IB MYP Math 9 Extended Level **Name**_____

Exponential Modeling Checklist

<u>Step 1:</u> Data Intro – Table – Graph

___Project **Title**

___Organize data in a table

___Display data using a scatterplot

<u>Step 2:</u> Equation $y = a(b)^x$ $b = (1+r)^x$ **<u>OR</u>** $b = (1-r)^x$

___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

___Use the collected data values and verify the equation using ***logs.***

$$x = a^y \Leftrightarrow y = \log_a(x)$$

____ Write a statement commenting on the validity of the equation

<u>Step 3:</u> Analysis (Using Table-Graph-Equation)

Interpret the real-life meanings of your equation:

____Starting value _____Constant multiplier

____ **r** (*rate of growth / decay*) *What % is the data growing/decaying ?*

____Dependent variable (*y-value*) ____Independent variable (*x-value*)

___Use ***logarithms*** to make a prediction ***outside*** the collected data set.

___Discuss the accuracy of the prediction

___Use ***logarithms*** to make a prediction ***inside*** the collected data set.

___ Discuss the accuracy of the prediction

____ Write a conclusion of the project.

<u>Questions to consider for the conclusion:</u>

- **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?**
- **What are the implications of this data?**