

## Welcome Back to MYP Math 9!

	Assignment Effort Grade (Circle One)	Comments (What was interesting or challenging?)
<b>Monday</b> Date: <u>2/19</u> Topic: _____	<b>No School</b> 0 1 2	
<b>Tuesday</b> Date: <u>2/20</u> Topic: <u>Growth and Decay Review</u>	0 1 2	
<b>Wednesday</b> Date: <u>2/21</u> Topic: <u>Practice Project conclusion!</u>	0 1 2	
<b>Thursday</b> Date: _____ Topic: _____	0 1 2	
<b>Friday</b> Date: _____ Topic: _____	0 1 2	

Warm-up: Suppose the video is still on Instagram.  
 How many views would she expect on day 8?

Days since Ms. Berg shared her cat video	Number of views of the video on Instagram	Ratio: $\frac{\text{today's views}}{\text{yesterday's views}}$
0	55	XXXXXXXXXX
1	48	$\frac{48}{55} \approx .872$
2	42	$\frac{42}{48} \approx .875$
3	37	$\frac{37}{42} \approx .881$
4	32	$\frac{32}{37} \approx .865$

$$y = 55(.873)^x$$

$$y = 55(.873)^8$$

$$y \approx 55(.337)$$

$$y \approx 18.5 \text{ views}$$



## Class Plan:

1. Warm-up
2. Project Introduction - checklist  
-Examine Exemplar: What is missing from Ms. Paulson's work.
3. Joke....then Choose Topic
4. Exponential Project

# Project Introduction - SL checklist

## 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. *minimal*

1) Examine exemplar

2) Compare work to checklist

3) What is missing?

# Project Introduction - SL checklist

## 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.

1) Examine exemplar

2) Compare work to checklist

3) What is missing?

Missing

1) Justification of **a, b.**

2) Conclusion

3) Prediction within data.

# Project Introduction - SL checklist

## Do: Step 1

- Step 1: Data Intro - Table - Graph
- \_\_\_ Project Title
  - \_\_\_ Organize data in a table
  - \_\_\_ Display data using a scatterplot

1) Use the template below to organize your data in a table.

Yes	No	Current / Previous
0		<del>Current / Previous</del>
1		
2		
3		
4		
5		
6		
7		
8		
9		

Average of ratios \_\_\_\_\_

Done: Show teacher and continue into step 2.

## 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

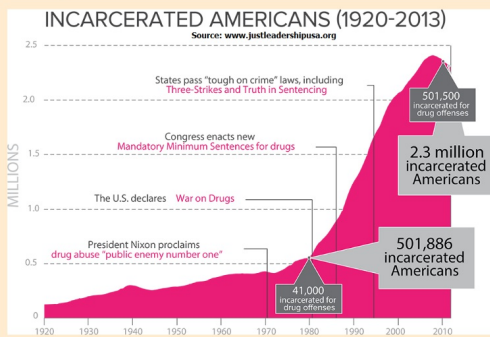
\_\_\_ Write a conclusion of the project.

## SL checklist: Possible questions to answer while writing your conclusion.

### Questions to consider for the conclusion:

- What does the data show?
- What impact does this data have on me or my family?
- What impact does this project have on our community or society?

# Consider topics for project!



## Joke of the day.....Teacher roast!

Teacher: did you  
do your homework?  
Student: did you  
grade my test?  
Teacher: I have other  
students' tests to  
grade.  
Student: I have other  
teachers' homework  
to do.

GIRLPROPARIS | TUMBLR

### When a teacher roasts a student



**Thank you for your patience! (Study guide scores will be in the portal by Thursday evening!**

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# Exercises...

Continue working on Project

Friday is the last workday