MYP 5 Mathematics
Transformation of Functions
## Applying Mathematics in Real Life Unit Project

Criterion D₅ Applying Mathematics in Real-Life Contexts. Maximum 8	**D₅**				
	Strand 1: *Identify relevant elements* Is able to:	Identify *some* of the elements of the authentic real-life situation	Identify the *relevant* elements of the authentic real-life situation	Identify the *relevant* elements of the authentic real-life situation	Identify the *relevant* elements of the authentic real-life situation
	Strand 2: *Select mathematical strategies* Is able to:	____	**Select** with some success, adequate mathematical strategies to model the authentic real-life situation	**Select** adequate mathematical strategies to model the authentic real-life situation	**Select** appropriate mathematical strategies to model the authentic real-life situation
	Strand 3: *Apply mathematical strategies* Is able to:	**Apply** mathematical strategies to *find a solution* to the authentic real-life situation, *with limited success*	**Apply** mathematical strategies to *reach a solution* to the authentic real-life situation	**Apply** the selected mathematical strategies to *reach a valid solution* to the authentic real-life situation	**Apply** the selected mathematical strategies to *reach a correct solution* to the authentic real-life situation
	Strand 4: *Degree of accuracy* Is able to:	____	____	**Explain** the degree of accuracy of the solution	**Justify** the degree of accuracy of the solution
	Strand 5: *Making sense* Is able to:	____	**Discuss** whether the solution makes sense in the context of the authentic real-life situation	**Explain** whether the solution makes sense in the context of the authentic real-life situation	**Justify** whether the solution makes sense in the context of the authentic real-life situation

Command term	What it means
Apply	Use knowledge and understanding in response to a given situation or real circumstances. Use an idea, equation, principle, theory or law in relation to a given problem or issue. (See also "Use".)
Discuss	Offer a considered and balanced review that includes a range of arguments, factors or hypotheses. Opinions or conclusions should be presented clearly and supported by appropriate evidence.
Explain	Give a detailed account including reasons or causes. (See also "Justify".)
Identify	Provide an answer from a number of possibilities. Recognize and state briefly a distinguishing fact or feature.
Justify	Give valid reasons or evidence to support an answer or conclusion. (See also "Explain".)
Select	Choose from a list or group.

Step 1:

a. Create a Google document titled: "Unit 4 – Criterion D Project – Your Name"
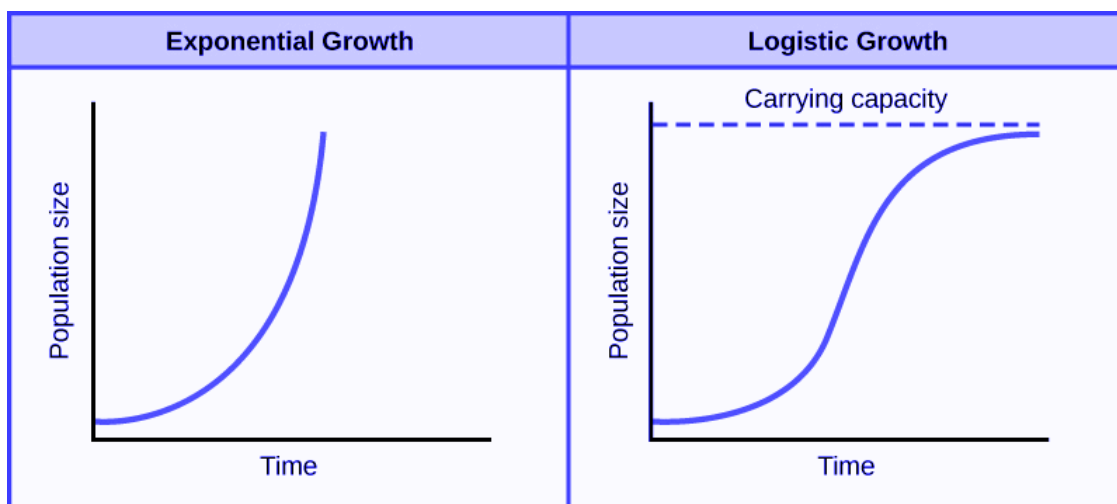   Please ensure that you have set the "Share" settings allowing me to view your document.
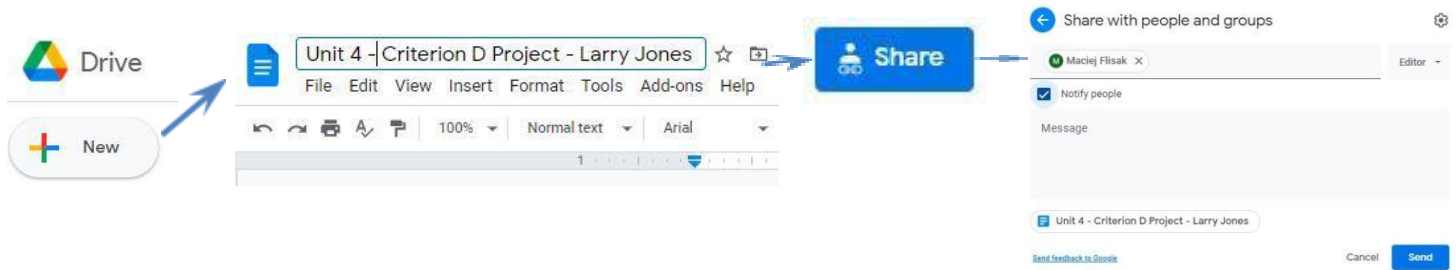
b. Read the following, then complete step d. below.

Many real life phenomena grow exponentially.
Many others grow exponentially but then plateau at a given point.
A mathematical curve for this kind of exponential then plateauing growth is called a logistic function.

c. Briefly research online for some real world data or phenomenon that can be modelled using a logistic curve. You will be surprised how many real world things follow this shape !

Make your search based on something that you are interested in; do not just search for "real world examples of logistic curves". For example, someone interested in sports may search for: "premium league football salary graph" or "number of international players in the NBA graph". Someone interested in technology may search for "Netflix users graph" or "iPhone sales graph".   Someone interested in ancient civilizations may try: *"Aztec civilization + logistic curve". Very quickly, I found this good source:*
https://phe.rockefeller.edu/docs/empires_booklet.pdf
Within that source, I see dozens of logistic functions representing many of history's greatest empires!

Although the graph or data that you find may not be perfectly "logistic" as long as, generally, it has this "S" shape, then it can be modelled by the logistic function.

d. On our course website, scroll over the Global Context for the Transformations unit in order to read about what "Orientation in Space and Time" means.
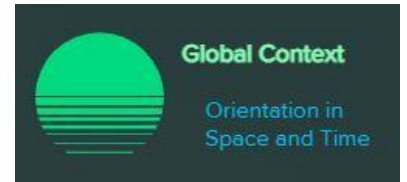
▢ Select a theme from the possible list of explorations that connects to the data set that you found.

In your Google document, write the Global Context (Orientation in Space and Time) and exploration theme that you will focus on. The exploration statements are still quite broad. Therefore, be very clear about what specific topic, of interest to you, you will focus on.

For example:
Global Context: Orientation in Space and Time
Exploration Theme: epochs, eras, turning points and big history
Specific Topic: The rise and fall of the Aztec Empire

▢Add the results of your research so far to your Google document.
   * This MUST include an image of the specific logistic data set or curve that you will use.