Teacher(s)	V. Bunce and A. Guerrero	Subject group and discipline	Algebra 1		
Unit title Make it catchy	Foundation of Functions	MYP year 9th = 4/ 10th = 5	4th	Unit duration (hrs) Not days	10 hrs

Inquiry: Establishing the purpose of the unit

Key concept (1)	Related concept(s) (1-2)	Global context & exploration (1)
Relationships	**Representations and Patterns**	Global Context: **Identities & Relationships** Exploration: **Professional efficacy and agency**

Statement of inquiry Process (Key concept + Related concept + Exploration)

Conceptual Understanding **(Key concept + Related concepts):** **Combine the key & related concepts together to make a meaningful conceptual statement that identifies their relationship.**

Functions are relationships/patterns in pictorial form.

Statement of Inquiry **(Key concept + Related concepts + Exploration):** **Create your statement (not question) of inquiry by combining the global contexts' exploration chosen for this unit with the conceptual understanding.**

Functions are relationships/patterns in pictorial form.

Inquiry questions (These questions need to be focused around the Key Concept, Related Concepts, and Global Context).

Factual—What is a pattern?

Conceptual—What does a pattern look like in the real world?

Debatable—To what extent can a relationship be represented by a pattern?

Objectives and their strands	Summative assessment	
OBJECTIVE A: KNOWING AND UNDERSTANDING **i. select appropriate mathematics when solving problems in both familiar and unfamiliar situations** **ii. apply the selected mathematics successfully when solving problems** **iii. solve problems correctly in a variety of contexts** **OBJECTIVE B: INVESTIGATING PATTERNS** **i. select and apply mathematical problem-solving techniques to discover complex patterns** **ii. apply the selected mathematics successfully when solving problems** **iii. verify and justify relationships and/or general rules**	G (Goal) – **Your task is** to create a rental catalog that includes information about the number of people that can sit around the tables, depending on what shape is ordered. Some of the shapes and their arrangements are shown. Functions are relationships in pictorial form. R (Role) – **You are** the advertising manager of Any Occasion Party Rental company. A (Audience) – **The target audience** are individuals looking to rent banquet tables for any special occasion. S (Situation) – **The rental catalog needs to** include 4 stages of table arrangements for the following shapes: - Triangle - Square - Trapezoid - Hexagon - Octagon P (Product) & P (Performance) – **You will develop** the rental catalog with each page containing the following: - A completed table for each number of banquet tables, ***n***, and show the process column you used to figure out the number of people that can be seated. - Write arithmetic rule, in function notation, that gives the number of people, ***p***, that can be seated around ***n*** tables. - Find the number of tables needed to seat 50 and 100 people. S (Standards for Success) – Criterion A and Criterion B:	Explain the relationship between summative assessment task(s) and statement of inquiry: Statement of Inquiry: Functions are relationships/patterns in pictorial form. Students will show their understanding of generalizing rules from pictorial patterns using a table and arithmetic rules in relationship to the real world work situation.

	Assessment Criterion/Objectives (IB specific) – **Your** work will be assessed by Criterion A and Criterion B.	

Approaches to learning (ATL) In order for students to (objective strand), students must (ATL skill). (ATL category: _____, ATL Skill: _____) .

In order to describe whether a solution makes sense in the context of the authentic real-life situation, the students need to interpret data and evaluate evidence and arguments.

The strategy that will be explicitly taught and practiced teaching strategy. Use the sentence stem in the box above for each ATL skill strategy you indicate.

In order to describe whether a solution makes sense in the context of the authentic real-life situation, the students need to interpret data and evaluate evidence and arguments.

Service Learning Outcomes:
During this unit students are expected to _____. In order for their team performance to meet and exceed expectations each student will experience the following service learning outcomes. •

Action: Teaching and learning through inquiry

Content (TEKS) **WRITE THEM OUT**	**Learning Process** (List in the order in which you will teach the lessons, ask inquiry questions, when ATL statements will be taught and practiced, as well as when both assessment types will occur)	
Readiness Standards A.2(A) determine the domain and range of a linear function in mathematical problems; determine reasonable domain and range values for real-world situations, both continuous and discrete; and represent domain and range using inequalities A.6(A) determine the domain and range of quadratic functions and represent the domain and range using inequalities Supporting Standards A.9(A) determine the domain and range of exponential functions of the form $f(x) = ab^x$ and represent the domain and range using inequalities A.12(A) decide whether relations represented verbally, tabularly, graphically, and symbolically define a function A.12(B) evaluate functions, expressed in function notation, given one or more elements in their domains	**Learning Experiences and Teaching Strategies** Also explain how you will incorporate the Approaches to Learning and Learner Profiles. Week 1/Day 1: Intro Activity – Skateboard Problem Week 2/Day 2: Patterns/Sequence – Patterns A & B Week 3/Day 3: Patterns/Sequence – Mystery Pattern Week 4/Day 4: Relations/Functions/Evaluating Functions/Function Notation Week 5/Day 5: Discrete & Coninuous/Domain & Range Week 6/Day 6: Discrete & Coninuous/Domain & Range	
	Formative Assessment (formal and informal)	
	➢ **Entrance ticket** ➢ **Quiz** ➢ **Homework** ➢ **Unit Test**	

A.12(D) write a formula for the n^{th} term of arithmetic and geometric sequences, given the value of several of their terms	**Differentiation** (Consider your student population, their special accommodations and modifications and language supports)
	The students will get a pre-made blank coordinate grid to put their graphs on and skeleton notes. Allow the LEP students to ask questions in Spanish to another Spanish speaker. Give SPED students more time to complete assignment, if it is on their IEP.

Resources:

State Resources	Text Books, Consumables, Etc.	Online Resources	Technological Resources
1. TEKS 2. Scope & Sequence 3. Region 4 Resources 4. AgileMind Resources	5. GRASPS 6. Principles into Practice 7. IB Subject Guide - Mathematics	8. District Sharepoint Resources 9. Teachers Pay Teachers Resources	10. Graphing Calculator – TI-84 11. Laptop/PC 12. Printer 13. WORD application

Reflection: Considering the planning, process and impact of the inquiry *You can answer the questions directly

Prior to teaching the unit	During teaching What are the areas of concern that occurred during the unit and how were they resolved? What are some things you wish to include or remove to enhance the learning experiences?	After teaching the unit For this portion, it will serve as a reflection for how the unit went. Explain what can be done to make the lesson more thorough next school year.
Why do we think that the unit or the selection of topics will be interesting? It will give the students an opportunity to apply their newly learned knowledge to a real-world situation. What do students already know, and what can they do? All lower math content. What have students encountered in this discipline before? Frustration and the ability to quit. What does my experience tell me about what to expect in this unit? Students will mix up domain/range and continuous/discrete as well as function notation will give the students trouble. What potential interdisciplinary connections can we identify? We will be working with the computer design teacher so the students can create their rental catalog electronically.	What difficulties did we encounter while completing the unit or the summative assessment task(s)? What resources are proving useful, and what other resources do we need? What student inquiries are emerging? What can we adjust or change? What skills need more practice? What is the level of student engagement? How can we scaffold learning for students who need more guidance? What is happening in the world right now with which we could connect teaching and learning in this unit? How well are the learning experiences aligned with the unit's objectives? What opportunities am I hearing to help students explore the interpretative nature of knowledge, including personal biases that might be retained, revised or rejected? (DP Theory of knowledge skills development)	What were the learning outcomes of this unit? How well did the summative assessment task serve to distinguish levels of achievement? Was the task sufficiently complex to allow students to reach the highest levels? What evidence of learning can we identify? What artefacts of learning should we document? Which teaching strategies were effective? Why? What was surprising? What student-initiated action did we notice? What will we do differently next time? How will we build on our experience to plan the next unit? How effectively did we differentiate learning in this unit? What can students carry forward from this unit to the unit? to the next year/ level of study? Which subject groups could we work with next time? What did we learn from standardizing the assessment?