

Constructing and exploring conics geometrically (Tutorial B11)

http://www.atomiclearning.com/k12/en/movie/92861/play_window?type=Tutorial&sid=2410

[00:00:00.00]

Geometric conic functionality allows geometric construction and exploration of conic sections using geometric definitions

[00:00:07.00]

of foci, vertices, directrices, or using any 5 given points.
To construct a conic section using these features, first

[00:00:16.00]

insert a Graphs or Geometry application. I'm in the Graphs application. Next, go to menu, and choose Geometry, Shapes,

[00:00:27.00]

and choose the conic or method you'd like to use. I'll construct a parabola by defining the focus and directrix,

[00:00:35.00]

so I'll choose Parabola. Now I need to define the focus, so I'll use my touchpad and then click to define it. Now

[00:00:47.00]

I'll roll my cursor away from the focus. If I stay away from the axes, the point I'm dragging defines the vertex

[00:00:54.00]

of the parabola, so if I wanted to define it that way, I could drag until I locate the vertex and click. As I roll

[00:01:01.00]

over an axis, I'm now defining a directrix, and constructing the parabola that way instead. To create my parabola, I'll

[00:01:09.00]

click on the axis (or another line previously created) to define it, and you'll see the parabola appear. You can

[00:01:18.00]

construct other conic sections just as easily. I'll go to menu, and choose Geometry, Shapes again, and this time

[00:01:28.00]

I'll choose Ellipse. We'll construct an ellipse by defining the foci and a point on the ellipse. Set the first focus

[00:01:37.00]

by rolling to its location and clicking. Next, roll to the location of the other focus, and click again. Now roll

[00:01:47.00]

away from your foci to define the last point, a point on your ellipse. Once you've found it, click to define your

[00:01:55.00]

ellipse. Now you can explore and compare the conic sections you've defined geometrically.

[00:02:04.00]