



New & Improved Formula Editor in JMP 13

JMP Discovery Summit: March 21-23, 2017

Presenters/Authors

Mike Muhlada

Development Tester, JMP

Audrey Shull

Senior Development Manager, JMP

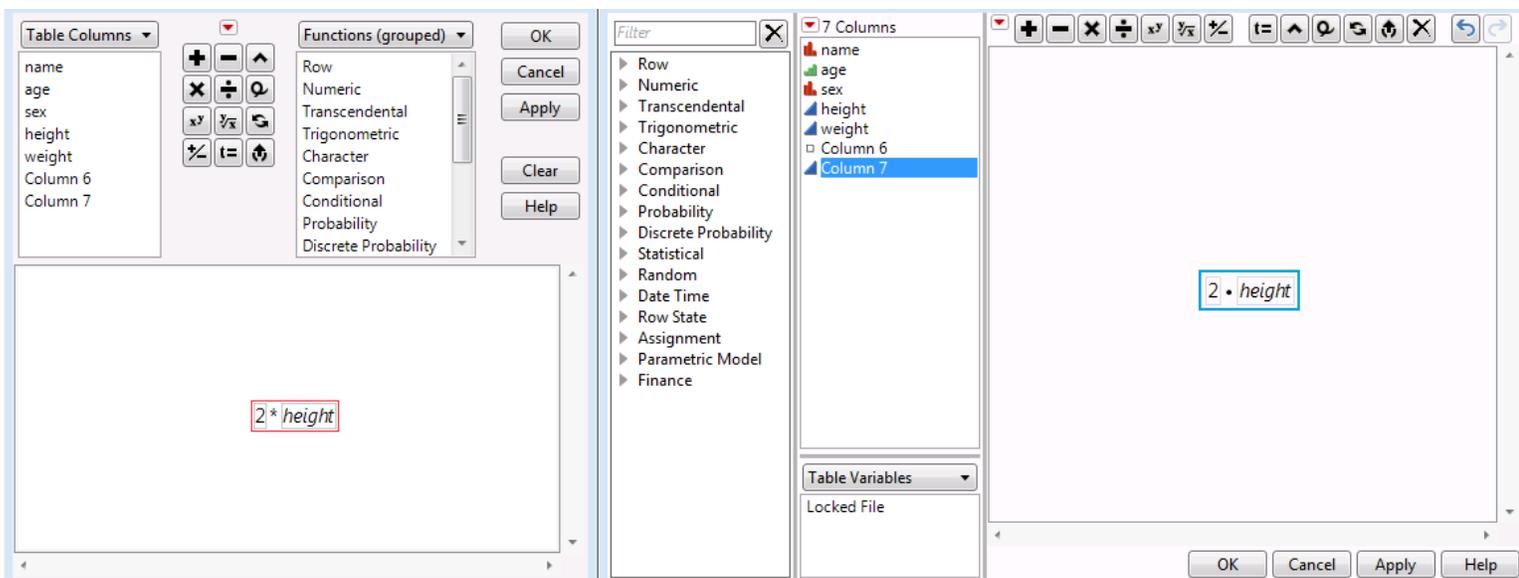
Abstract

The Formula Editor got a facelift for JMP 13. While this new design is intuitive and flows well, there are many enhancements to explore. This paper will start by showing off the new Formula Editor layout with its filterable function list, standard interactive column list, formula parameter/constant list and new larger workspace. Display updates include readability features for configurable matrix display, associative array display, automatic reformat of displayed formula depending on window size, and mini- and full-screen script editors. Using interactive examples, we will show more new features, including multiple column selection, drag/drop into formulas, context clicking replace and undo/redo functionality. We will share some lesser-known tricks such as alt-click formula replacement, direct editing of local variables and typing directly into formulas. We will also explore the new custom formats and show how these propagate to data tables and graphs.

Introduction

The Formula Editor in JMP received a major overhaul in JMP 13. You can see below a screenshot of the older JMP Formula Editor and the new-and-improved one. One of the most noticeable changes you can see immediately is that the layout is quite different and has been vastly improved.

- More space – the buttons have been moved to the top of the Formula Editor in a line. They are still convenient to click but allow plenty of room for the workspace below.
- Parameters, variables, constants – these items are now visible in their own pane. Writing formulas is easier when the columns list is always visible
- Expandable functions list – the leftmost pane now displays the functions list in an expandable tree.
- Remembers size – the editor will always remember the last size you used instead of defaulting to a small editor. This is nice if you are usually working with larger formulas.



Screenshot: Formula Editor side-by-side comparison: JMP12 (left) vs. JMP13 (right)

In addition to changes in the layout, there are several ways the actual use of the Formula Editor is much easier in JMP 13. The demo portion of this paper shows all of the following features in use and demonstrates some general tips and tricks of using the Formula Editor. The remainder of this document will highlight the major elements of the Formula Editor enhancements in JMP 13. For more information and details on how to use them, please consult the attached document “Step By Step Instructions for Demo.pdf”.

Undo Redo

Undo and Redo are a longtime request of JMP users, and JMP 13 has implemented a full Undo/Redo stack. Undo and Redo buttons are available along the top of the Formula Editor with the other buttons. You can also use Control-Z, Control-Y (or Command-Z, Command-Shift-Z on Mac) if you like to use the keyboard. See blue Undo and Redo buttons below.

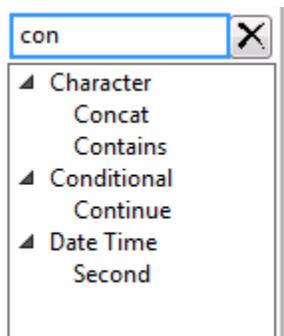


Clear Formula

The 'Clear' button has been relocated to the top button row. You can still clear the workspace, resetting it back to 'No Formula' using the convenient new 'X' button. Don't worry, if you pressed this accidentally, you can Undo and retrieve your work.

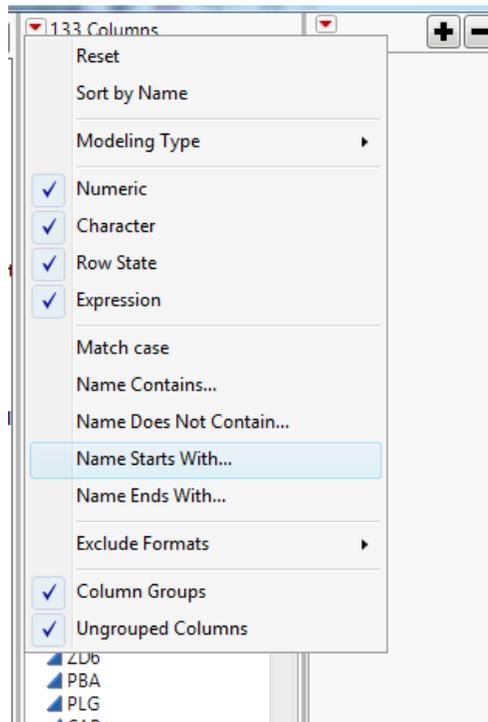
Searchable Functions List

The functions tree/list is expandable, as mentioned above. The new live filtering makes it very easy to find functions you know you want to use, but may not know which category they are in. For example, typing **con** would display this filtered function tree:

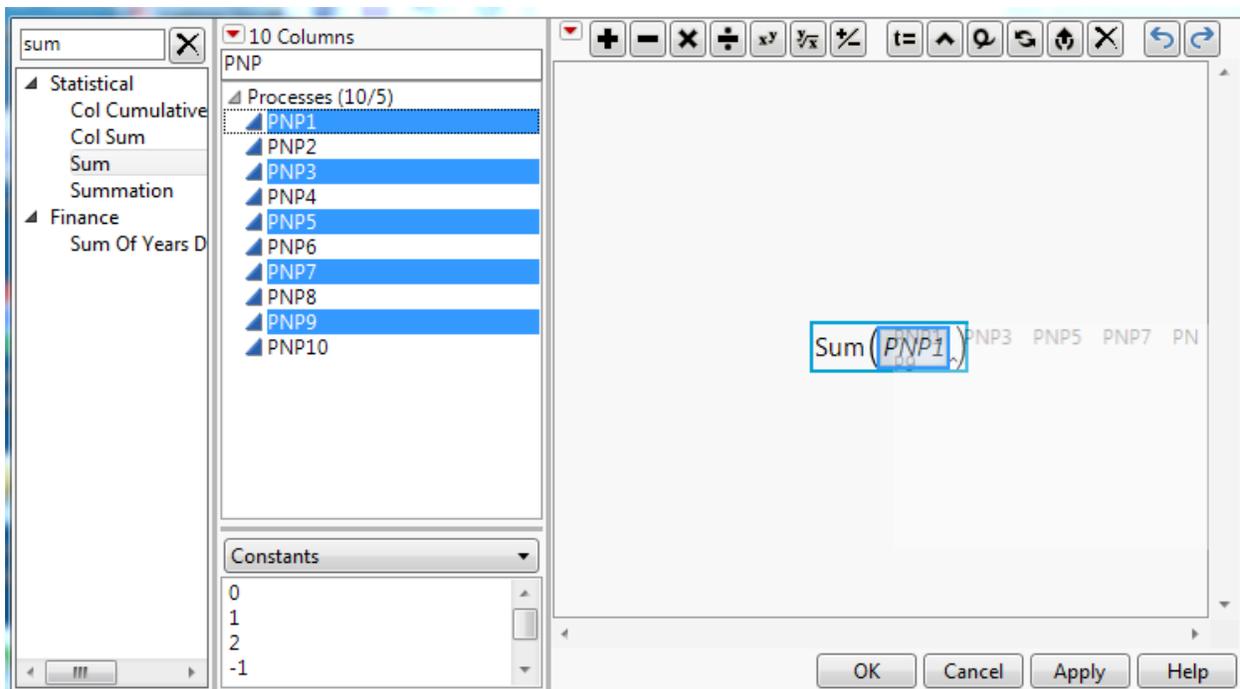


Columns List

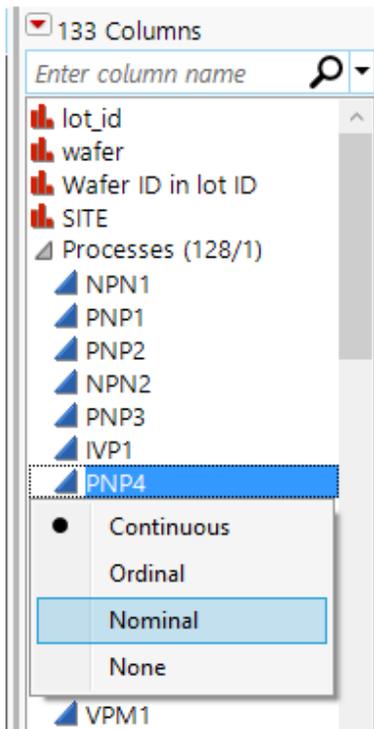
The columns list is now a “real” columns list, as available in most launch dialogs, with the ability to filter and search columns. For example, Name Starts With... ‘PNP’.



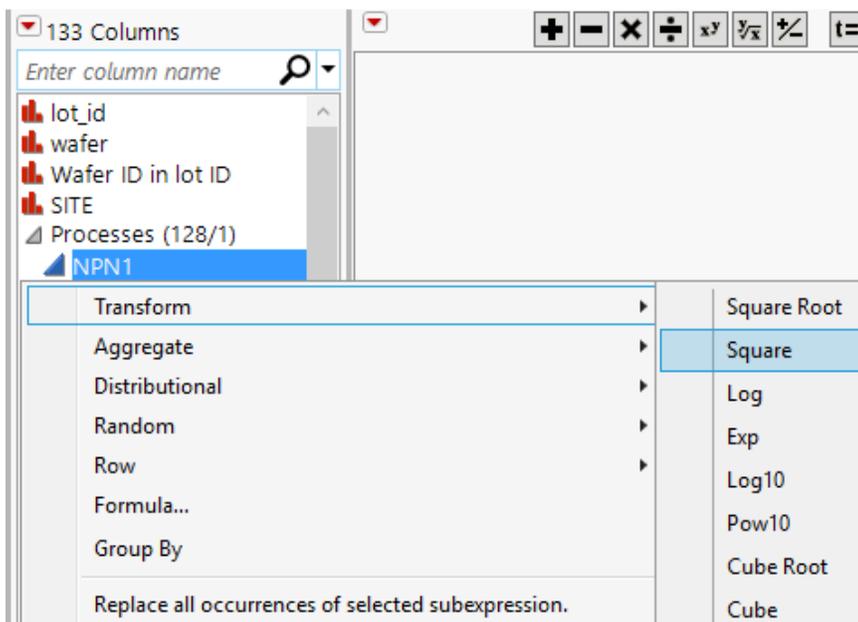
You can now select multiple columns (Shift-click or Ctrl-click), then drag and drop to populate a formula.



You can also change the modeling type of a column quickly and easily,

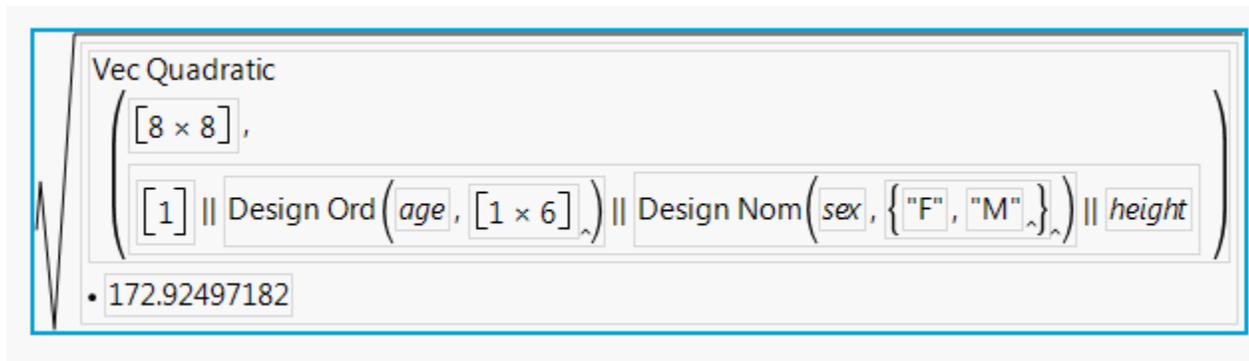


or create a column transform.

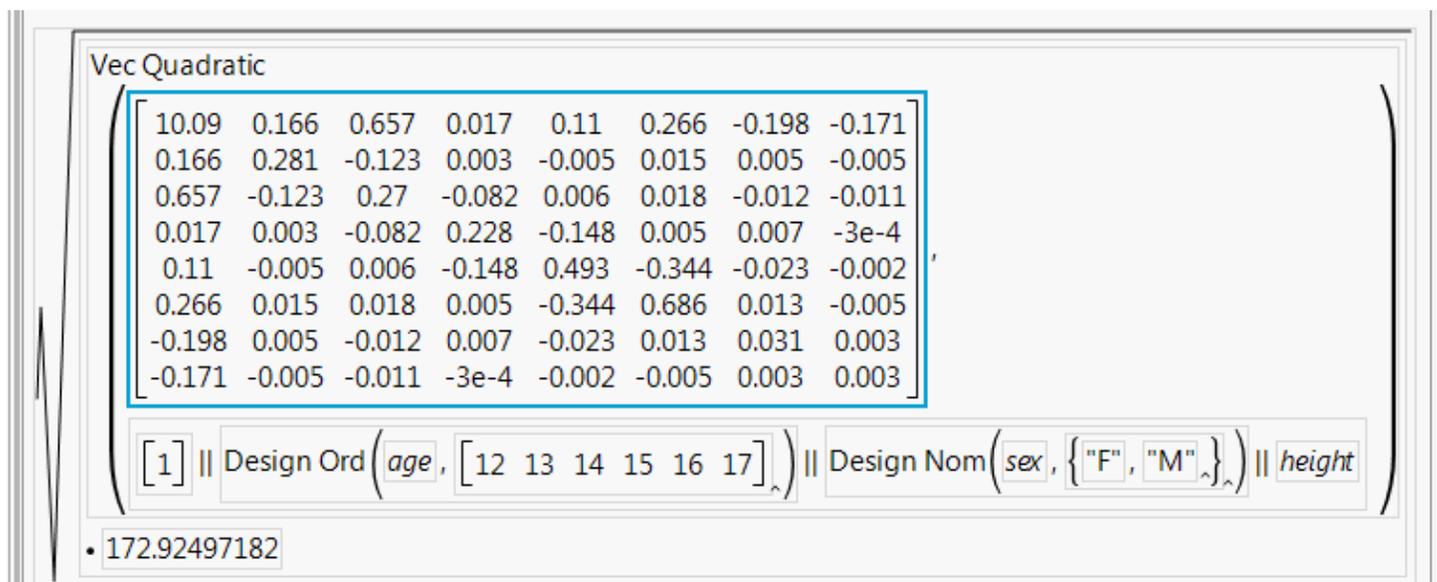


Displaying Matrices

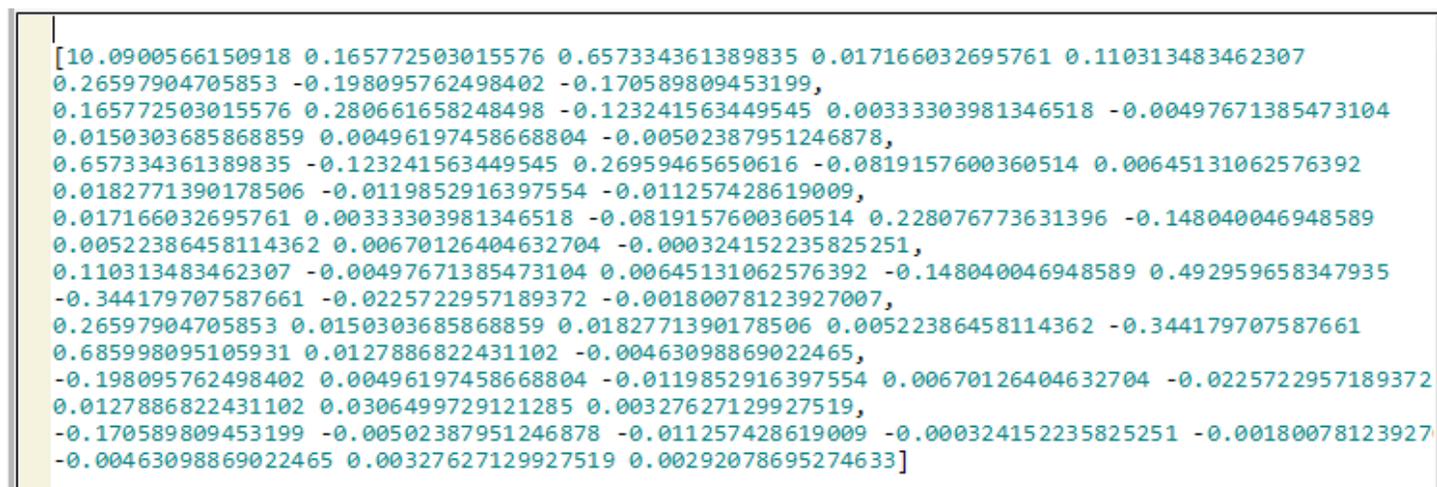
The JMP Formula Editor can now display matrices nicely inside of the editor. You can determine the size of the dimensions that are shown from the red triangle menu. Matrices are abstracted to show only the size if dimensions exceed the display size.



For this example, if 'Max Matrix Size to Show...' is increased to 8, then you would see actual matrix values. These values may be truncated,

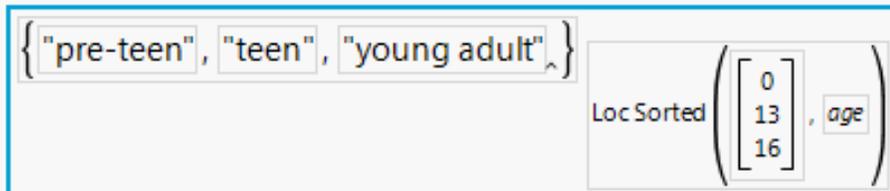


but you can always double-click to see the full matrix in the built-in JSL editor.

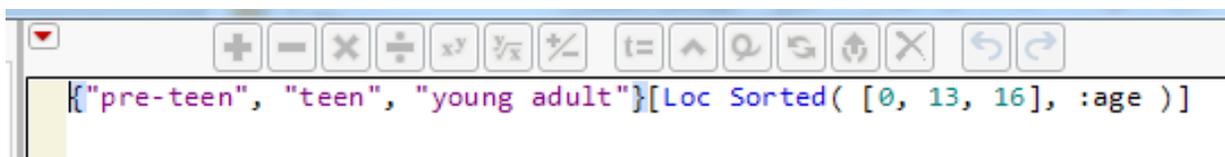


Tiny Editor and Full Script Editor

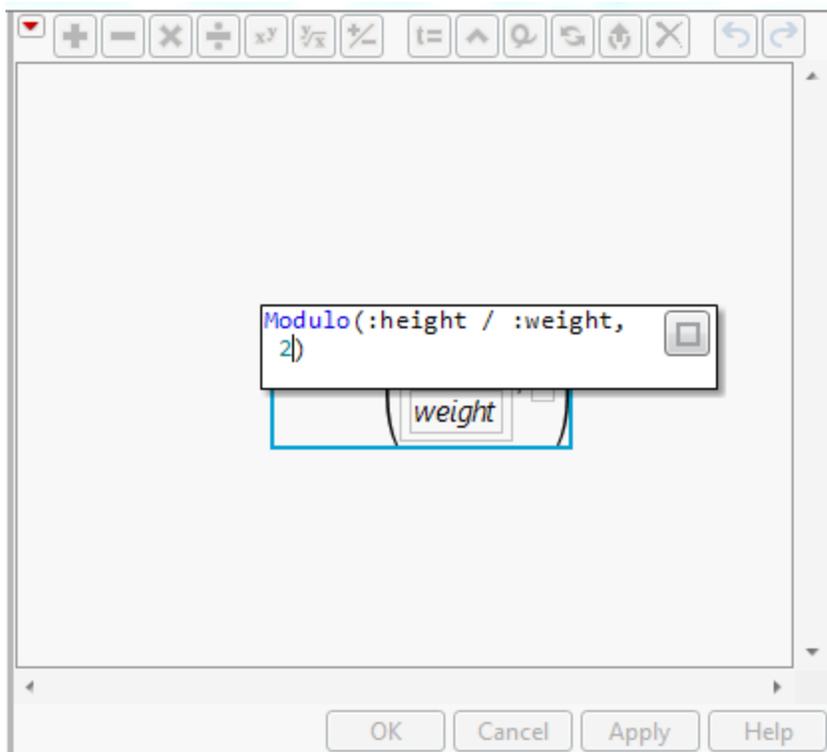
When you want to switch to writing the JSL yourself instead of using the point-and-click interface, this is easy to do. JMP has always had the notion of a “tiny editor” within the Formula Editor, but it wasn’t always a true JSL editor. Now it is, complete with the coloring of functions and tooltips when you want and expect them.



Double-clicking on this formula displays the JSL in a full-screen script editor.

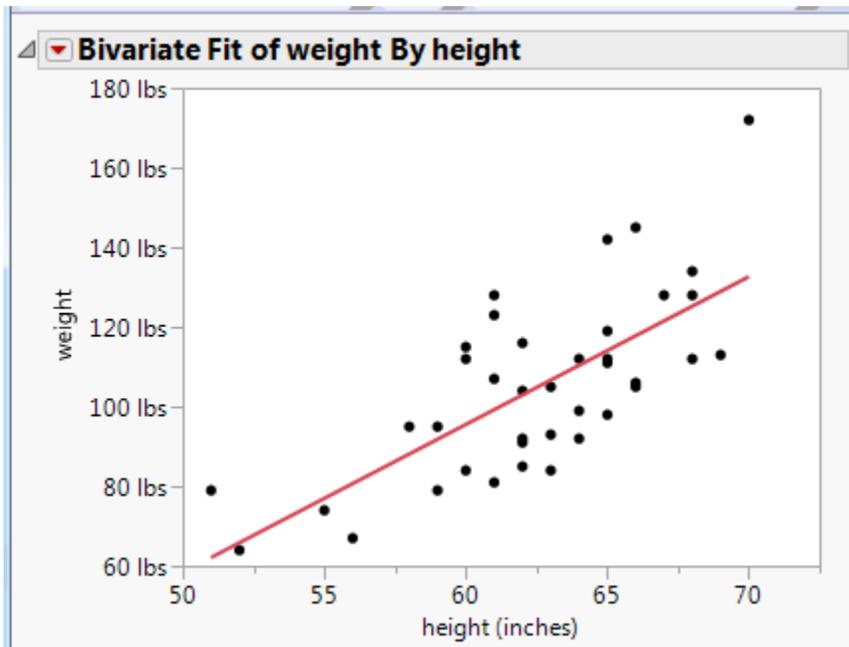


Editing smaller formulas will use the tiny editor.

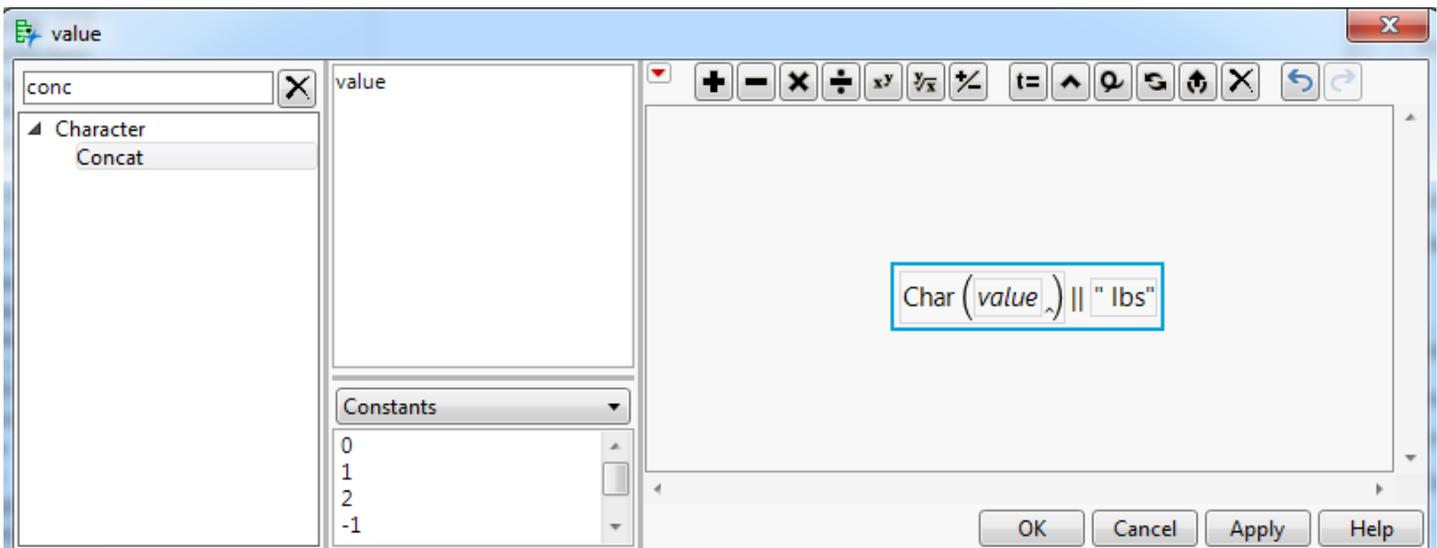


Custom Formats

Custom formats are a new feature in JMP, which make use of the new Formula Editor in order to define them. For example, sometimes you would like your axis labels to display units instead of just the values. Below, see the weights are displayed with 'lbs' units.



In order to define this view, right-click on the axis and a unique instance of the Formula Editor will appear. Define the unit you want by using the concat() function to append " lbs" to the end of the value. Here is the corresponding formula to add 'lbs' to the weight values.



Custom formats may be added to Axis Properties or to column formats directly. Please see the accompanying "Step By Step Instructions for Demo.pdf" for detailed instructions.

NOTE: Care should be taken if the actual 'value' is changed in the custom format. It will display this new value, but won't change the underlying cell's value. This can be tricky.

Conclusion

There are many new enhancements in the Formula Editor in JMP 13 which make the process of creating or editing formulas a smoother experience. A nicer and more customizable layout, undo/redo, searchable functions, nice matrices and a fully-functioning script editor are some of the newer features that go well with the already-powerful JMP Formula Editor. We encourage you to open up JMP yourself and then follow along with the Step By Step Instructions to get full details on how some of these features work and to see some of the tips and tricks that are best seen visually.