Activity Title: Paths of Rectangles		
Description	**Instructor Notes**	**Slides/Handouts/Files**
In this exploration, students will look at how the lengths of the sides of rectangles with equal areas are related. The rectangles are constructed so that one vertex is at the origin. The path of the opposite vertex is an example of indirect variation and demonstrates a connection between algebra and geometry.	The sketches for these investigations have been set up for the preservice teacher and are designed to quickly give them an introduction to how an NSpire can be used to view data in multiple representations. No constructions are involved, however the activity can be extended at a later point by having students construct their own sketches of different polygons with the same area. Each student should work through the activity using their own NSpire handheld, but should discuss the results in a small group setting. The activity introduces students to adding pages, collecting data from the sketch automatically in a spreadsheet and setting up a graph for a scatter plot on the Nspire,	Students will need a copy of PathsOfRectangles.tns loaded onto their TI NSpire or TI NSpire CAS and a copy of the student activity.

Participant Discussion

Questions for discussion after activity is completed:

1. What mathematics is involved in these activities? Where in a curriculum would these activities fit?
2. What would a student need to know to complete this activity?
3. What does the technology add to the activity? How does it detract?
4. Can the activity be completed without the technology? Why or why not?
5. The sketches for the activity were constructed for you. If you were to construct them, how would the mathematics change? What would a student need to know to construct these sketches?
6. Can this activity be extended to other polynomials?

Instructor Notes