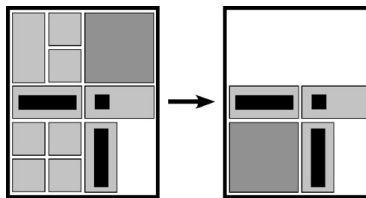


Fence The Cow



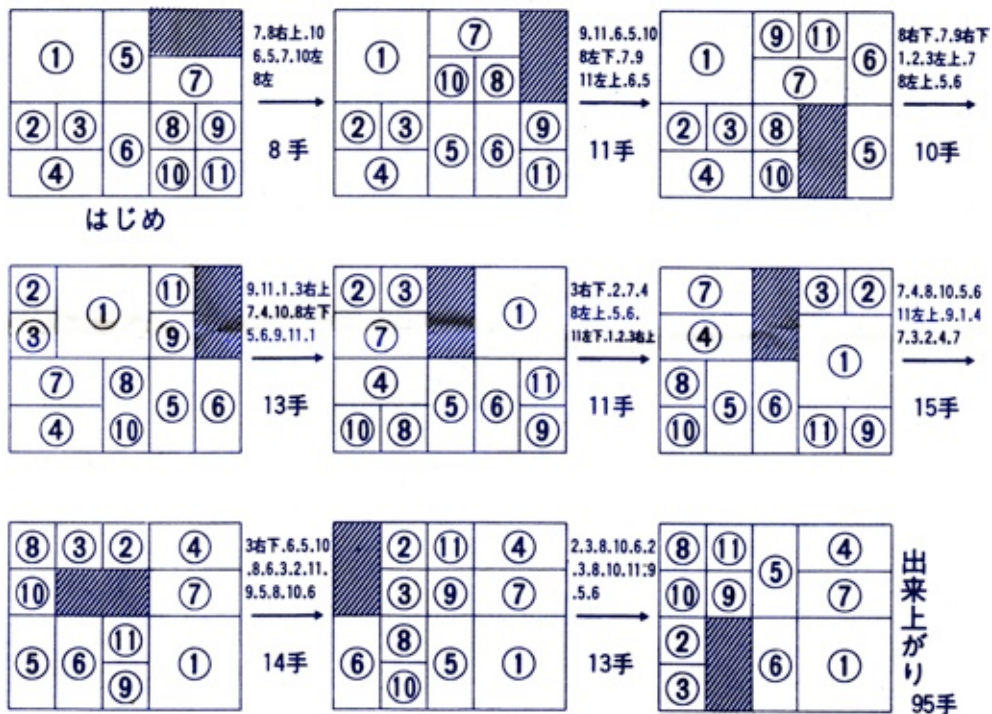
Originally manufactured by Hanabishi 1984;
 left purchased in Japan 2010, right made by J. A. Storer 2007.
 (left: cardboard box, 11 wood pieces + keeper, 4.75" x 5.8" x 7/16";
 right: box, 11 purple heart and cherry pieces + keeper, 5" x 6.1" x 1.25")

The object is to move the cow inside the fences:



Here are the directions that were sold with the puzzle:

牛・牧場パズル 正解例



A Solution to Fence The Cow

Here is a solution of 82 straight-line moves; it can be converted to 71 rectilinear moves by combining steps 2/3, 15/16, 19/20, 23/24, 26/27, 30/31, 33/34, 40/41, 45/46, 58/59, and 62/63 (this solution remains minimal even if graphics are ignored, and no solution is possible if the lower right two square are required to be blank):

| | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|
| 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X |
| 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X |
| 7 7 8 8 | 7 7 8 8 | 7 7 8 8 | 7 7 8 8 | 7 7 8 8 | 7 7 8 8 | 8 8 | 8 8 3 |
| 3 4 10 | 3 4 10 | 3 4 10 | 3 10 | 3 10 | 7 7 3 10 | 7 7 3 10 | 7 7 10 |
| 5 6 10 | 5 6 10 | 5 6 10 | 5 6 4 10 | 5 6 4 10 | 5 6 4 10 | 5 6 4 10 | 5 6 4 10 |
| 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X |
| 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X |
| 8 8 3 10 | 8 8 3 10 | 8 8 3 10 | 8 8 3 10 | 8 8 3 10 | 8 8 3 10 | 3 10 | 3 4 10 |
| 7 7 4 | 7 7 4 10 | 7 7 4 10 | 7 7 4 10 | 7 7 4 10 | 8 8 4 10 | 8 8 4 10 | 8 8 10 |
| 5 6 10 | 5 6 | 5 | 5 6 | 7 7 5 6 | 7 7 5 6 | 7 7 5 6 | 7 7 5 6 |
| 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X |
| 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X |
| 3 4 10 | 3 4 10 | 3 4 10 6 | 3 4 10 6 | 3 4 10 6 | 3 4 10 6 | 3 4 10 6 | 3 10 6 |
| 8 8 10 | 8 8 10 | 8 8 10 | 8 8 10 | 8 8 10 5 | 8 8 10 5 | 8 8 10 5 | 4 10 5 |
| 7 7 5 6 | 7 7 5 6 | 7 7 5 | 7 7 5 | 7 7 | 7 7 | 8 8 7 7 | 8 8 7 7 |
| 9 1 X X | 9 1 X X | 9 1 X X | 9 1 X X | 9 1 | 9 1 | 9 2 1 | 9 2 1 |
| 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 2 X X | 9 X X | 9 X X |
| 3 10 6 | 3 10 6 | 3 10 6 | 3 10 | 3 10 X X | 3 10 X X | 3 10 X X | 3 10 X X |
| 4 10 5 | 4 10 5 | 4 10 5 | 4 10 6 5 | 4 10 6 5 | 4 10 6 5 | 4 10 6 5 | 4 10 6 5 |
| 8 8 7 7 | 8 8 7 7 | 8 8 7 7 | 8 8 7 7 | 8 8 7 7 | 8 8 7 7 | 8 8 7 7 | 8 8 7 7 |
| 9 10 2 1 | 9 10 2 1 | 9 10 2 1 | 9 10 2 1 | 9 10 2 1 | 9 10 2 1 | 9 10 2 1 | 9 10 2 1 |
| 9 10 X X | 9 10 X X | 9 10 X X | 9 10 X X | 9 10 X X | 9 10 X X | 9 10 X X | 9 10 |
| 3 X X | 3 X X | 3 4 X X | 3 4 X X | 3 4 X X | 3 4 X X | 3 4 X X | 3 4 X X |
| 4 6 5 | 4 6 5 | 6 5 | 8 8 6 5 | 8 8 6 5 | 8 8 6 5 | 8 8 5 | 8 8 X X |
| 8 8 7 7 | 8 8 7 7 | 8 8 7 7 | 7 7 | 7 7 | 7 7 6 | 7 7 6 5 | 7 7 6 5 |
| 9 10 1 | 9 10 1 | 9 10 1 | 9 10 1 | 3 9 10 1 | 3 9 10 1 | 3 9 10 1 | 3 9 10 1 |
| 9 10 2 | 9 10 2 | 9 10 2 | 9 10 2 | 9 10 2 | 9 10 2 | 4 9 10 2 | 4 9 10 2 |
| 3 4 X X | 3 4 X X | 3 4 X X | 3 4 X X | 4 X X | 4 X X | X X | 8 8 X X |
| 8 8 X X | 8 8 X X | 8 8 X X | 8 8 X X | 8 8 X X | 8 8 X X | 8 8 X X | X X |
| 7 7 6 5 | 7 7 6 5 | 7 7 6 5 | 7 7 6 5 | 7 7 6 5 | 7 7 6 5 | 7 7 6 5 | 7 7 6 5 |
| 3 9 10 1 | 3 9 10 1 | 3 9 10 1 | 3 9 10 1 | 3 9 1 | 3 9 1 | 3 9 1 2 | 3 9 1 2 |
| 4 9 10 2 | 4 9 10 2 | 4 9 10 2 | 4 9 10 2 | 4 9 10 2 | 4 9 10 2 | 4 9 10 | 4 9 10 |
| 8 8 X X | 8 8 X X | 8 8 X X | 8 8 | 8 8 10 | 8 8 10 | 8 8 10 | 8 8 10 |
| 7 7 X X | 7 7 X X | 7 7 X X | 7 7 X X | 7 7 X X | 7 7 X X | 7 7 X X | 7 7 X X |
| 6 5 | 6 5 | 6 5 | 6 5 X X | 6 5 X X | 6 5 X X | 6 5 X X | 6 5 X X |
| 3 9 2 | 3 9 2 | 3 9 2 | 3 4 9 2 | 3 4 9 2 | 3 4 9 2 | 3 4 9 2 | 3 4 9 2 |
| 4 9 10 | 4 9 10 | 4 9 10 | 9 10 | 8 8 9 10 | 8 8 9 10 | 8 8 9 10 | 8 8 9 10 |
| 8 8 110 | 8 8 110 | 8 8 110 | 8 8 110 | 110 | 7 7 110 | 7 7 110 | 7 7 110 |
| 7 7 X X | 7 7 X X | 7 7 X X | 7 7 X X | 7 7 X X | X X | 5 X X | 5 X X |
| 6 5 X X | 6 5 X X | 6 5 X X | 6 5 X X | 6 5 X X | 6 5 X X | 6 X X | 6 X X |
| 3 4 9 2 | 3 4 9 2 | 3 4 9 2 | 3 4 2 | 3 4 2 | 3 4 2 1 | 3 4 2 1 | 3 4 2 1 |
| 8 8 9 10 | 8 8 9 | 8 8 9 | 8 8 9 | 8 8 9 | 8 8 9 | 8 8 9 | 8 8 9 |
| 7 7 110 | 7 7 1 | 7 7 1 | 7 7 9 1 | 7 7 9 1 | 7 7 9 | 7 7 9 | 7 7 9 |
| 5 X X | 5 X X 10 | 5 X X 10 | 5 X X 10 | 5 X X 10 | 5 X X 10 | 5 X X 10 | 5 X X 10 |
| 6 X X | 6 X X 10 | 6 X X 10 | 6 X X 10 | 6 X X 10 | 6 X X 10 | 6 X X 10 | 6 X X 10 |
| 3 4 2 1 | 3 4 2 1 | 3 4 2 1 | 3 4 2 1 | 3 4 2 1 | 3 4 2 1 | 3 4 2 1 | 3 4 2 1 |
| 8 8 9 | 5 8 8 9 | 5 8 8 9 | 5 8 8 9 | 5 8 8 9 | 5 8 8 | 5 8 8 | 5 8 8 |
| 7 7 9 | 6 7 7 9 | 6 7 7 9 | 6 7 7 9 | 6 7 7 9 | 6 7 7 | 6 7 7 | 6 7 7 |
| 5 X X 10 | X X 10 | X X 10 | X X 10 | X X 10 | X X 10 9 | X X 10 9 | X X 10 9 |
| 6 X X 10 | 6 X X 10 | X X 10 | X X 10 | X X 10 | X X 10 9 | X X 10 9 | X X 10 9 |
| 3 4 2 1 | 3 4 2 1 | 3 4 2 1 | | | | | |
| 6 5 8 8 | 6 5 8 8 | 6 5 | | | | | |
| 7 7 | 7 7 | 7 7 8 8 | | | | | |
| X X 10 9 | X X 10 9 | X X 10 9 | | | | | |
| X X 10 9 | X X 10 9 | X X 10 9 | | | | | |

(one move = sliding one piece any number of units in one direction)