

Do: Reflect and turn in! Happy Friday:)

	Assignment Effort Grade (Circle One)	Comments (What was interesting or challenging?)
Monday Date: <u>2/19</u> Topic: _____	No School 0 1 2	
Tuesday Date: <u>2/20</u> Topic: <u>Growth and Decay Review</u>	0 1 2	
Wednesday Date: <u>2/21</u> Topic: <u>Practice Project conclusion!</u>	0 1 2	
Thursday Date: <u>2/22</u> Topic: <u>Project title, data table, and graph</u>	0 1 2	
Friday Date: <u>2/23</u> Topic: <u>Equation, justification, verification</u>	0 1 2	

Class Plan:

1. Review checklist, Rubrics
2. Worktime: Exponential Project

Wednesday Workday

Step 1: Data Intro – Table – Graph

- ___ Project Title
- ___ Organize data in a table
- ___ Display data using a scatterplot

Step 2: Equation $y = a(b)^x$ $b = (1+r)^x$ OR $b = (1-r)^x$

- ___ Calculate the constant multipliers between each data value
- ___ Identify the starting value ___ Justify your starting value
- ___ Identify the constant multiplier ___ Justify your constant multiplier
- ___ Write Equation
- ___ Verify the equation by substituting data from your table into equation.
- ___ Write a statement commenting on the validity of the equation

Step 3: Analysis (Using Table-Graph-Equation)

- Interpret the real-life meanings of your equation:
- ___ Starting value ___ Constant multiplier
 - ___ r (rate % of growth/decay)
 - ___ Dependent variable (y -value) ___ Independent variable (x -value)
 - ___ Use equation to make a prediction that is **outside** the collected data.
 - ___ Discuss the accuracy of the prediction
 - ___ Use equation to make a prediction that is **inside** the collected data set.
 - ___ Discuss the accuracy of the prediction
 - ___ Write a conclusion of the project.

Project checklist

Step 2:
Thursday

Step 3:
Friday

Project Equation - SL checklist

Step 2: Equation $y = a(b)^x$ $b = (1+r)^x$ OR $b = (1-r)^x$

- ___ Calculate the constant multipliers between each data value
- ___ Identify the starting value ___ Justify your starting value
- ___ Identify the constant multiplier ___ Justify your constant multiplier
- ___ Write Equation
- ___ Verify the equation by substituting data from your table into equation.
- ___ Write a statement commenting on the validity of the equation

Recall our Exponential Equation:

a: Starting value $y = a \cdot b^x$

b: Constant multiplier (multiplier is always positive.)

r: Rate of growth/decay, interpreted as a %

Exponential Growth

$$b > 1$$

$$y = a(1 + r)^x$$

Ant Population Example:

$$y = 16(1.5)^x$$

r = 50% growth

Exponential Decay

$$0 < b < 1$$

$$y = a(1 - r)^x$$

Car Value Example:

$$y = 21,700(0.83)^x$$

r = 17% depreciation

Project Analysis - SL checklist

Step 3: Analysis (Using Table-Graph-Equation)

Interpret the real-life meanings of your equation:

___ Starting value ___ Constant multiplier

___ r (*rate % of growth/decay*)

___ Dependent variable (*y-value*) ___ Independent variable (*x-value*)

___ Use equation to make a prediction that is **outside** the collected data.

 ___ Discuss the accuracy of the prediction

___ Use equation to make a prediction that is **inside** the collected data set.

 ___ Discuss the accuracy of the prediction

___ Write a conclusion of the project.

RUBRIC Criterion B: Investigations

-Calculate multiplier

-Identify and defend the multiplier and starting value

-Verify equation using 2 data pairs

7	The student is able to: <ul style="list-style-type: none">• Select and apply mathematical problem-solving techniques to discover complex patterns		<ul style="list-style-type: none">• Detailed work is shown to generate the equation model.
8	<ul style="list-style-type: none">• Describe patterns as general rules consistent with correct findings• Verify these general rules		<ul style="list-style-type: none">• Parts of the equation are identified and justified correctly.• Equation is verified using at least two data pairs from original data set.

RUBRIC: Criterion C: Communication

-Models: table, graph, equation

-Interpretations

-Predictions

-Conclusion

-Organized, neat work

7	The student is able to: <ul style="list-style-type: none">• Consistently use appropriate mathematical language• Use appropriate forms of mathematical representation to consistently present information correctly.• Move effectively between different forms of mathematical representation.	<ul style="list-style-type: none">• Correct table, graph, and equation.• Equation is interpreted: Y-value, X-value, multiplier, rate, starting value.• Multiple predictions are made using values from <i>within & outside</i> the given data range.
8	<ul style="list-style-type: none">• Communicate through lines of reasoning that are complete, coherent, and concise.• Present work that is consistently organized using a logical structure.	<ul style="list-style-type: none">• Conclusion is complete, concise and coherent.• The piece of work is organized and neat.

Worktime: Exponential Project

***Use rubric as checklist**

7	The student is able to: <ul style="list-style-type: none">• Select and apply mathematical problem-solving techniques to discover complex patterns			<ul style="list-style-type: none">• Detailed work is shown to generate the equation model.• Parts of the equation are identified and justified correctly.• Equation is verified using at least two data pairs from original data set.
8	<ul style="list-style-type: none">• Describe patterns as general rules consistent with correct findings• Verify these general rules			

7	The student is able to: <ul style="list-style-type: none">• Consistently use appropriate mathematical language• Use appropriate forms of mathematical representation to consistently present information correctly.• Move effectively between different forms of mathematical representation.			<ul style="list-style-type: none">• Correct table, graph, and equation.• Equation is interpreted: Y-value, X-value, multiplier, rate, starting value.• Multiple predictions are made using values from <i>within</i> & <i>outside</i> the given data range.
8	<ul style="list-style-type: none">• Communicate through lines of reasoning that are complete, coherent, and concise.• Present work that is consistently organized using a logical structure.			<ul style="list-style-type: none">• Conclusion is complete, concise and coherent.• The piece of work is organized and neat.

Exercises...

Complete Project by Monday

Then you can focus on
studying for the Unit 5 Test
(Friday March 2nd)