

Middle School Algebra Outreach Learning
April 28 – May 1, 2020

***Algebra 1* Week of April 28th**

If there are any questions,
please feel free to email me at: rheaburnsl@lpisd.org

Please use the given links to access your class period's
TEAMS folder:

Previous Lessons: Solving quadratic equations by using
the square root method, examining vertex form of
quadratic equations, solving using factored form, and
basics of the quadratic formula.

Objectives

Objective / I Can:

- Describe transformations of quadratic equations
- Write Quadratic equations when given a transformation

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Activities

Lesson 1: Graphing & Describing Transformations

1) [Video Lesson](#)

(If you have access to a printer, you can print out this page to follow along with the lesson. If not, grab a piece of notebook paper and write the questions as you go.)

TRANSFORMATIONS
from the
Parent Function

Original Coordinates of the Parent Function
 $(y = x^2)$

x	y
-2	4
-1	1
0	0
1	1
2	4

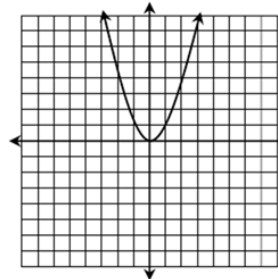
Compare this table to the ones you complete in problems 7-12 to help aide in your description of the transformation.

- The most simplistic quadratic equation is _____.
- This is known as the _____.
- A **transformation** is a _____ to the _____ or _____ of a figure.

Directions: Graph each function. Describe how it compares to the parent function shown on the graph.

7. $y = (x + 2)^2$

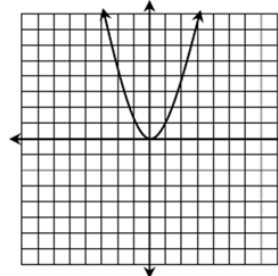
x	y



Transformations:

8. $y = x^2 + 5$

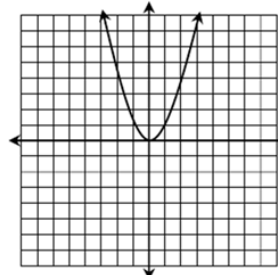
x	y



Transformations:

9. $y = (x + 1)^2 - 6$

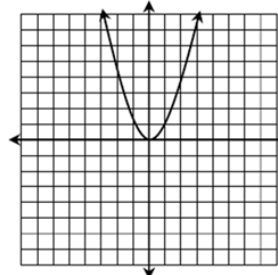
x	y



Transformations:

10. $y = -(x - 4)^2 + 1$

x	y



Transformations:

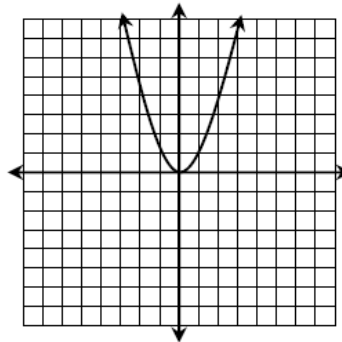
Middle School Algebra Outreach Learning

April 28 – May 1, 2020

Lesson 1: Graphing & Describing Transformations (continued)

11. $y = 3x^2 - 7$

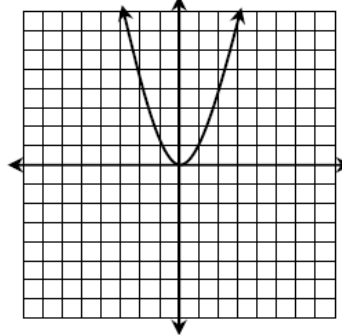
x	y



Transformations:

12. $y = -\frac{1}{2}(x-3)^2 - 2$

x	y



Transformations:

**PUT IT
TOGETHER!**

Given a quadratic equation in vertex form, $y = a(x-h)^2 + k$:

- h is the _____ shift. (+ shifts _____, - shifts _____)
- k is the _____ shift. (+ shifts _____, - shifts _____)
- If a is negative, the function is _____ across the ____ - _____
- $|a| > 1$ represents a vertical _____.
- $0 < |a| < 1$ represents a vertical _____.

Forms *(FOR GRADE): SEE LINK IN ASSIGNMENTS TAB IN TEAMS*

Middle School Algebra Outreach Learning

April 28 – May 1, 2020

Lesson 2: Writing Transformation Equations

1) [Video Lesson](#) (If you have access to a printer, you can print out this page to follow along with the lesson. If not, grab a piece of notebook paper and write the questions as you go.)

PUT IT TOGETHER!	<p>Given a quadratic equation in vertex form, $y = a(x - h)^2 + k$:</p> <ul style="list-style-type: none"> h is the _____ shift. (+ shifts _____, - shifts _____) k is the _____ shift. (+ shifts _____, - shifts _____) If a is negative, the function is _____ across the ____ - _____ $a > 1$ represents a vertical _____. $0 < a < 1$ represents a vertical _____. 	
WRITING EQUATIONS	Directions: Transformations from the parent function $y = x^2$ are described below. Write an equation to represent the function.	
	13. translated 2 units right	14. translated 5 units up
	15. translated 3 units left and 4 units down	16. translated 7 units right and 4 units up
	17. reflected over the x -axis, then translated 3 units down	18. reflected over the x -axis, then translated 5 units right and 2 units down
	19. vertically compressed by a factor of $1/3$, then translated 8 units up	20. vertically stretched by a factor of 2, reflected over the x -axis, then translated 4 units left

2) Quizizz (*For Grade*): See Codes : 2nd period 387484, 6th period 902592

Academic/Instructional Support

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Schedule :	Students should begin work on Tuesday, 4/28 and should be completed no later than Monday, 5/4 at 8 a.m.
	This assignment should take less than 2 hours to complete.
Office Hours:	Wednesdays 9 – 11 a.m. & Fridays 1 – 3 p.m. Please email me anytime, and I will get back to you as soon as I can.

To Be Graded

Assignment for students to submit:

- Forms Submission – Describing Transformations
- Quizizz on writing quadratics when given transformations

When is it due? All assignments are due no later than Monday, May 4th at 8:00am.

What assignments will the student submit?

1. Describing Transformations Forms
2. Writing Quadratics Quizizz

How will it be submitted?

All assignments are to be submitted electronically via Quizizz and Microsoft Forms except by individual arrangement.