



Using Excel to Create Time Lines

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In this class you will learn basic approaches to creating time lines in Microsoft Excel. Excel skills are not a prerequisite for attending the presentation. There is value in learning what is possible, even if you have to learn the Excel skills later. When it comes to following the instructions in this syllabus, Excel skills are a must. Because everything is done differently in the new user interface introduced in Excel 2007, it is not practical to give exact instructions herein for both the old interface and the new.

Time lines can be created in Excel using tables or using graphs. We will look at both alternatives.

Tables

Table time lines have several advantages. They are simple to implement and can be arbitrarily complex. The disadvantage is that they do not show the relative time spacing among events.

To create a vertical time line, use a table with two rows and a column for each event. Enter event descriptions in the columns across the first row. In the second row, underneath each event, enter the year. Select the descriptions and format the cell alignment such that the text orientation is 45 degrees. For more information, see <http://www.microsoft.com/education/en-us/teachers/how-to/Pages/timeline.aspx>. The resulting time line looks like this:

Alonzo Born	1821
Clarinda Cutler born	1827
Alonzo Baptized	1842
Moved Vermont to Nauvoo	1842
Moved from Nauvoo to Iowa	1846
Joined Mormon Battalion	1847
Reached the Pacific	1850
Returned to Iowa	1851
Moved from Iowa to Utah	1853
Pioneered Midvale	1859
Pioneered Lehi	1860
Pioneered Plain City	1862
Pioneered Smithfield	1863
Wife Clarinda Died	1868
Married Zilpha Noble	
Married Elizabeth Thompson	1904

A regular table with years down the first column and events down the second may be more practical and produces a more serviceable time line. Add additional columns, use the Excel **filter** feature, and you can create powerful time lines that can be filtered by participant, event type, location, or date and can include notes and sources.

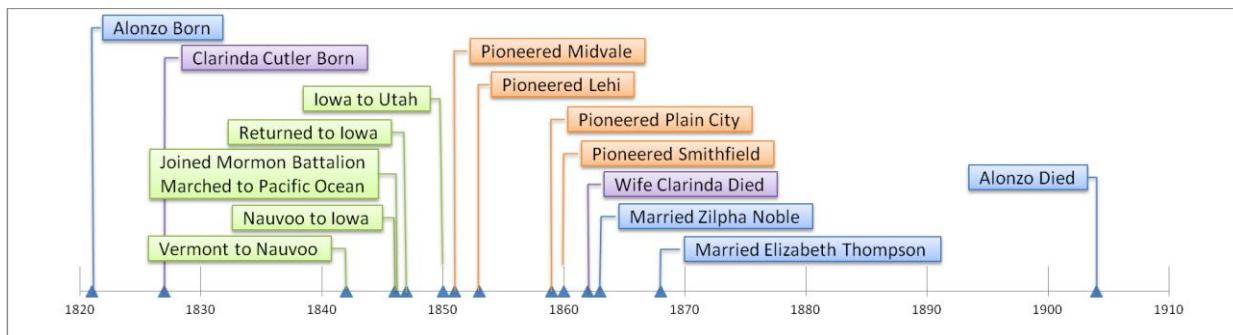
Excel does not support dates before 1900. As an alternative, enter dates starting with year, then month number, and lastly the day of the month. Separate each number with a dash. For example, specify 14 February 1821 as 1821-02-14. This format will sort correctly.

A resulting table time line might look like this:

Year	Event	When (sort)	Who	What	Where	Notes and sources
1821	Alonzo Born	1821-02-14	Alonzo	Birth	Vermont	Alonzo P Raymond is born in Bristol, Vermont, the son of Pearis and Rebecca. Several different years are given for Alonzo's birth. It often appears that when asked his birthdate, Alonzo reports 14 Feb 1821, but when asked his age, he gives wildly conflicting ages! The earlier the source was created, the more credibility I give it. Sources for the different years is presented below. I think that 1821 is correct.
1823	Saritta born	1823-00-00	Abigail Saritta	Birth	Vermont	Saritta A. Raymond b. about 1823 in Addison Co., Vt., sister of Alonzo. (LoganB85, p. 405.) Death records for the town of Bristol made in 1919, specify "Abigail S." (BrisDeath)
1824	Wallace born	1824-03-26	Wallace	Birth	Vermont	William Wallace Raymond b. in Bristol, brother of Alonzo. (ECIF, film 1750708, "Raymond - William W. 586".)

XY Scatter Graph

Use Excel **XY scatter graphs** to create graphical time lines. Create the base time line with marks showing events. Then add graphical labels. The result looks like this:



Follow these steps to create such a graph.

Step 1—Create the XY table

Since we will be using an XY scatter graph to produce the line and event markers, first create a table of XY values. Enter events in column A and years in column B. Because an XY scatter graph works with XY pairs of numbers, enter zeros next to each year in column C. The result looks something like this:

	A	B	C
1	Alonzo Born	1821	0
2	Clarinda Cutler born	1827	0
3	Moved Vermont to Nauvoo	1842	0
4	Moved from Nauvoo to Iowa	1846	0
5	Marched to Pacific Ocean	1847	0
6	Moved from Iowa to Utah	1850	0
7	Pioneered Midvale	1851	0
8	Pioneered Lehi	1853	0
9	Pioneered Plain City	1859	0

Step 2—Create the XY graph

To create the XY scatter graph, select the values in columns B and C. In the example above, that would be cells from B1 to C10. (Column A is not actually used. It serves as a convenient reference.) Then insert an XY scatter graph. If necessary, use Excel Help to learn how to do so.

Because the steps to do this are different in different versions of Excel, it is impractical to explain here.

Add vertical grid lines. Delete horizontal grid lines.

Format the plot area. Set Border color as desired. The border color of the example above is set to **No line**. With no line, shorten the height of the plot area to the desired grid line height. This effectively creates taller tick marks than those supplied by Excel.

Format the horizontal axis. Set the Minimum and Maximum values to the desired range of years. Set the Major unit to the distance desired between tick marks. Set Major tick mark type to **Outside**, or as desired. Set Minor tick mark type to **None** and Axis labels to **Next to Axis**.

Delete the vertical axis. If desired, set the minimum and maximum values prior to deletion.

Format the data series. Markers are the symbols on the time line indicating events. To change the appearance of the marker, set the marker type and size.

Step 3—Add labels

Add Call Out shapes to label the time line. Again, use Excel Help to learn how. Consider using color to identify types of events, location of events, or periods of ancestors' lives.

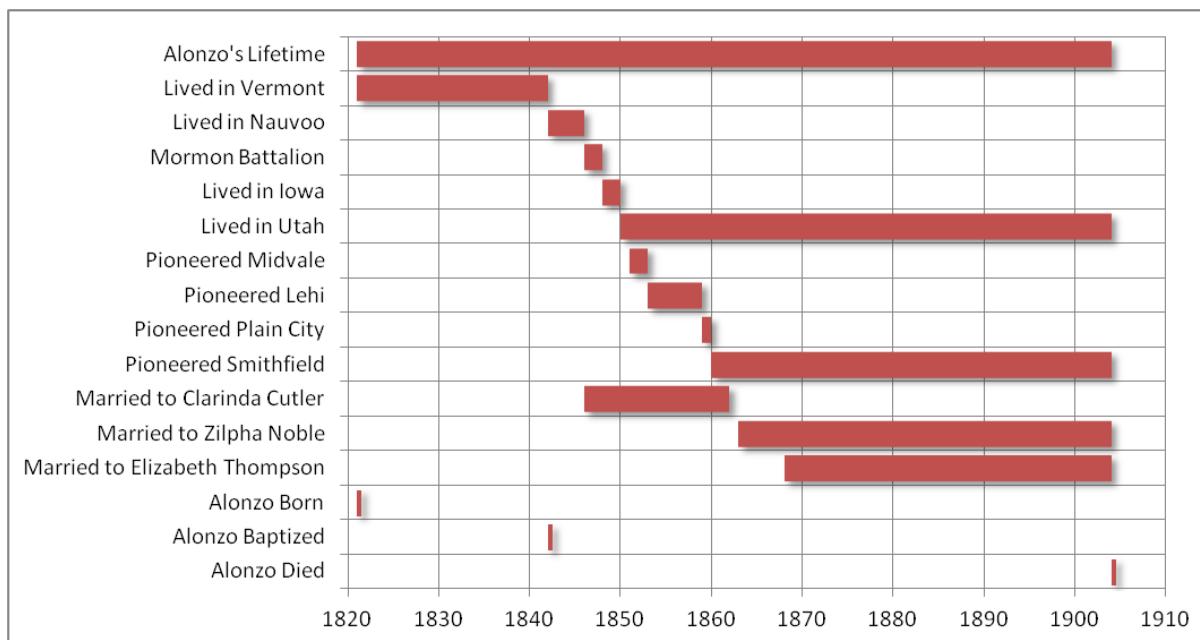
For a template with example call outs, see <http://office.microsoft.com/en-us/templates/timeline-TC001016266.aspx?pid=CT101172751033>.

Stacked Bar Charts

Use Excel Stacked Bar Charts to create time lines with bars indicating event durations. Set up the data like this:

	A	B	C
1	Event	Begin Year	Duration
2	Alonzo's Lifetime	1821	83
3	Lived in Vermont	1821	21
4	Lived in Nauvoo	1842	4
5	Mormon Battalion	1846	2
6	Lived in Iowa	1848	2
7	Lived in Utah	1850	54
8	Pioneered Midvale	1851	2
9	Pioneered Lehi	1853	6
10	Pioneered Plain City	1859	1
11	Pioneered Smithfield	1860	44
12	Married to Clarinda Cutler	1846	16
13	Married to Zilpha Noble	1863	41
14	Married to Elizabeth Thompson	1868	36
15	Alonzo Born	1821	0.5
16	Alonzo Baptized	1842	0.5
17	Alonzo Died	1904	0.5

The time line looks like this:



Briefly, to create the chart, follow these steps:

1. Calculate a duration. Use a minimum, such as **1** rather than 0.
2. Select **A:C**.
3. Create stacked bar chart.
4. Hide the first series (no fill, no line).
5. Axis Option: Categories in Reverse Order.
6. Horizontal Axis Crosses: At Max Category.
7. Adjust Horizontal Axis start and end range.
8. Probably want the major tick distance to be 10 years.
9. Format data series with 100% overlap and 33% gap width.

For more information, see <http://www.mrexcel.com/articles/timeline-chart-in-excel.php>.

Summary

Microsoft Excel supports several ways to create time lines. Use a two-row table to produce a simple time line. Use a list to create arbitrarily complex table-style time lines. Add columns for who, what, when, and where. This allows sorting and filtering by these aspects of an event.

Use an XY scatter graph to create a graphical time line that shows the amount of time between events. Use call out shapes to manually label the time line.

Use a stacked bar graph to create a graphical time line that shows the duration of events. Hide the first series.