

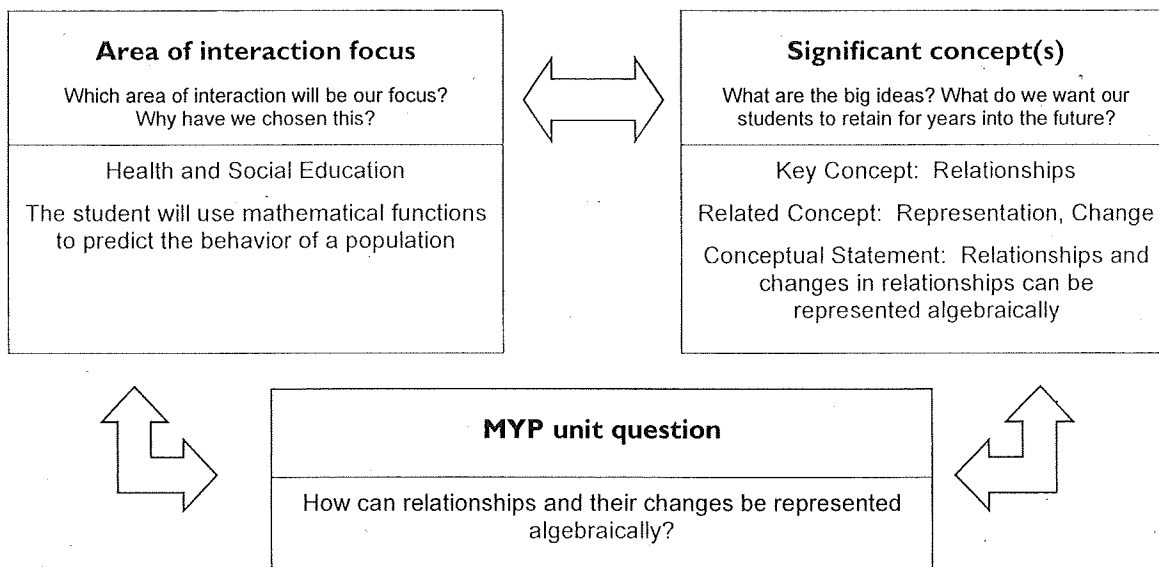
# MYP Unit Planner

## Algebra 1: Quarter 2

### 2013-2014 School Year

<b>Unit title</b>	<b>Forms of Linear Equations</b>
Teacher(s)	Lee Tran
Subject and grade level	Algebra 1 9 <sup>th</sup> – 12 <sup>th</sup> grade
Time frame and duration	2 weeks / 5 block classes approximately 88 minutes each

#### Stage 1: Integrate significant concept, area of interaction and unit question



<p><b>Assessment</b></p> <p>What task(s) will allow students the opportunity to respond to the unit question?</p> <p>What will constitute acceptable evidence of understanding? How will students show what they have understood?</p>
<ol style="list-style-type: none"> <li>1) The students will be given data with regard to winning marathon times for each Olympics since 1900. The students will create a coordinate plane and create a graph that correlates to the data.</li> <li>2) The students will create an equation in <math>y=mx + b</math> form their "Olympics" graph.</li> <li>3) The student will label the slope and y-intercept in the equation.</li> <li>4) The students will predict the winning time for the Olympics marathon in the year 2028.</li> <li>5) Estimate what the winning times would have been in 1944 and 1916.</li> <li>6) The student will chose a point on the graph and algebraically prove that it is a solution to the equation.</li> </ol>

Which specific MYP objectives will be addressed during this unit?

Objective B – (Investigating patterns)

- Recognize simple patterns in different situations
- Describe simple patterns as relationships or general rules
- Arrive at a single result or set of results and make predictions consistent with findings
- Explain simple mathematical relationships and general rules using logical arguments.

Which MYP assessment criteria will be used?

Criteria B

## Stage 2: Backward planning: from the assessment to the learning activities through inquiry

### Content

What knowledge and/or skills (from the course overview) are going to be used to enable the student to respond to the unit question?

What (if any) state, provincial, district, or local standards/skills are to be addressed? How can they be unpacked to develop the significant concept(s) for stage 1?

### Essential

- 6.a.1 Graph linear equations and inequalities (Unit 7) in two variables, including those that arise from a variety of real-world situations.
- 6.a.3 Use the parent function  $y = x$  and describe transformations defined by changes in the slope or y-intercept
- 6.a.4 Find the slope of the line, given the equation of a linear function
- 6.a.5 Find the slope of a line, given the coordinates of two points on the line
- 6.a.6 Find the slope of a line, given the graph of a line
- 6.a.7 Recognize and describe a line with a slope that is positive, negative, zero, or undefined
- 6.a.8 Use transformational graphing to investigate effects of changes in equation parameters on the graph of the equation.
- 6.b.1 Write an equation of a line when given the graph of a line.
- 6.b.2 Write an equation of a line when given two points on the line whose coordinates are integers.
- 6.b.3 Write an equation of a line when given the slope and a point on the line whose coordinates are integers.
- 6.b.4 Write an equation of a vertical line as  $x = a$
- 6.b.5 Write an equation of a horizontal line as  $y = c$

### Expected

- 6.a.8 Describe the relationship between slope of parallel lines.
- 6.a.9 Describe the relationship between slopes of perpendicular lines.

- 6.b.6 Write the equation of a line in point-slope form.
- 6.b.7 Convert algebraically between the different forms of linear equations: slope-intercept, standard form, point-slope form.
- 6.b.8 Given an equation of a line, write an equation of a parallel line that passes through a given point.
- 6.b.9 Given an equation of a line, write

### Approaches to learning

How will this unit contribute to the overall development of subject-specific and general approaches to learning skills?

Collaboration: Students will work in teams, collaborate, designate roles and resolve a problem.

Reflection: Self-evaluation – students will look at two formative assessments and explain why they missed a question. They will then redo the problem correctly.

Organization: Time management – students will have to complete two tasks (quiz correction and in class assignment) within a given time frame.

### Learning experiences

How will students know what is expected of them? Will they see examples, rubrics, templates?

How will students acquire the knowledge and practise the skills required? How will they practise applying these?

Do the students have enough prior knowledge? How will we know?

### Teaching strategies

How will we use formative assessment to give students feedback during the unit?

What different teaching methodologies will we employ?

How are we differentiating teaching and learning for all? How have we made provision for those learning in a language other than their mother tongue? How have we considered those with special educational needs?

1. The students will look at data of the population of the world from different decades. They will create a coordinate plane and graph the data points. From the graph, they create an equation in  $y = mx + b$  form, verify points on the graph algebraically and make a prediction by extrapolation and substitution.

2. Students will separate into teams of 3. One student will be designated a leader, and one will be the recorder and one will be the presenter. Each team will answer unit related questions together. Once an answer is agreed upon, the recorder will write it on to a small white board and present it to the teacher.

1A. The teacher will present background information of the lesson.....population growth and its effects.

1B. The teacher will walk around and check/correct student work.

2. The teacher will present each problem and give the teams 10 minutes for each team to complete each problem. Any team with the correct solution earns a candy prize.

<p>3. Students will take two formative quizzes, in two separate classes. The quizzes will be given back and students will need to explain their errors and correct them.</p> <p>4. The students will be given 45 minutes to correct quizzes and complete an in-class assignment.</p>	<p>3. The teacher will grade the quizzes and hand them back to the student and the student corrections.</p> <p>4. The teacher will remind students of the importance of time management and staying on task. The teacher will correct/grade quizzes and in-class assignments as they are turned in and provide instruction and guidance.</p>
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### Resources

What resources are available to us?

How will our classroom environment, local environment and/or the community be used to facilitate students' experiences during the unit?

### Materials:

Graphing calculator, work sheets / hand-outs, Text book, Directions for project, Rubrics, document camera, Smartboard, Projectors, Stuart Common Drive, County shared materials, Online resources, Library and IB Math Tutors.

In addition the teacher will provide comfortable and open classroom environment where students are encouraged to help each other and ask for help and one in which they know they are capable of succeeding.

## Ongoing reflections and evaluation

**In keeping an ongoing record, consider the following questions. There are further stimulus questions at the end of the "Planning for teaching and learning" section of *MYP: From principles into practice*.**

### Students and teachers

What did we find compelling? Were our disciplinary knowledge/skills challenged in any way?

What inquiries arose during the learning? What, if any, extension activities arose?

How did we reflect—both on the unit and on our own learning?

Which attributes of the learner profile were encouraged through this unit? What opportunities were there for student-initiated action?

### Possible connections

How successful was the collaboration with other teachers within my subject group and from other subject groups?

What interdisciplinary understandings were or could be forged through collaboration with other subjects?

### Assessment

Were students able to demonstrate their learning?

How did the assessment tasks allow students to demonstrate the learning objectives identified for this unit? How did I make sure students were invited to achieve at all levels of the criteria descriptors?

Are we prepared for the next stage?

### Data collection

How did we decide on the data to collect? Was it useful?

Will be collected throughout the unit.