MATH MCS MYP UNIT PLANNER

Teacher(s)	**McQueen**	**Subject group and discipline**	**Honors Algebra 1**		
Unit title	**Unit 1: Relationships Between Quantities and Expressions**	**MYP year**	**Year 4**	**Unit duration (hrs)**	**12 hr; 4 wks**

Inquiry: Establishing the purpose of the unit

Key concept	**Related concept(s)**	**Global context**
Relationships	Quantity, Equivalence, Measurement	Scientific and Technical Innovation

Statement of inquiry

Measurements help us to understand, make inferences, and draw conclusions about the world.

Inquiry questions

Factual

- What is a radical?
- What is a radicand?
- What is a monomial?
- What is a polynomial?
- What is a rational number?
- What is an irrational number?
- What is dimensional analysis?

Conceptual

- How do I interpret parts of an expression in terms of context?
- How are polynomial operations related to operations in the real number system?
- How can polynomials be used to express realistic situations?
- How do you multiply, add, and subtract radical expressions?
- How do you convert units of measure?

Debatable

- What is the best way to multiply two polynomials?

MYP Objectives	Assessments
Objective A: Knowledge and Understanding	Formative - Ticket out the Door; Polynomials Quiz Summative – Unit 1 Test

Approaches to learning (ATL)

- Understand and use mathematical notation
- Organize and depict information logically
- Use appropriate strategies for organizing complex information
- Draw reasonable conclusions and generalizations
- Test generalizations and conclusions
- Analyze complex concepts and project into their constituent parts and synthesize them into create new understanding
- Use models and simulations to explore complex systems and issues

Action: Teaching and learning through inquiry

Content Standards

Extend the properties of exponents to rational exponents.

MGSE9–12.N.RN.2 Rewrite expressions involving radicals ~~and rational exponents using the properties of exponents.~~ (i.e., simplify and/or use the operations of addition, subtraction, and multiplication, with radicals within expressions limited to square roots).

Use properties of rational and irrational numbers.

MGSE9–12.N.RN.3 Explain why the sum or product of rational numbers is rational; why the sum of a rational number and an irrational number is irrational; and why the product of a nonzero rational number and an irrational number is irrational.

Reason quantitatively and use units to solve problems.

MGSE9–12.N.Q.1 Use units of measure (linear, area, capacity, rates, and time) as a way to understand problems:

a. Identify, use, and record appropriate units of measure within context, within data displays, and on graphs;
b. Convert units and rates using dimensional analysis (English–to–English and Metric–to– Metric without conversion factor provided and between English and Metric with conversion factor);
c. Use units within multi–step problems and formulas; interpret units of input and resulting units of output.

MGSE9–12.N.Q.2 Define appropriate quantities for the purpose of descriptive modeling. Given a situation, context, or problem, students will determine, identify, and use appropriate quantities for representing the situation.

MGSE9–12.A.SSE.1 Interpret expressions that represent a quantity in terms of its context.

MGSE9–12.A.SSE.1a Interpret parts of an expression, such as terms, factors, and coefficients, in context.

MGSE9–12.A.SSE.1b Given situations which utilize formulas or expressions with multiple terms and/or factors, interpret the meaning (in context) of individual terms or factors.

Perform arithmetic operations on polynomials

MGSE9–12.A.APR.1 Add, subtract, and multiply polynomials; understand that polynomials form a system analogous to the integers in that they are closed under these operations. *(For the purpose of this course, operations with polynomials will be limited to the second degree. Higher degree polynomials will be addressed in future courses.)*

Moved to Milestone Review

Reason quantitatively and use units to solve problems.

MGSE9–12.N.Q.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. *For example, money situations are generally reported to the nearest cent (hundredth). Also, an answers' precision is limited to the precision of the data given*.

Learning Activities and Experiences

Topic Lesson	Resource	Content Addressed	Standards Addressed
Expressions	**Translating Expressions** Guided Notes & Graphic Organizer	• Identifying parts of expressions • Translating verbal phrases into algebraic expressions • Translating algebraic expressions into verbal phrases	N.Q.2 A.SSE.1 A.SSE.1a A.SSE.1b
Operations with Polynomials	**7-1 Adding & Subtracting Polynomials** Guided Notes & Graphic Organizer Pearson enVision pg. 259 - 266	• Classifying polynomials • Add & Subtracting Polynomials • Finding perimeter of polynomials	A.APR.1
	7-2 Multiplying Polynomials **7-3 Multiplying Special Cases** Guided Notes & Graphic Organizer Pearson enVision pg. 267 - 280	• Review of exponent properties • Multiplying Polynomials • Finding area and volume of polynomials	A.APR.1
	Modeling (Performance Task) – DOE	• Modeling with polynomials	A.APR.1 A.SSE.1a A.SSE.1b N.Q.1
	Additional Resources:		
Operations with Radical Expressions	Simplifying Radical Expressions Guided Notes with Graphic Organizer	• Identifying rational and irrational numbers • Identifying parts of a radical • Prime factorization • Simplify radicals	N.RN.2

	Arithmetic Operations with Radical Expressions Guided Notes	• Adding & Subtracting Radical Expressions • Multiplying radical expressions • Ordering real numbers • Sums and products of rational and irrational numbers	N.RN.2 N.RN.3
	Additional Resources: 9-3 Rewriting Radical Expressions Pearson enVision pg. 370 - 375 1-1 Operations On Real Numbers Pearson enVision pg. 5 - 10		
Dimensional Analysis	Dimensional Analysis Guided Notes with Graphic Organizer	• Simple dimensional analysis (unit conversions) • Multi-step dimensional analysis (unit conversions) including English to English, metric to metric, metric to English, English to metric	N.Q.1
	Additional Resources:		

Personalized Learning and Differentiation

Teachers differentiate by providing examples (work samples or task-specific clarifications of assessment criteria); structuring support (advance organizers, flexible grouping, peer relationships); establishing flexible deadlines, and adjusting the pace.

-SWD/504- Accommodations provided

-ELL- Five Principle ELL Curriculum Framework and Vocabulary Supports
-Intervention Support- Re-teaching Activities in Small Groups with Progress Monitoring
-Extensions- Enrichment Tasks and Projects

Resources

Unit Web Links

Nearpod	Kahoot!
Delta Math	Quizizz
Khan Academy	WootMath
WordWall	Jeopardy Labs
EdPuzzle	
Gimkit	