

**Graphing
Quadratic Functions
in Vertex Form
with Parameters
 a , h , and k .**

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Instructions

Print or copy page 3 and 4 double sided.

Place the paper so the examples are face down.

Cut along the dotted lines to create flaps.

Flip and fold the flaps inwards.

Glue the foldable into notes or on a piece of construction paper.

Go through the foldable with your students.

**Effect of
Parameter “+a”
in an
Quadratic
Function**

$$y = a(x - h)^2 + k$$

**Effect of
Parameter “-a”
in an
Quadratic
Function**

$$y = a(x - h)^2 + k$$

**Effect of
Parameter “+h”
in an
Quadratic
Function**

$$y = a(x - h)^2 + k$$

**Effect of
Parameter “-h”
in an
Quadratic
Function**

$$y = a(x - h)^2 + k$$

**Effect of
Parameter “+k”
in an
Quadratic
Function**

$$y = a(x - h)^2 + k$$

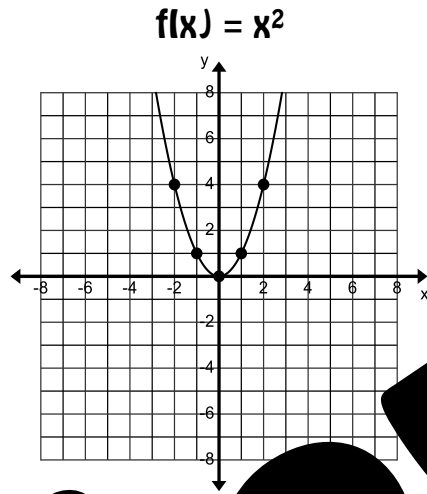
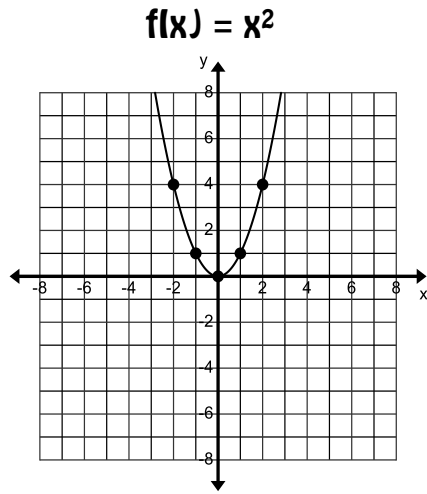
**Effect of
Parameter “-k”
in an
Quadratic
Function**

$$y = a(x - h)^2 + k$$

Preview

Graph $g(x) = 2x^2$		
x	$g(x) = 2x^2$	y
-2		
-1		
0		
1		
2		

Effect +a:

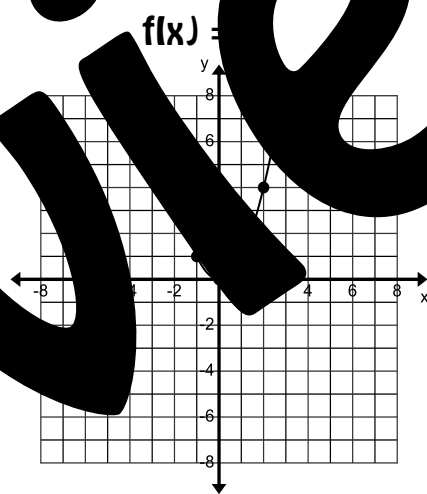
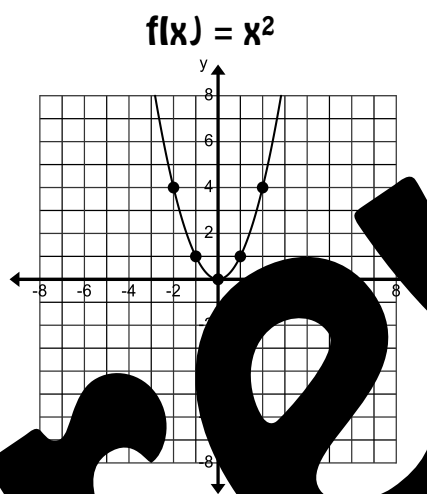


Graph $g(x) = -2x^2$		
x	$g(x) = -2x^2$	y
-2		
-1		
0		
1		

Effect

Graph $g(x) = (x - 3)^2$		
x	$g(x) = (x - 3)^2$	y
1		
2		
3		
4		
5		

Effect +h:

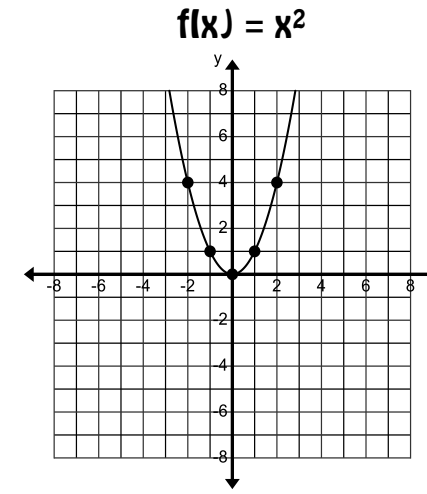
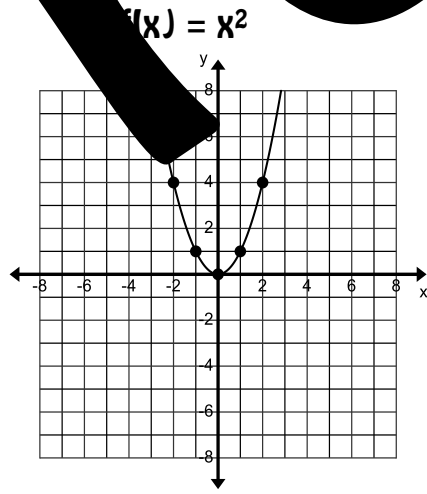


Graph $g(x) = (x + 4)^2$		
x	$g(x) = (x + 4)^2$	y
-6		
-5		
-4		
-3		
-2		

Effect -h:

Graph $g(x) = x^2 + 2$		
x	$g(x) = x^2 + 2$	y
-2		
-1		
0		
1		
2		

Effect +k:



Graph $g(x) = x^2 - 3$		
x	$g(x) = x^2 - 3$	y
-2		
-1		
0		
1		
2		

Effect -k:

Preview

**Effect of
Parameter “-a”
in an
Quadratic
Function**

$$y = a(x - h)^2 + k$$

**Effect of
Parameter “+a”
in an
Quadratic
Function**

$$y = a(x - h)^2 + k$$

**Effect of
Parameter “-h”
in an
Quadratic
Function**

$$y = a(x - h)^2 + k$$

**Effect of
Parameter “+h”
in an
Quadratic
Function**

$$y = a(x - h)^2 + k$$

**Effect of
Parameter “+k”
in an
Quadratic
Function**

$$y = a(x - h)^2 + k$$

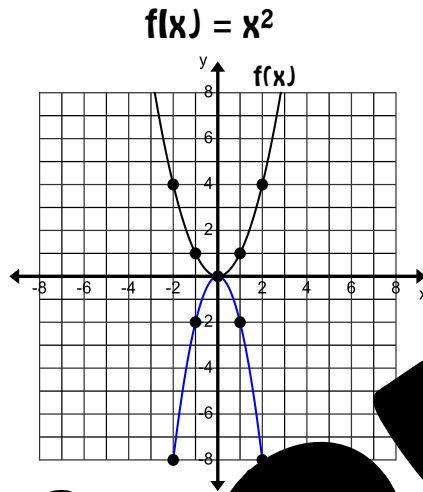
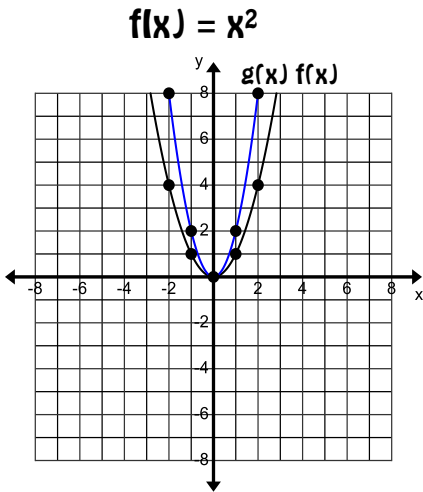
**Effect of
Parameter “+k”
in an
Quadratic
Function**

$$y = a(x - h)^2 + k$$

Preview

Graph $g(x) = 2x^2$		
x	$g(x) = 2x^2$	y
-2	$2(-2)^2 = 2(4)$	8
-1	$2(-1)^2 = 2(1)$	2
0	$2(0)^2 = 2(0)$	0
1	$2(1)^2 = 2(1)$	2
2	$2(2)^2 = 2(4)$	8

Effect +a: changes the width graph opens up

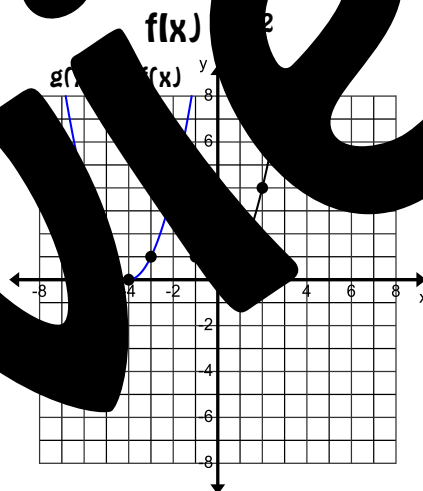
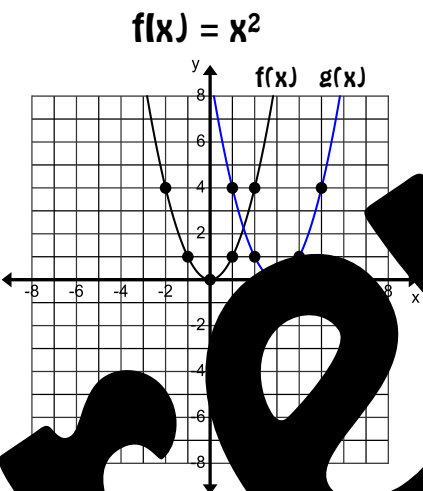


Graph $g(x) = -2x^2$		
x	$g(x) = -2x^2$	y
-2	$-2(-2)^2 = -2(4)$	-8
-1	$-2(-1)^2 = -2(1)$	-2
0	$-2(0)^2 = -2(0)$	0
1	$-2(1)^2 = -2(1)$	-2
2	$-2(2)^2 = -2(4)$	-8

Effect -a: graph opens down

Graph $g(x) = (x - 3)^2$		
x	$g(x) = (x - 3)^2$	y
1	$(1 - 3)^2 = (-2)^2$	4
2	$(2 - 3)^2 = (-1)^2$	1
3	$(3 - 3)^2 = (0)^2$	0
4	$(4 - 3)^2 = (1)^2$	1
5	$(5 - 3)^2 = (2)^2$	4

Effect +h: shifts graph right

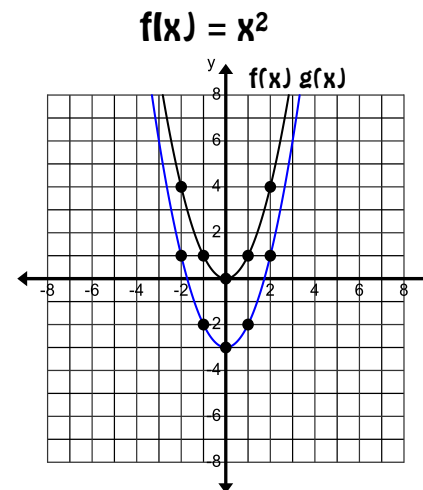
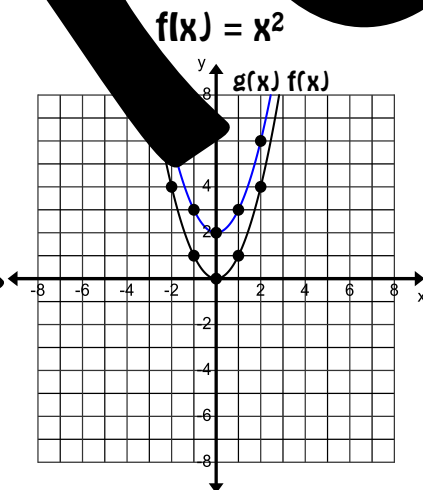


Graph $g(x) = (x + 4)^2$		
x	$g(x) = (x + 4)^2$	y
-6	$(-6 + 4)^2 = (-2)^2$	4
-5	$(-5 + 4)^2 = (-1)^2$	1
-4	$(-4 + 4)^2 = (0)^2$	0
-3	$(-3 + 4)^2 = 1^2$	1
-2	$(-2 + 4)^2 = (2)^2$	4

Effect -h: shifts graph left

Graph $g(x) = x^2 + 2$		
x	$g(x) = x^2 + 2$	y
-2	$(-2)^2 + 2 = 4 + 2$	6
-1	$(-1)^2 + 2 = 1 + 2$	3
0	$(0)^2 + 2 = 0 + 2$	2
1	$(1)^2 + 2 = 1 + 2$	3
2	$(2)^2 + 2 = 4 + 2$	6

Effect +k: shifts graph up



Graph $g(x) = x^2 - 3$		
x	$g(x) = x^2 - 3$	y
-2	$(-2)^2 - 3 = 4 - 3$	1
-1	$(-1)^2 - 3 = 1 - 3$	-2
0	$(0)^2 - 3 = 0 - 3$	-3
1	$(1)^2 - 3 = 1 - 3$	-2
2	$(2)^2 - 3 = 4 - 3$	1

Effect -k: shifts graph down

Preview