Unit Title	Do Rules Matter?
Teacher(s)	Martin
Subject and Grade Level	7th grade, Course 2
Time frame and Duration	Four Weeks (September, 2012)

Stage 1:

Integrate significant concept, area of interaction and unit question, and ensure it can be assessed

Area of Interaction Focus

Which AoI will be your focus? Why have you chosen this?

Approaches to Learning…chosen because this unit provides opportunities to employ different mathematical study skills that students have not always used in the past such as:

- math flashcards(properties)
- acronyms (PEMDAS)
- manipulatives(virtual and concrete)

Health and Social Education: Students (most of whom are new to Moody and need to establish relationships) will be seated in groups of four most of the time. Collaboration is encouraged; students will assist each other with difficult concepts.

Significant Concept(s)

What are the big ideas? What do I want my students to retain for years into the future?

There are two languages in use in math class; verbal and algebraic.

Properties are the tools that help you find the solution or solutions to an algebraic equation or inequality.

Algebraic models (kinesthetic and visual) prove the validity of solutions to equations.

Attention to correct format (showing work) is essential for accuracy in algebraic problem solving. This includes defining appropriate variables and "checking" solutions.

Real world problems can be solved using algebraic equations/inequalities.

MYP Unit Question

Why do rules matter?

Assessment

What task(s) will allow students the opportunity to respond to the unit question?

What will constitute acceptable evidence of understanding? How will students show what they have understood?

Tasks: Practice with manipulatives and visual representations of integer operations

Practice without manipulatives/visual representations

Practice with correct written format for order of operations

Translation of verbal and algebraic language (written and oral)

Evidence: Students will perform at 80% or above on unit quiz/test which includes:

simplifying/evaluating algebraic expressions, representing math models for integer operations, identifying and giving examples of these properties: additive inverse, commutative (+, *), associative (+, *), identity (+, *), product of powers, quotient of powers, zero exponent property, negative exponent property, distributive property. IB Assessment: Expressions Quiz (Knowledge and Understanding, Criterion A)
Which specific MYP objectives will be addressed during this unit?
3, 4, 12, 32, 34, 47, 50
Which MYP assessment criteria will be used?
Criterion A: Knowledge and Understanding (chapter 2 quiz)

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

Content What knowledge and/or skills (from my course overview) are going to be used to enable the student to respond to the guiding question? What (if any) state, provincial, district, or local standards/skills are to be addressed?
7.2 The student will simplify expressions that contain rational numbers (whole numbers, fractions, and decimals) and positive exponents, using order of operations, mental mathematics, and appropriate tools. 7.5 The student will formulate rules for and solve practical problems involving basic operations (addition, subtraction, multiplication, division) of integers. 7.20 The student will write verbal expressions as algebraic expressions and sentences as equations. 8.1 The student will a) simplify numerical expressions involving positive exponents, using rational numbers, order of operations, and properties of operations with real numbers; b) recognize, represent, compare, and order numbers expressed in scientific notation; and c) compare and order decimals, fractions, percents, and numbers written in scientific notation. 8.4 The student will apply the order of operations to evaluate algebraic expressions for given replacement values of the variables. Problems will be limited to positive exponents.
Approaches to Learning How will this unit contribute to the overall development of subject-specific and general AtL skills?
This unit provides specific math study skills such as use of manipulatives, notetaking, graphing, memorizing and applying properties.

Learning Experiences	Teaching Strategies
How will students know what is expected of them? Will they see examples, rubrics, templates, etc.? 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 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? Have we considered those learning in a language other than their mother tongue? Have we considered those with special educational needs?
The teacher will model graphing, ordering, comparing integers, integer operations. Students will be asked to begin to speak the algebraic language by learning appropriate vocabulary. Students will develop a set of property flashcards which will be continued in to Chapter 3. They will use their text and class notes to obtain correct wording. Students will have follow up homework which will be assessed informally by the teacher and reviewed in class.	Homework will be completed and corrected. A quiz and test will be given on which scores of 80% will represent mastery. Students who are primarily kinesthetic learners will have the opportunity to use manipulatives. Students will be given additional time as necessary for the first nine weeks of 6th grade to complete quizzes and tests with the understanding that they need to work within time constraints as the year progresses. This has been a development concern in the past Students will be required to show correct format as well as the self-check for linear equations. This is crucial for success later with more advanced equations and inequalities.
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?	
The student will use text explanations, teacher's examples, and computer assisted instruction Students were introduced to the HCPS Math Course web site and Brainpop.com. Manipulatives (red/yellow tiles) will be used extensively to model interger operations. Students will use red/yellow colored pencils to illustrate number line and tile models.	

Ongoing reflections and evaluation

In keeping an ongoing record, consider the following questions. There are further stimulus questions in the unit planning section of *MYP: from principles into practice.*

Students and Teachers

What did we find compelling? Was 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?

Were there any attributes of the learner profile that were encouraged through this unit? Were there any opportunities for 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?

Did the assessment tasks allow students to demonstrate the learning objectives identified for this unit? 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 I decide on the data to collect? Was it useful?
I found that the students were successful using the manipulatives since some were familiar with "Hands on Equations" from elementary school. This was motivating to students because although the content was challenging for early sixth grade, most students had a point of reference. I focused on the "Inquirer" characteristic of the learner profile because it was important for 6^{th} graders to begin to ask questions in their new environment. I recommended additional computer practice in Course 2 materials (Course A) from the glencoe.com and HCPS Math web sites for several students. One student moved to Course 1 and one moved to Algebra I. Another student was accelerated to this course from Course 1.