

## Graphing lines and conic sections using templates (Tutorial B10)

[http://www.atomiclearning.com/k12/en/movie/XXXXXX/play\\_window?type=Tutorial&sid=2421](http://www.atomiclearning.com/k12/en/movie/XXXXXX/play_window?type=Tutorial&sid=2421)

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Equations for lines and conics can now be entered quickly and easily using templates. To see the templates for graphing

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linear functions, insert the Graphs application. Now click the Document Tools menu and select Graph Entry/Edit, Equation,

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Line. The templates include slope-intercept, vertical lines, and the standard form of a linear function  $ax+by=c$ . Select

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any of these options and the template will be pasted into the Graph Entry line. You can input values for any of the

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coefficients of the equation. I'll use the standard form, and enter  $3x+4y=10$ , so I'll press 3, then Tab or the right

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arrow key to move to the next field, and then press 4. I'll press Tab again to jump to the last field, and then enter

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10. Now I can press Enter or Return to see the graph. All three line forms can be clicked and dragged to explore

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the effects on the graph and its algebraic representation. You can also use the templates to quickly enter functions

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for conic sections. I'll click the Document Tools menu again, and then Graph Entry/Edit, Equation, and then choose

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the conic section I'd like to graph. In this case, I'll graph an ellipse by choosing Ellipse. Now I can enter my

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x and y values, and my major and minor axis values. Note that templates require something to be entered in each

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of the fields, so if I want the y-intercept to be zero and just have  $y^2$ , I still have to enter  $(y-0)^2$  rather

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than just skip the field and leave it blank. Once I've filled in my function, I'll press Enter or Return to graph

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it. As with the line we graphed, if you want to perform a translation of this ellipse and see its effects, you

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can roll over the graph, click to grab it, and then drag it to see the effects. Once you've graphed conic sections,

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you have several tools you can use to explore features specific to conics. I'd like to find the foci of my ellipse,

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so I'll click Document Tools, and then choose Analyze Graph, Analyze Conics. You can see many different attributes of

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conic sections that can be found here. I'll choose Foci. Now I can roll over my ellipse to see the foci appear. If

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I want to have them stay on the graph while I explore it in different ways, I can click once to keep the foci plotted.

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