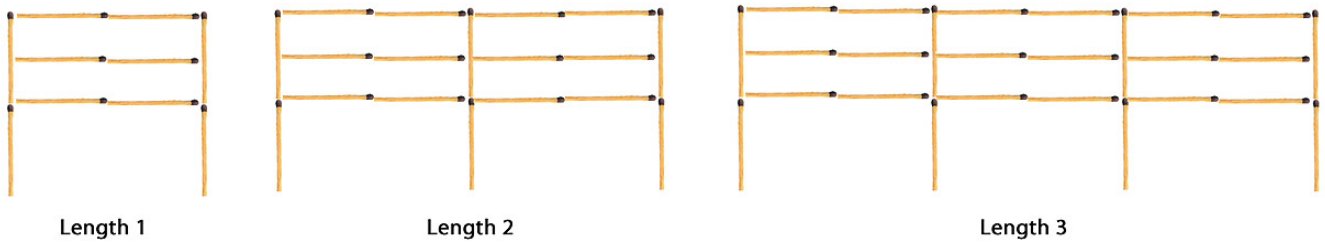
Fencing it in

Annotation

Brian solves the problem representing the relationship between elements of a sequential pattern and their ordinal positions using a table and a graph. He can state the rule in words that correctly describe the pattern and the shape of the line in the relationship graph.

Problem: Fencing It In

The teacher shows the student the following matchstick fence pattern and makes pencil and paper available to the student.

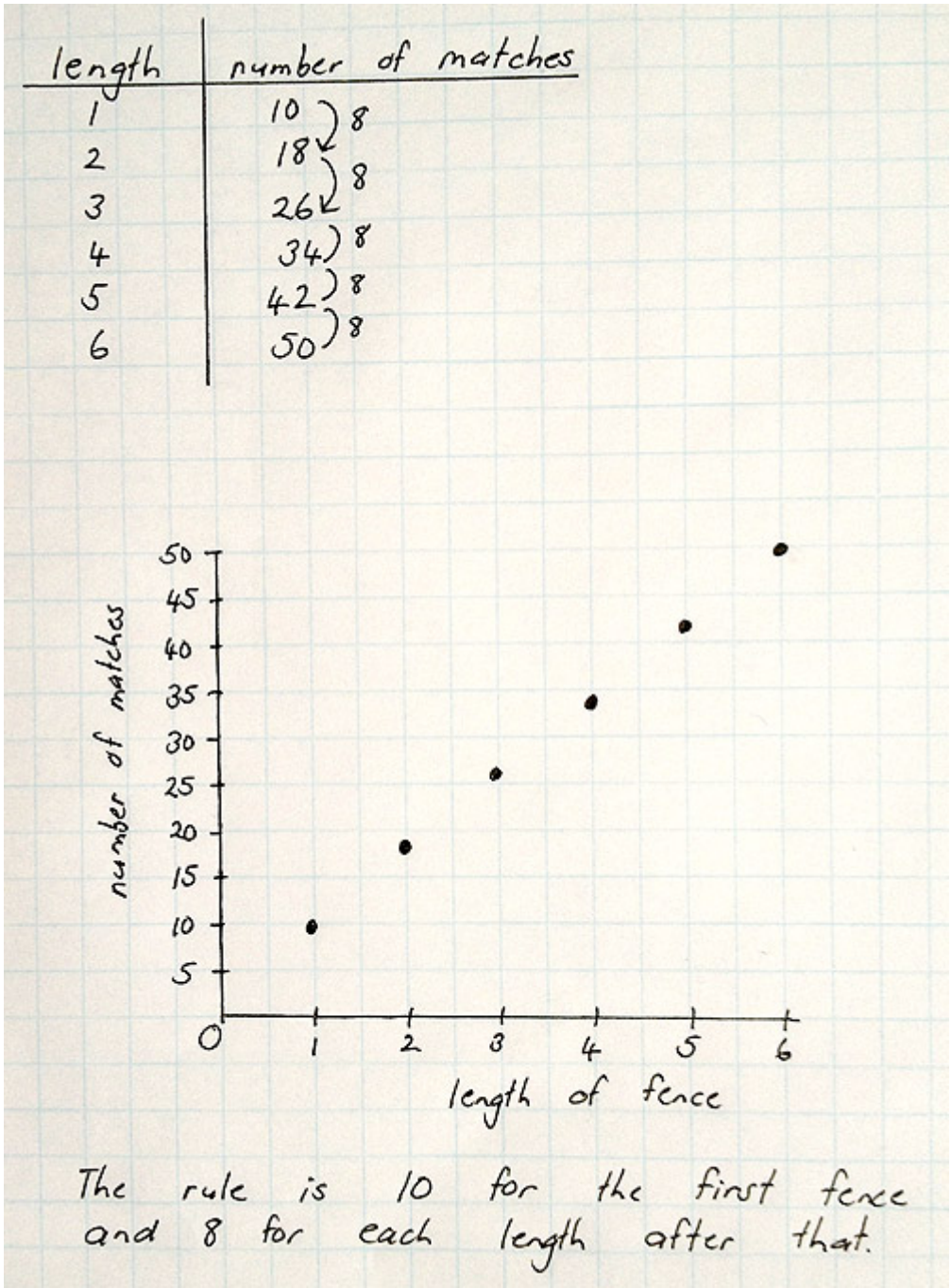


Then the teacher poses this question:

In this fence problem there are three fences of length 1, length 2 and length 3. Your challenge is to find out how many matchsticks you need for different fence lengths.

Student Response

Brian draws the following table and graph:



Teacher: Tell me about what you have done.

With problems like these I find it helps if I draw a table so I can see what was going on with the numbers. Then I like to see it on a graph cos that shows what's happening too.

Brian: You can see the 10 for the first fence length, but then the slope is in a straight line from there because each fence length goes up by the same amount, which is eight.

I wrote the rule too because that tells you in words what's happening in the pattern.