

# Using Excel for Graphics

## Introduction

This document has the notes from pages 12 and 13 of my book “Practical Perpetual Calendars – Innovative, Convenient and Green” followed by some notes on how to use Excel for the calendar described in this instructable.

## Notes from Book

I used Excel to make all of my prototypes. It is certainly not a powerful graphics program, but it is widely available and easy to use. The following techniques may be helpful to small-quantity producers who also want to use Excel.

- Use centimetres for the ruler dimensions.
- Set up spreadsheets to a row height of 15 and a column width of 3. This makes a grid that appears to be close to square, although the width is slightly greater than the height. The “Merge & Center” function is used to make larger cells when required. On some of my spreadsheets, the row height and column width are different from 15 and 3 to accommodate a larger font, to have some rows a different height than others, or to make a window a fraction of a row height higher than the slider.
- In many of my prototypes, the merged cells for the month table and the year table are two cells wide by one cell high. The font is Calibri 11. The merged cells for the day-of-month table are two cells wide by two cells high. The font is Calibri 18.
- Use Excel spreadsheet cells for table data that appears in rows and columns, and use text boxes for other information such as notes, parts lists and operating instructions.
- Use Arial Narrow font when there is limited width available.
- Where possible, make horizontal and vertical lines by putting borders on cells rather than using the Excel “Insert Shapes” tool to draw lines.
- Excel is not set up to make lines of an exact length. (Or if it is, I have not learned the technique.) However, by using trial and error to set the number of rows and columns, and by scaling to a reduced size when printing, I have been able to produce figures close to the desired size. In making a calendar, proportions and fitting on a page are usually more important than making an exact size. If there are some paper or cardstock parts and some wooden parts, being able to set a dimension to a desired number of inches or millimetres would make cutting the wood easier than when it has to be cut to the size of a rectangle that is printed on a piece of paper.
- When printing to fit everything on a page, reduce the default margins and print to a scale less than 100 percent if necessary. Many of my prototypes were printed to a scale of 40 percent or 50 percent.
- To paste a picture that is in JPEG (or JPG) format into Excel, paste the picture into Word and then copy and paste from Word to Excel.
- To save an Excel drawing as a JPEG file, copy the area of the drawing you want to save. Then paste into Paint and save as a JPEG file. If you do not want to see the gridlines in the JPEG file, go to the View tab in Excel and uncheck Gridlines before copying.

- Excel does not show leading zeros of numbers (i.e. 00 is shown as 0 and 01 is shown as 1). The leading zeros can be shown by putting an apostrophe (') in front of the number. When this is done, Excel puts a small green triangle in the upper left corner of the cell. If the cursor is rolled over the triangle, the following message appears "The number in this cell is formatted as text or preceded by an apostrophe." The triangle is not printed when printing from Excel and does not appear if the Excel file is saved as a pdf file. However, the triangle is seen if the standard Copy command is used when copying and pasting into Paint. The way to eliminate the triangle in Paint is as follows:
  - a) Highlight the area in the Excel spreadsheet that you want to paste into Paint.
  - b) Copy this area using Copy → Copy as picture → Appearance → As shown when printed. (In some versions of Excel, the procedure is Paste → As Picture → Copy as Picture → Appearance → As shown when printed.)
  - c) Paste into Paint.

COMMENT: While writing this Instructable, I tried using Paint 3D instead of Paint. It works for both two dimensional and three dimensional drawings. However, when an area of a spreadsheet is copied following step b) above, the picture cannot be pasted directly into Paint 3D. The picture has to be pasted into Word and then copied from Word and pasted into Paint 3D.

### **Notes on Using Excel for the Calendar in this Instructable**

The first step in setting up the Excel spreadsheet is to format all the cells so that the Row Height is 15 and the Column Width is 3. This makes the cells approximately square. The dimensions for shapes should be in cm.

The text on the front, back and sides of the calendar is in text boxes. The back is one large text box that is rotated 180 degrees after it is done. The days of the week, the slider, and the year table are in merged cells as follows:

Days of the week - 2 cells high by 2 cells wide

Days of the month on top part of slider - 2 cells high by 2 cells wide

Months on bottom of slider - 1 cell high by 2 cells wide

Year table on front and century strip - 1 cell high by 2 cells wide

Most lines are made by putting borders around cells.

The height of the slits on the face is 17 rows that have a height of 15, which is one extra row than the number of rows required for the days of the month and the months.

The top row of the slider has a height of 5 instead of the usual 15 and the row has black fill. The middle 16 rows have the usual height of 15 and the bottom row is the same as the top. Thus, the height of the slider is row of 5 high less that the height of the slits.

The slider and the piece for the 19th and 20th have to be drawn horizontally and then rotated to fit on one sheet. The procedure to make a pdf that has the complete calendar on one 8.5 by 11-inch sheet of cardstock is as follows:

1. Draw everything on one sheet.
2. Make a second sheet with the same 15 high and 3 wide cells.
3. Copy the face and back as an Excel spreadsheet from the first sheet and paste onto the second.
4. Copy the slider as a picture (as shown when printed) from the first spreadsheet and paste onto a blank area of the second spreadsheet.
5. Use the Picture Tools to rotate the slider Left 90 degrees.
6. Move the slider into the desired position.
7. Repeat steps 4 to 6 for the piece for the 19th and 20th centuries.
8. Do a print preview of the second spread sheet and adjust scaling and margins as required to fit on one page. I found that the following worked for me:  
 Orientation – Portrait  
 Scaling - 47% of normal size  
 Margins - Top 1.0 cm, Left, Right and Bottom 0.1 Cm  
 Header and Footer - 0
9. Save the second spread sheet in both Excel and pdf formats.

The calendar can be printed from either the Excel or pdf format. I recommend using the pdf format if you have a print shop do the work.

The year table on the pdf that I provided for printing has the years consecutive with blanks where the day of the week advances for leap years. The table can be compacted by pushing the columns up to fill the blanks. As shown below, the compact arrangement requires 15 rows compared to 18 for the consecutive arrangement.

<b>2000</b>	2001	2002	2003	2009	<b>2004</b>	2005
2006	2007	2013	<b>2008</b>	2015	2010	2011
2017	<b>2012</b>	2019	2014	<b>2020</b>	2021	<b>2016</b>
2023	2018	<b>2024</b>	2025	2026	2027	2022
<b>2028</b>	2029	2030	2031	2037	<b>2032</b>	2033
2034	2035	2041	<b>2036</b>	2043	2038	2039
2045	<b>2040</b>	2047	2042	<b>2048</b>	2049	<b>2044</b>
2051	2046	<b>2052</b>	2053	2054	2055	2050
<b>2056</b>	2057	2058	2059	2065	<b>2060</b>	2061
2062	2063	2069	<b>2064</b>	2071	2066	2067
2073	<b>2068</b>	2075	2070	<b>2076</b>	2077	<b>2072</b>
2079	2074	<b>2080</b>	2081	2082	2083	2078
<b>2084</b>	2085	2086	2087	2093	<b>2088</b>	2089
2090	2091	2097	<b>2092</b>	2099	2094	2095
	<b>2096</b>		2098			

Compact arrangement

<b>2000</b>	2001	2002	2003		<b>2004</b>	2005
2006	2007		<b>2008</b>	2009	2010	2011
	<b>2012</b>	2013	2014	2015		<b>2016</b>
2017	2018	2019		<b>2020</b>	2021	2022
2023		<b>2024</b>	2025	2026	2027	
<b>2028</b>	2029	2030	2031		<b>2032</b>	2033
2034	2035		<b>2036</b>	2037	2038	2039
	<b>2040</b>	2041	2042	2043		<b>2044</b>
2045	2046	2047		<b>2048</b>	2049	2050
2051		<b>2052</b>	2053	2054	2055	
<b>2056</b>	2057	2058	2059		<b>2060</b>	2061
2062	2063		<b>2064</b>	2065	2066	2067
	<b>2068</b>	2069	2070	2071		<b>2072</b>
2073	2074	2075		<b>2076</b>	2077	2078
2079		<b>2080</b>	2081	2082	2083	
<b>2084</b>	2085	2086	2087		<b>2088</b>	2089
2090	2091		<b>2092</b>	2093	2094	2095
	<b>2096</b>	2097	2098	2099		

Consecutive arrangement