

## Lesson Plan

<b>Name:</b>	Ashley Killebrew	<b>Grade:</b> Algebra 1 8 <sup>th</sup> grade AC
<b>Lesson Title:</b>	Quadratic FUNctions	<b>Date:</b> March 1, 2018
<p><b>GPS/GSE Standard(s):</b></p> <p>MGSE9-12.A.CED.2 Create quadratic equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.</p> <p>MGSE9-12.F.IF.7 Graph functions expressed algebraically and show key features of the graph both by hand and by using technology.</p> <p>MGSE9-12.F.IF.7a Graph linear and quadratic functions and show intercepts, maxima, and minima</p> <p><b>Individual Education Plan Goal(s) and Benchmarks for the Focus Learner(s):</b></p>		

Learning - Focus	Strategies
Essential Question(s)	<p>What is similar between quadratic functions and linear functions?</p> <p>How can I contrast the graphed functions?</p> <p>What are the different ways I can use a quadratic functions and linear functions in real life?</p>

<p><b>Central Focus/Lesson Objective(s)</b></p>	<p>Do Students will find the domain and range of a quadratic function and a linear function.</p> <p>Be Students will discuss the maximum and minimum to find the end behavior.</p> <p>Know Students will recognize the patterns between the patterns of end behavior.</p>
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<p><b>Academic Language</b></p>	<p><b>Academic Language Demand</b></p> <p>Students will listen to the explanation of functions.</p> <p>Students will speak the responses.</p> <p>Students will demonstrate their knowledge about functions.</p> <p><b>Language Functions</b></p> <p>Students will identify what a function is.</p> <p><b>Language Vocabulary</b></p> <p>domain, range, increasing, decreasing, maxima, minima, end behavior, functions, linear functions, quadratic functions, x-values, y-values</p> <p><b>Language Discourse</b></p> <p>Students will speak to one another about the worksheet.</p> <p>Students will repeat back oral responses.</p> <p>Students will write the answers on the worksheet.</p> <p><b>Language Syntax</b></p> <p>Students will organize the numbers using tables.</p> <p>Students will organize their notes in their notebook.</p> <p>Students will organize their points on a graph for the function.</p>
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<b>Assessment/ Evaluation</b>	<p><b>Assessment Plan for IEP Goals (Before lesson, formative &amp; summative):</b></p> <p><b>Assessment Plan for Learning Objectives (Before lesson, formative &amp; summative):</b></p> <p>Formative The homework Summative The entire worksheet.</p> <p><b>Evidence of student progress and mastery (complete after lesson has been implemented):</b></p> <p>Students completed the worksheet and answered the questions correctly.</p> <p>Students couldn't complete the worksheet and asked them the reason for the incomplete work.</p> <p>Student completed the worksheet and missed certain answers.</p>
<b>Materials</b>	<p>homework sheet from Feb 28, whiteboard, worksheet: "Characteristics of Functions," with definition &gt;&gt;&gt; folded this sheet and turned the back into an answer sheet, worksheet: "Characteristics of Functions," with graphs, song</p>
<b>Introduction to Lesson/ Activating Thinking</b>	<p>The students are told to come in and get their warm-up. They will need to complete their warm-up. I will assign the problems to students that already have done these problems, so they can work them on the whiteboard. Then I will allow the students to check their peer's work.</p>

<b>Body of Lesson/ Teaching Strategies</b>	I will go over the homework use back of homework for classwork. Then I will use repetition to scaffold domain (left and right and X values), and range (up and down and Y values). Then after determining domain, range, if the graph is increasing or decreasing or both, determine the max or min, and then end-behavior. The students were given instructions of how to create their answer sheet and had a minute (song). Then they worked with partners to complete the given worksheet
<b>Closure/ Summarizing Strategies:</b>	I will review the definition of domain, range, increasing, decreasing, maximum, minimum, functions and how knowing these definitions will answer the essential questions.
<b>Modifications/ Differentiations for Students' Individual Needs</b>	<b>Differentiation Category:</b> <b>Modification(s)/Accommodation(s):</b> <b>Rationale:</b> Why is this modification/accommodation appropriate?

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# Lesson Plan

<b>Name:</b>	Ashley Killebrew	<b>Grade:</b> Algebra 1 8 <sup>th</sup> grade AC
<b>Lesson Title:</b>	Finding the End Behavior of FUNctions	<b>Date:</b> March 2, 2018
<p><b>GPS/GSE Standard(s):</b>  MGSE9-12.A.CED.2 Create quadratic equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.  MGSE9-12.F.IF.7 Graph functions expressed algebraically and show key features of the graph both by hand and by using technology.  MGSE9-12.F.IF.7a Graph linear and quadratic functions and show intercepts, maxima, and minima</p> <p><b>Individual Education Plan Goal(s) and Benchmarks for the Focus Learner(s):</b></p>		

Learning - Focus	Strategies
Essential Question(s)	How can I use the x-values and y-values to determine the part of the function that is decreasing and/or increasing? How can you use end behavior to relate to decreasing or increasing?
Central Focus/Lesson Objective(s)	Know Students will know how to use the x and y values to find a part of the function that is decreasing. Be The students will be able to discuss the misunderstanding of end behaviors and increasing and decreasing. Do I can determine if the linear function is increasing or decreasing.

**Academic Language****Academic Language Demand**

Students will listen to the explanation of end behavior.

Students will speak the responses.

Students will demonstrate their knowledge about end behavior.

**Language Functions**

Students will identify what end behavior and increasing and decreasing means.

**Language Vocabulary**

domain, range, increasing, decreasing, maxima, minima, end behavior, functions, linear functions, quadratic functions, x-values, y-values

**Language Discourse**

Students will speak to one another about the worksheet.

Students will repeat back oral responses.

Students will write the answers on the worksheet.

**Language Syntax**

Students will organize the numbers using tables.

Students will organize their notes in their notebook.

Students will organize their points on a graph for the function.

<b>Assessment/ Evaluation</b>	<p><b>Assessment Plan for IEP Goals (Before lesson, formative &amp; summative):</b></p> <p><b>Assessment Plan for Learning Objectives (Before lesson, formative &amp; summative):</b></p> <p>Formative The first two questions on the worksheet.</p> <p>Summative The entire worksheet.</p> <p><b>Evidence of student progress and mastery (complete after lesson has been implemented):</b></p> <p>Students completed the worksheet and answered the questions correctly.</p> <p>Students couldn't complete the worksheet and asked them the reason for the incomplete work.</p> <p>Student completed the worksheet and missed certain answers.</p>
<b>Materials</b>	<p>smartboard with notebook, beach ball</p>
<b>Introduction to Lesson/ Activating Thinking</b>	<p>The students walked in and completed their warm-up as a Dr. Seuss song is playing. The students turn in their warm-up. I ask the students different vocabulary words and they have to raise their hand and receive the beach ball to answer. Then I will host a vocabulary game.</p>



<b>Body of Lesson/ Teaching Strategies</b>	<p>Explain an example of end behaviors. Use repetition through call backs so the students know the key points of end behavior. I thoroughly explain each aspect of end behavior. Then provide a practice worksheet and walk through the first two on the sheet as a class. Then the students work on the worksheet in class</p>
<b>Closure/ Summarizing Strategies:</b>	<p>I will play the vocabulary game again (adding in end behavior) to allow the losing gender to come back and beat the winner from the earlier game.</p>
<b>Modifications/ Differentiations for Students' Individual Needs</b>	<p><b>Differentiation Category:</b>  <b>Modification(s)/Accommodation(s):</b>  <b>Rationale:</b></p>

# Lesson Plan

<b>Name:</b>	Ashley Killebrew	<b>Grade:</b> 8 <sup>th</sup> grade honors Algebra I
<b>Lesson Title:</b>	Introductions to Transformations of FUNctions	<b>Date:</b> March 6, 2018
<p><b>GPS/GSE Standard(s):</b>  MGSE9-12.F.BF.3 Identify the effect on the graph of replacing <math>f(x)</math> by <math>f(x) + k</math>, <math>k f(x)</math>, <math>f(kx)</math>, and <math>f(x + k)</math> for specific values of <math>k</math> (both positive and negative); find the value of <math>k</math> given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from the graphs and algebraic expressions for them.</p> <p><b>Individual Education Plan Goal(s) and Benchmarks for the Focus Learner(s):</b></p>		

Learning - Focus	Strategies
Essential Question(s)	What can you add to perform a transformation on a quadratic function and exponential function? Can I see transformations in real life?
Central Focus/Lesson Objective(s)	Know Students will know how to explain transformations to a quadratic function. Be Students will be able to discuss the differences between transformations to a quadratic function. Do Students will transform quadratic functions on a coordinate plan.

**Academic Language****Academic Language Demand**

Students will listen to the explanation of transformations of functions.

Students will speak the responses.

Students will demonstrate their knowledge about transformations.

**Language Functions**

Students will identify the effect that transformations have on an exponential function.

**Language Vocabulary**

transformation, translation, reflections, quadratic function, exponential function

**Language Discourse**

Students will speak to one another about the worksheet.

Students will repeat back oral responses.

Students will write the answers on the worksheet.

**Language Syntax**

Students will organize the numbers using tables.

Students will organize their notes in their notebook.

Students will organize their points on a graph for the function.

<b>Assessment/ Evaluation</b>	<p><b>Assessment Plan for IEP Goals (Before lesson, formative &amp; summative):</b></p> <p><b>Assessment Plan for Learning Objectives (Before lesson, formative &amp; summative):</b></p> <p>Formative</p> <p>The nearpod quiz</p> <p>Summative</p> <p>The ticket out the door.</p> <p><b>Evidence of student progress and mastery (complete after lesson has been implemented):</b></p> <p>Students completed the tottd and answered the questions correctly.</p> <p>Students couldn't complete the tottd and asked them the reason for the incomplete work.</p> <p>Student completed the tottd and missed certain answers.</p>
<b>Materials</b>	Nearpod.com, Devices (ipads), Elmo
<b>Introduction to Lesson/ Activating Thinking</b>	I will define translation (shift left and right). I will define reflection (flip over an axis). I will use repetition through saying the definitions over again as a whole class.
<b>Body of Lesson/ Teaching Strategies</b>	Use Nearpod as an engaging way to teach the material about transformations

<b>Closure/ Summarizing Strategies:</b>	I will administer a formative quiz at the end of the nearpod and review sheet with examples using the Elmo. Then give a ticket out of the door review the lesson.
<b>Modifications/ Differentiations for Students' Individual Needs</b>	<b>Differentiation Category:</b> <b>Modification(s)/Accommodation(s):</b> <b>Rationale:</b>

# Lesson Plan

<b>Name:</b>	Ashley Killebrew	<b>Grade:</b> 8 <sup>th</sup> grade honors Algebra I
<b>Lesson Title:</b>	Transforming FUNctions	<b>Date:</b> March 8, 2018
<p><b>GPS/GSE Standard(s):</b>  MGSE9-12.F.BF.3 Identify the effect on the graph of replacing <math>f(x)</math> by <math>f(x) + k</math>, <math>k f(x)</math>, <math>f(kx)</math>, and <math>f(x + k)</math> for specific values of <math>k</math> (both positive and negative); find the value of <math>k</math> given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from the graphs and algebraic expressions for them.</p> <p><b>Individual Education Plan Goal(s) and Benchmarks for the Focus Learner(s):</b></p>		

<b>Learning - Focus</b>	<b>Strategies</b>
<b>Essential Question(s)</b>	How can I master transforming an exponential function? How can relate transforming an exponential function in a real-life example?
<b>Central Focus/Lesson Objective(s)</b>	<p>Know Students will know how to explain transformations to an exponential function.</p> <p>Be Students will be able to discuss the differences between transformations to an exponential function.</p> <p>Do Students will transform exponential functions on a coordinate plan.</p>

**Academic Language****Academic Language Demand**

Students will listen to the explanation of transformations of functions.

Students will speak the responses.

Students will demonstrate their knowledge about transformations.

**Language Functions**

Students will identify the effect that transformations have on an exponential function.

**Language Vocabulary**

transformation, translation, reflections, quadratic function, exponential function

**Language Discourse**

Students will speak to one another about the worksheet.

Students will repeat back oral responses.

Students will write the answers on the worksheet.

**Language Syntax**

Students will organize the numbers using tables.

Students will organize their notes in their notebook.

Students will organize their points on a graph for the function.

<b>Assessment/ Evaluation</b>	<b>Assessment Plan for IEP Goals (Before lesson, formative &amp; summative):</b> <b>Assessment Plan for Learning Objectives (Before lesson, formative &amp; summative):</b> Formative The first five questions on the worksheet. Summative The entire worksheet. <b>Evidence of student progress and mastery (complete after lesson has been implemented):</b> Students completed the worksheet and answered the questions correctly. Students couldn't complete the worksheet and asked them the reason for the incomplete work. Student completed the worksheet and missed certain answers.
<b>Materials</b>	Smartboard, worksheet, notebook presentation
<b>Introduction to Lesson/ Activating Thinking</b>	Students will complete their warm-up. Then I will review the answers to the warm-up.
<b>Body of Lesson/ Teaching Strategies</b>	I will explain examples of the transformations to an exponential function. Then I will provide examples through different visuals and coral responses. Then the students will work on the first part of the worksheet independently and then I will answer any questions. Then the students will be able to finish the worksheet.



<b>Closure/ Summarizing Strategies:</b>	The last fifteen minutes of the class I will review the objectives for the lesson through a monitored discussion. Students will turn in the worksheet that they will complete during the body of the lesson.
<b>Modifications/Differentiations for Students' Individual Needs</b>	<b>Differentiation Category:</b> <b>Modification(s)/Accommodation(s):</b> <b>Rationale:</b>

#### Lesson Plan

<b>Name:</b>	Ashley Killebrew	<b>Grade:</b> 8 <sup>th</sup> grade honors Algebra I
<b>Lesson Title:</b>	Transformed FUNctions	<b>Date:</b> March 9, 2018
<b>GPS/GSE Standard(s):</b> MGSE9-12.F.BF.3 Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$ , $k f(x)$ , $f(kx)$ , and $f(x + k)$ for specific values of $k$ (both positive and negative); find the value of $k$ given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from the graphs and algebraic expressions for them. <b>Individual Education Plan Goal(s) and Benchmarks for the Focus Learner(s):</b>		

<b>Learning - Focus</b>	<b>Strategies</b>
<b>Essential Question(s)</b>	How can I perform a translation, reflection, and dilation to a parent function?

<p><b>Central Focus/Lesson Objective(s)</b></p>	<p>Know</p> <p>Students will know how to explain transformations to a quadratic function.</p> <p>Students will know how to explain transformations to an exponential function.</p> <p>Be</p> <p>Students will be able to discuss the differences between transformations to a quadratic function.</p> <p>Students will be able to discuss the differences between transformations to an exponential function.</p> <p>Do</p> <p>Students will transform quadratic functions on a coordinate plan.</p> <p>Students will transform exponential functions on a coordinate plan.</p>
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**Academic Language**

What is the key language demand? What Academic Language will you teach or develop? What is the key vocabulary and/or symbols? What opportunities will you provide for students to practice content language/vocabulary and develop fluency?

**Academic Language Demand**

Students will listen to the explanation of transformations of functions.

Students will speak the responses.

Students will demonstrate their knowledge about transformations.

**Language Functions**

Students will identify the effect that transformations have on exponential and quadratic functions.

**Language Vocabulary**

transformation, translation, reflections, quadratic function, exponential function

**Language Discourse**

Students will repeat back oral responses.

**Language Syntax**

Students will organize the numbers using tables.

Students will organize their notes in their notebook.

Students will organize their points on a graph for the function.

<b>Assessment/ Evaluation</b>	<p><b>Assessment Plan for IEP Goals (Before lesson, formative &amp; summative):</b></p> <p><b>Assessment Plan for Learning Objectives (Before lesson, formative &amp; summative):</b></p> <p>Formative</p> <p>Discussion over vocabulary</p> <p>Summative</p> <p>The quiz.</p> <p><b>Evidence of student progress and mastery (complete after lesson has been implemented):</b></p> <p>Students completed the quiz and answered the questions correctly.</p> <p>Students couldn't complete the quiz and asked them the reason for the incomplete work.</p> <p>Student completed the quiz and missed certain answers.</p>
<b>Materials</b>	Elmo, beach ball
<b>Introduction to Lesson/ Activating Thinking</b>	vocabulary review using beach ball and competition
<b>Body of Lesson/ Teaching Strategies</b>	I will review homework on Elmo then administer an assessment over transformations.
<b>Closure/ Summarizing Strategies:</b>	After students turn in quiz, review one of each from the quiz they will start on study guide. And I will answer any questions they have about the essential questions or study for the test.

<b>Modifications/ Differentiations for Students' Individual Needs</b>	<b>Differentiation Category:</b> <b>Modification(s)/Accommodation(s):</b> <b>Rationale:</b>
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## Lesson Plan

<b>Name:</b>	Ashley Killebrew	<b>Grade:</b> 8 <sup>th</sup> grade honors Algebra I
<b>Lesson Title:</b>	Rate of Change for an Exponential using Transformations	<b>Date:</b> March 13, 2018
<b>GPS/GSE Standard(s):</b> MGSE 9 - 12.F.IF.6 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.		
<b>Individual Education Plan Goal(s) and Benchmarks for the Focus Learner(s):</b>		

Learning - Focus	Strategies
<b>Essential Question(s)</b> 1-3 BIG ideas! How can these	How can I use my knowledge of dilations to help me predict what my rate of change will be for certain intervals? How can I use two people running a race using intervals and the differences of each function's rate of change? How can I relate the transformation of dilation to the intervals on the function?
<b>Central Focus/Lesson Objective(s)</b> Objectives are measurable and aligned with the standard.	Know Students will know how to calculate intervals on an exponential function. Be Students will be able to explain how to describe an example of an interval on an exponential function. Do Students will dilate a function and predict the interval between two points.

**Academic Language****Academic Language Demand**

Students will listen to the explanation of intervals.

Students will demonstrate their knowledge about dilations.

**Language Functions**

Students will identify the effect that a dilation has on an interval.

**Language Vocabulary**

dilation, horizontal shrink, vertical shrink, rate of change, slope

**Language Discourse**

Students will speak to one another about the worksheet.

Students will repeat back oral responses.

Students will write the answers on the worksheet.

**Language Syntax**

Students will organize the numbers using tables.

Students will organize their notes in their notebook.

- Students will organize their points on a graph for the function.

<b>Assessment/ Evaluation</b>	<b>Assessment Plan for IEP Goals (Before lesson, formative &amp; summative):</b> <b>Assessment Plan for Learning Objectives (Before lesson, formative &amp; summative):</b> Formative Homework: review translation Summative The worksheet <b>Evidence of student progress and mastery (complete after lesson has been implemented):</b> Students completed the worksheet and answered the questions correctly. Students couldn't complete the worksheet and asked them the reason for the incomplete work. Student completed the worksheet and missed certain answers.
<b>Materials</b>	Smartboard
<b>Introduction to Lesson/ Activating Thinking</b>	I will review the warm-up: finding the characteristics of a quadratic function I will go over the homework: review translation. Then I will introduce standard and essential questions.
<b>Body of Lesson/ Teaching Strategies</b>	I will review how to find the slope/rate of change of a linear equation. I will then introduce how to find the rate of change of two intervals on an exponential function with a graph. I will provide an example of how to find the rate of change of two intervals given only the equation and interval. Students will finish worksheet over rate of change for exponential functions.



<b>Closure/ Summarizing Strategies:</b>	I will review the essential questions and ask a variety of students different ways they answered the essential questions. I will then review the established math vocabulary and how those terms allowed me to learn the standard.
<b>Modifications/ Differentiations for Students' Individual Needs</b>	<b>Differentiation Category:</b> <b>Modification(s)/Accommodation(s):</b> <b>Rationale:</b>

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