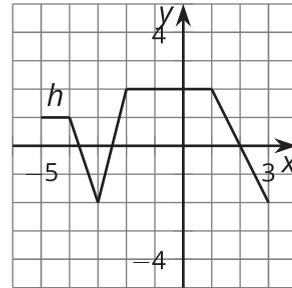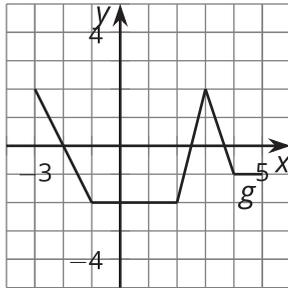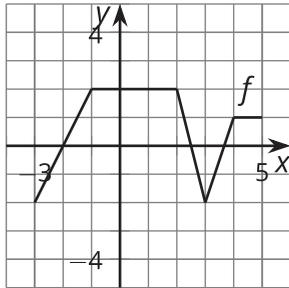# Unit 5 Lesson 4: Reflecting Functions

1 Notice and Wonder: Reflections (Warm up)

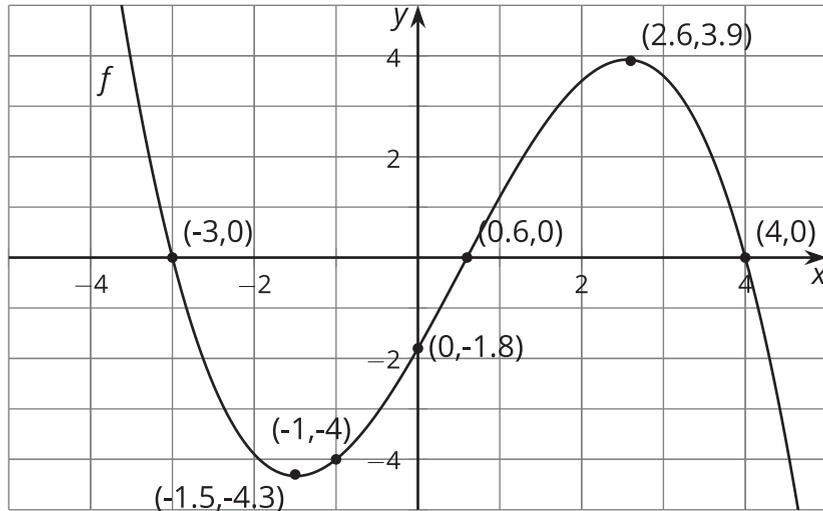**Student Task Statement**

What do you notice? What do you wonder?

2 Reflecting Across

Student Task Statement

Here is the graph of function f and a table of values.

x	$f(x)$	$g(x) = -f(x)$
-3	0	
-1.5	-4.3	
-1	-4	
0	-1.8	
0.6	0	
2.6	3.9	
4	0	

1. Let g be the function defined by $g(x) = -f(x)$. Complete the table.

2. Sketch the graph of g on the same axes as the graph of f but in a different color.

3. Describe how to transform the graph of f into the graph of g. Explain how the equation produces this transformation.

3 Reflecting Across a Different Way

Student Task Statement

Here is another copy of the graph of f from the earlier activity. This time, let h be the function defined by $h(x) = f(-x)$.
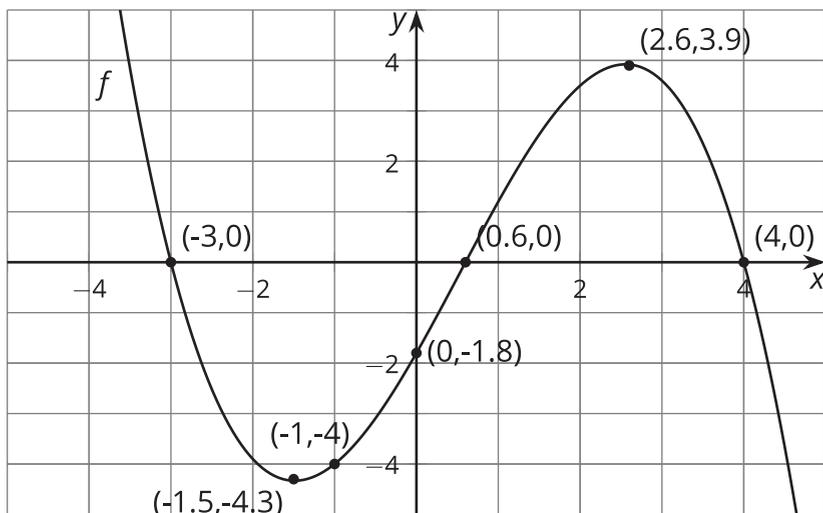
1. Use the definition of h to find $h(0)$. Does your answer agree with your prediction?

2. What does your prediction tell you about $h(-0.6)$? Does your answer agree with the definition of h?

3. Complete the tables. The values for x will not be the same for the two tables.

x	$f(x)$
-3	0
-1.5	-4.3
-1	-4
0	-1.8
0.6	0
2.6	3.9
4	0

x	$h(x) = f(-x)$

4. Sketch the graph of h on the same axes as the graph of f but in a different color.

5. Describe what happened to the graph of f to transform it into the graph of h. Explain how the equation produces this transformation.

Images for Activity Synthesis