



“Changing Garden”

FENCE	LENGTH (Feet)	WIDTH (Feet)	PERIMETER (Feet)	AREA (Square Feet)
A	1	14	30	14
B	2	13	30	26
C	3	12	30	36
D	4	11	30	44
E	5	10	30	50
F	6	9	30	54
G	7	8	30	56

2. What does *area* mean?

Area is the number of square units that cover a two-dimensional figure or shape.

3. What does *perimeter* mean?

Perimeter is the distance around a two-dimensional figure or shape.

4. In the space below, use words, pictures, or numbers to describe how you would find the perimeter of a rectangle of any size.

Students' responses will vary but should suggest the idea that they would (a) add the lengths of all four sides, or (b) add the length and width of the rectangle and multiply this sum by two, or (c) multiply the length by two and width by two and add these two products.

5. Do all the possible gardens that use the 30 feet of wire fencing have the same perimeter? _____ Why, or why not?

Yes, all the gardens have the same perimeter. The changes in the dimensions of each arrangement do not affect the total perimeter since at no point does the total **amount** of fencing change.

6. Do all the possible gardens that use the 30 feet of wire fencing have the same area? _____ Why, or why not?

No, all the gardens do not have the same area. As the dimensions change, square units are either “pulled into” or “pushed out of” the garden, changing its area. As the length and width approach each other in value (i.e. as the garden becomes more nearly square), the space inside the garden, or its area, increases.