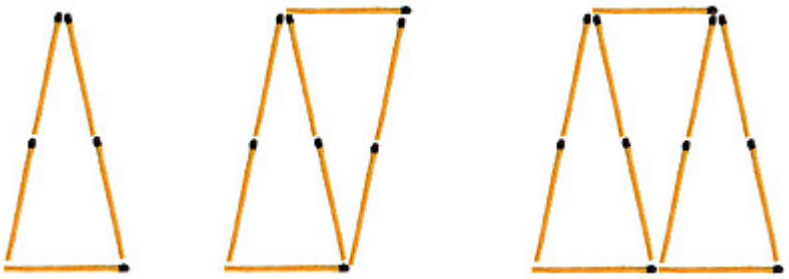
Matching up

Annotation

Frances can interpret a spatial sequential pattern, explain and write an equation to describe a linear relationship and move flexibly between representations.

Problem: Matching up

Room 2 are investigating patterns using a range of materials. The student has made this pattern and has begun making a table.



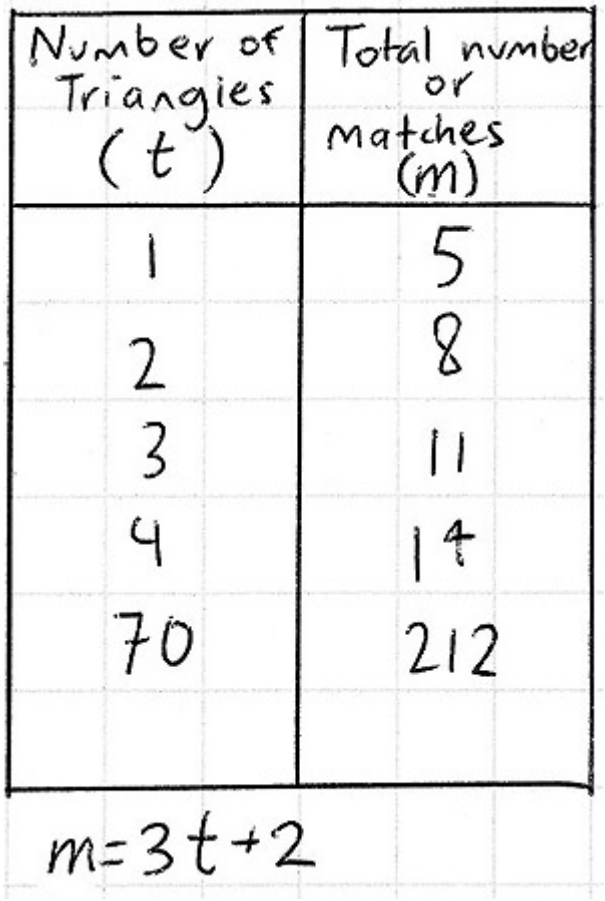
Number of Triangles (t)	Total number or matches (m)
1	5
2	8
3	11

The teacher poses this problem:

Can you work out how many matches you need for a pattern with "t" triangles?

Student Response

Frances adds to the table and then writes an equation:



Teacher: Tell me about your thinking.

Frances: Well I've called the number of triangles "t" and the total number of matches "m". Except for the first triangle, every triangle needs three matches. So, except for the first triangle, three times t will give m, which is the total number of matches. The first triangle uses five matches, two more than all the others, so we have to add those two on. That's the + 2. So the equation is $m = 3t + 2$.

I included that last number in the table just to show how this equation works when there are 70 triangles. So it would work for any number.