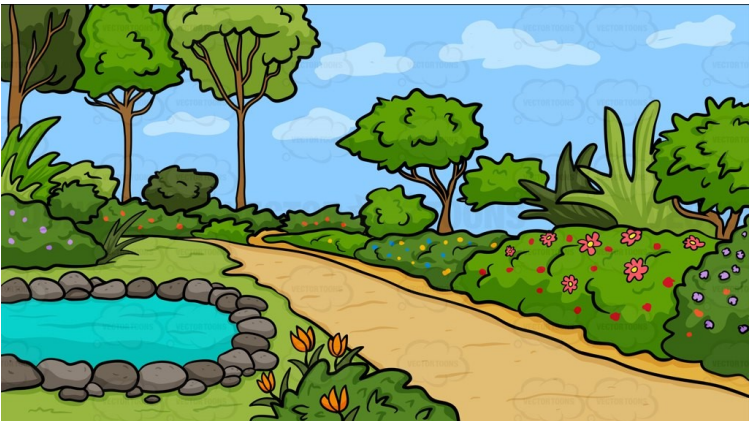
You are a landscape gardener, and you have been asked to design a garden for a client.

The area of the garden **must be 100m<sup>2</sup>** but you can make it any shape you wish.

You will need to put a fence around the garden, so you will also need to know its perimeter.



**Design some different shapes with area of 100m<sup>2</sup> and work out what the perimeter for these are. Then choose your favourite.**



Look below for some tips about how to start your garden design (I've given you examples, but I made my garden 80m<sup>2</sup> so that you can't copy me—sneaky! :) I've shown you how to make a simple garden design, plus a trickier one.

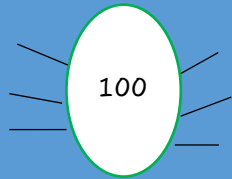
Don't be lazy—if you're capable of more of a challenge, try the trickier one.

## Simple garden shapes...

Your easiest option is to design some square/rectangular gardens.

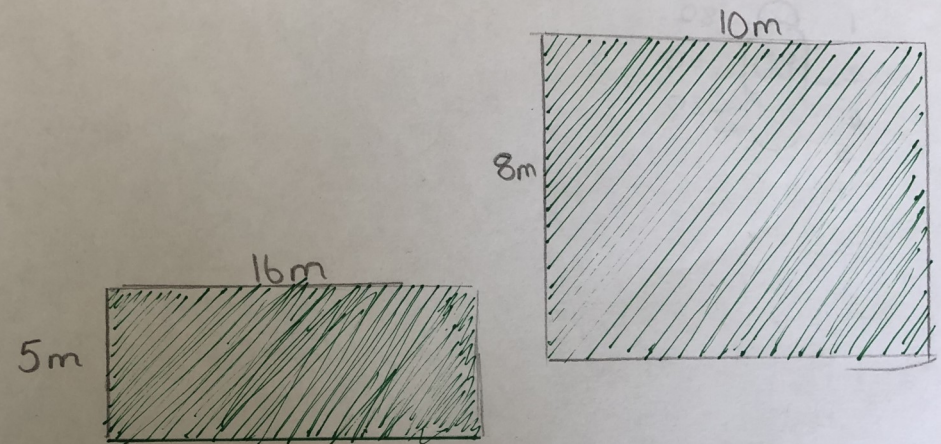
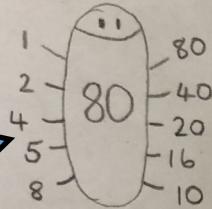
Start by thinking of the factors.

I've done the factors of 80 here on my example. **You need the factors of 100 :**

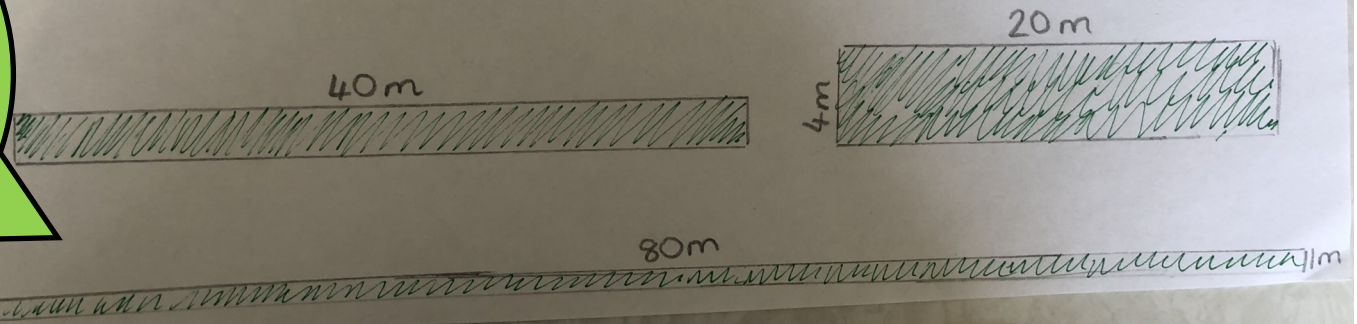


Then use the pairs of factors to design some gardens. Here are mine for  $80\text{m}^2$ . You need to choose your favourite shape. I think some of mine are too long and thin so I'm choosing  $8\text{m} \times 10\text{m}$ .

The factors of 80...



Remember not to copy mine! I've done  $80\text{m}^2$  for my example, yours has to be  $100\text{m}^2$ .



## Trickier Garden Shapes...

To design a more challenging garden shape, you could make a **compound shape** – two rectangles for example.

The total area needs to be  $100\text{m}^2$ , so the area of both rectangles would need to **add together** to make **100**.

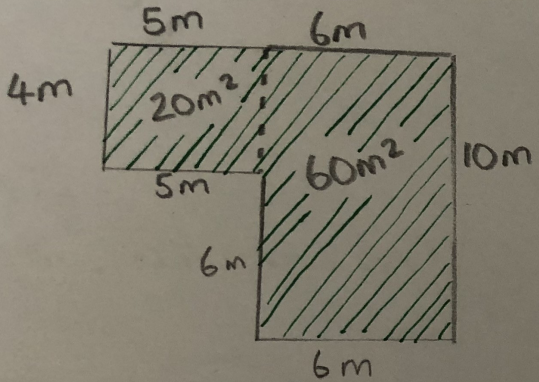
I've done a couple here with area of 80.

I had to

- Think of 2 numbers that add to make 80
- Work out their factors so that I could choose the lengths of the garden.
- Choose the sizes I wanted, and draw them.

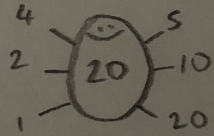
You just need to do the same for 100!

$20\text{m}^2 + 60\text{m}^2 = 80\text{m}^2$



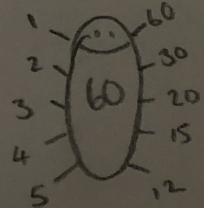
**Ways to make 20**

$4 \times 5$  ✓  
 $2 \times 10$   
 $1 \times 20$



**Ways to make 60**

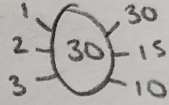
$1 \times 60$      $5 \times 12$   
 $2 \times 30$      $6 \times 10$  ✓  
 $3 \times 20$   
 $4 \times 15$



$30\text{m}^2 + 50\text{m}^2 = 80\text{m}^2$

**Ways to make 30**

$1 \times 30$   
 $2 \times 15$   
 $3 \times 10$  ✓



**Ways to make 50**

$1 \times 50$   
 $2 \times 25$      $5 \times 10$  ✓

