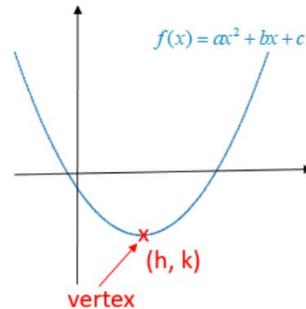


Carie Lawrence

# Major Project: Engineering Design Challenge

## Quadratic Function



General form:  $f(x) = ax^2 + bx + c$

To get the vertex of the quadratic graph

$$h = -\frac{b}{2a} \quad k = f(h)$$

Vertex form:  $f(x) = a(x - h)^2 + k$



NASA/Design Squad Challenge Used:

Launch it

Changes Made:

The idea of building a rocket from the activity was used. However, I changed it so that students could research/brainstorm their own way to make a rocket.

I learned:

\*There are grants available through the NAR (National Association of Rocketry)

and Apogee Components for building rockets

\*There is a rocket contest through Team America Rocketry Challenge.

Activity:

The students and I had to research a way to build a rocket. After designing, building, testing, and redesigning, the students and I created a quadratic model to represent the flight of the rocket.

