

Name: _____

Gizmo - Quadratics in Polynomial Form - Activity B

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Instructions: Login in at www.explorellearning.com -The login button is near the top, left hand side. Use the name and password that I gave you in class. Click on the Launch Gizmo button.

Follow the instructions and answer questions below:

1. Set $b = 0$ and $c = 0$ by typing next to the sliders.
 - Use the slider to experiment with different values of a .
 - Describe the role of a in determining the graph of the equation.

2. Keep $b = 0$ and experiment with c .
 - How does the graph move when you change c ?

 - Is the shape of the graph changed when c is changed?

 - What does the value of c correspond to on the graph?

3. Experiment with b . How do the shape and position of the graph change with changes in b ?

4. Turn on the "show vertex trail" option and observe the path of the vertex as you use the sliders to change a , b , and c . What patterns do you see?

5. Set $a = 0$ and hide the vertex trail.
 - What does the graph look like?

 - How do b and c relate to the m and b in slope-intercept form ($y = mx + b$)?

6. Can you adjust the equation to create graphs with and no x -intercepts. If so, how? Give a sample equation.

7. Can you adjust the equation to create graphs with one x -intercept? If so, how? Give a sample equation.

8. Can you adjust the equation to create graphs with two x -intercepts? If so, how? Give a sample equation.

9. Can you adjust the equation to create graphs with three x -intercepts? If so, how? Give a sample equation.

10. Is there always a y -intercept?