

# Minos Maze Maker (Pro/Full/Lite)



## User Guide

Version 2.3.1 - Revision 2501108



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# 1. Introduction: What Is This Software?

*Minos Maze Maker*<sup>1</sup> is a maze generator that creates myriad mazes and their solutions for you to print or use in your own publications. Make them sweet and easy, or make them diabolically difficult. You will be building and printing professional-looking mazes right away.

Add them to your newsletters, make and sell your own books. The puzzles you create are all yours to distribute and sell, royalty-free, no commercial license needed.

Your work is safely yours. Your mazes stay on your computer. *Minos Maze Maker* never requires you to create an internet account or save your work online.

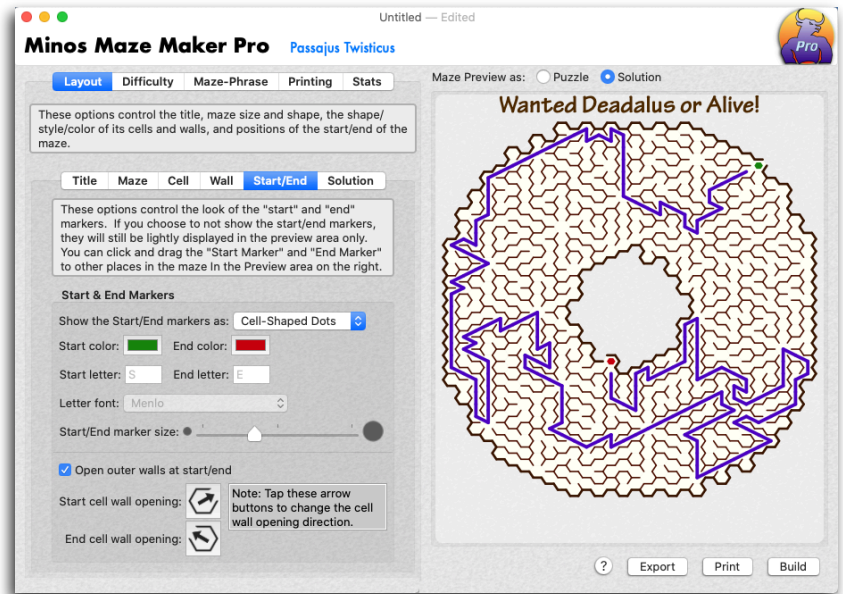
You can easily change a maze's difficulty level. Change the “Difficulty to Solve” setting and create a new maze. In response, the software automatically adjusts many subtle aspects of the maze for you. This lets you quickly fine-tune them, creating different mazes appropriate for anyone.

You can create, edit, save, and re-open one or more maze document files, just like when using a word processor. Each document saves all the settings and other information to recreate and re-display the maze. When you run the software for the first time, it will open a new maze document with default settings for a maze. You can then change these settings, build a maze, print it, and save the maze document to a file on the computer, so you can open it back up later. This allows you to create, lay out and save many different mazes of different shapes and difficulty levels, and return to them later by simply opening them from your saved documents.

There are many features you can customize, including changing size and shapes, colors, path and cell style, start and end points, export file formats, etc. This user guide will explain them all.

**Note:** Some features are not available or are limited in the Lite version of this software, and some are more extensive in the Pro version. Those differences are indicated throughout this user guide.

**Note:** Sections of this user guide can be read aloud to you by selecting the text and choosing “Speech>Start Speaking” from the “Edit” menu.



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<sup>1</sup> - The name "Minos Maze Maker" hints at the the story of the mythical Greek king Minos of Knossos, who hid his Minotaur monster away in a labyrinth.

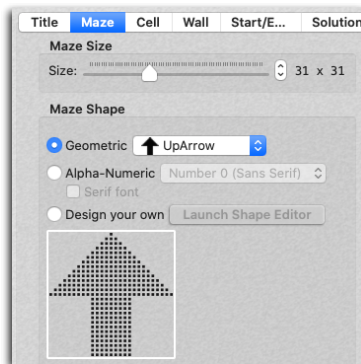
## 2. Let's Make a Maze!

This section shows you how to a) customize a maze's appearance; b) change its difficulty; c) build the maze; and d) print the maze. Advanced features of *Minos Maze Maker* are described later in sections three and four.

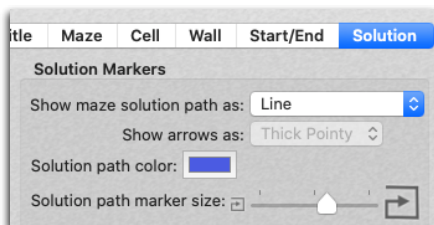
1. Lay out the size and shape of your maze:

Tap the "Layout" tab, and under that, tap the "Maze" tab.

Change the maze size (number of cells across and down) to 31x31, and change the maze shape to "UpArrow". Tap the "Cell" tab and set the cell shape to "Hex (Sigma)".

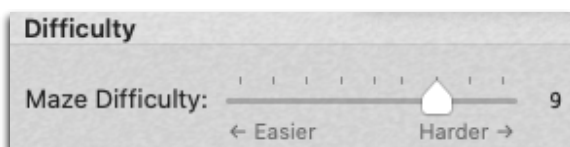


2. Choose how the Solution path will be displayed:



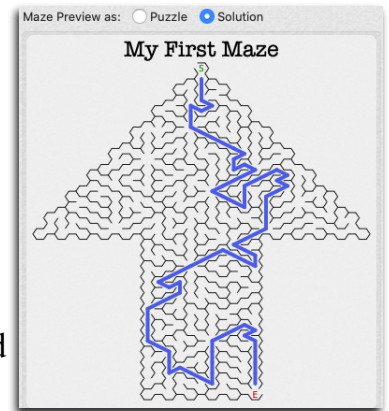
In the "Layout:Solution" pane, set the "Show Maze Solution Path as:" to "Line", and choose a Blue color for the Solution Path color.

3. Now choose how difficult the maze will be to solve. Under the "Difficulty" tab, move the "Maze Difficulty" slider to nine, for "pretty difficult":

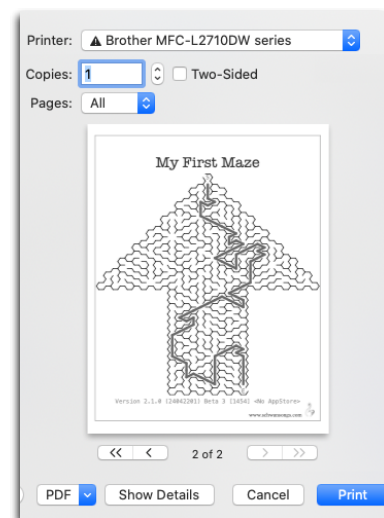


4. Tap the "Build" button at the bottom of the window, or type ⌘-B to build the maze, and wait a moment for it to build. Near the top of the window, set the "Maze Preview as:" to "Solution", and here is your maze, ready to print!

The Preview will show something like this, with a different solution path. You can tap the Build button a few times to see how it creates a different maze and solution path each time, and stop when you see one you like.



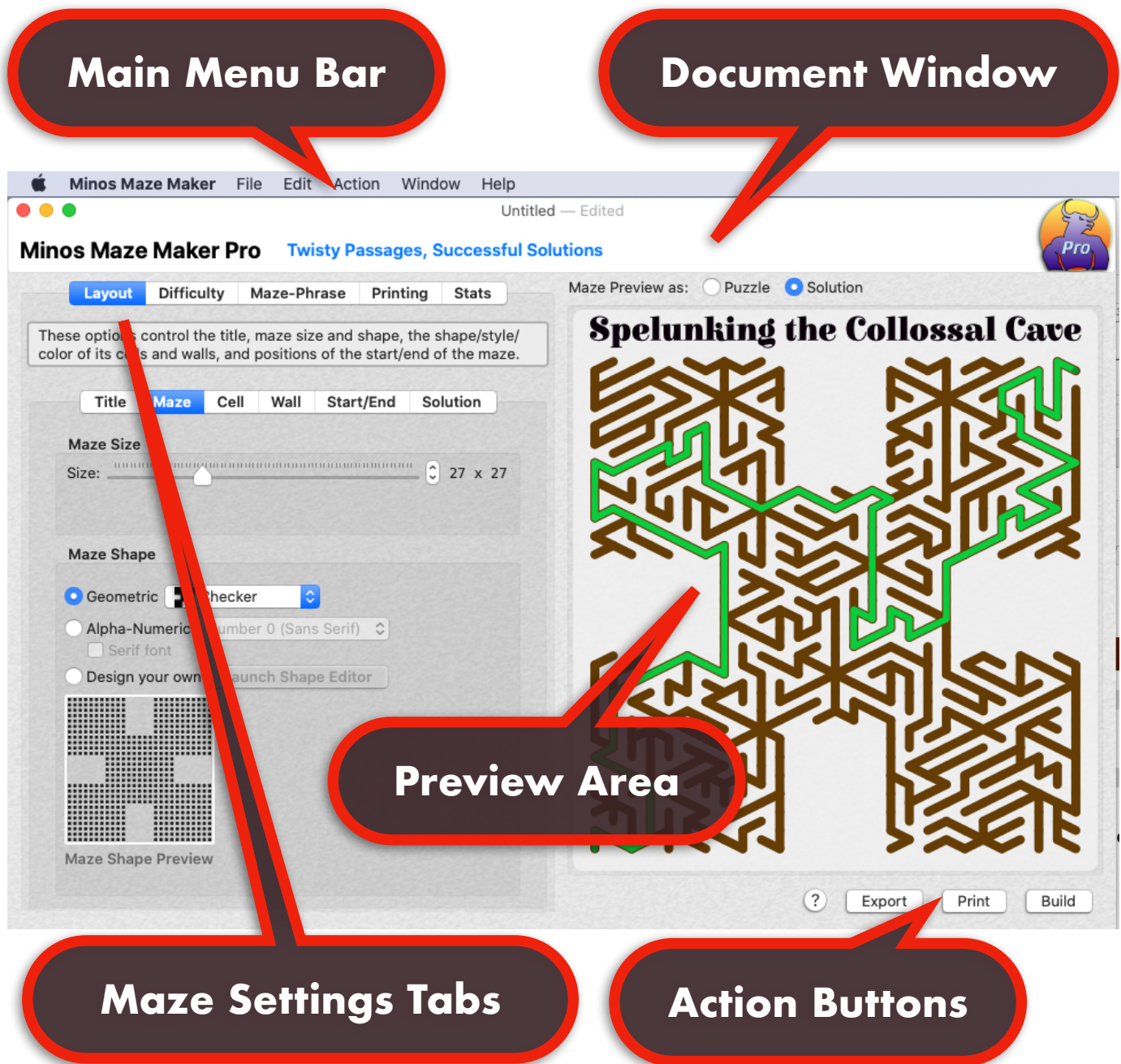
5. Tap the "Print" button at the bottom of the window, or type ⌘-P, and you should see the Print Preview screen, ready to print your maze.



Oh, but wait... there is so much more you can do with *Minos Maze Maker*. Keep reading and learn how to unlock many more powerful features. You will quickly be creating world-class mazes!

### 3. Where Is Everything?

This section gives you a general idea of the names and positions of the the software's main areas and their names in this user guide.



#### Main Menu Bar

When you start *Minos Maze Maker*, the main menu bar at the top of the screen is replaced with menus that are just for this software. Within these menus are many different actions that let you open, save, and close maze documents (just like a word processor). You can also customize the application's behavior when opening a maze. Other commands let you start and stop building a maze, bulk-build mazes, export the created maze puzzle and solution files, and even open this user guide or send me an

e-mail. A complete explanation of these commands can be found [in the section "Menus at the Top" linked here](#).

## Document Window

The document window contains all your customized settings to build a maze, including the size and shape and colors of the maze. In addition to letting you customize the settings, it also shows you a quick preview of the final maze puzzle and solution. This document can be saved as a file, and re-opened later.

## Maze Settings Tabs

The left side of the window contains a number of tabs you can tap to switch between different sets of controls. Each set of controls lets you customize the maze with colors, fonts, sizes and shapes, a Maze-Phrase, and other options. As you make changes, the Preview area will update to show you how the maze will look. The different controls under each Settings Tab are all explained [in the section "Maze Settings Tabs" linked here](#).

## Preview Area

The right side of the window displays a preview of what your final maze (and solution) look like, with the title and maze displayed in the fonts and colors you chose in the Control Tabs area. You can read more details about the Preview area [in the section "Maze Preview" linked here](#).

## Action Buttons

The array of buttons at the bottom right corner of the document window offer you quick access to the actions you most often take with the software, i.e., building a maze, printing/exporting it, and opening this user guide. These actions and others can also be accessed from the Action menu on the main menu bar. You can read more details about these buttons [in the section "Action Buttons" linked here](#).



## 4.Help: Tell Me How To...

Here you will find answers to many questions you may have, which will help you make more beautifully unique mazes with this software.

### Make a Really Easy Maze

Here are several suggested settings to make easy-to-solve mazes.

Under the Layout tab, choose a small number for Maze size, perhaps between eight and twenty. Note that you can only choose different Maze shapes if you choose a Maze size of ten or higher. Choose a Cell shape of Square or Triangle. You may want to choose a larger Wall Line width so they are easier to see.

Under the Start/End tab, choose to show the markers as “Start and End Letters”, or just choose “Circle Dots” and tell them to connect the two circles. You can also change the Start/End marker size. For the Solution Markers, choose “Arrows” or “Line”.

Under the Difficulty tab, set the Maze Difficulty to something between one and five.

Change the Maze Preview at the top to show “Solution” so you can quickly see how the maze is built.

Now, press the “Build” button in the lower right corner to create a maze. If you don’t like that one, press the Build button again. Each time you press it, a new maze will be built with a completely different solution path.

### Make a Really Hard Maze

Here are several suggested settings to make difficult-to-solve mazes.

Under the Layout tab, choose a larger number for Maze Size, perhaps between twenty and forty. Note that the larger the size, the longer it takes to build a maze, and the smaller the cells are, in order to fit the entire maze onto a single printed page. Choose a Cell Shape of Hexagon, for more dead-end path possibilities.

Under the Layout:Wall tab, turn up the "Line Wigginess".

Under the Layout: Solution tab, choose “Arrows” or “Line” for the Solution Markers.

Under the Difficulty tab, set the Maze Difficulty to a high number, between eight and eleven.

Change the Maze Preview at the top to show “Solution” so you can quickly see how the maze is built.

Now, press the “Build” button in the lower right corner to create a maze. If you don’t like that one, press the Build button again. Each time you press it, a new maze will be built with a completely different solution path.

## Move the Start and End Points Elsewhere

The maze software will automatically pick default start and end points for every shape. It always chooses the start point at the far upper left corner, and the end point at the far lower right corner. But you can change them to be at any cell in the maze, even somewhere *inside* the shape, not on an edge if you wish.

You can move the mouse pointer over either the Start or End marker, and tap-down and drag it to a new position, and let go to drop it in its new spot. Do the same with the other marker.



You can move either marker to any place inside the maze shape, either along an edge or even completely inside the shape. If the marker is on an edge and there are multiple walls to choose for the start or end direction, then you can tap on the “Start Cell Wall opening” button or the “End cell wall opening” button to rotate through and choose which wall you want opened. If you have dropped a marker onto the shape in a cell where it is not touching any outer walls, then the button will be dimmed and show a “no entry” icon, as shown in the “End cell” button here.

When you move the markers, you are invalidating any maze and solution that is already built. This means that when you move a marker, the maze is immediately cleared and you must re-make a new one using the new start/end spots.

Also, if you change the maze shape or size or cell style, the markers will be automatically reset back to their default positions. After you change the maze shape or size, if you want them back in your favorite custom spot, simply drag them back again.

**Note:** If you have set the “Show the Start/End Markers as” (under the Layout:Start/End tabs) to “Do Not Show”, then the markers will be shown in the Preview area as a light transparent color.

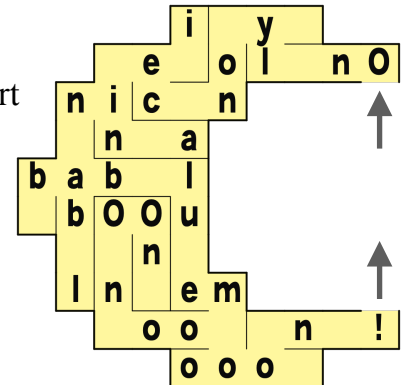
That way you can still find them in the preview area and drag them around to where you want them.

Note: Once you have set a maze shape, size, difficulty, and moved the start/end markers to a new spot, you can choose the “Save as Default Settings” menu item to remember all these as starting settings for all newly created maze documents.

## Make a “Maze-Phrase” Puzzle

The Maze-Phrase feature works by letting you first design a maze any way you like, easy or hard, any shape and size. You then select the Maze-Phrase tab and type in a phrase that will be laid down, letter by letter, along the solution path of the maze as it is built.

When it builds the maze, it lays your phrase out into the maze from the Start position to the Finish position along the solution path. The other dead-end paths of the maze will be filled with “almost” the same letters in your phrase, with a letter or two swapped around so that there will be only one complete properly-spelled phrase in the puzzle. The higher the difficulty of the maze, the farther along the dead-ends you go before the incorrect/ swapped letters appear. This allows your puzzle solving user to go farther down wrong paths before they notice the phrase is wrong.



Notice that your phrase of letters must be shorter than the total number of solution maze cells/steps from the start to the finish, in order for it to fit. If your maze has an “easy” difficulty setting, the solution path is fairly short and direct. If your maze has a “hard” difficulty setting, the solution path will be more windy, and have more space for a longer phrase. This will help you decide how many letters you can use.

If your phrase is too short or too long to fit along a solution path, then when you build the maze it will fail and display an error message. It will give you extra information about how close the phrase was to fitting, so you can then adjust the phrase length or the maze size or cell style or the difficulty and try to build again.



### Minos, we have a problem!

Your 'Exact-Fit' MazePhrase is 8 letters long and is 3 letters too SHORT to fit with these maze settings. The shortest solution found was 11. Try building the maze again, or increase your MazePhrase length, or decrease the maze size or difficulty level, or turn off the MazePhrase "exact-fit" option.

If you have the “Exact-Fill” checkbox **turned off**, the letters of your phrase will be spaced out to evenly stretch from the Start to Finish markers. The extra fill letters along dead-ends will also be stretched out in the same way, so the correct-solution and dead-ends will all look similarly populated.

#### ☒ Find an "Exact-Fill" solution

Note: Given the current maze settings, an "Exact-Fill" phrase should be between about 20 and 88 letters long, ignoring spaces.

If you have the “Exact-Fill” option **turned on**, then *Minos Maze Maker* will try to build a solution that is **exactly** the same number of cell steps as there are letters in the phrase. This means there will be a letter in every single cell of the maze. It will take into account your Difficulty setting and build a maze at that difficulty, while finding a solution exactly the length of your Maze-Phrase.

If creating the maze and finding an Exact-Fill solution of your phrase is impossible or impractically time-consuming, then building the maze will fail and display an error message. The error message will give you information about how far off the length is (too long or short), and will suggest ways you can try to fix it. If your Maze-Phrase length is within a single letter or two of the solutions found, you should simply re-build the maze again, and it will likely find the perfect solution next time.

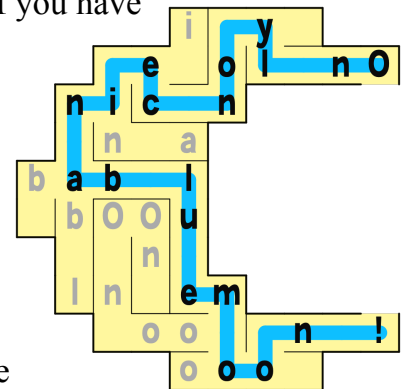
**Note:** “Exact-Fill” Maze-Phrases will be unsuccessful more often if you choose very short phrases and small mazes. You can help “Exact-Fill” succeed more often in these cases by increasing the phrase length and maze size a bit, or changing the “Difficulty” setting, or moving the start/finish markers, then re-building the maze.

So, set up the maze, shape, colors, difficulty any way you like. Keep in mind whether you want “Exact-Fill” or not. Exact-Fill will require you to more carefully match the length of the phrase with the number of cells between the start and finish positions, start and end positions, and difficulty level.

Select the Maze-Phrase tab and enter the phrase you want. As soon as the Maze-Phrase text is not empty, a little tag will show up in the Preview area, showing that the “Maze-Phrase” feature is activated. If you do not want to use a Maze-Phrase, simply delete all the text in the Maze-Phrase text box.

Then tap the Build button to create the maze. If the phrase is too long, or if you have turned on “Exact-Fill” and the phrase doesn’t exactly fit, an error message will display showing how many letters you must add/remove. Make any changes and build the maze again until it succeeds and looks the way you like.

You can change the solution key to show the Maze-Phrase letters along the solution path. Simply select the “Layout” tab and the “Solution” tab, then set the “Show Maze Solution Path as:” menu to one of the “Maze-Phrase Letters” options. You can now display the Solution Preview and see your Maze-Phrase letters laid out along the solution path.



You can dive deeper into Maze-Phrases in [in the section "Maze-Phrase Tab" linked here](#).

## Save a Maze Document to Disk for Later

If you have customized the layout of a maze, save your work to a document (file) on your computer. Then you can either open it or print more copies later. Do this especially if you want to save your changes or want to share your puzzle with a friend who has *Minos Maze Maker*.

Documents can be saved even if you've not yet built a maze. This allows you to quit the application, but then later return to the maze document to finish working on it.



- After making changes to the document, choose “Save” from the File menu.
- You will be prompted for a file name and directory location, depending if this was a new document or it was your first time saving it to disk. Type in a file name, choose a location on your disk, and tap the save button. The file has now been created. Your maze settings are stored within it.
- Alternatively, if you have opened an existing document to make changes, saving the document would quietly update it in place. It would update the information and not prompt you for a file name.

The saved document will look like this on disk:



The document will stay open after you save it so that you can keep working on it.

**Note:** The File menu has an “Open Recent” menu item that lists documents you have recently worked with. You can simply choose one of your recent documents here and it will instantly re-open for you.

## Save your Customized Settings for All Future Maze Documents

You may find that every time you start the software, you always go in and change certain settings the way you like. You would prefer that the software to remember your custom settings and open every new maze for you this way. *Minos Maze Maker* can do that for you!

Simply open a document and change all the settings to you want all documents to start with, and then choose “Save as Default Settings” from the *Minos Maze Maker* menu. It will remember every setting (size, shape, difficulty, colors, page title and font, etc.) and use them for every subsequent new maze.

Any time you want to change these “default” values, simply do those steps again and it will update and use your new settings.

## Make Several Groups of Similar Mazes

You may want to set up *multiple* “default” settings and be able to quickly switch between them, to create a group of mazes that all look similar. For example, you may be creating a book of mazes with three sections, EASY, MEDIUM, and HARD. You want eleven EASY mazes of easy difficulty and smaller size, and nine MEDIUM mazes of medium difficulty and moderate size, and eight HARD mazes of harder difficulty and a large size. In this case, it is best to create and save three separate maze documents, each with its own settings. These maze documents can be thought of as “template” files that each hold particular settings for a group of mazes.

For the above example, simply create, update and save a first maze document with the EASY settings for the first eleven mazes. Then, create and save a second new document (you can duplicate the EASY maze file from the File menu or in the Finder, and rename the copy to MEDIUM, for example) with the MEDIUM settings, and create a third document for your HARD settings. Now you can open the first EASY document and create and save eleven EASY mazes from it. Next, open the MEDIUM

document, and make nine different MEDIUM mazes from it, and open the HARD document and make eight HARD mazes from it.

**Note:** If you are using the Pro version of the software, you could instead open the EASY document and choose “Bulk-Builder” to set up and automatically make the eleven EASY mazes, then do the same for the MEDIUM and for the HARD document. See [this linked section for the Bulk-Builder](#).

If you wish to save each of the eleven mazes as separate documents, use the “File” menu’s duplicate command. Make eleven new copies of the original document, rename each one and build each maze. Do the same with the second template document to make twenty-two duplicate copies of it.

**Note:** You can even open both documents at the same time in different windows for comparison.

## Reset your document’s settings to saved “factory defaults”

If you have made a bunch of changes to your document but now want to quickly restore all its settings to the saved default set of values, there’s a menu item for that! Choose the menu item “Reset Document Settings to Defaults” under the *Minos Maze Maker* main menu. After you choose this, your currently opened document settings will all revert to the currently saved “default” settings for this software.

## Print the Finished Maze and Solution to the Printer

After you have opened a maze document and created a layout that you like, it is time to print the maze and its solution to the printer. You do not need to save your document to disk before printing, however, it is usually a good idea to save your work from time to time, and just before printing is a good time. To save the document, follow the instructions [in the section "Save a maze document" linked here](#), then continue reading this section.

Go to the “Printing” tab and choose to print the maze, its solution, or both.

You can now print by either:

- Tapping the “Print” button at the bottom of the main window.
- Or choose the “Print...” item under the File menu, and tap the Print button.
- Or press the <Command>-P keys on the keyboard.

Make any changes you need in the print dialog, and tap the Print button.

You could instead choose to save the maze and solution as a PNG or PDF files (for attaching to an e-mail, for example). See the next section for how to do this.

## Save/Export High Quality Maze Files for Publication

Your newsletter may be yearning for a maze page, or perhaps you want to add your own logo and text around a maze. You may want to create a number of different mazes, and publish them in a book. In these instances, you will want to extract just the maze image, and its associated solution image. You will need to import them yourself in a separate word processing document. Then, you can do your own page layout of them.

Note: The export command will export just the maze puzzle and maze solution images. The exported files will not include margins, and they will not (normally) include your title or your Maze-Phrase prompt, since it is assumed you will be laying out the maze with other elements on the page in your own artistic way. You *can* choose to export the maze with its title by turning *on* the “including Title...” checkbox from the top of the export window.

Exporting gives you additional file format options, and higher resolution/quality options. These are useful when importing to other publishing software. After exporting, you can import those files into software where you can nicely format them for publishing. For this more flexible work-flow option, here is how you can export the mazes and their solutions to separate files.

First, choose the settings for the size, shape, and colors for your maze, and then build your maze. You may want to save this maze document once you like it, in case you need to open it later and change and re-build and re-export the maze file... you know, in case one of those eagle-eyed editors requests a minor change.

If your final book will be printed in black and white, then there is no need to choose colors for lines and markers, set them all to black/white/gray by choosing the “Change all colors to B&W” menu item under the *Minos Maze Maker* menu. The maze is *normally* drawn using solid/opaque lines for the walls and *transparent* areas for the inner cell areas. This is useful if you want to lay the maze on top of some other background in your book and let the background show through. However, you may instead want the background behind the maze to be a *solid opaque color*. That way it will block out the background inside the maze area. You can make mazes either way to suit your purpose.

To get a *transparent* background, go to the Layout tab and turn *off* the “Add Cell Floor Color” checkbox.

To get a *solid color* background, turn *on* that checkbox, and choose a solid color by tapping the color rectangle just to the right of the checkbox.



Once you have built a maze and have chosen an export format, choose “Export Maze...” from the File menu, or use the Export button on the window. You are shown a window on your maze document:

**Export Maze Files**

Export the Puzzle file ☒ including Title & Maze-Phrase prompt  
☒ and Solution File ☒ and ESP File

**File Name:** NoOutlet\_1\_Puz  
**File Format:** 1200x1200 dimension PNG files

**File Size and Format**

Width & height of the exported graphic file in pixels, from 64 to 6000 pixels. Note that 1200 pixels at 72 DPI would be 16.7 inches. 1200

Puzzle export file format: PNG

**File Naming**

File name text: NoOutlet Use Default Filename  
☒ Add export-counter to file name, starting at: 1 (currently at 1)  
File name layout: FileText\_ExportCounter\_FileType

**Destination Directory**

Choose directory for export files: Choose Reveal Directory in Finder  
/Volumes/Buteo/Projex/Books-Published  
☐ Warn if about to overwrite existing files

Cancel Export

This window lets you choose which files to export, and which directory to write the files to. Near the top of the window is a box holding the proposed filename example and the currently chosen file size and format. This will update as you change any of the settings below.

**Note:** Your changes to these settings will be remembered in this document for future exports.

**Export the Puzzle file:** Export will always write the Puzzle file. You can optionally tell it to write the Solution file too.

**[✓] including Title & Maze-Phrase prompt:** Normally only the maze puzzle itself is written out when you export the maze *puzzle* image’s file. Later you will add your own title as well as the word list’s text around these puzzles. However, if you turn on this checkbox, the exported puzzle file will be a slightly narrower rectangle size. It will add the title above the puzzle, placing the Maze Phrase prompt below the puzzle. It will include the font, color, size, and formatting you specified in the “Layout” tabs. This is more convenient if you’re constructing multiple puzzles for a book. Moreover, this implies that you are satisfied with *Minos Maze Maker*’s layout of the title, subtitle and Maze Phrase prompt for the puzzle. Keep in mind, though, that this will only add the title and Maze Phrase prompt to the puzzle file; not the answer file.

**Note:** The exported puzzle file layout will always be “Portrait Mode.” Titles will be listed above, with the word list below. Export file layout is not affected by the “Printing Layout” tab to print puzzles in “Landscape Mode.”

[✓] **and Solution File:** The puzzle file will always be exported, and here you can optionally write the solution file too. The exported puzzle and solution files will have the same file names, with the added suffix of either “\_Puz” or “\_Ans”.

[✓] **and ESP File:** (*Pro Feature*) This is a JSON-formatted text file that is easily imported into other computer software. It contains all the puzzle and solution information needed to re-create the puzzle in other software. These files can be imported into your publishing workflow to lay out a large number of puzzles where you will want them re-formatted and flowed onto pages in your own way. Or they can be collected and imported into your own interactive game-player engine on the web or in your mobile app. See the Help menu item “ESP File Guide” for detailed information about this file format.

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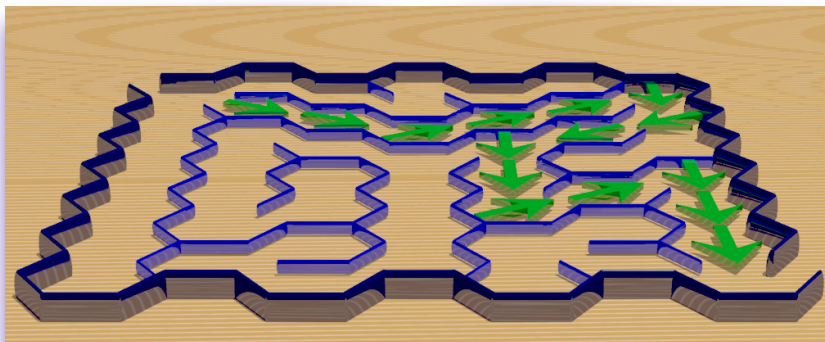
## File Size and Format

**Width and Height of exported graphic file...:** This "size" setting lets you choose how large the puzzle image will be when you export it. This is only used for the image formats (PNG, JPEG, PDF, SVG.) The text-based formats don't need or use it.

Note: There are fewer export sizes and file formats in the Lite version of this software.

**Puzzle export file format:** You can choose what file format to use when saving your exported puzzles and solution keys.

- **PDF:** This is a high quality (vector) publishing file format, readable by many word processing and page layout applications.
- **PNG, JPEG:** These are graphic image file formats. These are readable by many photo and image editing programs, as well as word processors and page layout applications. PNG supports transparency, JPEG does not.
- **POV-Ray:** A text scene description language used by the freeware “POV-Ray” ray tracer to generate photographic-quality three-dimensional (3D) images (or animated movies) of a scene. See [www.povray.org](http://www.povray.org) for more information. Here is an example of an exported maze, which is then rendered into an image with POV-Ray:



- **SVG:** This is a vector graphic file format. It can be re-sized without losing any quality. Many web browsers, Amazon Kindle, and some page layout or graphic editing applications can read these images. SVG files are non-interactive, but can be directly added to a web page, or imported and used to develop an interactive game. They may even be imported into CNC or 3D printing machines.



Let your creative imagination think about these possibilities! It is important to note that SVG files, unlike PDF and PNG/JPEG files, cannot capture and use your computer's fonts for drawing letters. Therefore, the fonts used in SVG files are a "suggestion" for what to use on the end-user's computer. You can change the font-suggestion for SVG files by selecting one from the SVG "Letter Font" menu under "SVG Info" in the Application Settings window.

---

## File Naming

**File name text:** This string will be used as the main part of all your export file names.

**Use Default Filename:** If you saved the current document, this button resets the value of the "file name text" to the currently saved document's file name, or to the generic "MinosExport".

**Add export-counter to exported file name:** Turn this on to add an export counter into the file name that increments upon each export. Therefore, you can build multiple puzzles with the same puzzle setup, exporting each puzzle with unique file names, "MyPuzzle\_Puz\_1.png", "MyPuzzle\_Puz\_2.png", "MyPuzzle\_Puz\_3.png".

**Note:** To display this counter in the title of your puzzles, see the puzzle-macro `$$exportcounter` in the section "Use Auto-Updating Puzzle Macros."

..., **Starting At:** If "Add Export Counter.." is turned on, then you're able to choose a starting value for the export counter mentioned above. For example, if you set this to 222 then, every time you start the application and start exporting, your first exported puzzle file will start with that export-counter value ("MyPuzzle\_222\_Puz.png"). Each time you export again, the subsequent files will get the next-higher export number, e.g., "MyPuzzle\_223\_Puz.png."

**Note:** You can reset the internal counter back to your starting value by simply re-typing the starting value in the text field.

**File name layout:** This pop-up menu lets you format the exported file names with the above components in a particular order. Ultimately this will change how they are sorted and grouped in the Finder. As you change this pop-up setting, the file name at the top of this window will update and show you the new layout.

---

## Destination Directory

**Choose directory for export files:** This lets you pick a directory to write all your exported puzzle/solution files.

**Reveal directory in Finder:** After you have chosen a destination directory, tap this button to open and display it in Finder. This is a quick way to access the exported files.

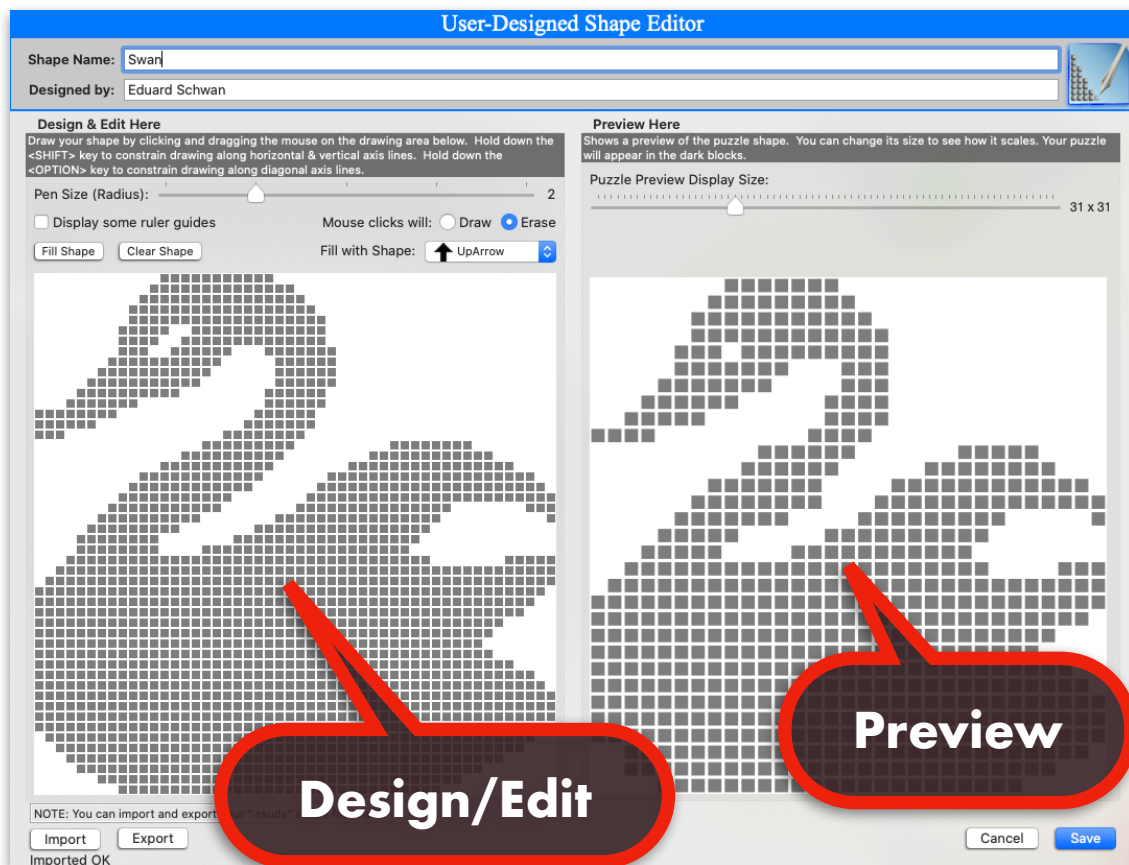
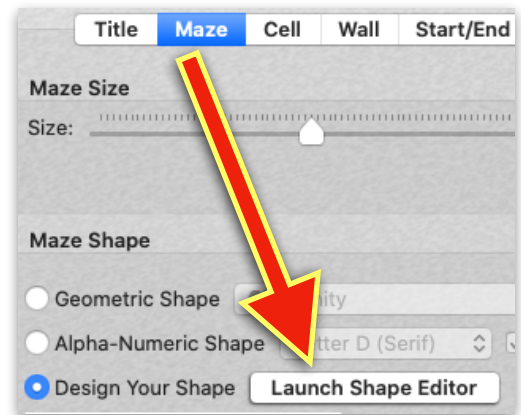
**Warn if about to overwrite existing files:** This warns you if you're about to overwrite an existing file. If export finds a file with an identical file name, it will pop up a dialog. This allows you to either overwrite or skip this one or all duplicate files.

## Design Your Own Shape for a Puzzle (*Pro Feature*)

You can design and edit your own shape, and then build a maze with it!

First, select the “Layout” tab. Next, choose “Design Your Shape” under the “Maze” tab in the Maze Shape box. Then, tap the “Launch Shape Editor” button. You can also create a shape by going to the top “Action” menu and choosing “Shape Editor.”

The “User-designed Shape Editor” sheet is now presented on top of your current maze document. It lets you design or edit your own shape for your maze.



Make a company logo, an animal, a tree, a holiday shape, or just about anything you can imagine. The “Shape Editor” lets you draw the shape in large puzzle resolution (50x50) in the “Design & Edit Here” grid on the left. It also shows you a preview of different puzzle sizes in the “Preview Here” grid on the right. If you make a mistake while drawing, erasing, or filling the design area, choose “Undo” from the Edit menu. It lets you back up a step or more. Opening the “Shape Editor” from a document with an already-created user-designed shape allows that shape to load into the program. Therefore, you can easily edit it. There is only one user-designed shape in each maze document.

**Note:** Every edit action you take in this sheet is “undoable.” You can switch pen size and draw a few strokes. Choose “Undo” from the “Edit” menu to undo those changes, essentially “backing

up” to prior versions of the shape. Simply use the “Undo” menu item under the “Edit” menu to undo each change you made.

---

## Shape Name/Designed By

Add a “Shape Name” and add your name/copyright to the “Designed by” text fields. They will be saved with the shape if you export the shape file.

---

## Design & Edit Here

### Pen Size (Radius)

This lets you change the pen size to draw/erase with. The left side makes you draw smaller, the right side lets you draw larger.

### Display some ruler guides

Turn this on to display faint ruler lines inside the design grid to help you line up your drawing.

### Mouse clicks will Draw/Erase

You can select the mouse-dragging behavior to either draw or erase. Drag the mouse around the “Design and Edit” grid with the mouse button down to make your shape.

You can hold down the <Shift> key while drawing along horizontal & vertical axis lines.

You can hold down the <Option> key while drawing along diagonal axis lines.

### Fill Shape/Clear Shape

You can completely fill or completely erase the shape area with these buttons. However, as you click these buttons, you will first be asked if it is OK to wipe the shape clean.

### Fill with Shape:

The shape area can be filled with a pre-defined geometric shape, which makes it easier to create your own custom shape. When you select a shape from the pop-up menu, you will first be asked if it is OK to wipe the prior shape clean.

---

## Preview Here

### Puzzle Preview Display Size

Moving the “Puzzle Preview Display Size” slider to different sizes shows how the puzzle will appear. This lets you fine-tune your drawing so it works well at a specific dimension/ range.

---

## Import

This button will load a “.ssuds” shape file that you or somebody else created earlier into this design window session. For more information on the .ssuds file [go to this linked section](#).



---

## Export

This button will save a copy of your current shape as a separate file, which can be imported later into this software or other software products that read this file format. For more information on the .ssuds file go to [this linked section](#).

---

## Save/Cancel

### Save

Save your shape back into your currently-opened document. Once saved, the "Shape Editor" sheet closes and the shape you have designed is shown in the "Preview" window. You can now make mazes from it. If you save this document to disk as a file, your user-shape is saved inside it as well. Both will be available when you re-open your document later.

### Cancel

Throws away your current edits, closes the "Shape Editor" window, and leaves the document's user-designed shape unchanged.

---

## Exported .ssuds Shape File Format

Upon exporting your user-designed shape, it's saved in a special file format that can be read/imported by any other SchwanSongs software supporting this format. Currently the only two SchwanSongs software applications that support this format are *Minos Maze Maker Pro* and *Whirlwind WordSearch Pro*.

The **“.ssuds”** file extension stands for “SchwanSongs User-Defined Shape.” The file itself is in XML format, specifically an Apple .Plist file format. It consists of a dictionary of key-value pairs. These define the version of the file, the name/credit strings, width/height dimensions, and the actual two-dimensional bitmap of the shape in Base64 encoding. If you are interested in parsing this yourself, e-mail me a request. I can send you the specification details.

## Bulk Build Many Mazes at Once (*Pro Feature*)

Bulk building is most useful for creating a large number of puzzle image files that you will later import and arrange into your own book, newsletter, or web page.

When you choose “Bulk Builder” from the “Action” menu, a sheet is presented on top of your current puzzle document. This sheet lets you configure and then automatically build a large number of different puzzle and solution files. Bulk Builder will then save all the completed files in a directory you choose. These files will be the exported image files, and optionally other informational files you choose to export.

The screenshot shows the 'Bulk-Builder - Make Many Mazes' interface. At the top, a blue header bar contains the title. Below it, a text box explains the tool's functionality: 'Automatically make and export many unique mazes with one tap. This tool starts with your current maze settings and then gives you additional ways to automatically alter each generated maze. Both puzzles and their answers can be generated. Use the "Export Files" tab to select where to save the maze files. When you are ready to generate the mazes, tap the "Start" button. You can interrupt the current batch operation by tapping the "Stop" button. Tap the "Save Settings as Default" button to save all these batch settings, so that all future new mazes you create will start off with these settings preset.' Below the text box are four tabs: 'How Many' (selected), 'Randomize Settings', 'Bulk Maze-Phrases', and 'Export Files'. Under the 'How Many' tab, there is a text box stating: 'Choose how many maze files to create for this batch-session. You can choose up to 100 unique maze designs, and additionally you can choose to make up to 10 random variations of each maze design as separate maze files.' Below this, there are two sliders: 'Number of maze designs to build:' with a value of 42, and 'Number of variations of each maze design to build:' with a value of 2. At the bottom, there is a checkbox labeled 'Continue building if errors occur' which is checked.

## Designs

Here is how the “Bulk Builder” works. Let’s say you want to quickly make ten different puzzles, each with a different difficulty level. I will call each of these ten puzzles it creates a “design.”

## Variations

For each of these designs, you can optionally have it build one, two, three... up to five different “variations” on that puzzle design. In other words, for each design, it will re-build that same puzzle (with the same difficulty and layout) and save it as a new variation. It’s as if you simply tapped the build button again to get a new layout of the same puzzle<sup>2</sup>. For example, if you ask for three variations of each design, it will generate your ten designs with three variations each. There will be a total of thirty (ten times three) different puzzles for you. This lets you review and choose your favorite variation for each puzzle design without having to re-run a new bulk build if there was just one puzzle design that you didn’t like.

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<sup>2</sup> As you know, sometimes a second or third “re-build” of a puzzle gives a more interesting layout, and this allows you to automatically make several layouts (variations) and you can then review and choose the best one after they are all built.

---

## File Naming

“Bulk Builder” will name each file with a number for the design, followed by a letter for the variation. Given the example above with ten designs and three variations, you will get exported files named:

MyPuzzle-1a, MyPuzzle-1b, MyPuzzle-1c,

MyPuzzle-2a, MyPuzzle-2b, and MyPuzzle-2c, ... up to:

MyPuzzle-10a, MyPuzzle-10b, and MyPuzzle-10c.

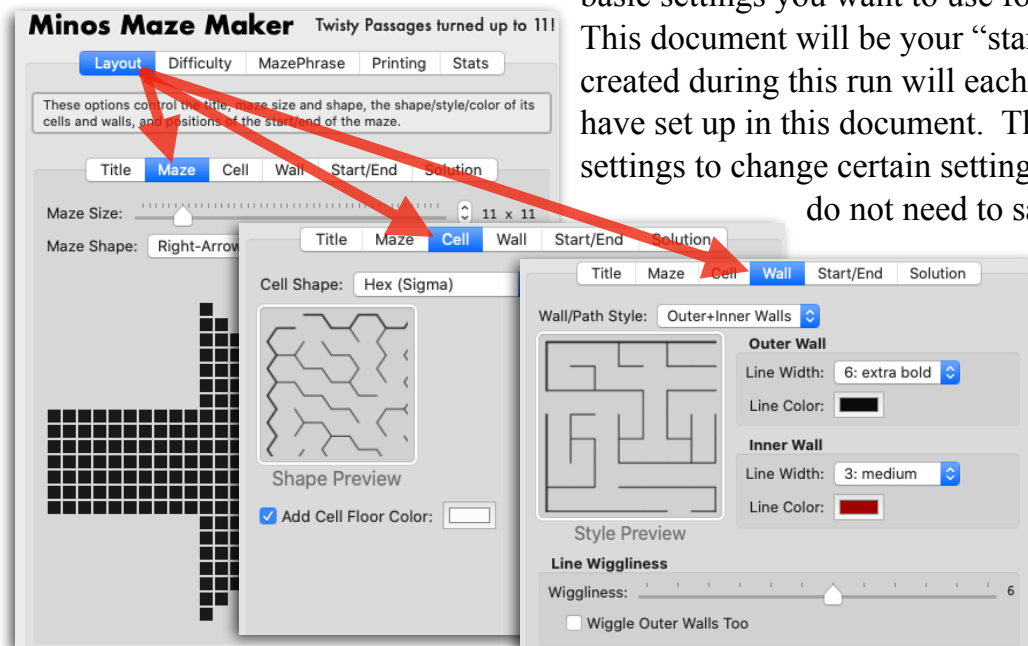
---

## Preparing a Puzzle for Bulk Building

Before starting a “Bulk Builder” session, you must first set up a *Minos Maze Maker* document with the basic settings you want to use for the puzzles in this bulk run.

This document will be your “starting template.” The puzzles created during this run will each start out with the layout you have set up in this document. Then Bulk Builder will use your settings to change certain settings of each created puzzle. You do not need to save this “template” document

to a file or even build a puzzle from it. However, you may want to initially build a puzzle with it in order to preview how it looks before committing to the bulk build. You can optionally save this document so you can easily load it back up later to re-run the bulk process.



**Note:** If you do not want “random” changes to settings, but instead want several groups of puzzles sharing the same settings (for example, 20 easy puzzles, 20 medium puzzles, and 20 difficult puzzles) then you can combine the Bulk-BUILDER feature with the [“Multiple Template Documents”](#) idea described in this [linked section](#).

To prepare, first open a new document and choose the basic settings you want to use for this group of puzzles. Every bulk-built puzzle will start with these settings.

Now you are ready to configure the settings for the bulk run. Choose “Bulk Builder” from the action menu and open it. The settings are separated and grouped under four main tabs.

---

## How Many

This tab lets you choose how many maze designs and their variations to create in this bulk run.

Automatically make and export many different mazes with one tap. This tool starts with your current document settings and then offers additional ways to create many mazes from those starting settings. Both puzzles and their answers can be generated together. Use the "Export Files" tab here to select where to save your files. When you are ready to generate them, tap the "Start" button. You can interrupt the current bulk run by tapping the "Stop" button. Tap the "Save Settings as Default" button to save a snapshot of all these bulk settings, so that all future new maze documents you create will start off with this snapshot.

**How Many** Randomize Settings Bulk Maze-Phrases Export Files

Choose how many unique maze designs to build for this bulk-run. You can choose up to 100 unique maze designs, and additionally you can choose to make up to 10 random variations of each of those maze designs.

Number of maze designs to build:

..... 42

Number of variations of each maze design to build: 5

☒ Continue building if errors occur

### Number of Maze Designs to Build

Choose the number of unique maze “designs” you want to bulk-build. When you start the run, the settings that you choose below for each puzzle design will randomly change as it builds each maze. It saves the corresponding puzzle file (and an answer & info file) for each design it builds. Each puzzle design will be numbered, 1,2,3, etc.

### Number of Variations of Each Maze Design to Build

Normally you may only want one maze built for each design. But there may be times when you want to choose the best from several variations of each puzzle design. Let’s say you want to build forty-two mazes, but you know that you don’t always like the particular random solution of any given maze. Therefore, you want a few extra variations of that maze design. You can do this by choosing to create more than one variation for a design.

If you choose five variations, then the bulk operation will build forty-two maze designs. For each design it sets up, it will build and save five different mazes with that design. In all, a total of 210 mazes will be created. Each of the maze design files will be numbered 1,2,3...42, but they will now also have the five variations added to their filenames as a, b ,c, d, and e. So the files will be named: MyMaze\_1a, MyMaze\_1b, MyMaze\_1c, MyMaze\_1d, MyMaze\_1e, MyMaze\_2a, MyMaze\_2b, etc.

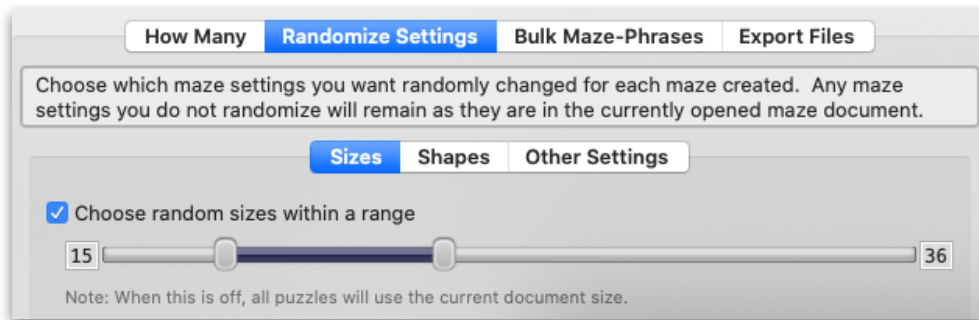
When the bulk build is complete, choose your best variation (a-e) for each of these forty two maze designs.

### Continue Building if Errors Occur

Normally, if there is a problem building or writing a maze's file during this long run, immediately stop running the bulk builder. Then, you can fix the problem and restart it. However, if you want it to ignore an error of one maze and just charge ahead making the rest of the mazes, you can turn this checkbox on. Any maze that cannot be built will instead write an error text file with information about the maze and why it had a problem. This may be useful if you are trying to build many Maze-Phrase style mazes, where sometimes the message doesn’t fit the particular randomly chosen puzzle size/ shape. In this case, you want to ignore the problem and keep building the other maze designs.

## Randomize Settings

This tab lets you select a number of maze settings in your document to randomly change for each maze design that is built. If you leave a checkbox *off* here, it will simply use the setting from your underlying maze document for every generated maze in the bulk session.



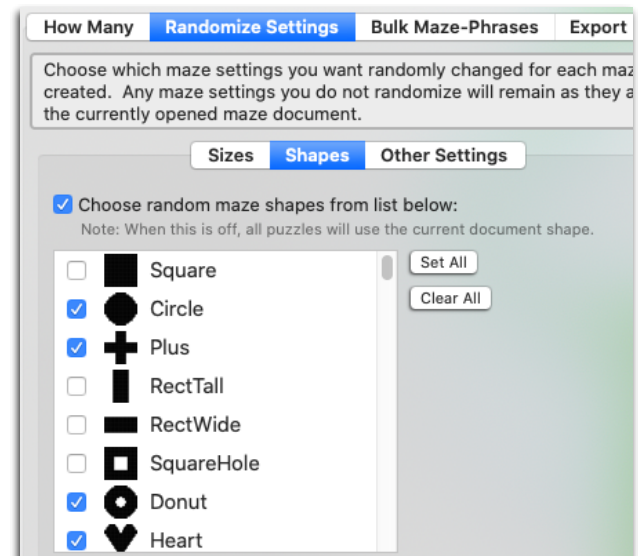
### Sizes

You can leave the “Choose...” checkbox off to create all puzzles using the underlying document size setting you have. Or, you can turn on randomness and it will randomly pick any puzzle sizes within the size range you choose. If you set the lower range to something below ten (the smallest size that allows shapes), then any puzzles that happen to randomly get created below a size of ten will default to a square shape, no matter what you set for puzzle shape.

### Shapes

You can turn on any number of the pre-defined geometric or alpha-numeric shapes to build mazes from. Minos will choose a different shape from your list for each maze design it creates. If you have asked for more mazes than maze shapes, then after Minos uses all your shapes once, it will reset the list and start choosing from your list of shapes again.

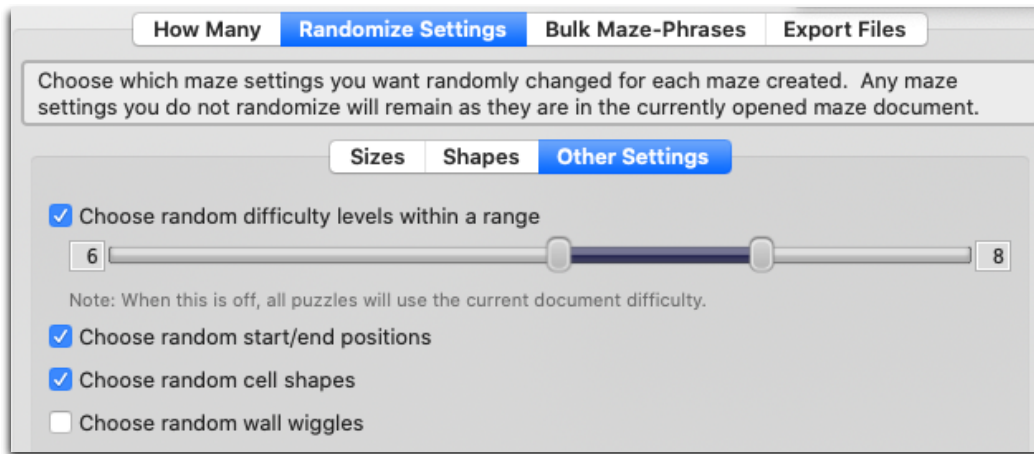
You can bulk-build mazes from your user-designed shape instead. Simply choose your user-designed shape in the document under the “Layout:Maze:Maze Shape” tab, and turn off “Choose random maze shapes” here in the Bulk-Builder window. Your user-designed shape will then be used for all bulk designs.





## Other Settings

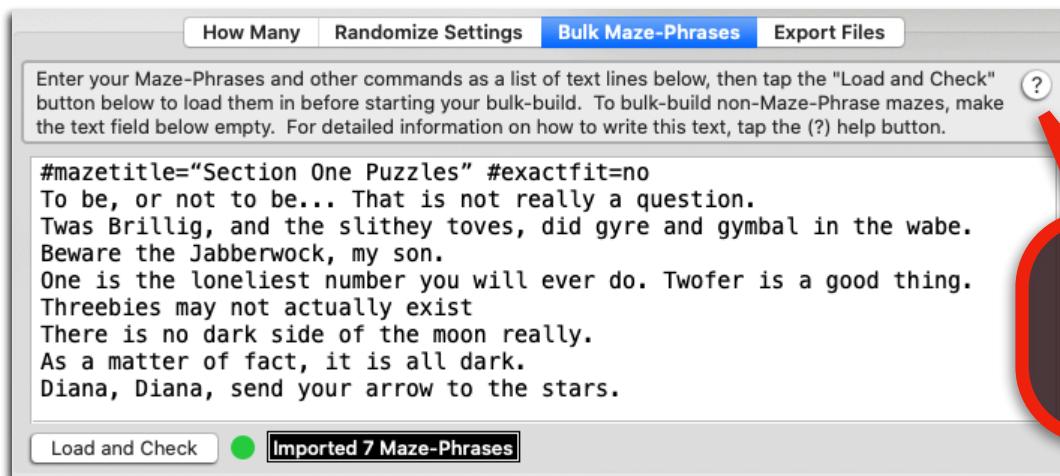
This has a number of other settings that you can select to be randomly chosen for each maze it creates. If you turn one of these on, that setting will be randomly set for each maze. If you turn it off, then all mazes will use the same setting from the underlying document.



You can enable a random range of difficulty settings, random start/end positions, random cell shapes and random amounts of wall-wiggle for each puzzle design.

## Bulk Maze-Phrases

This tab lets you type in a list of Maze-Phrases (and other commands to help guide the bulk-builder process), or leave the text box empty to bulk-build regular non-Maze-Phrase mazes instead. The text can be typed in, or copy/pasted from another document. These text lines are automatically saved/remembered between bulk builds with your document.



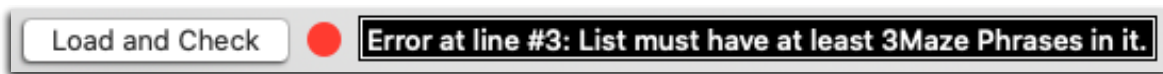
Tap the circle “help” button near the top of this tab area to open and view a document. This describes the technical format of the text and commands in the bulk-maze-phrases text area, showing you how to format this text list.

Note: You can also access this little guide any time by choosing “Bulk Builder Guide” from the Help menu.

Tip: If you want to automatically add the current puzzle design counter into your title (e.g. “Easy Puzzles - #1”, “Easy Puzzles - #2”,) you add the magic “puzzle macro string” **\$Designcounter** into your Bulk Word list #mazetitle command, and it will get automatically filled in for you as you bulk-build the files. See the [“Puzzle Macros” section](#) for more information.

**Load and Check:** After entering your maze-Phrase list, tap this button to load the text lines and prepare them as the Maze-Phrase text lines for the mazes. The first maze design will use the first line of text as a Maze-Phrase, the second maze design will use the second line, etc. If a line is left blank or there are fewer lines than mazes, those mazes will become regular mazes, not Maze-Phrase mazes.

Ensure you entered everything error-free. If the lines loaded alright, then you will see a green dot after the “Load and Check” button. If there was a problem, then there will be a red dot and an error message next to it, explaining what went wrong.



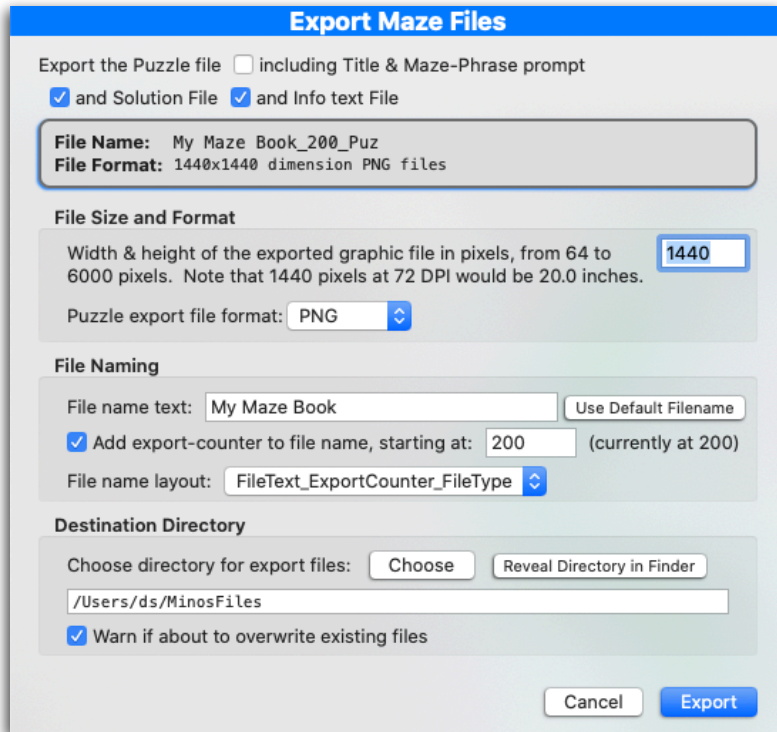
The Maze-Phrase settings from your current document will be used to determine how to build the Maze-Phrase (font, exact-fill, etc.) This text that you enter will be saved with the document and remembered between bulk runs.

Note: This list of Maze-Phrases is completely separate from the single Maze-Phrase text in your main document. If you wish to use the Maze-Phrase from your document here as well, then simply close this bulk-builder window, switch to the “Maze-Phrase” tab and copy the Maze-Phrase from that text box. Then re-open this bulk-builder window and switch to this “Bulk Maze-Phrases” tab, and paste in the Maze-Phrase to this text box. The single Maze-Phrase will then be in these two separate spots. You can add to this Bulk Maze-Phrases list without affecting the main document’s Maze-Phrase.

---

## Export Files

This bulk-builder tab is almost identical to the regular export dialog. (To read more, see [the section "Save/Export" linked here.](#)) Though, it is used by the bulk builder instead.



The 'Export Maze Files' dialog box contains the following settings:

- Export the Puzzle file**: ☐ including Title & Maze-Phrase prompt
- ☒ and Solution File ☒ and Info text File
- File Name**: My Maze Book\_200\_Puz
- File Format**: 1440x1440 dimension PNG files
- File Size and Format**:
  - Width & height of the exported graphic file in pixels, from 64 to 6000 pixels. Note that 1440 pixels at 72 DPI would be 20.0 inches. (1440 is entered in the field)
  - Puzzle export file format: PNG
- File Naming**:
  - File name text: My Maze Book (Use Default Filename button)
  - ☒ Add export-counter to file name, starting at: 200 (currently at 200)
  - File name layout: FileText\_ExportCounter\_FileType
- Destination Directory**:
  - Choose directory for export files: (Choose button) (Reveal Directory in Finder button)
  - /Users/ds/MinosFiles
  - ☒ Warn if about to overwrite existing files
- Buttons: Cancel, Export

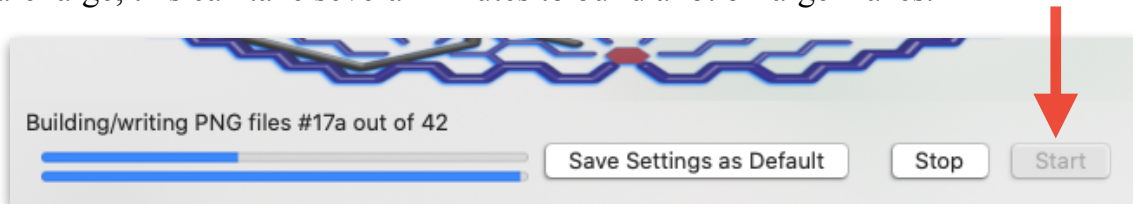
The only difference is that the “Add Export Counter” setting is always **on** for bulk runs, so, each exported maze design will be uniquely numbered. It lets you choose various settings related to the destination files that are exported for each puzzle, for example what file format to use, what the filenames should look like, and what directory to write them all to.

---

## Start Building Them All

### Start

Finally, tap the Start button. The mazes will be built and exported one by one, along with their puzzle and answer files. The files will all be saved to the export directory you chose. If your maze dimensions are large, this can take several minutes to build a lot of large mazes.



As it builds each maze, the preview area will display the current puzzle it is working on. There is also a visual indication of completion via an upper progress bar for the entire build job. A lower progress bar shows progress for each maze being built. It will also attempt to refresh the preview area behind the bulk window as each maze is built.



## Stop

If you want to stop the build process partway through, simply tap the stop button. It will stop building mazes. It will cleanly stop, and any existing maze files that it has already built will remain in the directory. When you start the bulk-build process again, it will restart from the beginning, and attempt to overwrite any prior files.

## Save Settings as Default

Once you have all the bulk settings arranged the way you like, you may want to tap the Save Settings as Default button to save all the current settings into your document. That way, all future new mazes you create will start off with these bulk settings.

---

## Bulk Building - Additional Notes

If you have a regular Maze-Phrases set up in your document, then Bulk build will try to create a Maze-Phrase for each maze, and it will use that regular phrase for every bulk maze, unless you have entered some "Bulk Maze-Phrases".

As mentioned above, if a puzzle cannot be built, then an error text file will be exported in its place (with its filename containing an "...\_Err.txt" ending.)

If you are making Maze-Phrases and also have "Maze-Phrase:Exact-Fill" turned on or random maze size turned on, it is possible that during the bulk operation it will design a maze that cannot place the Maze-Phrase successfully, and it would fail. If you want it to continue so you can get as many good mazes as you can, simply turn on the "Continue building if errors occur" checkbox under the "How Many" tab. It will try creating each Maze-Phrase design with as many variations as you have set it to.

If you plan on doing multiple bulk-build runs, you may want to do some initial preparation to streamline your workflow. This can be done by choosing where the exported files get written. For example, you may want to either (1) have all your bulk projects go to a single directory, or (2) you may want to have each bulk project go to its own separate directory. For more instructions on how to set up either of these two workflow styles, please read the following two sections below.

If you turn on the "Random Start/End" positions, it will usually put the start and end markers on opposite corners of the maze, or sometimes half-way down near the middle. But it always will put them along an edge. Occasionally it might put them close to each other. It is up to you to discard any generated mazes that are just plain silly. Fate is guaranteed to be random and thus seemingly cruel.

---

## Save a Default Bulk Setting for All Future New Mazes (*Pro Feature*)

The Pro version of this software allows you to automatically generate a large number of puzzles instantly. If you want most of the bulk settings to be identical when you use the bulk feature, then here is what you do.

First, open a new puzzle document. Set it up with all the settings you want to use. Then, open the bulk window and update each of its tabbed settings the way you want them to appear. Make sure to choose the export tab. Then, choose an export format, size, and destination directory.

Now tap the “Save Settings as Default” button at the bottom of the bulk window. Then choose “Save Current Settings as Default” from the *Minos Maze Maker Pro* main menu. From now on, all your new documents will be created with all the bulk settings just as you set them here.

You can make changes to this “default set” by opening a new puzzle document. Open the bulk window, and make any changes you want before choosing “Save Current Settings as Default” from the *Minos Maze Maker Pro* main menu again.

## Save Different Bulk Settings for Each Bulk Run (*Pro Feature*)

The Pro version of this software allows you to automatically generate a large number of puzzles all at once. However, you may want to set up different bulk settings for different projects. For example, you may have five “beginner” books to make, and five “advanced” books to make. You want to set up a “beginner” bulk setting for those first five books, and a separate “advanced” setting for the other five books. Here is how you can do this.

First, open a new maze window, setting it up with all the settings you want to start with for the “beginner” books. Then open the bulk window. Continue to update each of the tabbed bulk settings the way you want for those “beginner” books. Choose the export tab; then, choose a format, size, and destination directory.

Next, save all these settings in this “beginner” maze document. Tap “Close” on the bulk window. Then, choose “Save...” from *Minos Maze Maker's* File menu and type in a name for this beginner “template” maze document. For example, you may want to call it “Template-Beginner.” You may also want to create a “Maze Templates” directory to save all these template files together. Note that this is simply a regular *Minos Maze Maker* document containing all your saved puzzle and bulk settings within it.

Now do all the same steps above to create an “advanced” settings template document. Although, change the puzzle and bulk settings to these new “advanced” settings before saving it.

Now you have two saved *Minos Maze Maker* documents, each with its own saved settings. You can open these at any time and start a bulk build to create all the mazes for that template.

You are now ready to start building! To work on one bulk-build run with all its settings in place, simply open the appropriate “settings template document” you made earlier. Then, open the bulk window and start the bulk run.

When the bulk run completes, you can open a different template document<sup>3</sup>. Open its bulk window, and start its bulk run. It will use its own settings to build the mazes.

Upon completing the bulk operations, you can close the template windows.

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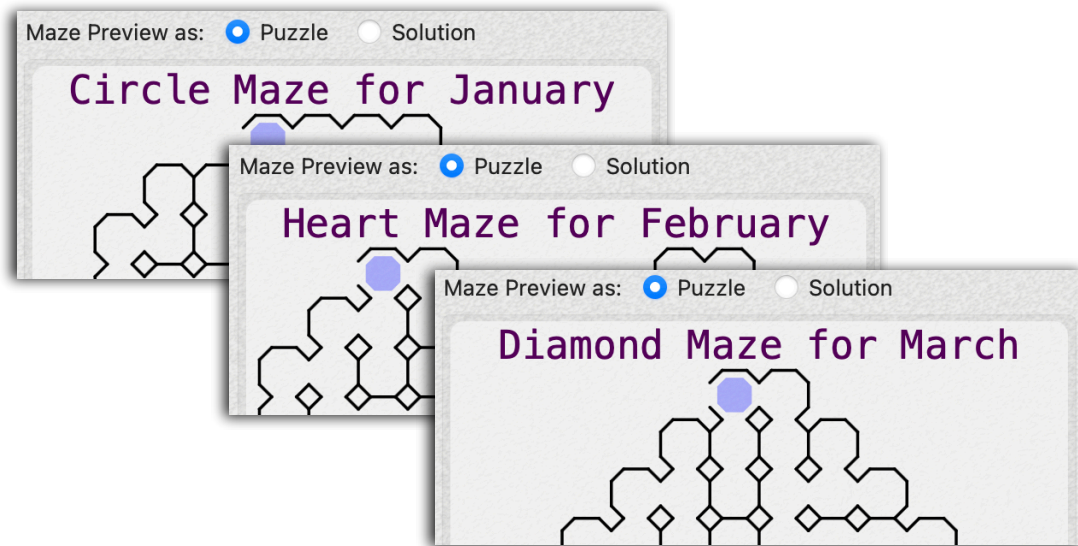
<sup>3</sup> Although you can open two windows and run two bulk operations at the same time, I don't recommend more than two at a time. Each running bulk operation gives your computer quite a workout.

***Important:*** Running a bulk operation on an opened document will automatically update a lot of the document's settings. Overall it ***changes*** the document's shape, size, difficulty, and solution layout for each puzzle. If you want to keep the template document settings as they originally were, make sure to close these documents ***without*** saving any changes.

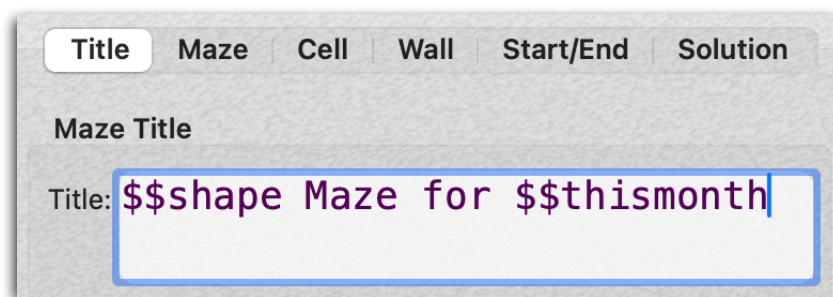
## Use Puzzle-Macros in Text (Full & Pro Feature)

You might want to have the title or Maze-Phrase text of your maze automatically update with information about the puzzle itself, a puzzle counter, or the current date, without you updating it each time. For example if you create monthly puzzles, you might want to show the name of the current month and the name of the puzzle shape in the title. You can do this by adding a specially formatted puzzle-macro<sup>4</sup> in the text field, and when the puzzle is created and printed or exported, the puzzle-macro will be replaced with the actual text it refers to.

Here is an example of a few puzzles with their titles automatically updated for each puzzle.



You can achieve this by adding the puzzle-macros **\$\$shape** and **\$\$thismonth** into the text where you want the shape and current month name to show. Then, when each puzzle is created, the puzzle-macros will be replaced by their current real value in-place. The Preview area will immediately display the filled-in title and subtitle as you type them. To get the title results shown above, you would type your title like this:



The text fields that allow puzzle-macros are the **Title** and **Maze-Phrase** text fields.

Puzzle-macros must start with **\$\$** and must be all-lower-case. If you misspell a puzzle-macro, then it will be left unchanged. After you complete the typing of a puzzle-macro in a text field, it will

<sup>4</sup> In other software applications these are sometimes also called “parameters” or “variables” or “placeholders”.

automatically be shown (in its expanded form) in the Preview area. The list of all puzzle-macros along with a description of each is below:

- **\$\$shape** - This will insert the name of the shape for this puzzle (from the shape menu.)
- **\$\$dimension** - This will insert the number of letters wide for this puzzle, e.g., “16”. This will always be a single Arabic number.
- **\$\$dimxy** - This will insert the number of letters wide and tall for this puzzle, e.g. “16x16”. These will always be Arabic numbers.
- **\$\$exportcounter** - This will insert the current “Export counter”, which will begin numbering with the “Export Counter starting” value you choose in the Export dialog, and will increase with each puzzle you export. This can be used to add a “puzzle #” in your puzzle titles, which will correspond with the number in the exported file names of each puzzle. For more information on using the Export Counter, [see this section link](#).
- **\$\$datetoday** - This will insert today’s full date (year, month, and day), based upon your local country’s region setting on your computer.
- **\$\$thisyear** - This will insert the current 4-digit year, formatted according to your computer’s locale setting.
- **\$\$thismonth** - This will insert the full name of the current month, formatted according to your computer’s locale setting.
- **\$\$thisweekday** - This will insert the name of this day of the week, formatted according to your computer’s locale setting.
- **\$\$nextmonth** - This will insert the full name of the month following this month, formatted according to your computer’s locale setting. This could be useful if you always make a maze ahead of time to publish the following month.
- **\$\$nextweekday** - This will insert the full name of the day of the week for tomorrow, formatted according to your computer’s locale setting. This could be useful if you always make a maze ahead of time to publish the following day.

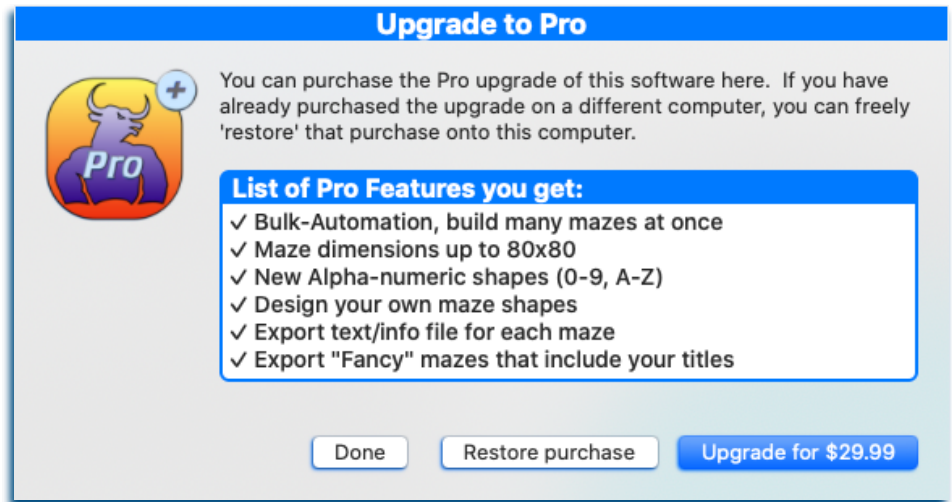
The following puzzle-macros are available in *Minos Maze Maker Pro* for the #title commands and Maze-Phrase text, when using the Bulk-Builder feature:

- **\$\$designcounter** - This will insert the current Bulk-Builder design counter, as a value starting at 1 and increasing for each puzzle design to the total number of puzzle designs you wanted to create. This is the overall bulk-created puzzle number.
- **\$\$variationcounter** - This will insert the current Bulk-Builder design variation counter, as a letter value starting at 'a' and increasing for each variation of the current puzzle design. If you choose not to have any variations (by setting “number of variations...” to 1), then this puzzle-macro will be empty.

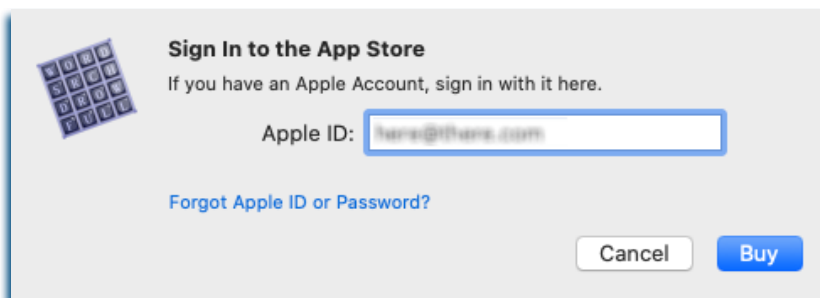
## Upgrade to Get the Pro Features

Run *Minos Maze Maker*, and find the “Minos Maze Maker” application menu at the top left of your screen. Open the menu and select “Pro Upgrade...”. This menu item lets you immediately get all the extra features available in the Professional (Pro) version of this software via a one-time in-app purchase.

Simply tap the button “Upgrade for \$—” to begin the upgrade. If you have already purchased the Pro upgrade on a different computer and don’t yet have the upgrade license on this computer, you can easily use this dialog to “restore” your Pro purchase onto this computer as well. In that case, simply tap the “Restore Purchase” button instead. Once you have upgraded to Pro, you will be able to receive all future Pro updates. You will also receive new full and pro features for free, forever.

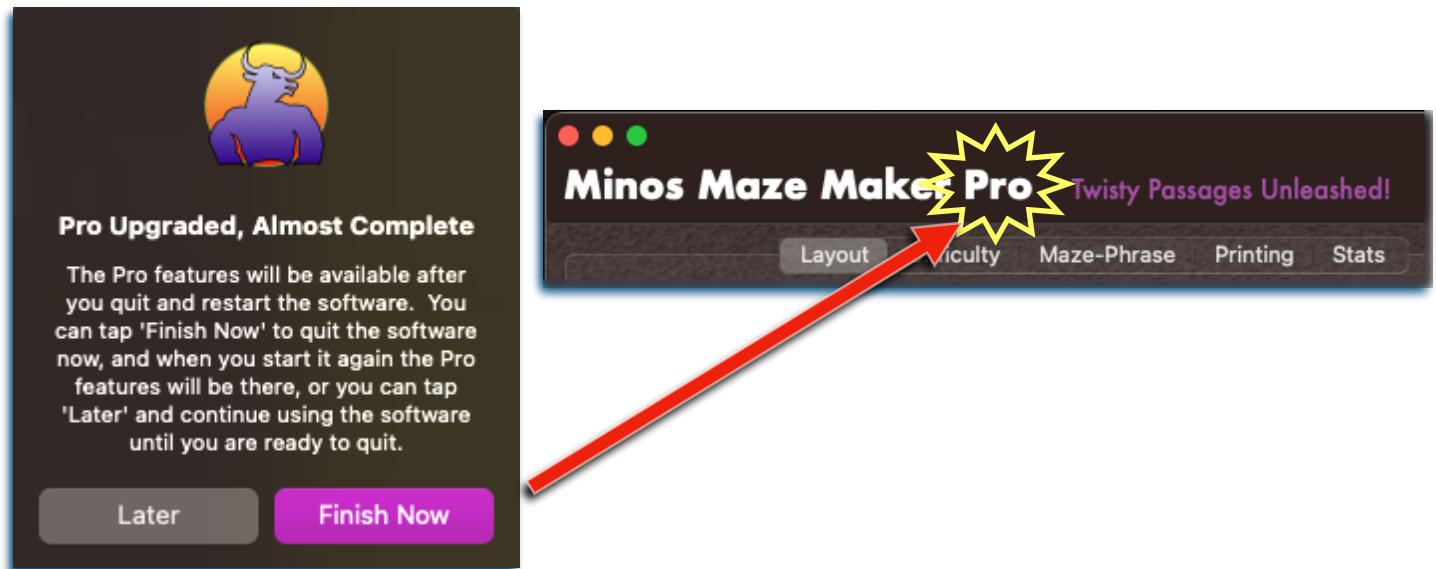


You will be asked to log into the Apple App Store with your Apple ID, which you used to purchase software. Then, you will be able to upgrade or restore it.





After upgrading, you will need to quit and re-start the software. This allow Minos Maze Maker to start up with the Pro features.



After that, all the Pro features available will be available to you (bigger mazes, bulk-builder, user-designed shapes, alpha-numeric shapes, more export styles, etc.)

## Get a Commercial License to Sell Mazes in Your Own Books/Products

I have good news! You ***do not need*** any commercial license to sell any of your puzzles created with my software! All exported mazes and solutions are copyright-free and royalty-free without any requirement for you to obtain a commercial-use license. You are explicitly allowed to give away or sell all the puzzles you create with my software. Moreover, you can use the exported information to generate your own games from them. I do not require you to fill out any kind of license, ever! Of course, if you still want to offer me something, please see the next item!

## Add Minos Maze Software Credits to Your Own Product

I have good news! You ***do not need to credit my software*** in your own publications or software that use the puzzles. At the same time, I would certainly appreciate it if you do mention it. After all, doing so will help advertise my own products, which allows me to work on even more features and other software products for you.

Many people like to read honest reviews about products before getting them. So, I would encourage you to write and publish a review of my software on Apple's App store, or your own newsletter, or on your YouTube channel. Here is a suggestion for a "credits line" that you could add somewhere in your newsletter, book, or web/software product:

These mazes were designed with Minos Maze Maker by SchwanSongs: [www.schwansongs.com](http://www.schwansongs.com)

## Print this User Guide to a Printer

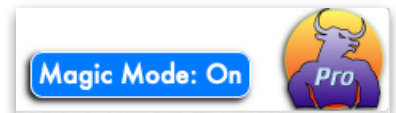
Here is how you would print a copy of this user guide, instead of viewing it on-screen.

First, open the user guide window by choosing “Minos Maze Maker \* User Guide” from the “Help” menu. With the user guide window displaying, choose “Print” from the “File” menu. It will print the entire user guide to your printer.

You can also download the full PDF file of this file directly from the button at the top of the user guide window, or from the software product page of my web site. Then, you can easily read it elsewhere “offline.”

## Find the Hidden “Easter Egg” Features

Why would you think there are extra features hidden in my software? Who told you? I have absolutely no idea what you are talking about. I don’t believe<sup>5</sup> there are secret passages that let you unlock extra features. Of course if they did exist, I am sure you would be alerted by some kind of “Bat-signal” at the top of the window.



OK, since you have patiently read thus far, one little secret will out. To print or export a maze grid that has not been built yet, simply hold down the <Option> key while opening the File menu. This will force the Print and Export menu items to be allowed even if there is no maze built yet. You can now create “template” images that are not yet “eaten” with maze paths. Perhaps useful for creating templates or playing boards for other purposes.

## Contact the Author with a Feature Request or Bug Report

If you found something that isn’t working correctly, or if you wish that this software did something differently, or you would like a new feature added, I would certainly like to know. I am constantly adding these to my to-do list from my users and testers. Likewise, I always strive to update my software so that it does what you want. You can even write just to let me know that it is working well and you are enjoying it!

The best way to contact me is to run the software and choose “Contact Author” from the Help menu. This will open your e-mail software and automatically create an e-mail to me. This also adds the version of the software you are currently using at the bottom of the e-mail, which can be helpful to me when answering your questions.

Send any feedback or correspondence to me at: [note@schwansongs.com](mailto:note@schwansongs.com), or via the “Contact” link on my web site at: [www.schwansongs.com](http://www.schwansongs.com)

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<sup>5</sup> There is a subtle but critical difference between belief and knowledge.



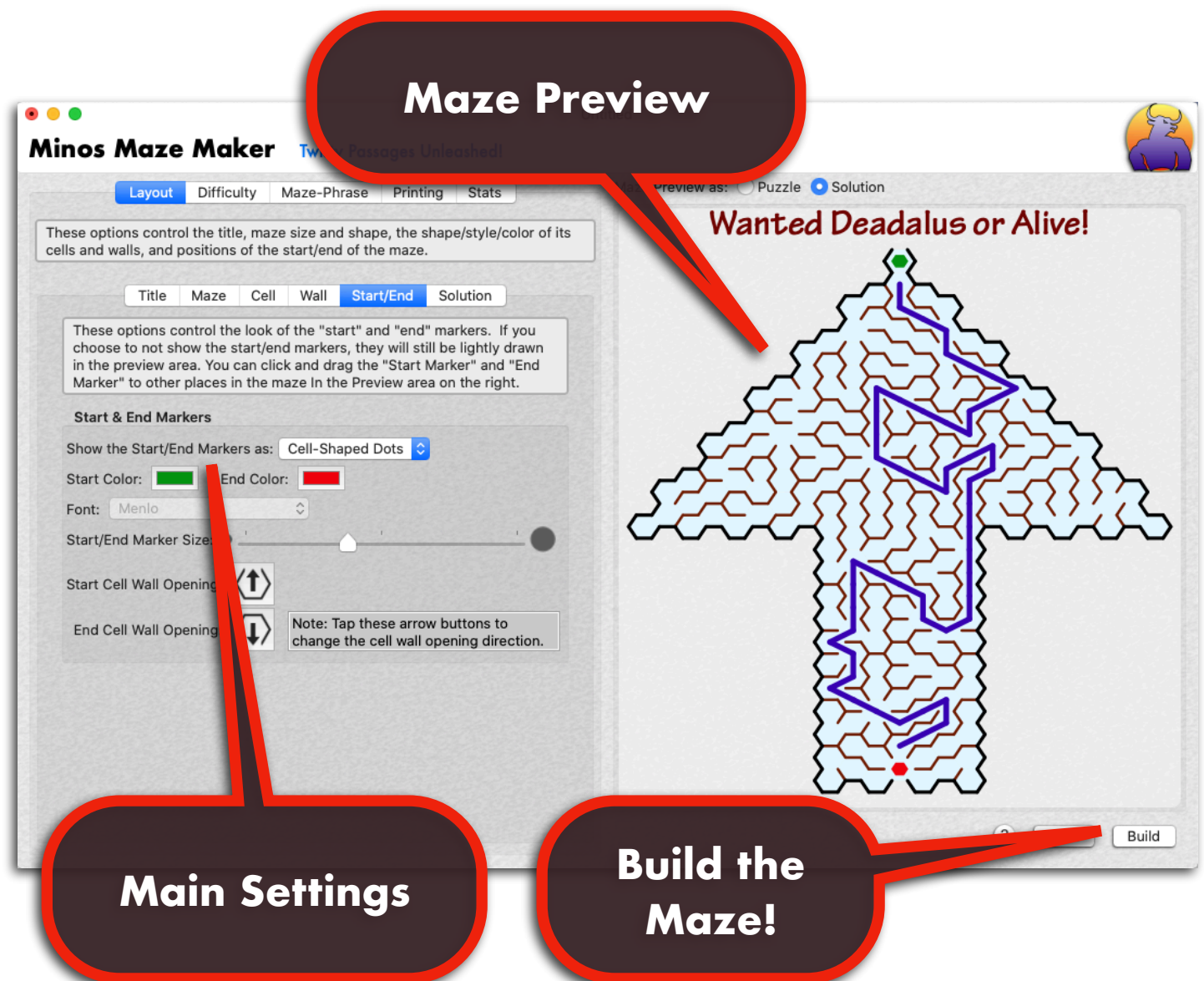
## 5. Details: What Does This Thing Do?

This section offers more detailed descriptions of each tabs and their individual options. You can also hover your mouse over different options and menus to activate a “tool-tip” text box that will give you additional information about each item.

**Note:** Some of the features described here are only available in the Full or Pro version, not the “Lite” version.

### Main Document Window

When you start *Minos Maze Maker*, it opens a new “document window.” Configure your mazes by using the settings located on the left-hand side, and looking to the right-hand side for the maze preview area. The preview displays the updated puzzle as you design it. Some buttons along the bottom offer you quick access to building, printing, or exporting your maze. These button commands can also be started by main menu items or their keyboard shortcuts.



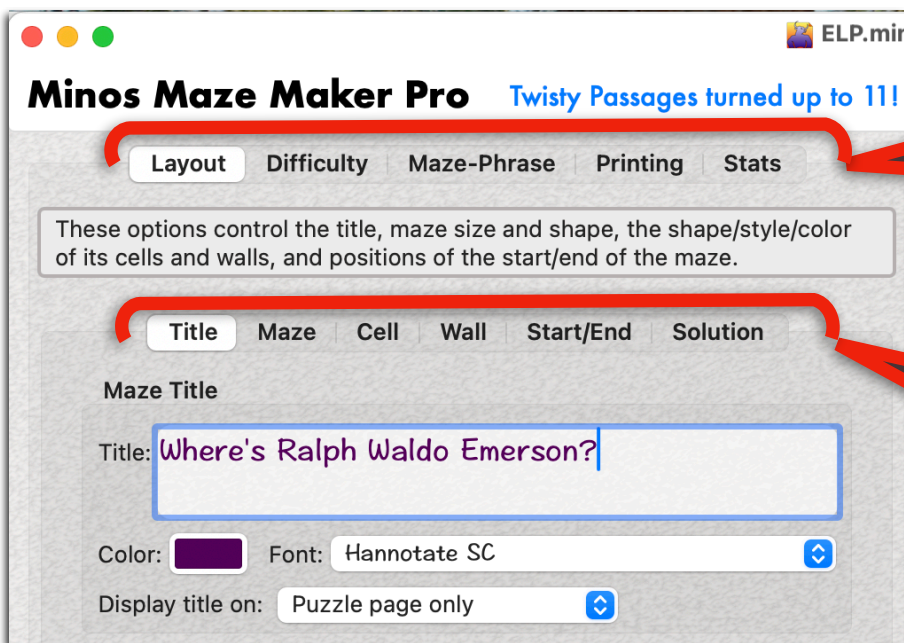
This new window can be saved as a document (e.g. file) on your computer. Later, it can be opened (just as you do with word processor documents) to show the maze and all its settings, saved just as you left them.

*Minos Maze Maker* allows you to create and open multiple windows at once; although, you will likely just open and work with one at a time.

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## Maze Settings Tabs on the Left

You can use many settings to customize and create unique looking mazes. They are grouped into sets of “tabs” along the upper left side of the document window. First, there are the “main” tabs along the top. When you choose one of those top tabs, there are often additional “secondary” tabs underneath. All of these tab settings are described below.



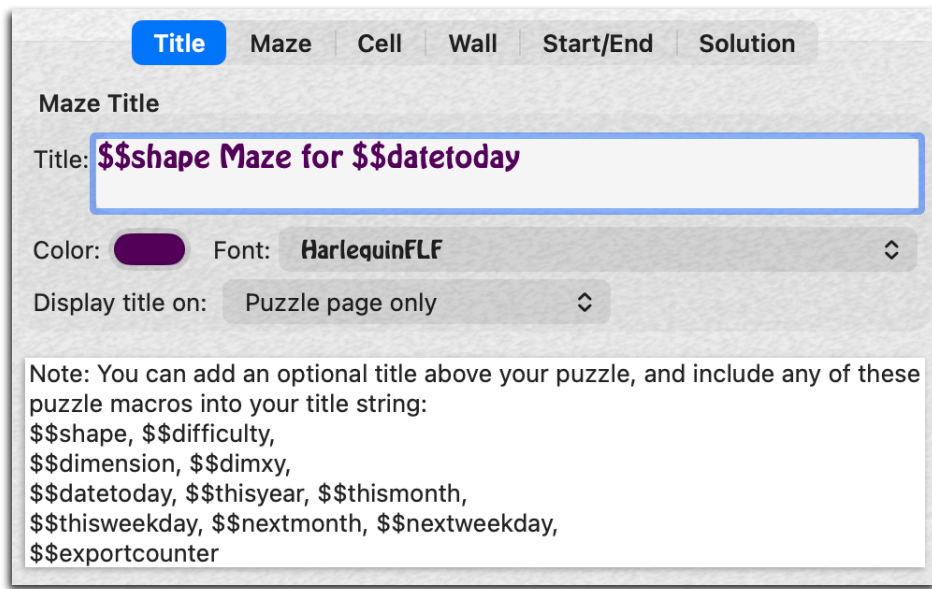
**Main  
Settings Tabs**

**Secondary  
Settings Tabs**

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## Layout: Title Tab

The “Title” tab is where you choose the title to print above your puzzle. It appears on the printed pages, and optionally on the exported puzzle files. This field is optional and can be left blank if you want no title text displayed.



The screenshot shows the 'Title' tab selected in a menu bar with options: Title, Maze, Cell, Wall, Start/End, and Solution. Below the menu, the 'Maze Title' section contains a 'Title:' label followed by a text input field with the text '\$\$shape Maze for \$\$datetoday'. Below the input field are three settings: 'Color:' with a purple color swatch, 'Font:' with a dropdown menu showing 'HarlequinFLF', and 'Display title on:' with a dropdown menu showing 'Puzzle page only'. At the bottom, a note box contains the text: 'Note: You can add an optional title above your puzzle, and include any of these puzzle macros into your title string: \$\$shape, \$\$difficulty, \$\$dimension, \$\$dimxy, \$\$datetoday, \$\$thisyear, \$\$thismonth, \$\$thisweekday, \$\$nextmonth, \$\$nextweekday, \$\$exportcounter'.

### Layout: Title: Maze Title

**Title:** You can enter text in the title field and that text is then printed at the top of your printed puzzle pages. You can also leave the field blank, since it is optional. If you type in title text that is too long, the text will wrap to a second line at the edge of the page when it is printed.

Note: If you want to refer to the current date or the current puzzle number or puzzle shape/size in your title, e.g. “Heart Puzzle #3 for Monday”, you can add magic “puzzle macro strings” in the title and subtitle fields, and they will get automatically filled in for you as you print or export. See the [“Puzzle Macros” section](#) for more information.

**Color:** The color of the title text.

**Font:** The font to use for the title text.

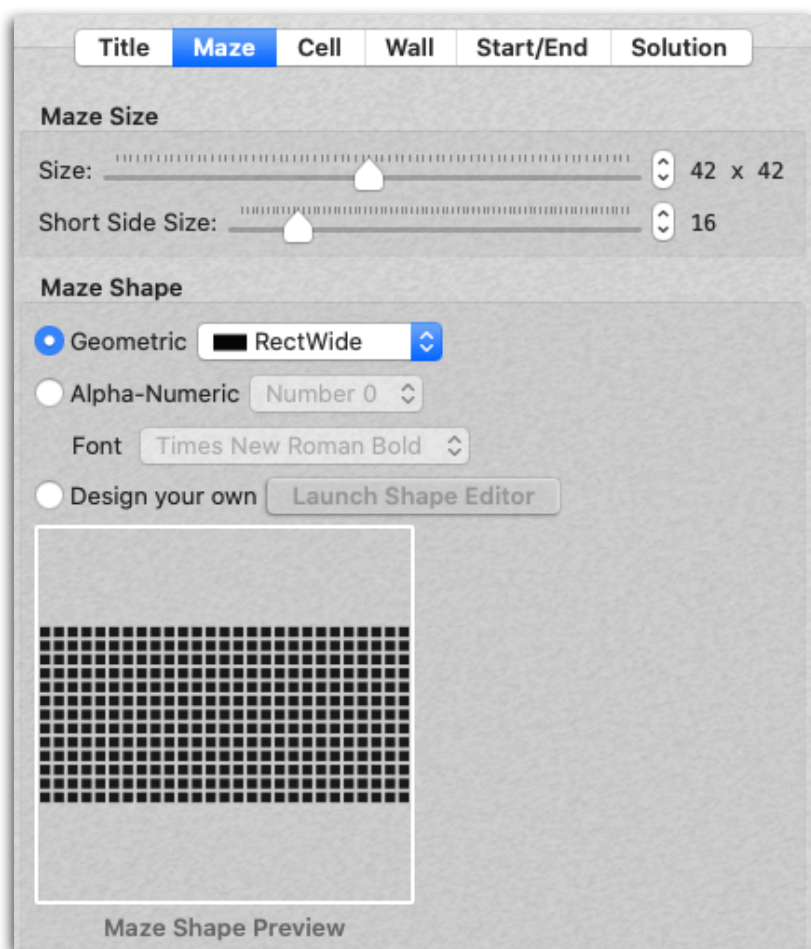
**Display title on:** You can choose whether the title appears on the puzzle page, the solution page, or both. This will affect both the printed pages and exported mazes (if you turn on “including title...” checkbox in the Export window.)

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## Layout: Maze Tab

This tab has settings that let you control the size and shape of the overall maze.



### Layout: Maze: Maze Size

**Size:** Adjust this slider to choose the overall width and height (in “cells”) of the maze. The larger the number, the more complicated the maze becomes, and the longer it takes to generate it. Increasing the size also makes the custom maze shapes look nicer and less jagged. If you are printing the maze to a printer, then as you increase the maze size, the cell size will shrink so that the overall maze will always fit on a single page. If you *export* the maze files instead of printing them, you can then set a separate “output” pixel size for the maze, for high quality large-format images; See the [“Export Maze: File Size...”](#) section [linked here](#).

**Short Side Size:** This slider appears when you choose a shape of either rectangle tall or rectangle wide. It lets you choose the short(er) side size, i.e., the number of cells along the shorter side of the rectangle. The larger the number, the closer to a square it becomes. It ignores anything larger than the current maze size. Changing this allows you to fine-tune the rectangle puzzle to fit either a tall, thin column or a wide, thin row.

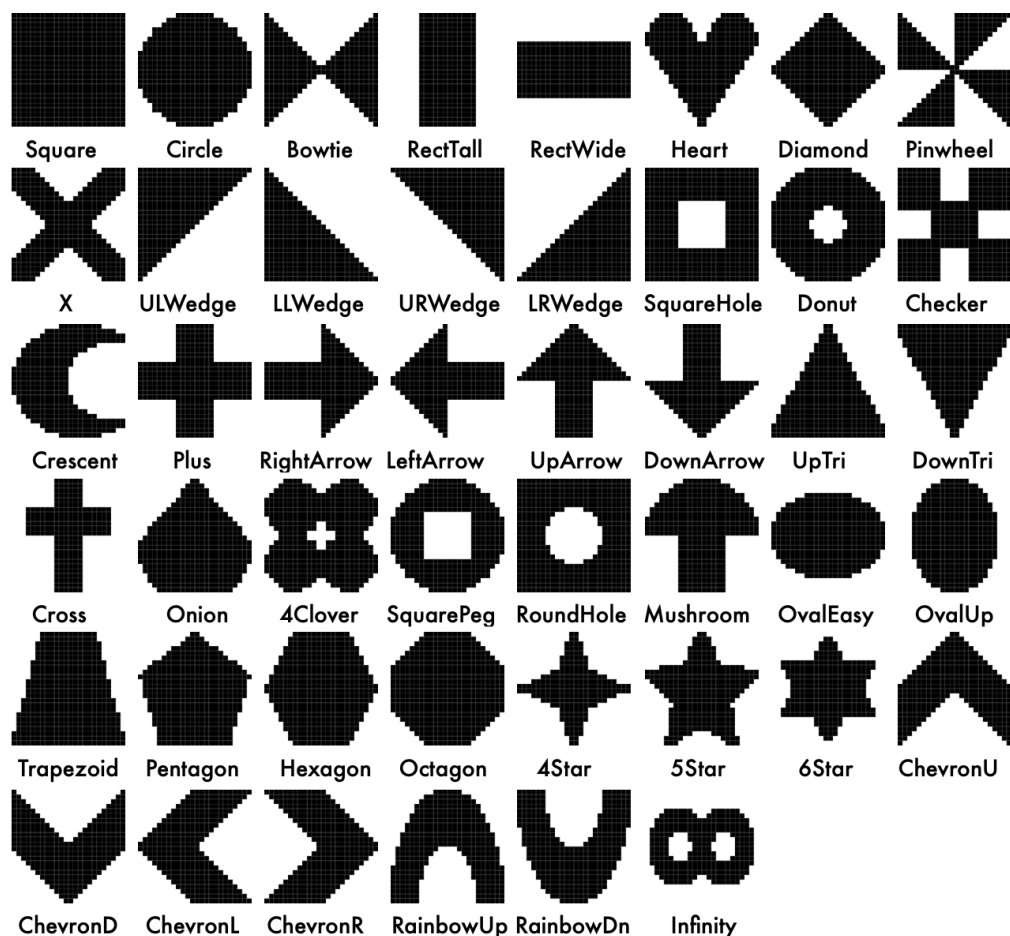
Note: Unlike other shapes, once you choose one of the Rectangle shapes you can then make the “Puzzle Size” smaller than ten, in case you want to make “five by nine” rectangular puzzles, for example.



## Layout: Maze: Maze Shape

You can choose from many different shapes to use. However, the shapes only become available if you have a maze size that is ten or bigger. Any puzzles smaller than this must be square.

**Geometric:** This lets you choose from a variety of preset shapes for the maze. Here are the available geometric shapes.



**Alpha-Numeric:** (*Pro Feature*) This lets you choose from the uppercase letters A through Z, and the numeric digits zero through nine.

**Font:** (*Pro Feature*) You can choose from a variety of fonts to shape the alpha-numeric characters.

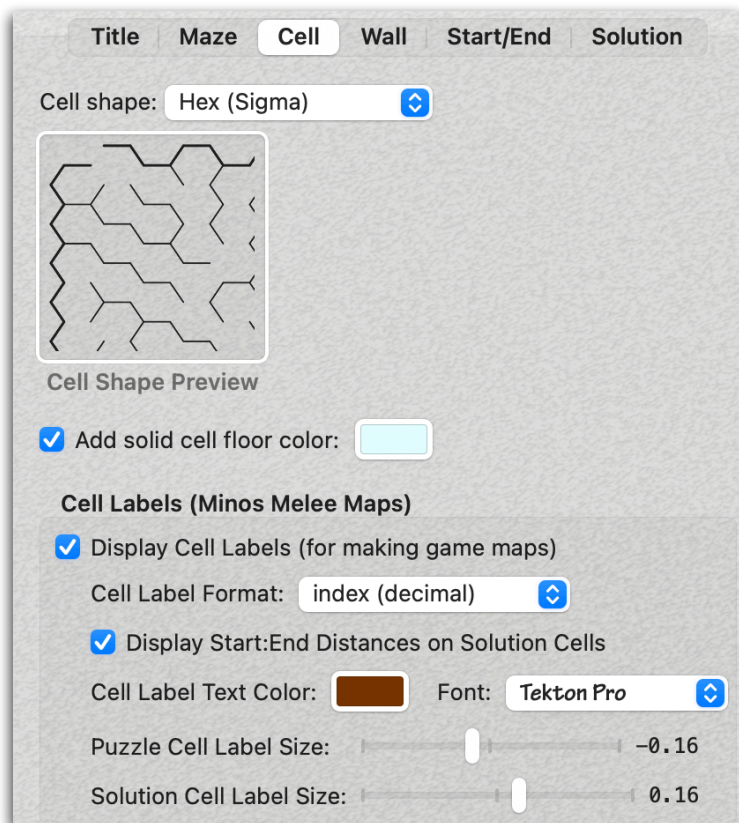
**Design your own:** (*Pro Feature*) This lets you design your own shapes. A built-in “shape editor” allows you to design a logo or complex shape of your own. You can then use that to create your puzzle. You can also export your shape to send to others, or import shapes designed by other software users. See the [“Design your own shape” section linked here](#).

**Note:** When you choose one of these non-square shapes, there are not as many available cells in the maze. If you have long Maze-Phrases, they may not fit in these other shapes. To compensate for this and still fit in your words, you will need to increase the maze size. Furthermore, many of these shapes will look nicer & smoother at larger maze sizes.

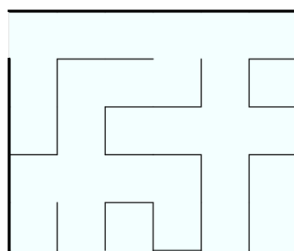


## Layout: Cell Tab

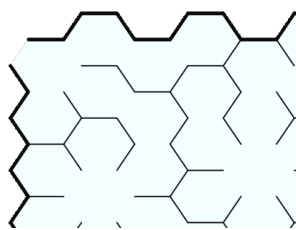
This tab has settings that let you choose from different maze cell shapes, and whether to fill the maze cell “floor” with a solid color, or leave it transparent.



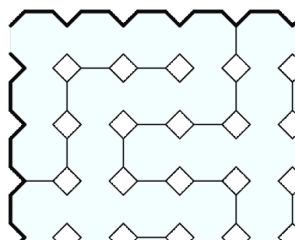
**Cell shape:** This lets you choose from a number of cell shapes for the maze.



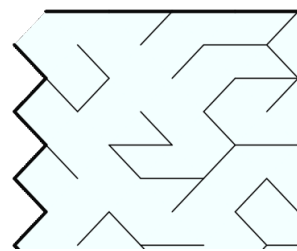
**Square (Ortho)**



**Hex (Sigma)**



**Octo-Grid (Ortho)**



**Iso-Triangle (Delta-Iso)**

Note: Regular square-cell mazes are usually referred to as “Orthogonal.” Hexagon-cell mazes are called “Sigma”, and triangle-cell mazes are called “Delta.”

**Add solid cell floor color:** Turn this checkbox *on* to “paint” each cell with a particular solid floor color. Turning this off leaves the cells transparent.

**Color:** When the above checkbox is on, you can tap the color box to change the cell floor color.

### Cell Labels (Minos Melee Maps)

This tab section allows you to turn on unique numeric labels for each cell of the maze. In this way, each cell has its own unique sequential number. You can print this maze out and use it for your own

role-playing board game, where you might roll dice to determine where your players or monsters or treasures are scattered within a maze, and then take turns trying to find your party and escape the maze. Or invent your own brand new game or puzzle that relies on referring to cell positions and knowing the distance from the beginning or end of the maze.

This feature is probably best-used when you also choose the wall style of “all walls+path” so that your players can easily see the paths on the puzzle page, and you (the D.M.) can also see the overlaid solution path on the solution page, along with distance values on each cell, telling you how many moves to the exit (and back to the entrance.)

### Cell Labels (Minos Melee Maps)

☒ Display Cell Labels (for making game maps)

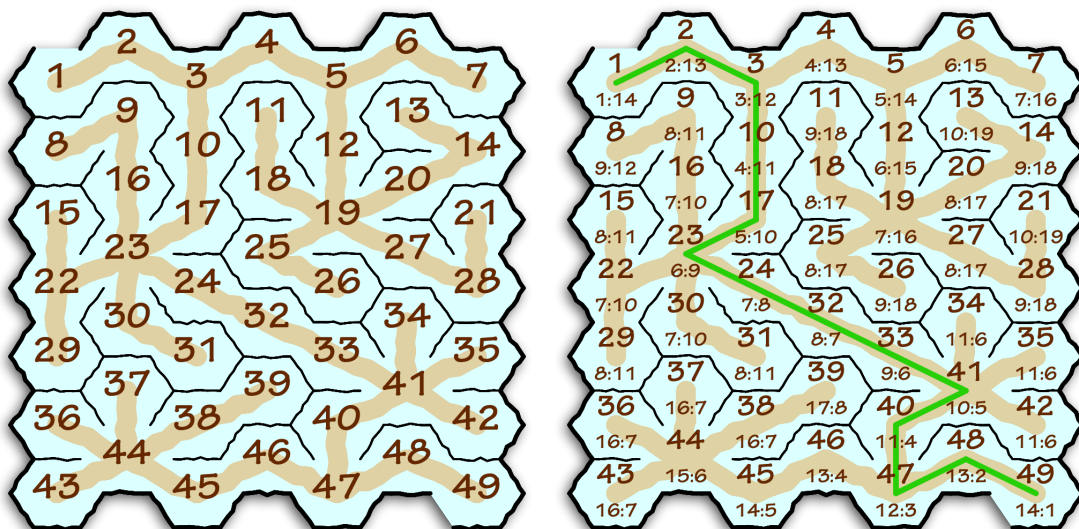
Cell Label Format: index (decimal)

☒ Display Start:End Distances on Solution Cells

Cell Label Text Color:  Font: Tekton Pro

Puzzle Cell Label Size:  -0.16

Solution Cell Label Size:  0.16



**Display Cell Labels:** Turn this on to print cell label information inside each cell.

**Cell Label Format:** Choose how the cell labels should be formatted, either as indices (cells labeled 1,2,3... consecutively) or as x,y coordinates.

**Display Start:End Distances on Solution Cells:** Turn this on to add numbers inside each cell (only on the solution page) that indicate (a) distance between this cell and the start cell, and (b) distance between this cell and the end cell. These numbers can be useful in determining how many player turns it will take to get from this spot to the end, and also whether the player is going in the correct direction.

**Cell Label Text Color:** Choose the color to draw the cell label text.

**Font:** Choose the font to draw the cell label text.

**Puzzle Cell Label Size:** Choose the relative size to draw the cell label text on the puzzle.

**Solution Cell Label Size:** Choose the relative size to draw the cell label text on the solution.

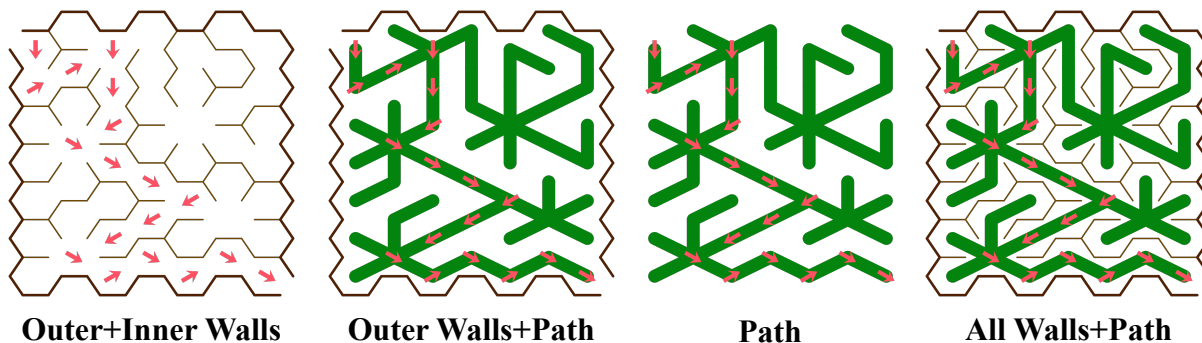
## Layout: Wall Tab

This tab has settings that let you adjust how the walls are drawn, color, width, squiggly-or-straight. You can instead choose to draw the paths between the walls, or both walls and paths.



### Layout: Wall: Wall/Path style

Change how the maze walls are drawn. Mazes can be drawn with combinations of outer walls, inner walls, and an inner line tracing all the paths:



### Layout: Wall: Outer Wall

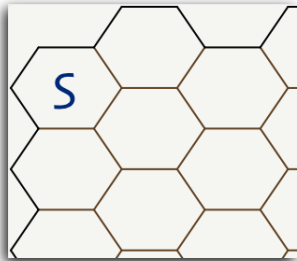
**Line width & color:** Change the outer wall line thickness and its line color.

### Layout: Wall: Inner Wall

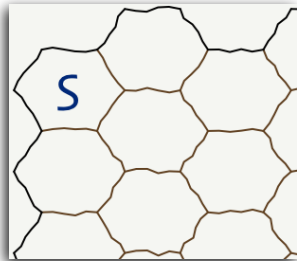
**Line width & color:** Change the inner wall line thickness and its line color.

## Layout: Wall: Line Wiggleness

**Wiggleness:** How much to “crinkle” the lines of the walls and paths. Setting this to 0 will leave walls completely straight. Increasing the wiggleness will break the wall into little pieces and make them twist more and more. Small values can give the maze a “hand-drawn” look. Large values can add to the difficulty level of following along the path. As you increase the number of cells of the maze, the wiggleness is slightly reduced (and number of broken wall segments is reduced) to keep them from getting too crazy-wiggly and completely cutting off a passage.



**Wiggleness = 0**



**Wiggleness = 2**



**Wiggleness = 11**

**Wiggle Outer Walls Too:** Turn this *on* to apply the wiggleness to the outer walls as well as the inner ones. Sometimes you will want the outer “outline” of the maze to not be wiggly, but the inner walls to be wiggly. This allows you to control that. If you turn on "Wiggle Outer Walls Too", then you will notice the overall maze will shrink slightly to allow the outer walls more room to squiggle outside the lines and not get cut off by the bounding area.

## Layout: Wall: Path

**Path Width:** If you have chosen to draw the maze as a path, then the width of its line can be chosen here. As you change its width, you can see the result in the (Solution) preview area. If no maze has been built yet, the path width and color will be shown as a placeholder dot in each cell.

**Path color on puzzle:** Change the line color of the path on the puzzle.

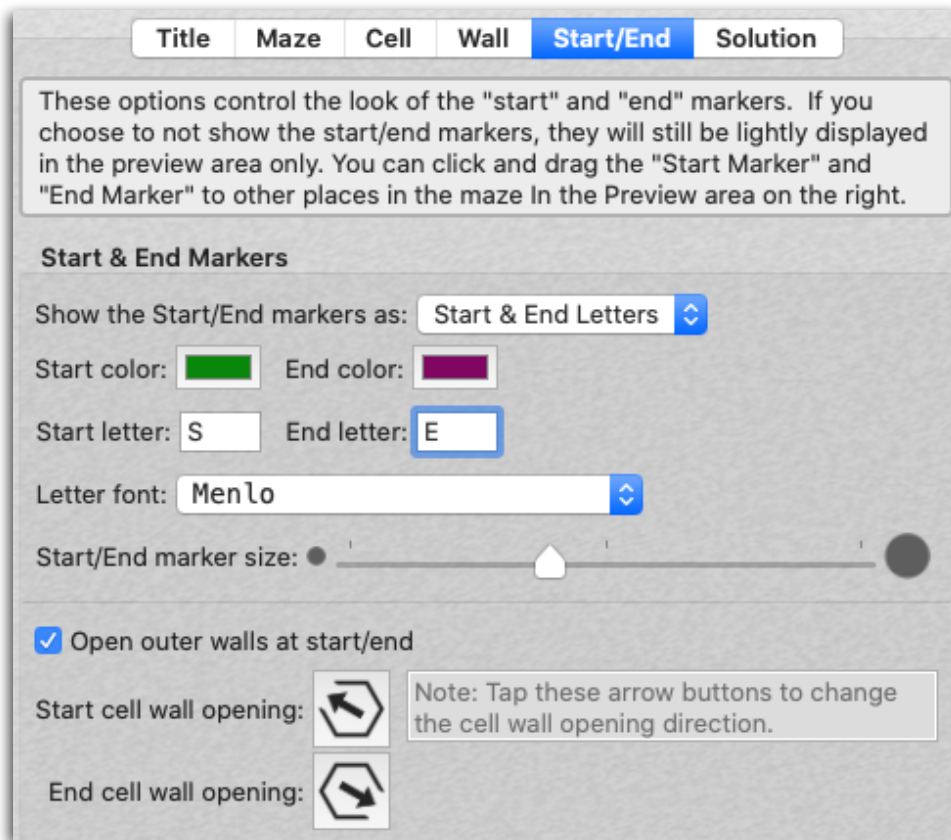
**Path color on solution:** Change the line color of the path on the solution key. It can be helpful to change the solution key’s path color to something else (perhaps a light gray) so that the solution path can stand out.



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## Layout: Start/End Tab

This tab has settings that let you set whether there are markers shown for the start and end points of the maze, and what they should look like.



### Layout: Start/End: Start & End Markers

**Show the Start/End markers as:** Change how the start and end markers are displayed in the maze.

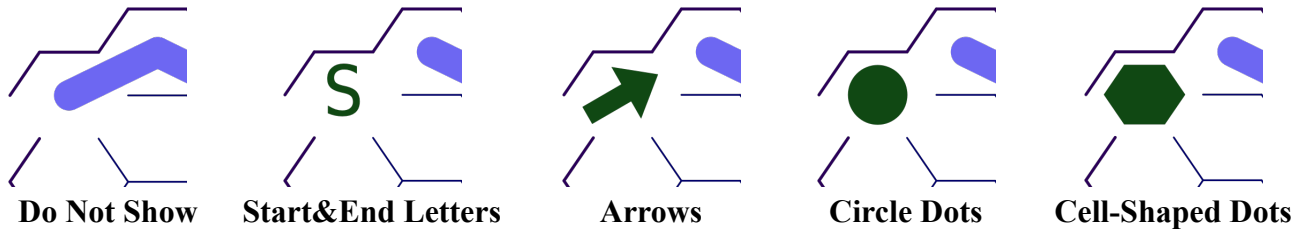
- “Do Not Show” will hide the start and end markers completely. Note that this will also extend the Solution Markers (mentioned next) to fill in those start and end cells.

Note: If you turn off these markers, they will still be very lightly shown in the Preview area, so you can drag them to new positions.

- “Start&End Letters” will print an “S” at the start and an “E” at the end, or whatever letters you choose under “Start Letter” and “End Letter” below. They can each be one or two characters long.
- “Arrows” will display a solid arrow for the start and end markers, with the Start Marker pointing in, and the End Marker pointing out. The “style” of the arrow drawn can be changed, by choosing a different arrow style under the “Solution” tab. Note that if a Start or End Markers is completely within the maze (i.e. not next to an outer wall) then the Marker will displayed as a “Circle Dot” instead. Also note that the Start arrow will point in a generic “in” direction away from the opening, not necessarily toward the correct path to start on.
- “Circle Dots” will display a solid colored circle for the start and end markers.

- “Cell-Shaped Dots” will display a solid colored inset cell shape for the start and end markers.

Examples of these Start/End marker settings are shown below:



**Start color:** Choose a color for the “Start” marker if shown.

**End color:** Choose a color for the “End” marker if shown.

**Start letter:** If you have chosen “Start&End Letters” for the markers, then here you can choose a letter for the “Start” marker. Note that this character can be Unicode in any language/alphabet, even emoji.

**End letter:** If you have chosen “Start&End Letters” for the markers, then here you can choose a letter for the “End” marker. Note that this character can be Unicode in any language/alphabet, even emoji.

**Letter font:** If you have chosen “Start&End Letters” for the markers, then here you can choose the letter font to use for those letters.

**Start/End Marker Size:** Slightly increase or decrease the overall size of the start and end markers.

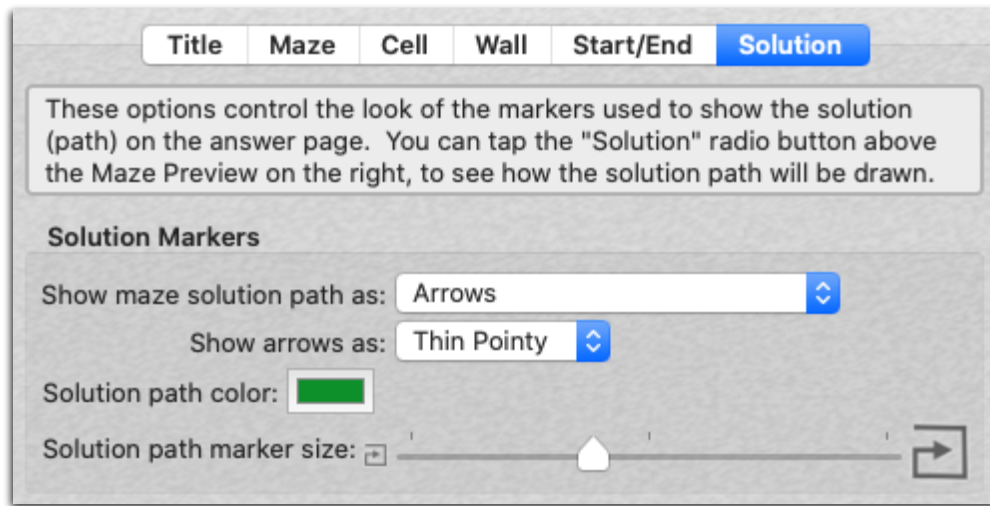
**Open Outer Walls at Start/End:** When checked, this opens the outer wall where the start and end markers are, if they are against outer walls. If un-checked, then the outer wall will remain closed, completely enclosing the maze shape. This option was suggested to prevent precocious people from drawing a simple line *around the outside* of the maze from the start to the end and claiming that they followed the instructions.

**Start Cell Wall Opening:** Tapping this button lets you cycle through all possible outer wall directions to break open for the Start cell. If the cell is completely inside the maze with no exterior (edge) wall, this button will be disabled.

**End Cell Wall Opening:** Tapping this button lets you cycle through all possible outer wall directions to break open for the End cell. If the cell is completely inside the maze with no exterior (edge) wall, this button will be disabled.

## Layout: Solution Tab

This tab has settings that let you set the style and size of the solution path markers.

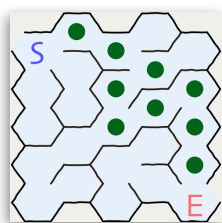


### Layout: Solution: Solution Markers

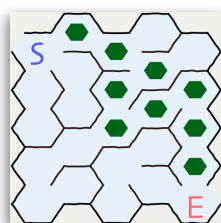
**Show maze solution path as:** Change how the solution markers are displayed in the maze.

- “Do Not Show” will hide the solution markers completely.
- “Circle Dots” will display a solid colored circle in each cell between the start and end markers.
- “Cell-Shaped Dots” will display a solid colored inset cell shape in each cell between the start and end markers.
- “Line” will display a continuously connected line through each cell between the start and end markers.
- “Arrows” will display a small arrow-pointer shape in each cell between the start and end markers, pointing *from* the start marker *toward* the end marker. See “Show arrows as” below to see how to choose different arrow styles.
- “Maze-Phrase...” options will be available if you are creating a Maze-Phrase. See the [“Maze-Phrase Tab”](#) section linked here for more information.

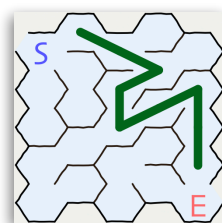
Examples of different solution markers are shown below:



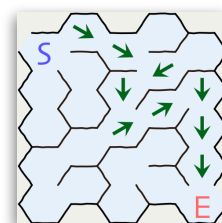
Circle Dots



Cell-Shaped Dots

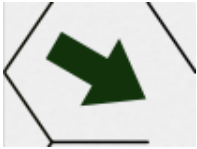


Line



Arrows

**Show arrows as:** When you have chosen “Arrows” as the “Show maze solution path” option above, you can alter the style of the arrows as Thick or Thin, Flat or Pointy. This arrow style will be used for the Start/End marker arrows too.



**Thick Flat**



**Thick Pointy**



**Thin Flat**



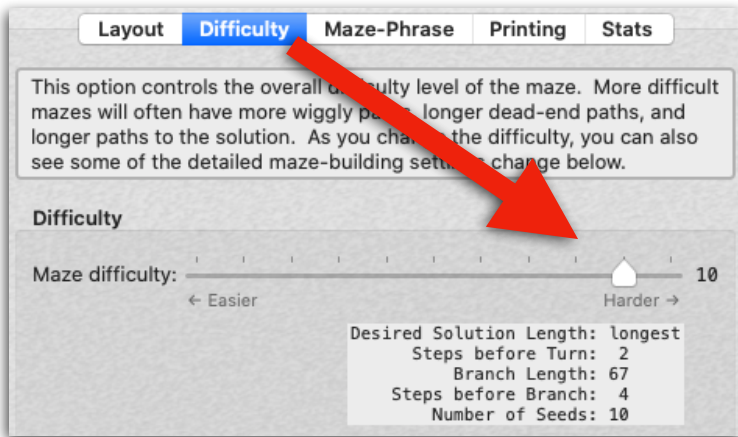
**Thin Pointy**

**Solution path color:** Choose a color for the solution markers if shown.

**Solution path marker size:** Slightly increase or decrease the overall size of the solution path markers.

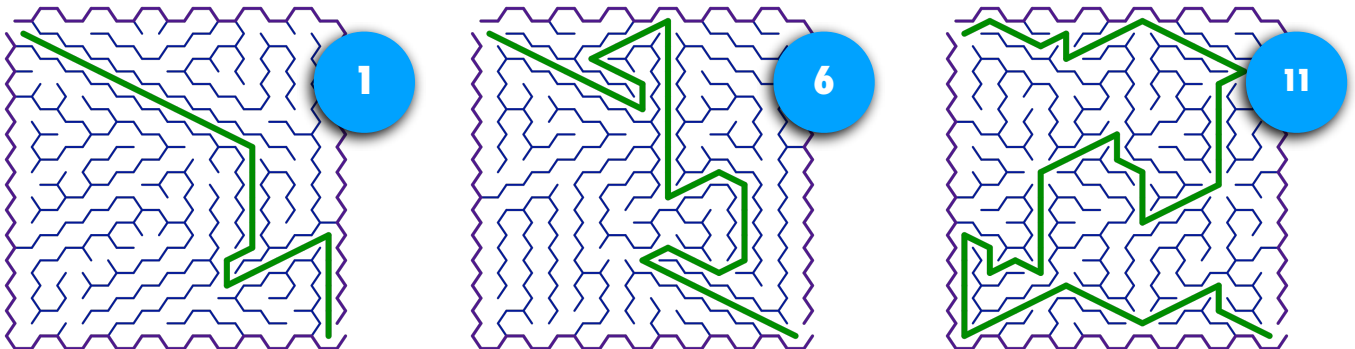
## Difficulty Tab

This tab lets you set how difficult the maze is to solve. You simply move the slider from easy to hard and re-build the maze.



### Difficulty

**Maze Difficulty:** This slider changes many aspects of the maze using a single value, from one through eleven. In general, one will be a much easier maze to solve, six will be moderately difficult, and eleven will be very difficult to solve. Here are some examples of the same maze built with different difficulty settings. You can see that easy mazes have longer straighter paths, and a shorter run from start to end.



Under the difficulty slider is a list of some of the internal settings that are updated as you change the difficulty. These are informational, and probably not very interesting.

**Desired Solution Length:** This determines whether the software looks for and chooses from the shortest, shorter, longer, or longest possible paths for the solution path.

**Steps before Turn:** How long should a straight path try to go before changing direction.

**Branch Length:** How long (# of cells) should each dead-end path run.

**Steps before Branch:** How long should a path go before branching to multiple directions.

**Number of Seeds:** How many “magic maze-bushes” are planted in the grid. Don’t ask. These are not the droids you are looking for. You can go about your business.



## Maze-Phrase Tab

This tab has settings that let you enter a text phrase<sup>6</sup>, which *Minos Maze Maker* will then lay out, letter-by-letter, along the solution path from start to end. It will fill the rest of the maze with letters from your phrase, but only the solution path will contain the entire correct phrase. All other dead-end branches will have incorrect (slightly scrambled) versions of the phrase. As you increase the difficulty setting, the "scrambling" happens later along the dead-end phrases.

Normally the phrase will spread the letters out along the solution path, but you also have the additional option to fill every cell of the maze with a letter ("Exact-Fill" described below.)

The first and last letters of the phrase will land exactly on the start and end cells, and all the letters in between will be spaced out evenly between along the paths. If you choose to also show the Start/End markers, then the Maze-Phrase will start and end one cell inside the markers, to allow spots for the Start/End markers to show.

If the phrase is too long or short and a solution cannot be found, then an error message will display and help explaining how to adjust things to try again. You can make a minor change and re-build the maze until it fits, since a different solution path (and length) is created each time.

For even more information on how to build one of these specialized "Maze-Phrase" puzzles, see the ["Make a Maze-Phrase puzzle"](#) section linked here.

### Maze-Phrase

**Type your Maze-Phrase here:** A line of text to lay out across the solution path. You may enter any text (in any language), and all letters and punctuation will be used. However, space characters will be removed along the path. The phrase must be at least three letters long, and must be no longer than the

LayoutDifficultyMaze-PhrasePrintingStats

You can lay the letters of a word or phrase into your maze as an extra puzzle solving style. To change how the Maze-Phrase solution is drawn, go to the "Layout:Solution" tab and change "Show maze solution path as".

Maze-Phrase

Type your Maze-Phrase here:Copy as Template String  
(Leave empty for no Maze-Phrase)26 letters long

Beware the Jabberwock, my son!

Letter color:Font: EpicGothic

Letter font size: A

NOTE: To change the Maze-Phrase letter font size in the Solution, use the Solution Path Marker size under the Layout:Solution tab.

Letter baseline adjustment: -0.2

Change letter case to: Leave as-is

☐ Find an "Exact-Fill" solution  
Note: "Exact-Fill" is off, so phrase will spread-to-fit, and should be less than about 405 letters long.

Display Maze-Phrase prompt on printed pages as: Prompt and Template

☒ Add spaces between template underscore letters

#### Minos, we have a problem!

Your 'Exact-Fit' MazePhrase is 8 letters long and is 3 letters too SHORT to fit with these maze settings. The shortest solution found was 11. Try building the maze again, or increase your MazePhrase length, or decrease the maze size or difficulty level, or turn off the MazePhrase "exact-fit" option.

<sup>6</sup> This is an optional variation of maze-making, and if you leave the phrase empty, a regular maze will be created.

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maximum number of cells/steps possible for the solution of the maze (which depends on maze size, shape, and difficulty settings.) It cannot be a string of the identical letters and at least some letters must be unique. If you leave the phrase completely empty, then the Maze-Phrase feature will be “turned off”, and a regular maze (with no letters inside) will be created instead.

Note also that when you start typing letters in the Maze-Phrase text box, a little tag will show up under the Preview Window, telling you that “Maze-Phrase” mode is on. Also, the number of letters used for the Maze-Phrase (ignoring spaces) is shown in the upper right above the Maze-Phrase text box, and will update as you type.



**Copy as Template String:** Tap to copy a string to the clipboard that is your Maze-Phrase, but with all its alphabetic and numeric letters replaced with underscores. This can then be used as a printed “template” or “placeholder” below your maze, for your users to fill in the letters as they find them. For example, here is a Maze-Phrase, and below it is the template that would be copied for it:

Beware the Jabberwock, my son!  
-----, -- -- !

You can also change the template string to include a space character between each template letter to “space it out” a little more and be more readable. See the setting “Add spaces between template underscore letters” below.

**Letter color:** Set the color to use for the Maze-Phrase letters in the puzzle.

**Letter font size:** Change the size of the letters within the cells of the puzzle. This will affect the letter size in the puzzle and the solution. This means that when you have created a Maze-Phrase, the “Solution Path Marker Size” under the Layout:Solution tab will have no effect on the solution font size.

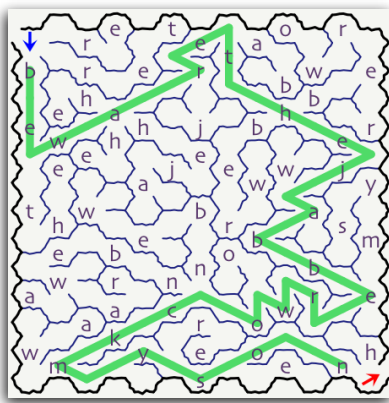
**Font:** Choose the font to use for the Maze-Phrase letters in the puzzle. Note that if you are using non-Latin alphabets, you need to choose a font that supports those letters, because some Macintosh fonts do not contain letters for other alphabets. ざねんですね！

**Letter baseline adjustment:** Move the letters up or down a little bit inside the maze cell, so they look vertically centered. Some fonts may look better if their letters are moved up or down a little.

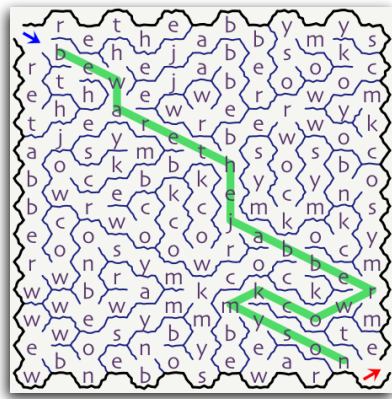
**Change letter case to:** Choose whether you want to (1) leave all the letters in the same case (capitalization) that you entered them, or (2) change them to all lower case, or (3) change them to all upper case.

**Find an “Exact-Fill” solution:** Turn this *off* to space out your phrase letters so that they stretch exactly from start to end, no matter how large or difficult your maze is. This also spaces out the other random letters sprinkled through the maze to give a balanced look to the maze. As long as the maze is large enough to fit the phrase along the solution, it will succeed. Turn this *on* to find a solution that is exactly

the same number of cells as the phrase itself. This will also create a maze where every maze cell will



Find an “Exact-Fill”: *off*



Find an “Exact-Fill”: *on*

be filled with a letter of the phrase.

Note that with this setting on, you will have to more carefully match and “fine-tune” your Maze-Phrase length to a maze size/shape/difficulty setting to get the maze to successfully build. Although the software will try *very hard* to find the exact solution for you, this setting will require you to do some trial and error adjustment to get it to build an Exact-Fill maze. If it cannot, the error message will give you an idea of how far off you are, and you can either try again a few times, or alter some maze settings and try again.

**Display Maze-Phrase prompt on printed page as:** Choose to show a hint to readers to look for the Maze-Phrase on the puzzle page. It can be omitted, or have a prompt and template or Maze-Phrase text.

**Add spaces between template underscore letters:** Turn this on to add space characters between every template underscore letter, to help separate the letter spots. If off, then the template will exactly match the number of letters of your Maze-Phrase, and the displayed underscores will be “shortened” so they don’t run together like normal underscores do.

## Maze-Phrase Solution Options

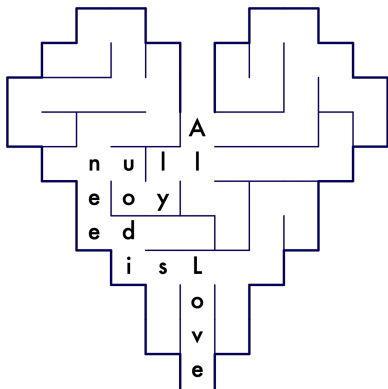
When you have created a Maze-Phrase, there are some extra options available for how to display the solution:

**Maze-Phrase Letters (Sparse):** The solution will be printed with letters along the solution path, and the rest of the maze will be empty.

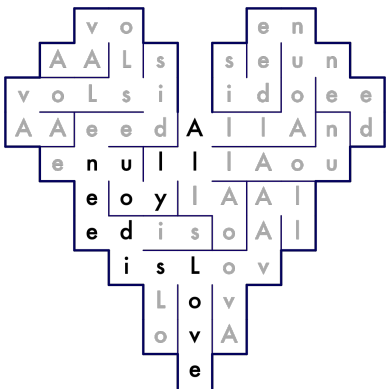
**Maze-Phrase Letters (Dimmed):** The solution will be printed with all the letters shown in the maze, and the letters along the solution path will be the “Solution Color” you chose, and all the non-solution letters will be dimmed as a light gray.

**Maze-Phrase Letters & Line:** The solution will be printed with all the letters shown in the maze, and the letters along the solution path will be the “Solution Color” you chose, and all the non-solution letters will be dimmed as a light gray. In addition, the solution path will be drawn as a solid line underneath the solution letters. You can adjust the width of the solution line and its color, just like you

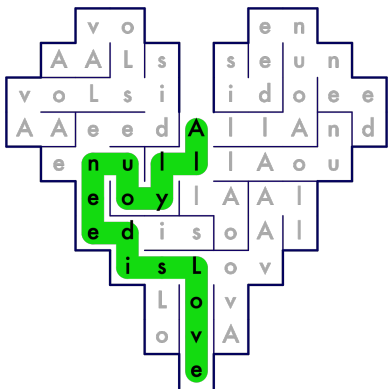
would for a regular maze solution line. See the [“Layout: Solution: Solution Markers”](#) section linked [here](#).



**Maze-Phrase Letters  
(Sparse)**



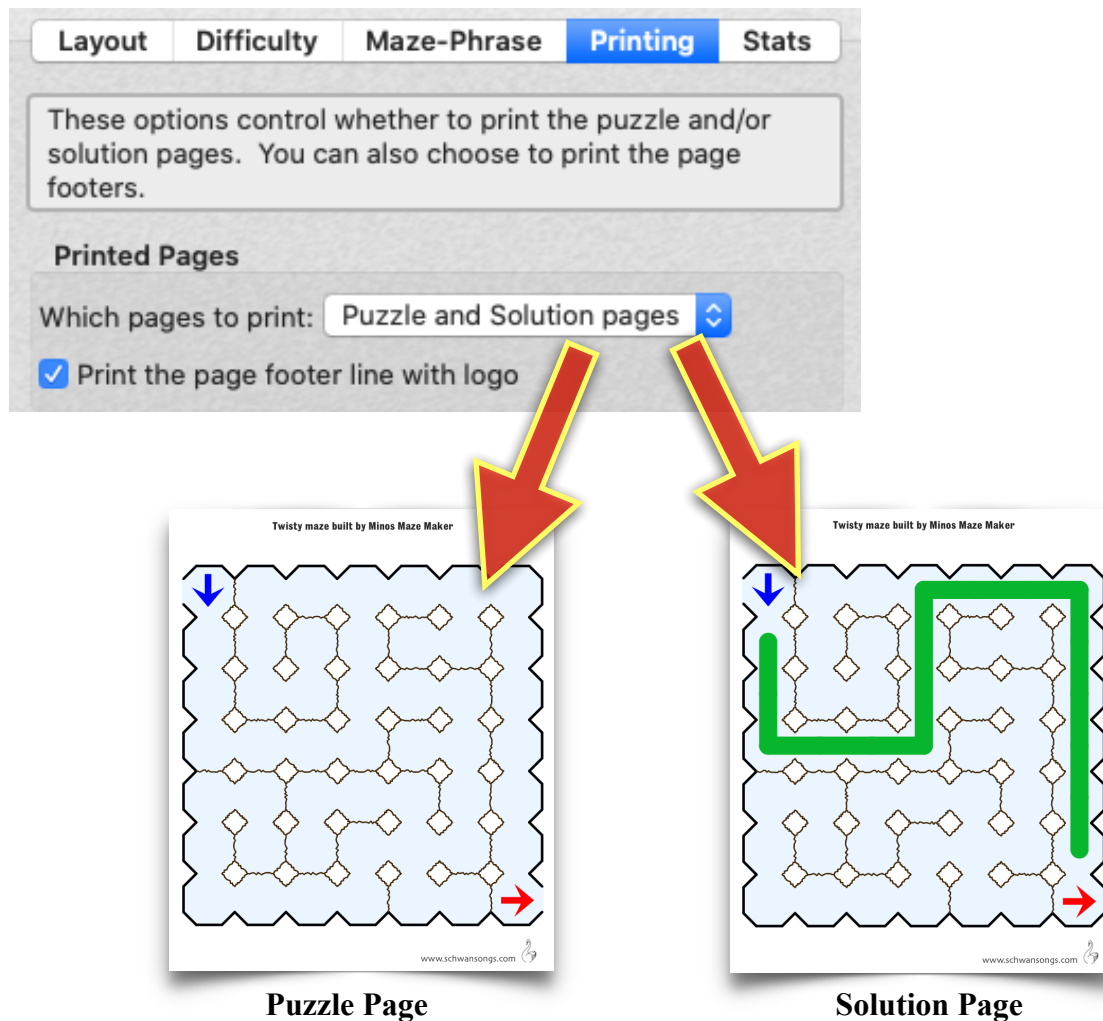
**Maze-Phrase Letters  
(Dimmed)**



**Maze-Phrase Letters  
& Line**

## Printing Tab

This tab has settings that let you set which maze pages should be printed.



### Printed Pages

**Which pages to print:** Choose what parts of the puzzle to print: *Puzzle Page* only, *Solution Page* only, or both *Puzzle* and *Solution* Pages. Choosing this option only affects what is **printed** to a printer via the File:Print menu item, not **exporting** the maze to files.

**Print the page footer line with logo:** Turn on/off printing of the software name and company logo at the bottom of each page.



---

## Stats Tab

This tab displays a number of detailed statistics about the generated maze. If no maze is generated, this table is empty. Depending on the kind of maze you create, different statistics will show up here. This is rather technical geeky information for most users, so feel free to ignore it.

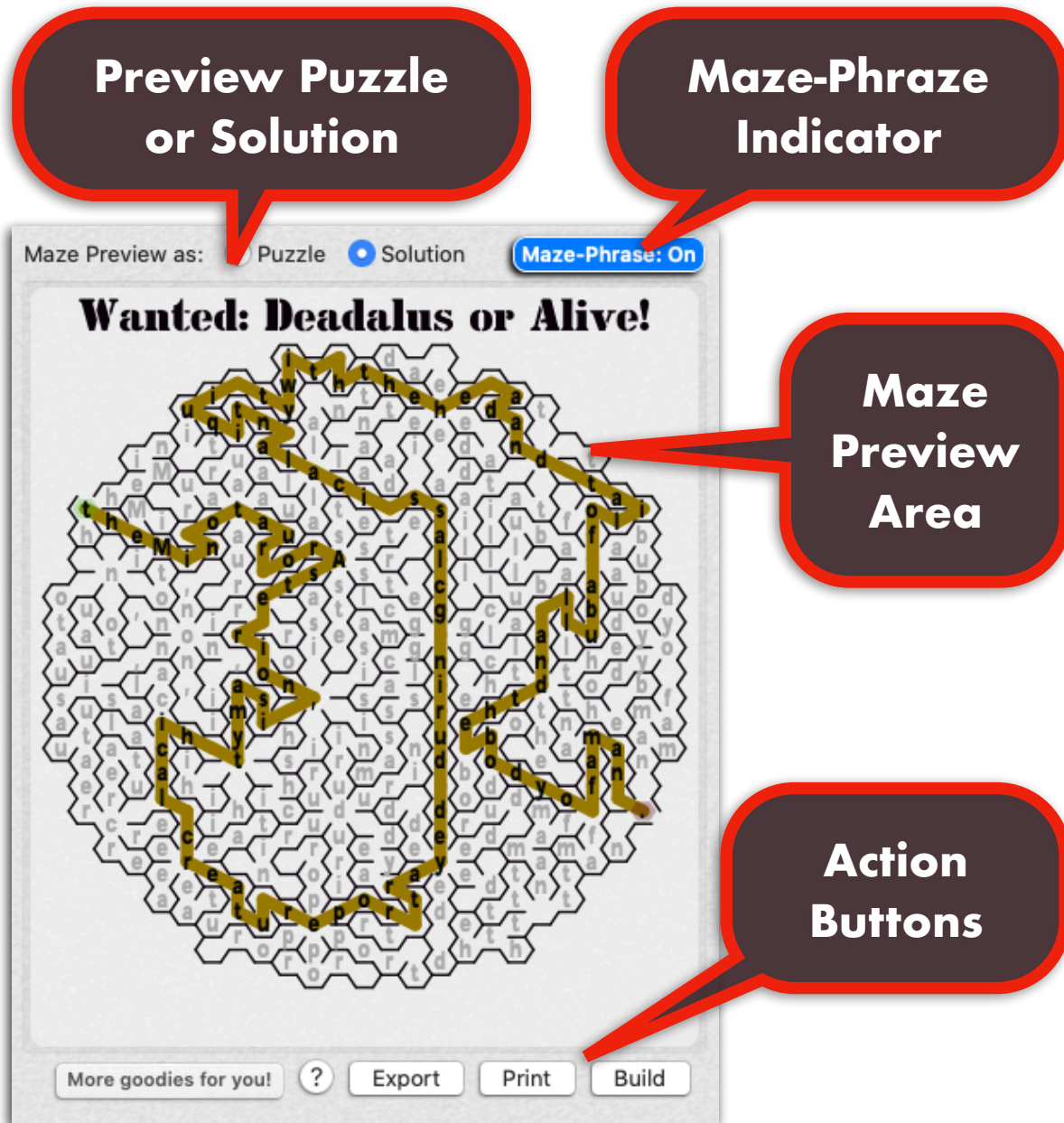
Layout   Difficulty   Maze-Phrase   Printing <b>Stats</b>	
After a maze is built, this screen lists myriad bits of information about how it was built: its size, complexity, path-lengths, etc.	
Maze Shape	Letter M (Serif)
Maze Width	42
Maze Height	42
Cell Shape	Hex (Sigma)
Total Maze Cells	685
Difficulty Value	6
Max Branch Length	22
Distance Before Branching	8
Distance Before Turning	4
Desired Solution Length	longer
Start/End Markers	Cell-shaped dots
# Seeds	8
# Branches per Seed	3
Solution Markers	Line
# of Solutions found	2
Shortest Solution Length found	149
Longest Solution Length found	166
Solution Length (including S/E markers)	166
Solution Length as % of Total Maze Cells	24%

Perhaps the most interesting line is “Solution Length as % of Total Maze Cells”, which tells you how long the solution path is, compared to the overall size of the maze. That is, it tells you how much of the maze you have to wander around before you get to the exit.

## Maze Preview on the Right

The pane on the right half of the window displays a preview of what your maze and solution look like. When you change the size or shape of the maze, its new shape and size will be instantly reflected here. After you build a maze, the final maze puzzle and its solution will be displayed here as well.

There are radio buttons at the top for you to preview either the Puzzle or its Solution. You can also see and drag the start/end markers around in the preview area.




---

## More goodies for you! Button

This button opens a window that displays a list of many of my other software products and published books, with a short description of each. Simply tap one of the product rows, and it will immediately open your web browser to a page that fully describes that product, and where to get it.

---

## Help (User Guide) Button

 The circled-question-mark button is a “Help” button, and opens a window with this user guide displayed for quick access. It is the same as choosing “User Guide” from the Help menu.

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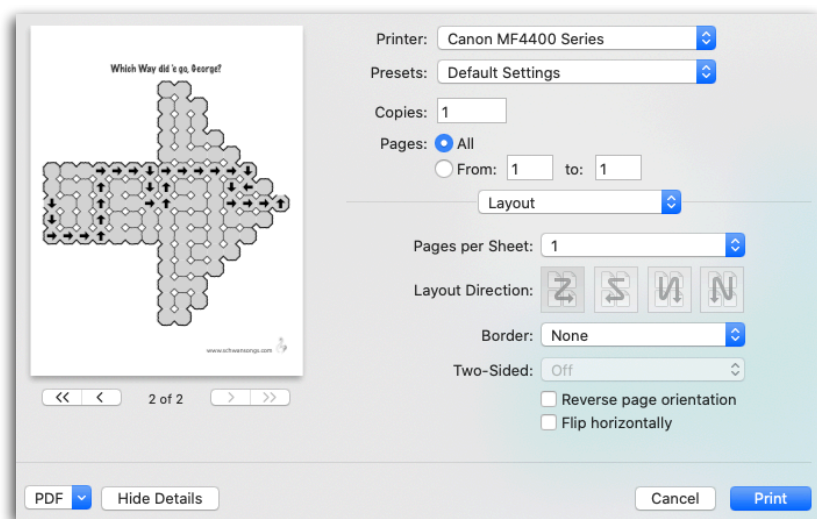
## Export Button

After building the maze, you can immediately export the maze by tapping the “Export” button in the lower-right corner of the document window. You can also choose “Export Maze” from the File menu, or press **⌘-1**. This will bring up an export dialog, letting you choose the destination directory and a number of other options. See the [“Save/Export” section linked here](#) for more information.

---

## Print Button

After building the maze, you can immediately print the maze by tapping the “Print” button in the lower-right corner of the document window. You can also choose “Print” from the File menu, or press **⌘-P**. This will bring up the standard print dialog, letting you choose the printer, page layout, number of copies, etc.



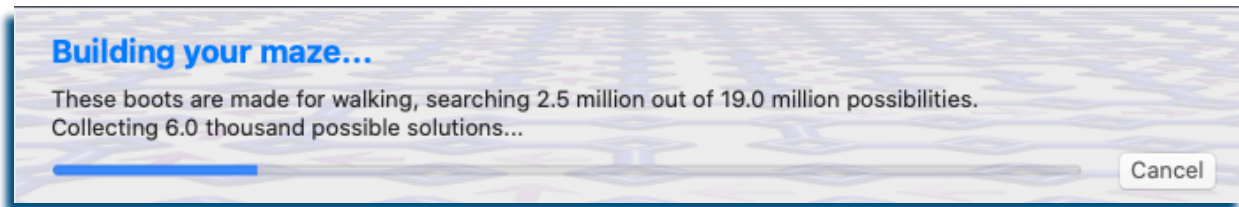
Note that before you print the pages, you can configure what to print and how the page looks, for example, the page title, footers, and whether to print the maze page or the solution page (or both). You can do this from settings under the main window’s “Layout” tabs, described above.

---

## Build Button

After configuring the maze, you can tell the software to build a maze by pressing the “Build” button in the lower-right corner of the document window. You can also choose the “Build the Maze” item on the Action menu, or press **⌘-B**.

Once the maze begins building, a progress sheet will display, showing the progress of laying out the maze. This could take from a few seconds to a minute or two, depending on how large or complex the maze is. If you want to stop the building of the maze, simply press the “Cancel” button on the sheet, and the maze will stop building and be cleared.



If you don't like the final solution path for the currently built maze, simply press the Build button again. Each time you press it, the maze will be re-built with a completely different solution path.

**Easter Egg Note:** If you have a large maze (40x40 or bigger) and you have the Difficulty level set to very high, Minos will sometimes get a bit of ennui and just not build that really long twisty solution you want it to. You can force it to take even more time finding a solution by holding down the <Option> key as it nears the end of the progress bar. As long as you hold the key down, it will continue checking every possible path for the longest. As soon as it has found all possibilities, or when you release the key, it will immediately stop and use the best path it found so far.

---

## Menus at the Top

The menu items along the top "menu bar" contain special commands for opening/closing/printing your documents, etc. You won't need to use them too often, but the menu items that are specific to *Minos Maze Maker* are explained here.



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### Minos Maze Maker menu

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#### Minos - About Minos Maze Maker

Choose this item to display a window that gives credit to all the people who helped make this software happen, accompanied by some fun parade music as they scroll by and wave.

---

#### Minos - Settings<sup>7</sup>

Choose this item to open a window that lets you change application-specific settings. When you set the values here, they are used for all future runs of *Minos Maze Maker*. See the [“Settings window” section linked here](#) for more information.

---

#### Minos - Save Document Settings as Defaults

Choose this item to take and save a "snapshot" of the current document's settings (including maze size & shape, difficulty, fonts/colors, etc.) Afterward, all new documents you create with *Minos Maze Maker* will start with these default settings.

---

#### Minos - Reset Document Settings to Saved Defaults

Choose this item to reset all the current document's settings to the prior saved document settings, i.e., the settings you saved when you chose the menu item above, “Save Document Settings as Defaults”.

Note: This only resets the currently open document settings, and does not change the settings for future newly opened documents. To also use these settings for all future new documents, immediately select the “Save document Settings as Defaults” menu item after selecting this menu item.

---

#### Minos - Reset Document Settings to Factory Defaults

Choose this item to reset all the current document's settings to the original factory default settings.

---

<sup>7</sup> Note that “Settings” used to be called “Preferences”, and Apple changed this name (in MacOS 13/ Ventura) to “Settings” to align with iPhones, because, well, you know, “a foolish consistency is the hobgoblin of small minds.”



Note: This only resets the currently open document settings, and does not change the settings for future newly opened documents. To also use these settings for all future new documents, immediately select the “Save document Settings as Defaults” menu item after selecting this menu item.

---

## Minos - Change All Colors to B&W

Choose this setting if you are printing a book or worksheet, It will quickly change all font/grid colors to black and white (and gray). To then save this as the default setting for all future newly-opened documents, choose “Save as default settings” described above.

---

## Minos - Pro Upgrade...

This menu item allows you to purchase an in-app upgrade. Immediately it gives you all the extra features available in the Professional (Pro) version of this software. For details, see the [“Upgrade to get the Pro Features”](#) section linked here.

---

## File menu

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### File - New

Creates a new empty document window, where you can build a new maze. Save your maze document as a file if you want to open it later. You can have multiple windows open at once, switching between each of them periodically.

---

### File - Open/Save

This allows you to save an existing maze to a file (including all your settings and solution), or re-open it. These files can also be sent to other *Minos Maze Maker* users who can open and use the maze too. These special files can only be opened by *Minos Maze Maker*.

---

### File - Revert to

As you build mazes from a document, you can *Save* it to the current document. It will be remembered as a “snapshot” or “version.” Later on, you can choose this menu item to bring up a list of saved versions of this document. Instantly you can restore back to one of those prior saved file versions. Use this feature to “rewind” back to an earlier maze solution you might have liked best.

---

### File - Export Maze

Choose a file name, and an image of the the maze (and optionally an image of the solution) will be converted and saved. This item will be disabled if you have not yet built a maze. You can export just the Puzzle image, or both the Puzzle and Solution images together. For more details about exporting, see the [“Save/Export”](#) section linked here.

---

## File - Print

This opens the print dialog and allows you to print one or more copies of your maze page (and solution page) to a printer. This does the same thing as the Print button on the main window.

Note: This option will format and print your maze along with your title and any Maze-Phrase solution key underneath on the solution page.

---

## Edit menu

Nothing special here... these are standard system text editing copy/paste items.

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## Action menu

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### Action - Build Maze

Choose this to build a maze from the settings you have chosen. This menu item is equivalent to tapping the "Build" button on the main window.

---

### Action - Shape Editor (*Pro Feature*)

Design your own custom shapes and create puzzles with them. See the ["Design your own shape" section linked here.](#)

---

### Action - Bulk-Builder (*Pro Feature*)

Choose this to build multiple mazes from the settings you have chosen. After you choose how many mazes to make and a destination directory, the puzzle and solution files will be generated together. See the ["Bulk builder" section linked here.](#)

---

### Action - Daily Maze (*Pro Feature*)

Choose this to create a new unique maze that will be different every day. *Minos Maze Maker* will automatically select the maze type, difficulty level, digit style, and then build the puzzle for you. It will create the same maze for that entire day, and a completely different one on a different day.

And here's the magic part; The maze for this calendar day will be identical for all *Minos Maze Maker* users anywhere around the world! This offers all sorts of possibilities of cross-country collaboration or competition with your friends.

Before *Minos Maze Maker* loads the new maze into your existing document — thus overwriting any existing maze settings you have there — it will first prompt you if it is OK to replace your current document with the Daily Maze. If you tap "Yes", it will load the Daily Maze and build it for you. It also adds a title with today's date.

Note: There are some options that are never chosen for Daily Mazes, for example very small or very large mazes, Maze-Phrases, or certain path types. However, you can add these items back into the Daily Maze after it is built if you like. In fact, here's a tricky tip: If after you and your friends all created the Daily Maze, you can all make exactly the same changes and all re-build your mazes, and those new mazes will all still match each other.

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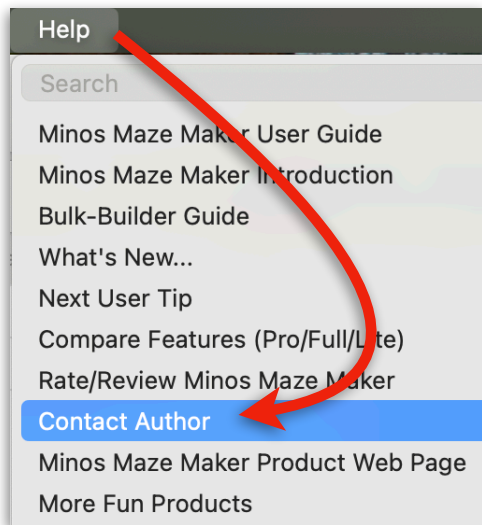
## View menu

Standard Apple menu... allows zooming to/from full screen.

---

## Window menu

Standard Apple menu... these are standard system window-handling items, minimizing, etc.



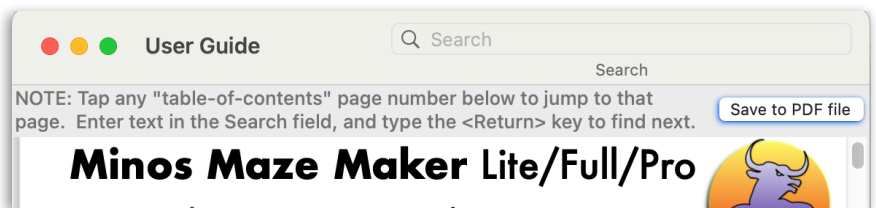
---

## Help menu

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### Help - Minos Maze Maker User Guide

This menu item opens a window that displays this user guide document. Adjust the size of the text by making the window larger or smaller. Print a copy of this user guide by choosing Print from the File menu. You can tap the “Save to PDF file” button to save a copy of this user guide as a separate PDF file. You can then open it in a nicer PDF viewer, or copy it to another device for later viewing.



Note: While the user guide window is open, you can tap any "table-of-contents" page number to jump to that page. To search for a word or phrase in the document, enter that text in the Search field at the top. You can type the <Return> key to find the next occurrences of that text.

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### Help - Minos Maze Maker Introduction

This menu displays a multi-tabbed quick introduction, illustrating some of the features of the software. It opens each time you run the software, unless you un-check the “Show this window on startup” box at the bottom of the window. You can always open it later, by choosing this menu item.

---

### Help - Next User Tip

This opens a little window with an interesting tip or suggestion for interesting things you can do with this software. Each time you choose this menu item, a new tip will be displayed.

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### Help - Bulk Builder - Guide

This opens a window displaying a document showing you how to enter large lists of Maze-Phrases. These can be used in the *Bulk Maze-Phrase* tab of the Bulk-Builder in the Pro product.

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### Help - ESP File Export Guide

This menu item opens a window displaying a document explaining the special ESP File format available in the Export window of the Pro product. This exported file format captures the entire puzzle and answer in a single easily-readable file, and can be used for advanced publishing workflows or as data to power your own interactive web puzzle games.

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### Help - What's New

This menu item displays a detailed list of all the new features and bug fixes. It details what is new in this release. There is also a list of known bugs, in case you find something acting strangely and want to see if I already know about it. Moreover, there are notes on prior releases.

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## Help - Compare Features (Pro/Full/Lite)

This menu item displays the feature differences between the Lite and Full and Pro versions of this software.

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## Help - Rate/Review Minos Maze Maker

This menu item opens an Apple App Store window. It lets you add your rating, and write a review for this software. By doing this, you are letting others know how you like it. Please consider rating it and possibly writing a sentence or three about it.

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## Help - Contact Author

This menu item opens an e-mail. You can easily send me an update with any questions, bugs, or feature requests. It automatically contains some information about which version of the software you are using. Having this information helps me answer questions for you.

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## Help - Minos Maze Maker Product Web Page

This menu item opens a browser window that displays the product web page for this software.

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## Help - More Fun Products

This menu item opens a window that displays a list of many of my other software products and published books. Each has a short description. Simply tap one of the product rows, and it will immediately open your web browser to a page that fully describes that product, and where to get it.

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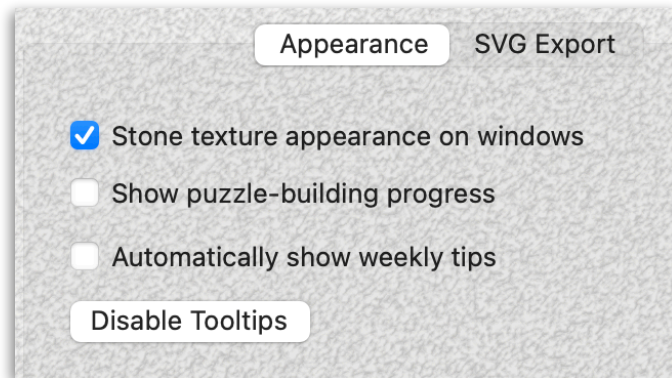
## Help - Company Web Page

This menu item opens a browser window that displays my company web page, showing my other products and myriad interests.



## Settings Window

This window lets you change settings that are specific to the application software. The settings here alter the overall look or behavior of the application itself, and do not affect your individual maze documents.



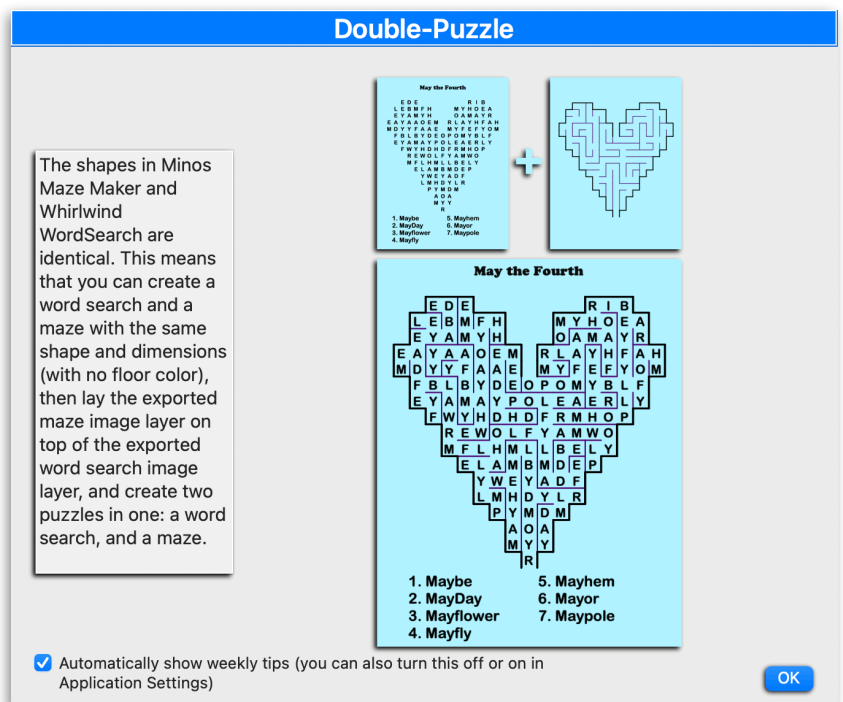
## Appearance Tab

**Stone texture appearance on windows:** This turns on or off the stone-textured background on the windows.

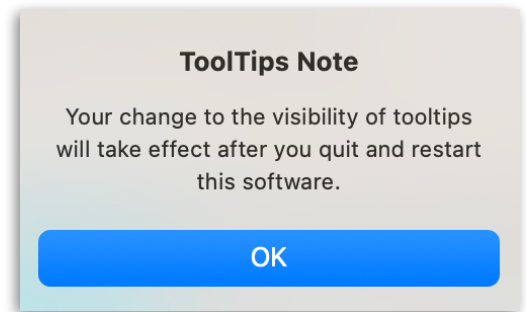
**Show puzzle-building progress:** Turn this on to watch the walls get torn down and solutions collected as the maze gets built step by step. This can be entertaining to watch, and gives you a peek at how my particular mazes are designed. However, in order to show all the steps it slows down the maze building quite a bit.

### Automatically show weekly user tips:

This will cause *Minos Maze Maker*, once a week, to open with a little window with an interesting tip or suggestion for things you can do with this software. Each week a new tip will be displayed. Turn this off to permanently silence the dialogs. You can always manually read the next one by choosing “Next User Tip” from the Help menu.



**Disable/Enable Tooltips:** You know those useful text pop-ups that help you learn what each item is before you click on it by floating the text under your mouse cursor? After using the software for awhile, you may want to turn those off, since they sometimes cover up what you are trying to look at. Now you can! Well, you can now turn *most* of them off... the ones on the main document window, the main menu, the export window and bulk-builder window. Simply tap the “Disable Tooltips” button, and (after reading the note) quit and re-start the software, and from now on, the tooltips will be gone. If you want them back, simply repeat this process, as the button will now say “Enable Tooltips”.



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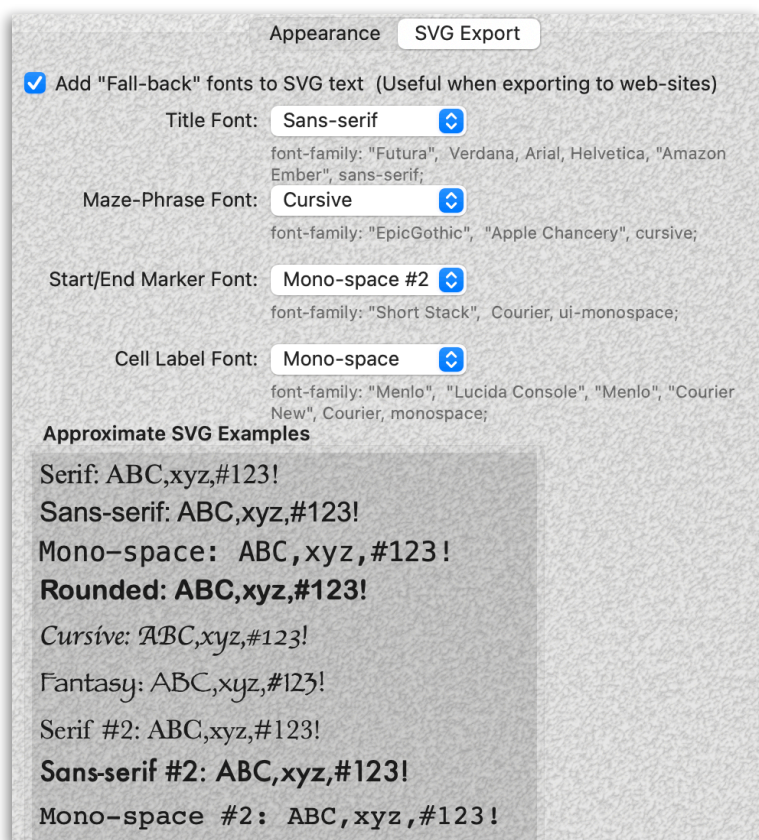
## Author Info

When you export your puzzles, you will likely want to insert your name and copyright information into the exported files as a way to protect/watermark your work. Some of the export formats support this embedded information, specifically SVG, ESP Files, and the Text info files. You can enter your information here. By doing so, it will be added to every file you export.

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## SVG Export Tab

When you export your puzzles in “SVG” format, that file will include your specific font choice for the title, maze-phrase letters, cell labels, etc, as well as substitute or fall-back fonts to use in case your specific font choice is not available on the destination user’s computer. Since you have no control over which fonts other people have on their computers, SVG can supply additional general-purpose “fall-back” fonts.



Here you can choose from some which will closely match your chosen font. The font styles you choose here will be used for all future SVG exports. Below is a legend showing an approximate example of the font styles listed in the pop-up menus above, for reference.

**Add “Fall-back” fonts to SVG text:** If you are going to import these SVG files into another publishing/page layout program (e.g. InDesign or Affinity Publisher) and you will then be exporting the final file as a PDF file, then you don’t have to worry about the SVG switching fonts on you, because the original fonts you chose will be used and copied exactly into the PDF file. In this case, you should turn off the “Add Fall-back...” checkbox. If you will be posting the SVG directly in a web page or sending it to other computers, you should turn the checkbox *on*.

Below that you can choose which fall-back fonts which will closely match your chosen font for the title, Maze-Phrase letters, Start/End marker letters, and cell labels. The font styles you choose here will be used for all future SVG exports.

Below that is a legend showing an approximate example of the fall-back font styles listed in the pop-up menus above, for reference.

## 6. More Information

This original software was written by Eduard Schwan of SchwanSongs over many years, starting in 2013.

The unique maze algorithm that can adjust between simple and difficult maze paths is my own invention, and as far as my own maze research shows, I have not found any other maze algorithms quite like what I have invented here. I hope to publish a little paper on my novel maze-generating algorithm someday.

The terms “Maze-Phrase” and “Minos Melee Map” are my own invented terms.

This maze software has now grown to over 25,000 lines of Objective-C code, carefully designed, written and built 100% by me, and tested with the help of a small group of friends.



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