

Learning Goals:

- Describe and predict how changing the coefficients of a quadratic function changes the graph of the function.
- Identify specific geometric transformations on the coordinate plane (reflection, translation, dilation)



1. **Explore** the Graphing Quadratics simulation for a few minutes. Play with the values of a , b , and c , then describe how each changes the graph of the quadratic function.

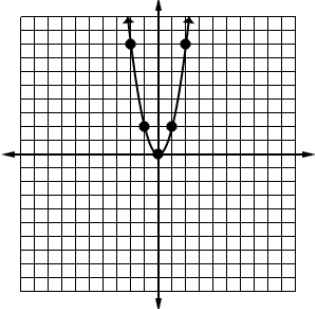
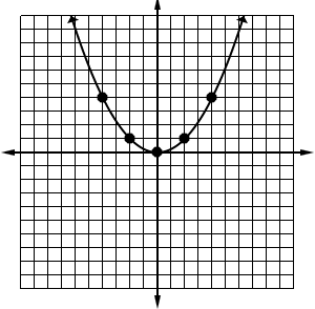
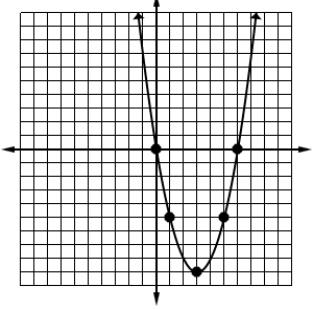
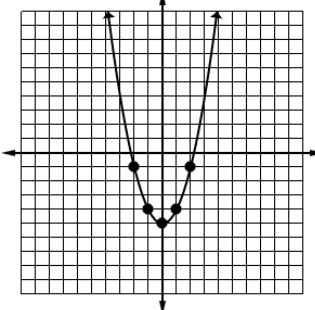
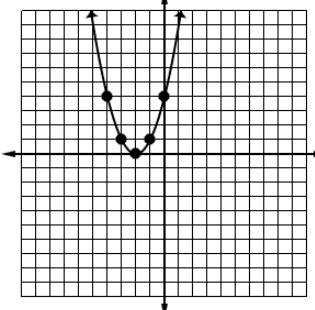
| Changing the value of a ... | Changing the value of b ... | Changing the value of c ... |
|-------------------------------|-------------------------------|-------------------------------|
| | | |



Turn and talk with your neighbor about your observations.

2. View each graph and describe how to change the parent function ($y = x^2$) to make the 'new' parabola - be specific! (If you get stuck, brainstorm ideas with a neighbor.)

| Graph | Describe transformation and action required |
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| Graph | Describe transformation and action required |
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| <p>Challenge!</p>  | |

Are you the master of the mathematical universe? Create your own graph and challenge a partner to find the right equation.