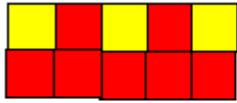
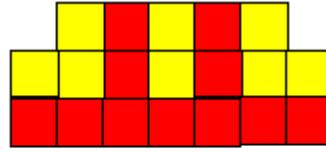


Building Patterns Incrementally Copymaster 6

This pattern is for a block of flats. The architect thought that the buildings would look nicer if he put red and yellow squares on the outside.



first block



second block

Task 1.

How many yellow squares do we need for the first block of flats? The second? The third?

How many yellow squares will we need for the sixth block? The eighth?

What is the recurrence rule for the number pattern for the yellow squares? (How does it change as we go from block to block?)

What is the number of the block if we have to use exactly 63 yellow squares to make it?

*Which of these numbers are **not** a number of squares for one of these blocks: 119, 120, 121, 122*

What is the largest number of yellow squares less than 100 in this pattern?

Which block has 6 times more squares than another block? (Is there more than one answer for this question?)

What is the general rule for this pattern? That is, given the number of the block, can you make up a rule that gives the number of the yellow squares?

Can you see any more patterns here?

Task 2

How many red squares do we need for the first block? The second? The third?

How many red squares will we need for the sixth block? The eighth?

What is the recurrence rule for the number pattern for the red squares? (How does it change as we go from block to block?)

What is the number of the block if we have to use exactly 403 red squares to make it?

*Which of these numbers are **not** a number of squares for one of these blocks: 140, 141, 142, 143?*

What is the largest number of red squares less than 100 in this pattern?

Which two blocks are such that one block has 5 times the number of squares as the other? (Is there more than one answer for this question?)

What is the general rule for this pattern? That is, given the number of the block, can you make up a rule that gives the number of the red squares?

Can you see any more patterns here?