

Shikaku Cats: Rules & Demonstration Guide

UNICORN GAMES

Area Calculation, Factorization & Grid Logic – Grades 3-8

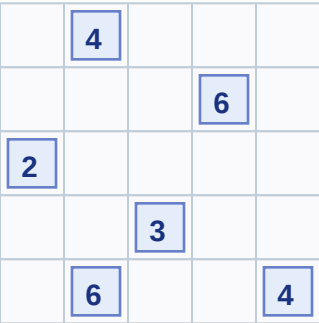
THE GOLDEN RULE OF SHIKAKU (NUMBER AREA)

Divide the grid into rectangles and squares so that EVERY room encloses EXACTLY ONE clue number.

The area of each room (Width x Height = Area in grid cells) must EQUAL the clue number inside it!

VISUAL DEMONSTRATION: UNSOLVED vs COMPLETED PUZZLE

1. Unsolved Grid (Clues Placed)



2. Solved Grid (Non-overlapping Rooms)



MASTER SOLVING STRATEGIES FOR STUDENTS

1. The Prime Number Rule

Prime numbers (2, 3, 5, 7) only have ONE factor pair: 1 x N. They can ONLY form a straight line 1 cell wide! Never try to make a square out of a 3 or 5.

2. The Corner Lock Technique

Inspect the 4 outer corners of the board. If only ONE clue number is physically close enough to claim a corner cell, that clue MUST expand to enclose that corner cell.

3. Large Clue Prioritization

Big numbers (like 8, 10, or 12) require massive space. Because the board has limited room, they often have only 1 or 2 possible placements. Fix them early!

4. The Conservation of Area Theorem

Add up all clue numbers: their sum MUST equal the total cells in the grid (e.g. 5x5 grid = 25 total cells). If a cell cannot be claimed by any room, reconsider your previous moves.

GEOMETRIC FACTOR PAIRS REFERENCE CHART (Area = Width x Height)

Area 2: 1x2, 2x1 (Line)	Area 4: 1x4, 4x1 (Line) or 2x2 (Square)	Area 8: 1x8, 8x1, 2x4, 4x2
Area 3: 1x3, 3x1 (Line)	Area 6: 1x6, 6x1, 2x3, 3x2 (Rectangle)	Area 9: 1x9, 9x1, 3x3 (Square)

Shikaku Logic Puzzle: 3 Classroom Challenges

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Draw the Rectangles with Pencil ☞ Every Cell Must Be Used

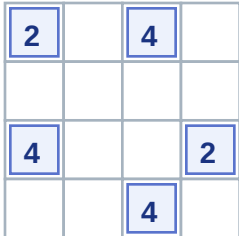
STUDENT NAME: _____

DATE: _____

SCORE: ____ / 3

PUZZLE #1: Playful Kitten (4x4 Grid - 16 Cells)

Hint: Start with the number 2 on the edge, then find the 2x2 square for 4.

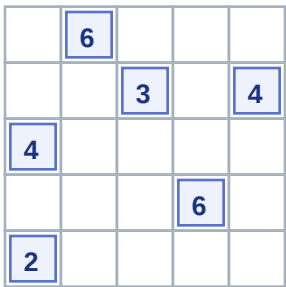


Student Checklist for Puzzle #1:

- ☐ Total cells check: $2 + 4 + 4 + 2 + 4 = 16$ cells (Matches 4x4 grid!)
- ☐ Every box contains exactly one number tile
- ☐ No lines or boxes cross over one another
- ☐ All 16 squares are completely covered with no empty spots

PUZZLE #2: House Cat (5x5 Grid - 25 Cells)

Hint: Factor pairs for 6 can be 2x3 or 3x2. Check which direction doesn't block the 3!

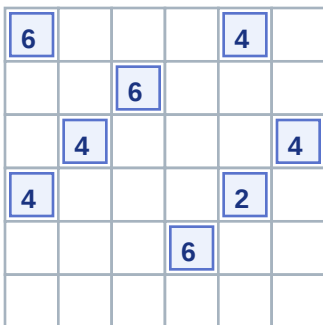


Step-by-Step Guidance:

1. Locate the '2' in the bottom-left corner. It only has room to go 2x1 horizontally or 1x2 vertically.
2. Notice the '4' above it. Can the 4 be a 2x2 square without crowding the 2?
3. The '6' clue at the top needs 6 cells. Since it's in row 1, it must be 2 rows down x 3 wide.
4. Try drawing light pencil borders first so you can erase if you hit a dead end.
5. Verify: $6 + 3 + 4 + 4 + 6 + 2 = 25$ cells. Perfect!

PUZZLE #3: Majestic Lion Challenge (6x6 Grid - 36 Cells)

Solve this expert logic puzzle without any hints! Double-check all rectangles before submitting.



Teacher & Self-Check Solutions:

☞ Puzzle 1: (0,0): 2x1=2 | (0,2): 2x2=4 | (2,0): 2x2=4 | (2,3): 1x2=2 | (3,1): 3x1 or 1x4

☞ Puzzle 2: (0,0): 3x2=6 | (0,3): 2x2=4 | (1,2): 1x3=3 | (2,0): 2x2=4 | (3,3): 2x3=6 | (4,0): 2x1=2

☞ Puzzle 3: Factor pairs test 6=3x2 or 2x3, 4=2x2 or 1x4, 2=1x2.

☞ Play 50+ handcrafted interactive levels at:

<https://www.unicorn.games/game/shikaku-cats-brain-puzzle>☞ Unblocked school version: <https://www.unicorn.games/unblocked/shikaku-cats-brain-puzzle>

STUDENT STEM REFLECTION QUESTION:

Explain why a clue with the number '7' is easier to solve than a clue with the number '12':
