

## 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?*