

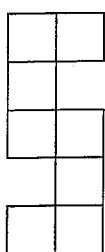
Name: Logan Kelley  
Grade: 5

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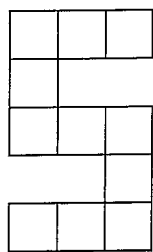
## The Queen's Croquet-Ground #2

Utah's Largest Math Event (qualifier)

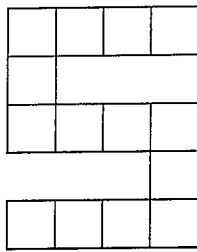
The shapes below show how the croquet-ground grows every time the Queen changes her mind. Now she wants the soldiers to build a new fence around each croquet-ground.



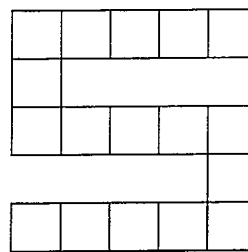
#1



#2



#3



#4

1. Use a pattern from the shapes above to determine the perimeter of the 5<sup>th</sup> shape in the sequence. Show or explain how you arrived at your answer. 42 units

If the pattern continues then n  
would equal 42. Each perimeter is 6 greater than  
the one before it.

field number	Perimeter (in units)
1	18
2	24
3	30
4	36
5	n

2. Write a formula that you could use to find the perimeter of any shape  $n$ .

Explain how you found your formula.  $6 \times (n-1) + 18$  If you  
keep the starting perimeter (18) and then  
if you take the difference in perimeter of  
each field (6) multiplying  $6 \times n$  would be greater than  
you need so you subtract 1 from  $n$  and  
add 18 and it equals the perimeter every  
time.