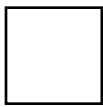
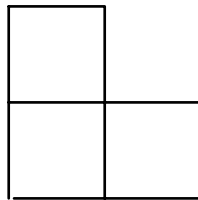


The Staircase Problem

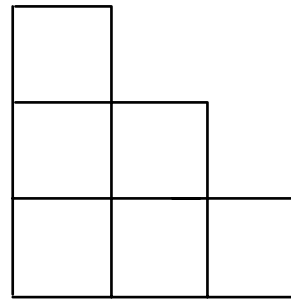
The staircases below are formed from tiles. Each row contains one more tile than the row above it.



Height 1



Height 2



Height 3

- How many tiles would it take to form a staircase of height 10? Of height 100? Of height H ?
- Look for patterns – numerical and visual. You can play with rearranging the tiles into a shape where it's easier to count them. Using more than one color tile in a systematic way might prove helpful. You can also look for patterns in the numbers.
- Justify as many patterns as possible. Justifying a pattern means finding an argument that will convince a skeptic that your pattern continues beyond the examples you've tried. Look for meaning. Try to relate your patterns to the initial problem.
- Make up variations of this problem and try to solve them. You can change the pattern in constructing the staircase, ask a different question, etc.

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