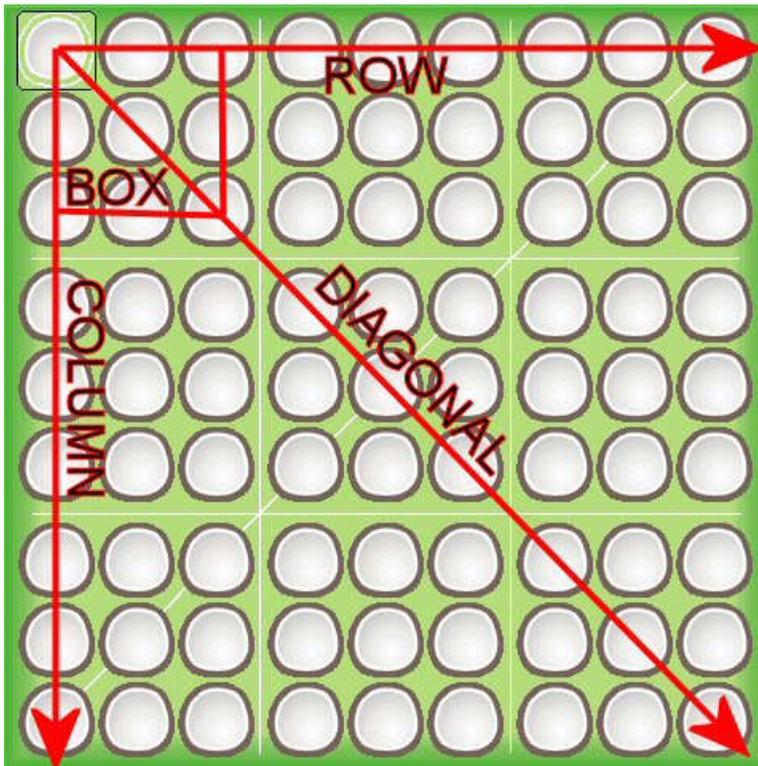


# Super KOKONOTSU-SUDOKU

Kokonotsu (pronounced “coconuts”) is a puzzle consisting of nine 3x3 boxes forming an 81-field matrix. The object is to place nine different objects in each of the nine 3x3 boxes, each horizontal row, each vertical column as well as both major diagonals.



## **Quick Start:**

For those who are familiar with Sudoku and want to get into the game right away, simply install the game and hit Continue or New Game. Select the square you want to enter and then the value you want to place in that square and you're off! Refer to the rest of this help text when you're ready for more.

## **Main Menu**

	Opens the Options Window
	Continues the current game
	Starts a New Game
	Opens the Registration Window
	Exits the Game

## **Options Window**

Several options are selectable here, including

Sound: Toggles sound on/off

Sudoku: Toggles Sudoku mode on/off (starts a new game when you change this setting)

Dots: Toggles the Helper Dots on/off

Piece Set: Allows you to choose an in game piece set

## **Registration Window**

Entering your Name on a Windows Mobile Device:

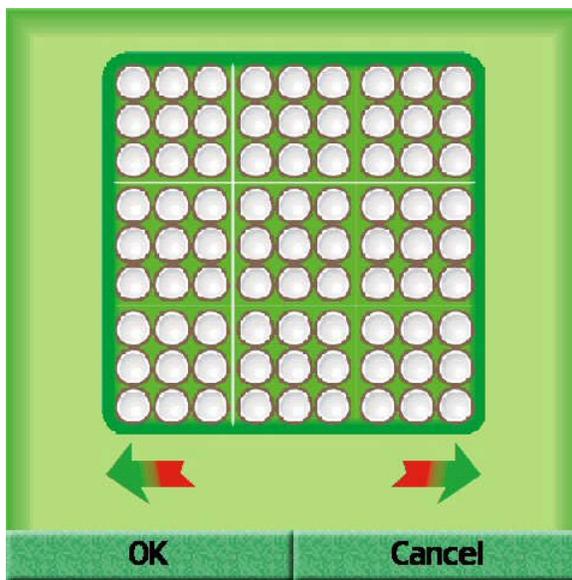
For PocketPC and PocketPC Phone editions, go to your Today Screen (Start Menu, Today, Owner) and enter your owner name. For Smartphone devices, hit Start, Settings, More Settings, Owner Information and enter your owner name in the field provided.

For PC, you must enter your owner name in the top field.

In all cases use the Shift key or button to access the European characters (i.e. ü). Enter your key in the lower space provided and press OK. If you get the message “Invalid Key”, carefully check your name and key to see it matches your registration info. If you need a new key (say you have initials or Dr. or something in your name) please send a request to [support@mud.ca](mailto:support@mud.ca).

## ***New Game***

Pressing the new game button opens up the new game selection screen:



Select the board size (4x4 or 9x9) and hit OK. The 4x4 mode is perfect for learning the game. If you select the 9x9 board size, you will be prompted to select a level; select from:

## Levels



Easy mode means that every piece will have a logical place given the information; i.e. every move is a forced move. Use this as an introduction to the 9x9 levels.

Medium mode means that in addition to forced moves, there are some logical deductions required for example Disjoin Sets that cause certain piece placements to be impossible. Use these deductions to discover forced moves. This is the level that most people will prefer to play.

Hard mode builds on Medium mode, in that besides the initial logical decisions, more complicated rules like XWing or Starfish come into play. These are definitely for the addict!

Extreme mode uses all the rules of Hard mode, except it looks for puzzles that have even more deductions required. Sometimes it can take a while to generate an extreme puzzle but it usually takes quite a while to solve it too!

## Gameplay

Here's an example image where the currently selected cell can only be a 5:



Use the cursor keys or mouse/stylus to select the cell and hit enter to select a piece from the selector bar (or simply click on it directly).



If you have a keypad you can also enter the number 1-9 to enter a piece, or 0 or Space to clear it. As a shortcut, clicking on a cell with only one possibility (a single dot) will automatically place that piece in the cell.

The cell will be filled with the selected piece. Continue in this way until you've solved the entire puzzle!

## Hints, Helper Dots and Marks



If Helper Dots are enabled, empty cells will be marked with dots in the positions of 1-9 modeled after a telephone keypad. Use these dots to quickly see what can and cannot be in a certain cell.

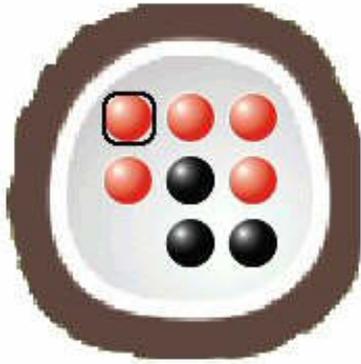


When you place a piece in a cell, the helper dots are automatically updated to reflect this new piece. If you take a hint they can be even further updated.

For example in the previous diagram, there must be a 4 in box 1 so there cannot be a 4 in the rest of row 1. The black dots mark the impossible 4's. This reveals a forced move:



The 4 must go in row 2 column 8. You can also manually mark dots as impossible, a process known as “pencil marking”. Select a cell and choose the Marks command from the menu.



This example has the 5, 8 and 9 marked as impossible. Cursor to the location you want to change and hit enter, or click on or hit the numbers 1-9 to toggle the dots. NOTE: whether or not you are correct, the game will let you mark dots as impossible...if you select hint with incorrect marker dots the hint system will use these and return false hints.

### ***Edit Mode***

In addition to playing, you can create your own puzzles in edit mode. Use the Menu – Edit command to enter edit mode and then type using numbers 1-9 and space to enter in a board. You can also select a cell and then a selector bar icon to enter a piece. Select a cell again to clear an entry.

Use the Copy and Paste commands to copy to and from the clipboard. This is especially useful for emailing or posting a puzzle to the forum. Paste recognizes many different formats, if there is a format it should recognize but does not please contact [support@mud.ca](mailto:support@mud.ca).

After you're done editing, hit either Menu – Cancel to abort your current editing; the board will revert to what it was before you entered edit mode; or hit Menu - Done to accept your changes. If the puzzle has no solution, an error message will appear and you will have to edit the puzzle some more. If there is a solution, but the solver can't solve it using logic alone, you will get a warning that Trial and Error is required to solve the puzzle. If you find a puzzle the solver can't solve that it should please paste this board into an email to [support@mud.ca](mailto:support@mud.ca).

### ***Sudoku Mode***

One of the options is to turn on/off Sudoku mode. This is for the users who want to use the game to solve a Sudoku puzzle or who prefer to play without diagonals. There are tons of interesting puzzles online in the forums; pasting one into the game is a great way to analyze it. If in Edit mode you get the error "Solution not found" after pasting a board, you probably forgot to put the game in Sudoku Mode (or vice versa)

## Appendix A

### **Keystrokes:**

#### In Game

1-9	Enters the selected piece into the current cell (if possible).
0, Space	Clears the current cell
Enter	Moves the cursor to the Selection bar to allow you to select a piece
Cursor Keys	Moves the cursor around the puzzle
Backspace, U	Undoes a move
O	Opens the Options window
M	Enters Marks mode (only for empty cells)
H	Asks for a Hint
CTRL-C	Copies the current board to the clipboard
CTRL-V	Pastes from the clipboard, enters edit mode
Shift-E	Enters Edit mode

#### Edit mode

Cursor Keys	Moves the cursor around the board
1-9	Enters the selected piece into the current cell and moves the cursor
0, Space	Clears the current cell
Shift-C	Clears the entire board
Shift-E	Exits Edit mode

#### Marks mode

1-9	Toggles the mark for position n
Enter, Space	Toggles the currently selected position
Cursor Keys	Moves the highlighted position
Backspace	Returns to the game saving the current marks

### **Menu Commands:**

Open the menu on the PC version by right clicking in the game area or left clicking on the Professor Logic icon in the top left (added for tablet users where right click is not very convenient)

#### Main Menu

Options	Opens the Options Window
Continue	Continues the current game
New Game	Starts a new game
Register	Opens the Registration Window
Exit	Exits the game

## **Menu Commands (cont)**

### In Game Menu

Marks	Zooms into the current coconut in Marks mode
Hint	Asks for a hint
Solve	Solves the puzzle; use undo to unsolved back to where you were.
Options	Opens the Options Window
Edit	Turns on Edit mode
New Game	Starts a new game at with the current size and skill level
Quit	Quits to the main menu

### Edit Mode Menu

Copy	Copies the current board to the clipboard
Paste	Pastes from the clipboard
Clear	Clears the board
Done	Accepts the current board and exits Edit mode. If a solution cannot be found will remain in Edit mode.
Cancel	Cancel the current edit and reverts back to the board before you entered Edit mode.

## Kokonotsu/Sudoku Solving Strategies

There are many techniques for solving these puzzles, from the very easy/obvious to the crazy hard to spot methods.



### ***Naked Singles***

In this example, there can only be a 6 in row 1, column 1. The other possibilities already exist in the row, column and diagonal.



### ***Hidden Singles***

Similarly, there can only be an 8 in row 3 column 2. There is no other place in box 1 where an 8 can go.

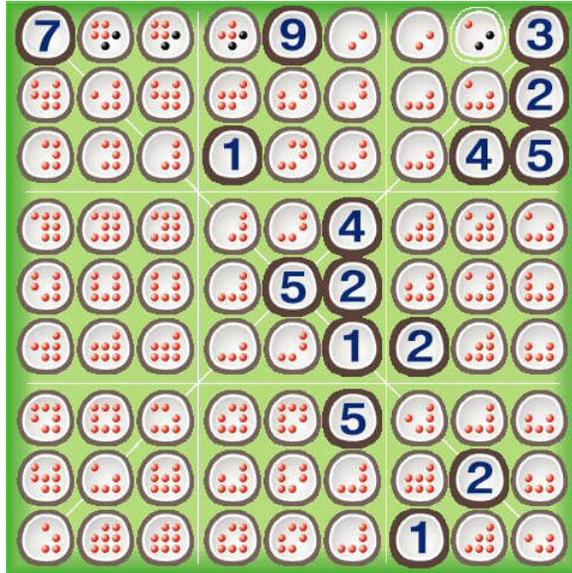


### ***Locked Candidates***

A 4 must exist in row 1 of box 1, therefore it cannot exist in the rest of row 1. Black dots mark these spaces as impossible.



Similarly, A 1 and a 9 must occur in column 6, therefore the 1 and 9s in the rest of box 8 can be eliminated.



### ***Naked Pairs***

Row 1, column 6 and row 1, column 7 are a pair. Since a 6 and 8 must be in either of these places, it cannot be in the rest of row 1. Similarly, this can be extended to Naked Triples and Naked Quads.



### ***Hidden Pairs***

Row 4 column 1 and row 5 column 1 are a hidden pair. They must have 3 or 4 in each of them. Using this knowledge we can eliminate the rest of the possibilities. Similarly these can be extended to Hidden Triples and Hidden Quads.

## ***Advanced Techniques***

There are many advanced techniques, the explanations of which are beyond the scope of this document. Some of these the solver in Kokonotsu sees, for example the XWing and Swordfish. Some it does not for example: Solving With Colors, Forcing Chains, and Nishio. If you think a new rule should be added that *a human can do easily* then please let me know and I'll add it to the solver.

## Acknowledgements and Further Reading

I would never have been able to figure out how to solve XWings and Swordfish without the help from people on the various Sudoku related forums. Thank you! Here are a few great sites you will find helpful:

Angus Johnson's Simple Sudou Hints Page

<http://www.angusj.com/sudoku/hints.php>

Simon "Sadman" Armstrong's Sudoku Tecniques

<http://www.simes.clara.co.uk/programs/sudokutechniques.htm>

Saul Bryan's Sudoku Page

<http://www.users.bigpond.net.au/sbryan/other/sudoku.html>

Have a suggestion for a great site with incredible solving insight? Send me a link at [support@mud.ca](mailto:support@mud.ca) and I'll add it to the list!

