



The Knight's Missing Numbers



COMPLETE TO COLLECT

Indicolite

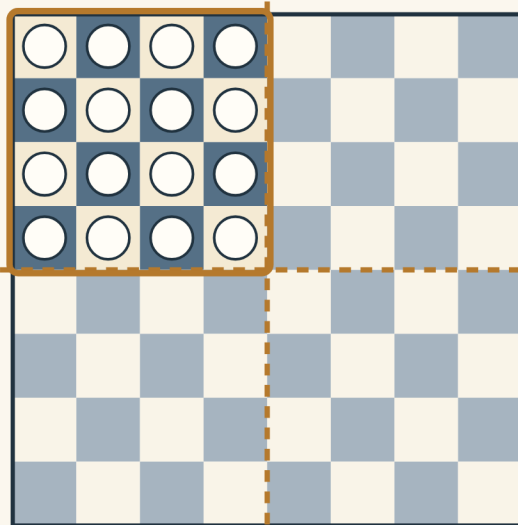
Level 3 · 5 Glints

THE PROBLEM

On an empty 8×8 chessboard, a square's **knight-move count** is the number of different squares a knight can reach from that square in one move.

A knight moves **2 squares** in one direction, then **1 square** in a perpendicular direction. Its landing square must stay on the board. The two center lines are mirror lines. Use the outlined 4×4 quarter to determine the counts for the whole board.

The knight-move map



center mirror line

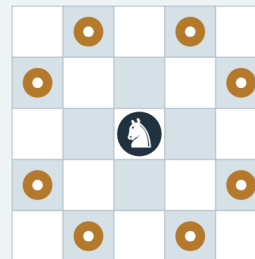
center mirror line

Each blank circle stands for one square in the outlined quarter. Write that square's knight-move count in the circle.

Knight-move count = number of legal landing squares

A knight jumps in an L

2 squares one way, then 1 square sideways.



The 8 brass dots are the possible landing squares when no board edge gets in the way.

Possible counts

Circle counts that appear. Cross out counts that never appear.

2

3

4

5

6

7

8



QUESTIONS

Mark the map and number row on this page. Use separate paper for the short explanation.

- Write the knight-move count in each of the 16 blank circles in the outlined quarter. Use the knight-jump picture as a checklist so that you test every possible landing square exactly once.
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- The numbers 2 through 8 appear beside the board. Circle every number that appears in your completed quarter map, and cross out every number that can never occur anywhere on the board. On separate paper, explain why reflecting the quarter across the two center lines cannot produce a new knight-move count.

