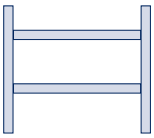
Trend Task: Fence

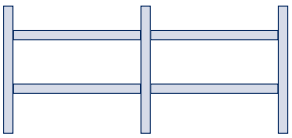
Approach:	Stations	Year:	4 & 8
Focus:	Using algebraic reasoning to solve problems		
Resources:	16 fence sticks		

Questions / instructions:

With 4 sticks I can make this fence section:



With 7 sticks I can make a fence with 2 sections:



1. Use the sticks to make a fence with 4 sections. Draw the fence here.

	% response 2005 ('01) year 4	year 8
correctly drawn with 4 sections *(5 verticals)*	57 (64)	87 (84)

YEAR 8 ONLY:

2. Write a rule for this pattern.

number of sticks = 3x + 1 *(any letter, any order)*	•	5 (3)
rule for number of sticks described in words clearly	•	10 (9)
other valid rule *(e.g. 1 more post than number of sections)*	•	17 (20)

3. How many rails would be needed to make a fence with 10 sections? 31 • . 27 (30)

4. How many rails would be needed to make a fence with 100 sections? 301 • 14 (17)

Total score: 6	•	4 (2)
5	•	4 (5)
4	•	6 (8)
3	•	10 (11)
2	•	16 (18)
1	•	50 (44)
0	•	10 (13)

Commentary:

Just over half of the year 4 students could construct the fence as requested. This increased to 87 percent at year 8, but few of the year 8 students could provide an adequate rule for the process or calculate more difficult tasks. 2001 and 2005 results were similar.