**Activity 2.1.1b Move It! Part Two**

**Part 1: Investigating Vertical Shifts**

1. Type x^2 into the input box and press enter.
2. Click the red button to explore the graph of $g\left(x\right)=f\left(x\right)+k$.
3. Move the slider to change the value of $k$, or enter values into the input box.
4. Make a conjecture about how the value of $k$ transforms the graph of *f*(*x*) to the graph of *g*(*x*), when $k$ is on the “outside” of the function.
5. Does your conjecture hold if $k<0$? If not, modify it.
6. Does your conjecture still hold if $k>0$? If not, modify it.

**Part 2: Investigating Horizontal Shifts**

1. Type x^2 into the input box and press enter.
2. Click the blue button to explore the graph of $h\left(x\right)=f(x+k)$.
3. Move the slider to change the value of $k$ or enter values into the input box.
4. Make a conjecture about how the value of $k$ transforms the graph of $f(x)$ to the graph of $h(x)$, when $k$ is on the “inside” of the function.
5. Does your conjecture hold for $k>0$? If not, modify your conjecture.
6. Does your conjecture hold for $k<0$? If not, modify your conjecture.