Parabolas in Standard Form

1. Using this location in the Desmos® Graphing Calculator, see how the variables *a*, *b*, and *c* determine where a parabola is graphed on the coordinate plane.
2. Answer the following questions.
   A. What happens to the parabola when *b* is increased? Decreased?
   B. What happens to the parabola when *c* is increased? Decreased?
   C. What happens when the value of *a* is increased?
   D. What happens when the value of *a* is negative?

A. When *b* increases, the graph moves left. When *b* decreases, the graph moves right.
B. When *c* increases, the graph moves up. When *c* decreases, the graph moves down.
C. When *a* increases, the parabola is compressed (narrows).
D. When *a* is negative, the parabola is reflected over the *x*-axis (faces down instead of up).

Parabolas in Vertex Form

1. Using this location in the Desmos® Graphing Calculator, see how the variables *a*, *h*, and *k* transform a parabola in vertex form.
2. Use the problems from Lesson 27 Part B Practice 1 and Practice 2.
   a. Complete the problems without using technology.
   b. Then, use this location in Desmos® Graphing Calculator to check your work.

Mastery Check

1. Using this location in the Desmos® Graphing Calculator, see what the solution to the Lesson 27 Part B Mastery Check looks like.

