Quadratic Connections
Student Worksheet

To click on an object, use ⍟. If you need to grab an object to move it, hold ⍟ for a two second count.

To open the file press ⌂ and click on 7:My Documents.

Find the file quadratic_connections.

To advance to a new page of the document, press ctrl ▸. The page number 1.1,1.2, etc. appears at the top of your screen. The one not highlighted is the current page.

To scroll down on a page press the down arrow.

Answer all questions on this handout, not the handheld device.

Page 1.2
What is the value of a? ____

What is the value of b? ____

What is the value of c? ____

Page 1.7
Explain what is meant by first differences and second differences.

Page 1.9 (To change the value of a, b, and c, up arrow to "Define a", press enter, and change it.)
Make a conjecture about the relationship of the parameter a and the differences.

What is the new value of a? ____

What is the new value of b? ____

What is the new value of c? ____

Page 1.10
What are the coordinates of the vertex? _____

Page 1.11
Make a conjecture about the relationship between the x-coordinate of the vertex, h and other value(s) on the spreadsheet.

You should now be able to write a formula for the x-coordinate of the vertex. What is it?

Explain how you can use the value of the x-coordinate to find the y-coordinate of the vertex.

Page 1.13
What would happen to the parabola if we changed only the sign of "a"?
Make a conjecture.

Page 1.14
What can you say about the point of intersection shown on the graph?

Page 1.15
What have you learned about the role of parameter a?

What have you learned about the role of parameter b?

What you learned about the role of parameter c?

Page 1.16
Find a, b, and c. Write the quadratic equation. Show your method.